

# **GREATER SOUTPANSBERG PROJECT PROPOSED GENERAAL PROJECT**

## **DMR Reference:**

Regulus Investment Holdings (Pty) Ltd - LP30/5/1/2/2/10045MR,  
Coal of Africa Limited - LP30/5/1/2/2/10047MR,  
Limpopo Coal Company (Pty) Ltd - LP30/5/1/2/2/10069MR,  
Chapudi Coal (Pty) Ltd - LP30/5/1/2/2/10044MR,  
Kwezi Mining and Exploration (Pty) Ltd - LP30/5/1/2/2/10054MR, LP30/5/1/2/2/10053MR,  
LP30/5/1/2/2/10050MR, LP30/5/1/2/2/10058MR)



## **SOCIO-ECONOMIC IMPACT ASSESSMENT**

**January 2014**





# GREATER SOUTPANSBERG PROPOSED GENERAAL PROJECT

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## DECLARATION OF INDEPENDENCE

Lizinda Dickson and Carien Joubert, authors of the Socio-economic Impact specialist report, hereby declare that we are employed at Naledi Development (Naledi) an independent environmental consultancy company. With a combined 50 years of practice in the environmental and social consulting industry, Naledi have extensive experience in conducting Social Impact Assessments and Public Participation Processes. Please refer to Lizinda Dickson's and Carien Joubert's CV's attached as Annexure A.

Naledi compiled the Socio-economic Baseline and Impact Assessment based on independent research and analysis of the proposed Generaal Project. We hereby confirm that we have no business, financial, personal or other interest in the activity proceeding other than remuneration for work performed as defined under "independent" in Chapter 1 of the Environmental Impact Assessment Regulations, 2010.



Lizinda Dickson

*For Naledi Development*

13 Jan 2014

Date



Carien Joubert

*For Naledi Development*

13 Jan 2014

Date

## EXECUTIVE SUMMARY

This document presents the results of a Social Impact Assessment (SIA) for the Generaal Project that MbeuYashu plans to construct in the Vhembe District, south of the Tshipise town.

The objectives of the SIA were to identify:

- The socio-economic characteristics of communities that may potentially be affected by the project;
- The anticipated positive and negative impacts of the proposed project during its construction, and operational phases;
- Practical, cost-effective and auditable management measures to avoid or ameliorate negative social impacts and enhance positive ones;
- Assess the no-go option as project alternative in terms of the anticipated socioeconomic impacts; and
- Identify any additional studies which may be required to determine the full impact of the project throughout and after its lifetime.

### Methodology

The study was designed so as to comply with the relevant national legislative requirements, such as those stipulated in the Mineral and Petroleum Resources Development Act (Act XX of 1998) and the Integrated Environmental Assessment Guidelines. Relevant international best-practice standards, such as the Equator Principles, and the International Finance Cooperation's (IFC) Principles and Performance Standards also informed the investigation's approach. The following activities were undertaken as part of the study:

- **Data collection**, which included:
  - A desktop review (including the most recent Census data (2011) and other National surveys done of the area; Local Government Planning Documentation, other Social Impact Assessment (SIA) for similar projects; as well as maps and available satellite imagery of the proposed project sites and surrounding environment);
  - Site visits and Observations to the project area in order to verify information obtained from secondary sources on potential project impacts and the socio-economic characteristics of the receiving environment;
  - Participant Observation and Individual interviews with key informants, stakeholder and public participation meetings including key members of local communities, municipal officials, land users and landowners in the area;
  - Previous data-gathering and reporting for the proposed Makhado Colliery;

- A limited sample survey of landowners in the Generaal area was conducted to appraise the nature and extent of land use and other livelihood related activities in the vicinity of the project area; and
  - Information from other specialist studies conducted as part of the Environmental Impact Assessment (EIA) for the proposed project.
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- Compilation of a ***socio-economic baseline profile*** on the basis of the information collected through the desktop review, site visits, participant observations and the sample survey and interviews with key informants;
  - ***Assessment of positive and negative impacts*** on the basis of issues identified through the public participation process, interviews with key stakeholders and specialist opinion. Identified impacts were categorised in terms of the phase of the proposed project that is expected to give rise to these impacts;
  - ***Rating of impacts*** in terms of their anticipated duration, extent, intensity and probability. Duration, extent and intensity ratings were combined into a measure of an impact's expected consequence. Consequence ratings, in turn, were combined with probability ratings to give a measure of an impact's overall significance;
  - Identification of appropriate ***mitigation measures*** to avoid or ameliorate negative socio-economic impacts and to enhance positive ones. The rating procedure described above was then repeated to assess the expected consequence, probability and significance of each impact after mitigation. This post-mitigation rating gives an indication of the significance of residual impacts, while the difference between an impact's pre-and post-mitigation ratings therefore represents the degree to which the recommended mitigation measures are expected to be effective in reducing or ameliorating that impact;
  - Assessment of ***cumulative impacts***, which are defined as impacts arising from the combined effects of existing activities, the project and foreseeable future projects or actions.

### **Baseline socio-economic profile**

Makhado LM is one of the most populous municipalities in Limpopo Province with a population of more than 516,000 people. Females are more than males, which is normal for the Province and for the country. Ward 21 is where the largest part of the proposed Generaal Coal Project is located. This ward is also considerably larger than the project footprint, but a more detailed level of analysis of the 2011 Census is not possible yet. Ward 21 has a population of slightly more than 21,000 people, who live on farms, in a cluster of small rural

villages and in a section of Makhado town. It is significant that there a substantially more men than women in this ward.

*Table 1-1: Population in the Project Area, 2011*

Area	Male	Female	Total
Makhado LM	236,795	279,236	516,031
Makhado Ward 21	11,079	9,959	21,038
Musina LM	34,506	33,853	68,359
Musina Ward 2	8,707	8,041	16,747

Source: Statistics South Africa, Census 2011

Ward 21 in Makhado has 1,965 children aged 4 or younger (9.3%) and 2,600 children of primary school age (12.4%). The number of children in the secondary school age cohort is approximately 1,540 or 7.3% of the ward population. This ward has one primary and one combined secondary school according to the Municipal Demarcation Board.

Ward 2 in Musina has approximately 1,940 children aged 4 and below, which is 11.6% of the ward population. There are approximately 1,600 learners of primary school age and approximately 1,200 learners of secondary school age. This ward has one farm school, one intermediate school and one combined school according to the Municipal Demarcation Board.

In both Ward 2 of Musina LM and Ward 21 of Makhado LM the proportion of the population aged 19 years and younger is considerably smaller than for the respective municipalities. This proportion is also smaller than the equivalent for Limpopo Province. The peculiar age distribution, as well as the dispersed nature of the population settlement pattern in the project area, has important implications for the planning of education support.

Population growth in Musina Municipality has been abnormally high during the past decade. Census 2001 recorded a total population of 39,310 people for Musina LM, compared to 68,360 in 2011. Compounded population growth was therefore 5.7% per year for the past ten years, compared to 0.25% per year for the entire Province. Population growth in Musina LM was concentrated in the urban wards comprising Musina town and Nancefield.

Population growth in Makhado LM since 2001 was less than 0.4% per year, based on the difference between the national census figures for 2011 and 2001. This suggests that some households, probably from rural settlements, are leaving the municipal area. It is part of a trend towards urbanisation throughout the country and internationally.

Less than 22% of the population who have passed school-going age in the two wards under consideration have completed secondary school or obtained a post-school qualification. Almost half of this population have only partially completed secondary school. This relatively low education level will have a negative implication for employability, as indicated below.

*Table 1-2: Education Profile in the Project Area for People Above School-going Age, 2011*

Education Level	Makhado Ward 21	Musina Ward 2	Total
No Schooling	1 341	1 558	2 899
Some Primary	4167	4227	8394
Some Secondary	10 445	7 535	17980
Senior Certificate	3 923	1 361	5284
Post School Qualification	2450	407	2857
<b>Total</b>	<b>22,326</b>	<b>15,088</b>	<b>37,414</b>

Source: Statistics South Africa, Census 2011

Unemployment in Makhado LM is significantly higher than in Musina, although Ward 21 in Makhado is an exception. Only 35% of the theoretically employable people in Ward 21 are likely to have completed secondary school, which numbers approximately 382 people.

The expanded unemployment rate (EUR) includes discouraged work seekers (DWS) as unemployed and is therefore always higher than the strict unemployment rate. Discouraged work seekers have given up on trying to find work and are therefore technically not included in the internationally used definition of unemployment. The strict unemployment rate (SUR) in Musina LM at 18.7% is considerably lower than the provincial average and it is even lower in Ward 2 at 9.8%. The total number of people in Musina Ward 2 who could theoretically be employed is 1,218 (967 unemployed plus 251 discouraged work seekers). However, it is likely that only 58% of these people will have completed primary school and only 13% have completed secondary school. More than 11% of residents of appropriate age have never been to school. The potential labour pool with senior certificates is therefore estimated at 158 people. A table on educational qualifications is provided below.

*Table 1-3: Employment Profile in the Project Area*

Area	Employed	Unemployed	DWS <sup>1</sup>	SUR <sup>2</sup> %	EUR <sup>3</sup> %
Makhado LM	78,768	45,705	24,383	36.7	47.1
Makhado Ward 21	10,636	821	269	7.2	9.3

<sup>1</sup> DWS: Discouraged Work Seeker

<sup>2</sup> SUR: Strict Unemployment Rate

<sup>3</sup> EUR: Expanded Unemployment Rate

Area	Employed	Unemployed	DWS <sup>1</sup>	SUR <sup>2</sup> %	EUR <sup>3</sup> %
Musina LM	25,588	5,893	1,869	18.7	23.3
Musina Ward 2	8,887	967	251	9.8	12.1

Source: Statistics South Africa, Census 2011

The total number of unemployed people (strictly unemployed as well as discouraged work seekers) in the two wards who have completed secondary school is therefore approximately 540. This suggests that the proposed Generaal Project will have to recruit from outside the project area.

The census does not indicate employment per sector, but useful information in this regard can be obtained from commercial providers of statistical information such as Quantec. The information below has been procured from them. It indicates that only 1.2% of the workforce in Makhado LM is employed in the mining sector, but this could change in the foreseeable future considering the pipeline of potential coal mining projects. Increased employment in the mining sector will have a positive impact on employment in other sectors through the indirect employment effect, particularly on construction, trade and transport. More than 16% of the workforce in Musina LM is already employed in the mining sector and the number is growing. The Trade, Accommodation and Catering sector is the biggest employer in both municipalities. Agriculture is also a major employer, especially in Musina LM.

*Table 1-4: Employment by Sector in Makhado and Musina Municipalities, 2011*

Sector	Makhado	Makhado %	Musina	Musina %
Agriculture, forestry and fishing	5578	7.8	3774	18.3
Mining and quarrying	832	1.2	3424	16.6
Manufacturing	4735	6.6	976	4.7
Electricity, gas and water	264	0.4	29	0.1
Construction	6062	8.5	1155	5.6
Wholesale & retail trade, catering and accommodation	21193	29.7	5072	24.6
Transport, storage and communication	2943	4.1	765	3.7
Finance, insurance, real estate and business services	5622	7.9	1326	6.4
Community, social and personal services	10320	14.5	1814	8.8
General government	13801	19.3	2242	10.9
<b>Total</b>	<b>71350</b>	<b>100.0</b>	<b>20578</b>	<b>100.0</b>

Source: Quantec 2013



The strict unemployment rate (SUR) in Musina LM at 18.7% is considerably lower than the provincial average and it is even lower in Ward 2 at 9.8%. The expanded unemployment rate (EUR) includes discouraged work seekers (DWS) as unemployed and is therefore always higher. Discouraged work seekers have given up on trying to find work and are therefore not included in the international definition of unemployment. Unemployment of more than 36% in Makhado LM is significantly higher than in Musina, although Ward 21 in Makhado is an exception. Most of the residents of this ward work on farms or in Makhado Town, resulting in a strict unemployment rate of only 7.2%, which is a quarter of the municipal average.

In relation to communities in the surrounding area which is located outside Ward 2 of Musina LM and Ward 21 of Makhado LM, the picture is much bleaker with an unemployment rate of over 60%.

Compared to the provincial and national averages, there are very few households in the project area with no income at all. This is presumably because there are not many rural settlements and at least one member of the households living on farms is likely to earn an income.

*Table 1-5: Annual Household Income in the Project Area, 2011*

<b>Annual Household Income</b>	<b>Makhado</b>	<b>Ward 21 %</b>	<b>Musina</b>	<b>Ward 2 %</b>
<b>Income Category</b>	<b>Ward 21</b>		<b>Ward 2</b>	
No income	546	7.5	374	6.8
R 1 - R 4800	207	2.8	99	1.8
R 4801 - R 9600	453	6.2	600	10.9
R 9601 - R 19 600	1935	26.5	2154	39.3
R 19 601 - R 38 200	1540	21.1	1371	25.0
R 38 201 - R 76 400	792	10.8	489	8.9
R 76 401 - R 153 800	691	9.5	171	3.1
R 153 801 - R 307 600	595	8.1	136	2.5
R 307 601 - R 614 400	390	5.3	51	0.9
R 614 001 - R 1 228 800	118	1.6	20	0.4
R 1 228 801 - R 2 457 600	26	0.4	11	0.2
R 2 457 601 or more	19	0.3	6	0.1
<b>Total</b>	<b>7312</b>	<b>100</b>	<b>5481</b>	<b>100</b>

Source: Statistics South Africa, Census 2011

However, household incomes are generally low, with 84% of households in Musina Ward 2 earning less than R38,200 per year or approximately R3,180 per month. Household income is

slightly higher in Makhado Ward 21 where 64% of households earn less than R38,200 per month.

The Makhado local economy, with a value of production of close to R13 billion, is almost three times larger than that of Musina. Government is the driver of this local economy, mostly because of the public sector needs of the very large population, which includes education, public health, safety and security, as well as local government services.

*Table 1-6: Gross Value Added for Makhado LM at Current Prices*

Sector	2009	2010	2011	2011%
Agriculture, forestry and fishing	470	457	467	3.6
Mining and quarrying	232	243	274	2.1
Manufacturing	434	442	459	3.5
Electricity, gas and water	306	342	380	2.9
Construction	430	519	616	4.7
Wholesale and retail trade, catering and accommodation	1921	2150	2406	18.6
Transport, storage and communication	1295	1340	1459	11.2
Finance, insurance, real estate and business services	2189	2422	2574	19.9
Community, social and personal services	596	747	823	6.3
General government	2782	3138	3507	27.0
<b>Total</b>	<b>10656</b>	<b>11798</b>	<b>12966</b>	<b>100.0</b>

Source: Quantec, 2013

The finance sector is significant, largely due to the imputed rent estimates of extensive tracts of land that command very high prices. The third largest sector is trade and catering. Makhado town provides a service function for a large hinterland that stretches beyond its borders. Attractive landscapes have also provided opportunities to create accommodation and catering product offerings. Agriculture is stagnant at best, but with a tendency to shrink. Important commodities include fruit, timber and meat. Mining has never been an important sector in the Makhado local economy, but this could change in the foreseeable future due to the interest that the Soutpansberg Coalfield is receiving with its attractive metallurgical properties.

*Table 1-7: Gross Value Added for Musina LM at Current Prices*

Sector	2009	2010	2011	2011%
Agriculture, forestry and fishing	297	248	248	5.2
Mining and quarrying	1571	1649	1871	39.6

<b>Sector</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2011%</b>
Manufacturing	102	114	122	2.6
Electricity, gas and water	48	56	68	1.4
Construction	76	95	116	2.4
Wholesale and retail trade, catering and accommodation	429	535	636	13.5
Transport, storage and communication	403	419	492	10.4
Finance, insurance, real estate and business services	476	542	587	12.4
Community, social and personal services	75	92	106	2.2
General government	345	404	478	10.1
<b>Total</b>	<b>3822</b>	<b>4155</b>	<b>4724</b>	<b>100.0</b>

Source: Quantec, 2013

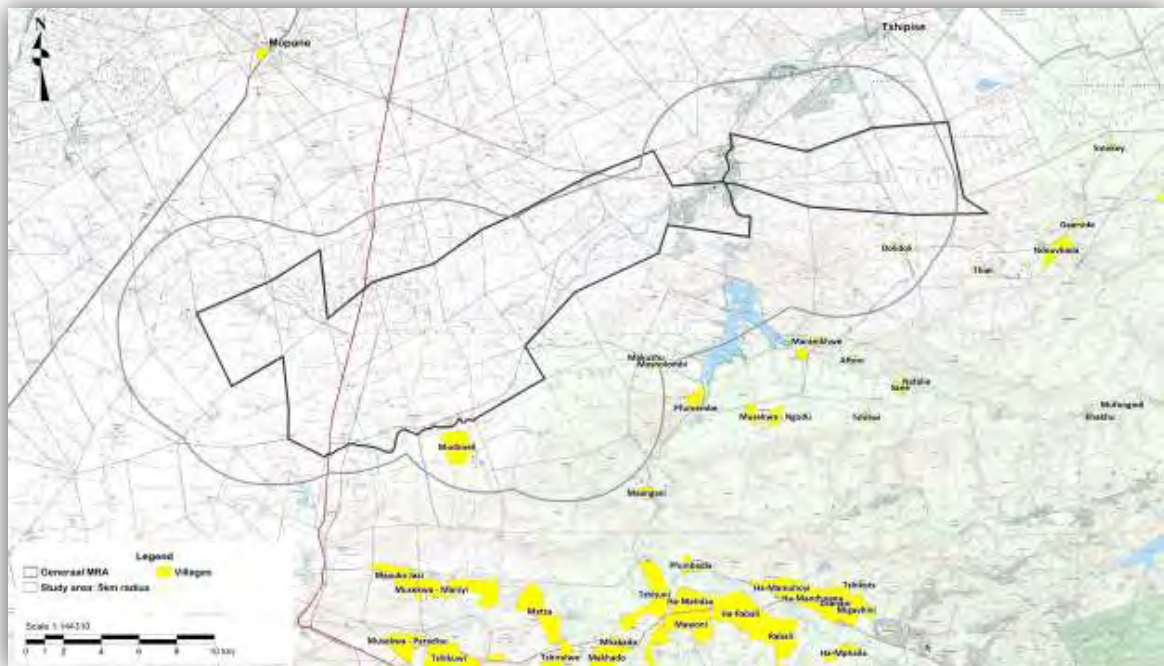
Musina LM has a relatively small local economy, with a total value of production of R4.72 billion at current prices for 2011. It contributes 2.5% to the provincial economy, which had a comparative size of R190 billion at current prices in 2011 and 13% to the Vhembe District economy (R36.4 billion at current prices in 2011). There are 25 local municipalities in Limpopo and 4 in Vhembe District. The main driver in the municipal economy is clearly mining, which contributed almost 40% to the total value of production in 2011 (at current prices). The primary commodity is diamonds, although coal is also beginning to make a significant contribution. By comparison, the mining sector contributes 9.3% to the production value of the Vhembe District economy, 30% to the provincial economy and 9.8% to the national economy.

The trade sector, transport and government activities are growing rapidly. This growth is being driven by the local mining sector and by trading activities, including consumption expenditure from residents of neighbouring countries. The construction sector is also growing, but off a low base. Growth in the finance sector is more a reflection of the imputed value of land, rather than an increase in actual financial transactions. The agriculture sector, which has a long tradition of considerable significance, is shrinking in relative and in absolute terms.

The Makhado IDP indicates that current infrastructure is inadequate to service a growing population. This was confirmed by municipal planning managers during a stakeholder consultation meeting with CoAL Ltd on 19 March 2013. Water sources in particular are insufficient and roads are generally in a bad condition. Properties in rural areas are difficult to access, particularly during times of high rainfall.

The project area have been divided into the following focus areas, those properties and communities in the surrounding area, the properties on Mining Right Application farms, and the properties on the Mining Right Application area physically affected by the mine footprint.

The communities in the surrounding area are residing in rural villages or farmworker villages and are summarised below:



**Figure 1-1: Settlement map**

**Table 1-8: Surrounding rural settlements**

Settlement Name	Population	Households	Unemployed <sup>4</sup>
Mudimeli	2892	678	285 people (57%)
Makushu- Mosholombi	1506	396	276 people (73%)
Pfumembe	717	189	111 people (76%)
Ngudu	810	174	111 people (66%)
Maranikwe (incl Starlight)	999	264	81 people (54%)
DoliDoli	312	90	24 people (44%)
Thiel	276	84	51 people (77%)
Ndouvhada (Khomela)	1020	273	129 people (62%)
Gaarside	267	69	18 people (67%)
Smokey	234	66	3 people (100%)
Honnet Nature Reserve Worker village	174	69	0 people (0%)
<b>Total</b>	<b>9207</b>	<b>2352</b>	<b>1089 people (61%)</b>

<sup>4</sup> Including unemployed and discouraged work seekers but excluding scholars, elderly and other economically non-active community members

The Mount Stuart section of the Mining Right Application area's primary land use is irrigation (with the focus on citrus) and game farming to a lesser extent. Further east of the section is the Kuduland Conservancy focussed on conservation, game breeding and the hunting industry.

The Generaal Section of the Mining Right Application area's primary land use is game breeding and the hunting industry. Game farming areas normally include hunting lodges that are in some instances also utilised for tourism. Some livestock breeding also occurs at some of these properties.

The properties physically affected by the mine footprint contributes to the agricultural sector GDP and also provides employment to people from the local communities as well as from across the borders of South Africa.

#### **Predicted impacts and recommended mitigation measures**

The anticipated socio-economic impacts of the proposed project, their consequence, probability and significance ratings, as well as recommended mitigation measures are summarised in the table below.

Table 1-9: Executive summary - Socio-economic Impact Table

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures
DP1	Demographic and Population Impacts	Influx of work seekers into the area	Negative	Moderate Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Optimise the use of local labour as far as possible. Establishing early on skills development programmes in the local area will support to possibility of finding skilled people locally</li> <li>❖ Development and Implementation of an Influx and Land use Management Plan</li> <li>❖ Develop a code of conduct with which contractors and their employees must comply. The code should deal with the interaction with local communities and substance abuse among other things.</li> <li>❖ Develop a Stakeholder Engagement Plan (SEP) which clarifies the principles of engagement with community and other stakeholders, sets in place appropriate liaison forums (a community forum is recommended), and describes the grievance management procedure to be adopted by the Generaal Project. Establishment of a local labour recruitment committee to monitor recruitment procedures and results</li> <li>❖ Communicate through media the recruitment procedures and priorities to discourage work seekers from outside the area</li> </ul>

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures
7DP2	Demographic and Population Impacts	Influx of construction labour with pressure on services and social structures	Negative	Moderate Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Facilitate the provision of housing and associated infrastructure. Establishment of a construction accommodation camp to house those employees that cannot be sourced from the local community due to a lack of skills</li> <li>❖ Optimise the use of local labour as far as possible. Establishing early on skills development programmes in the local area will support to possibility of finding skilled people locally</li> <li>❖ Development and Implementation of an Influx and Land use Management Plan</li> <li>❖ Develop a code of conduct with which contractors and their employees must comply. The code should deal with the interaction with local communities and substance abuse among other things.</li> <li>❖ Develop a Stakeholder Engagement Plan (SEP) which clarifies the principles of engagement with community and other stakeholders, sets in place appropriate liaison forums (a community forum is recommended), and describes the grievance management procedure to be adopted by the Generaal Project. Establishment of a local labour recruitment committee to monitor recruitment procedures and results</li> <li>❖ Develop and communicate a clear and concise employment and recruitment policy to prevent opportunistic job seekers from settling in the area.</li> <li>❖ Implementation of a programme of STD and HIV/AIDS screening, counselling and (where possible) treatment.</li> </ul>

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures
DP3	Demographic and Population Impacts	Influx of operational workforce with pressure on services and social structures	Negative	Moderate Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Contribution towards the provision of housing, infrastructure and services for operational staff. The establishment of partnerships with other private sector stakeholders, government authorities and civil society organisations to integrate planning around the provision of services and infrastructure, and to ensure that Mine inputs in this context compliment initiatives led by other players, especially the local and district municipality.</li> <li>❖ Development and Implementation of an Influx and Land use Management Plan</li> <li>❖ Optimise the use of local labour as far as possible. Establishing early on skills development programmes in the local area will support to possibility of finding skilled people locally</li> <li>❖ Induction of contractors and workforce with regard to their code of conduct in the local communities</li> <li>❖ Develop and communicate a clear and concise employment and recruitment policy to prevent opportunistic job seekers from settling in the area.</li> <li>❖ Implementation of a programme of STD and HIV/AIDS screening, counselling and (where possible) treatment.</li> <li>❖ Continuous assessment and monitoring of infrastructure and services capacity in focal points (assessment every 5 years)</li> <li>❖ Determine scale of assistance required at focal points and enter into an agreement with the municipality</li> <li>❖ Establish a development, infrastructure and service monitoring forum with the municipality to continuously assess and monitor capacity, determine assistance required and oversee implementation</li> </ul>



ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures
DP4	Demographic and Population Impacts	Influx of people and the development of spontaneous settlements near project facilities, in the rural villages, Tshipise Town and surrounding areas	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Develop a Community Development Plan which addresses issues relating to provision of housing for the workforce through on-going communication and engagement between the mine and local authorities for implementation of this plan.</li> <li>❖ Develop and adoption of an Influx Management Plan in consultation with the local government that outlines proactive management measures to discourage and manage influx, outlines and refines relevant stakeholders and their roles and responsibilities and the way in which each role-player intends to manage influx and spontaneous settlements.</li> <li>❖ Support the compilation of a development master plan, in cooperation with relevant local and regional authorities for the Makhado areas, whereby new development areas for workers' and new arrivals' accommodation will be catered for and duly planned</li> <li>❖ Support local government capacity for integrated development planning.</li> <li>❖ Develop and communicate a clear and concise employment and recruitment policy to prevent opportunistic job seekers from settling in the area.</li> <li>❖ Continuous assessment and monitoring of infrastructure and services capacity in focal points (assessment every 5 years)</li> <li>❖ Determine scale of assistance required at focal points and enter into an agreement with the municipality</li> <li>❖ Establish a development, infrastructure and service monitoring forum with the municipality to continuously assess and monitor capacity, determine assistance required and oversee implementation</li> </ul>

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures
DP5	Demographic and Population Impacts	Conflicts arising at the end of construction due to the termination of job opportunities for contractors	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Investigate the possibility of transferring labour from one operation to another – depending on the phasing of the projects</li> <li>❖ Develop the MbeuYashu grievance procedure to capture and address grievances arising due to retrenchments and downscaling.</li> <li>❖ Ensure compliance with all applicable Labour Regulations of South Africa</li> <li>❖ Consider compliance with Best Practice , i.e. IFC's Performance Standard 2 "Labour and Working Conditions"</li> <li>❖ Monitoring of all contractors and sub-contractors for compliance with the above standards, with contractually-established financial sanctions for observed non-compliances</li> <li>❖ Communicate the termination conditions to the communication structure established</li> <li>❖ Communicate the termination conditions to all employees – including contractors and sub-contractors</li> </ul>
HSW 1	Health and Social Wellbeing	Increased chances of the spread of communicable diseases such as HIV/AIDS and STDs linked to influx of predominantly male job-seekers and workers	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Develop a comprehensive HIV/AIDS and STD program to employees through employee wellness programmes which should include prevention, voluntary counselling for HIV testing, as well as anti-retroviral treatment for employees.</li> <li>❖ Develop a Community Health Action Plan which focuses on HIV/AIDS, tuberculosis.</li> <li>❖ Repeated awareness campaigns that is focused beyond employees and includes contractors and the communities near project facilities</li> </ul>

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures
HSW 2	Health and Social Wellbeing	Safety and Risk Exposure through an increase in crime	Negative	Moderate Risk	Low Significance	<ul style="list-style-type: none"> <li>❖ Increased security on mine premises</li> <li>❖ Construction and permanent workers are identified and marked with clear identifiable clothing</li> <li>❖ Code of Conduct to form part of induction of new workers with a clear statement and procedure regarding access, conduct and identification. All construction workers should wear clothing marked (and reflective vests) with the logo of the construction firm/contractor or sub-contractor as well as identification cards that cannot be easily forged, so that they can be easily recognized as being legitimate.</li> <li>❖ Workers to be screened including criminal background checks.</li> <li>❖ Properly constructed and secured fences can control access to construction sites. Implementing strict access control of the project site and specifically the contractor's workforce camp.</li> <li>❖ Workers should be urged to recognize and report suspicious activity and signs of burglary and be informed of crime prevention measures that they themselves can take.</li> <li>❖ Employment of local people on the mine to improve the poverty levels in the host and neighbouring communities</li> <li>❖ MbeuYashu to liaise with existing community policing forums and project security to properly secure the project area and surrounding area</li> <li>❖ Investigate the implementation of an anti-poaching unit in collaboration with local stakeholders, policing forums and police</li> </ul>

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures
HSW 3	Health and Social Wellbeing	Safety and Risk Exposure due to an increase in poaching on neighbouring game farming properties	Negative	Moderate Risk	Low Significance	<ul style="list-style-type: none"> <li>❖ Establishment of an anti-poaching unit available to adjacent land owners, and establishing a security forum in collaboration with these land owners. Land owners are to be actively involved in the selection of the contracting company employed to conduct anti-poaching in the area.</li> <li>❖ Increased security measures (fencing, access control and monitoring) on mine premises. Properly constructed and secured fences can control access to construction sites. Implementing strict access control of the project site and the contractor's workforce camp. Curfew times to be established in accommodation areas. Construction workers accommodated on mine are identified and marked with clear identifiable clothing</li> <li>❖ Code of Conduct to form part of induction of new workers with a clear statement and procedure regarding access, conduct and identification. All construction workers should wear clothing marked (and reflective vests) with the logo of the construction firm/contractor or sub-contractor as well as identification cards that cannot be easily forged, so that they can be easily recognized as being legitimate.</li> <li>❖ Workers to be screened including criminal background checks.</li> <li>❖ Employment of local people on the mine to improve the poverty levels in the local communities</li> </ul>

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures
QL1	Quality of Living Environment	Change in "sense of place"	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Regular and effective engagement with stakeholders through the SEP.</li> <li>❖ An effective grievance management procedure managed within the framework of the SEP. Grievance mechanisms must be in place throughout the life of the mine, including for a determined period post-closure, to address any impact for affected communities.</li> <li>❖ Implementation of traffic management measures</li> <li>❖ Implementation of insulation and mitigation measures for noise</li> <li>❖ Implementation of visual barriers and other mitigation measures as recommended in the visual study</li> <li>❖ Colour schemes must complement the local environment.</li> <li>❖ Minimising disturbance to vegetated areas outside the critical development areas where possible</li> <li>❖ Revegetation/rehabilitation of disturbed sites in parallel with development</li> <li>❖ Successful mitigation interventions can reduce the intensity of the impact to at least moderate and ultimately moderate-low levels. If grievances are addressed adequately, and communication and engagement is effective affected communities may be able to adjust more easily to the changes.</li> </ul>
QL2	Quality of Living Environment	Disruption of Social Networks and decrease in Social Capital	Negative	Moderate Risk	Low Significance	<ul style="list-style-type: none"> <li>❖ Employment of local people already part of the community.</li> <li>❖ Code of conduct to form part of induction for all new workers</li> <li>❖ Grievance Procedure within the local communities</li> </ul>
QL3	Quality of Living Environment	Perceptions of and Feelings in relation to the project	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Establish on-going Consultative Forums with concerned groups to air concerns, find possible mitigation measures for their perceived impacts, solutions to co-existence and monitor implementation and effectiveness of mitigation measures</li> <li>❖ Continuous communication with all stakeholders providing information on anticipated impacts and planned mitigation measures</li> </ul>

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures
FC1	Family and Community Impacts	Impacts on land owner and labourers	Negative	Very High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Development of a land acquisition and lease policy defining the negotiation process to minimize the feelings of uncertainty</li> <li>❖ Financial compensation of affected property owners/tenants, employees and their families in terms of the relevant legislation.</li> <li>❖ Displacement of workers and their dependents requires an equitable policy, principles, financial guidelines and clarification of operational approaches.</li> <li>❖ Land Acquisition, lease and compensation agreements reached with affected landowners that include arrangements and measures for labour tenants</li> </ul>
FC2	Family and Community Impacts	Change processes and impacts related to daily movement patterns	Negative	Moderate Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ The project description defines that no hauling will take place along existing farm roads or regional / national roads. It is planned that the run-of-mine (ROM) coal will be transported for short distances by truck, on the in-pit haul roads to the crushing and screening facilities. The crushed and screened ROM product will be transported to the coal beneficiation plant at the Infrastructure Hub via conveyor. It is further planned that the product will be loaded directly onto trains at the Rail Load-out Terminal situated at the Infrastructure Hub which links up with the existing Musina-Makhado railway line.</li> <li>❖ Therefore only supplier light-vehicles and employee busses will disrupt movement patterns, these will stabilize once the mine is fully operational</li> </ul>
FC3	Family and Community Impacts	Conversion of land use	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Acquisition and or leasing of directly impacted land</li> <li>❖ Fair compensation negotiated and agreed with land owners that will lose agricultural land</li> <li>❖ Continuous consultation with landowners discussing co-existence and feasibility</li> <li>❖ Educate landowners in terms of their rights and responsibilities prior to the construction phase</li> <li>❖ Assist landowners in identifying ways to adapt their land uses, to the benefit of both the landowner and MbeuYashu</li> <li>❖ Implement a consultation programme with regional stakeholders in the development of a closure plan and rehabilitation programme</li> <li>❖ Determine the regional needs and characteristics to ensure post mining use of land enhances the regional characteristics</li> </ul>

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures
I1	Institutional/Legal/Political/Equity Impacts	Challenge to local government capacity	Negative	Moderate Risk	Low Significance	<ul style="list-style-type: none"> <li>❖ Intensive engagement between MbeuYashu / CoAL and the municipality well in advance of construction. In this context the responsibilities of local government should be well understood, and potential problems defined and addressed as early as possible.</li> <li>❖ Establishment of a limited and time-bound municipal support function. MbeuYashu / CoAL should contribute funding and appropriate technical resources. The participation of other major mines and industries in the area should be promoted by both MbeuYashu / CoAL and the local municipality.</li> </ul>
I2	Institutional/Legal/Political/Equity Impacts	Participation and Consultation in process	Negative	Moderate Risk	Low Significance	<ul style="list-style-type: none"> <li>❖ Provide transport and/or reimbursement to the Historical Disadvantaged Communities</li> <li>❖ During the Operational phase, the structures established for participation should have a proper constitution that addresses reimbursement of costs</li> <li>❖ Arrangement of meetings in proximity to the mine or in affected communities to minimize the distance of directly affected parties to travel Cluster meetings together on the same day or over 2 days to minimize disruption of personal schedules</li> </ul>
I3	Institutional/Legal/Political/Equity Impacts	Impact equity	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Tax and Profit benefits must be ploughed back into the Local Municipal areas and immediate communities</li> <li>❖ Employment should be prioritized to local communities</li> <li>❖ Local beneficiation programmes to be investigated and implemented</li> </ul>
E1	Socio-economic Wellbeing	Increase in South African GDP and Trade Balance	Positive	High Positive	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Procure goods and services from South African suppliers as far as possible.</li> <li>❖ Procure ancillary services for goods procured abroad, such as installation, customisation and maintenance, from South African companies as far as possible.</li> </ul>

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures
E2	Socio-economic Wellbeing	Increase in provincial and local GDP	Positive	High Positive	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Procure goods and services from local or provincial suppliers as far as possible.</li> <li>❖ Procure ancillary services for goods purchased from outside of the Limpopo Province, such as installation, customisation and maintenance, from local or provincial companies as far as possible.</li> </ul>
E3	Socio-economic Wellbeing	Increase in government revenue	Positive	High Positive	Moderate Significance	<ul style="list-style-type: none"> <li>❖ None</li> </ul>
E4	Socio-economic Wellbeing	Increase in employment, income and skills development	Positive	High Positive	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Aim to use local workers as far as possible and formalise this policy in contracts.</li> <li>❖ Consider implementing labour-intensive rather than capital-intensive work methods wherever possible.</li> <li>❖ Procure resources from local sources wherever possible.</li> <li>❖ Establish a database of local people with information on qualifications and skills, utilize this database to develop skills plans and recruit local people.</li> <li>❖ Implement early on skills development programmes in the areas where most job opportunities will be created, i.e. operators and drivers</li> <li>❖ Include training for general life skills such as financial management and health.</li> <li>❖ Implement portable skills development programmes</li> <li>❖ Design and implement economic development programmes that will assist people being retrenched in sustaining their livelihoods</li> <li>❖ Establish a future forum with representation from the workforce to discuss potential difficulties and solutions</li> <li>❖ Implementation of programmes to minimize and mitigate the impact of downscaling and retrenchment</li> </ul>



ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures
E5	Socio-economic Wellbeing	Impact on existing businesses in surrounding areas	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Devise a compensation plan for direct impacts of mining on adjacent farms, such as loss or pollution of land.</li> <li>❖ Screen mining activities from the adjacent farms and the main access road to minimize the impact on the general sense of place and tourists.</li> <li>❖ Identification of employees that may lose their employment and enrol in skills programme</li> </ul>
E6	Socio-economic Wellbeing	Change in property values	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Attempt to minimize impacts through implementation of mitigation strategies focusing on aspects that may affect tourism characteristics including traffic, noise, and visual aspects such as screening mining activities from the adjacent farms and the main access road to minimize the impact on the general sense of place. Establish a baseline of property values by conducting baseline valuations on representative properties and providing such to landowners, thereafter conducting monitoring valuations in periods of 5 years or as may be agreed with landowners</li> <li>❖ Establish a communication channel with direct adjacent land owners to address impacts and grievances</li> <li>❖ Adopting principles of good corporate citizenship focused on conservation of natural resources such as water, biodiversity, etc. Inclusion of these principles and actions into information disseminated in the local area (“how mining can be done differently”)</li> </ul>
E7	Socio-economic Wellbeing	Decrease of visitors, tourists and hunting parties	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Attempt to minimize impacts through implementation of mitigation strategies focusing on aspects that may affect tourism characteristics including traffic, noise, and visual aspects such as screening mining activities from the adjacent farms and the main access road to minimize the impact on the general sense of place.</li> <li>❖ Collaborate with local stakeholders in terms of regional planning to ensure certain areas are protected for tourism and hunting activities.</li> <li>❖ Adopting principles of good corporate citizenship focused on conservation of natural resources such as water, biodiversity, etc. Inclusion of these principles and actions into information disseminated in the local area (“how mining can be done differently”)</li> </ul>

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures
E8	Socio-economic Wellbeing	Equity Participation of the Local Communities	Positive	Moderate Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Ensure communities are fully involved and properly represented in the structures</li> <li>❖ Ensure capacity is built at an early stage for communities to understand how equity and dividends work</li> <li>❖ Place protective measures in place that will shield the communities from any business risk or liabilities</li> </ul>
E9	Socio-economic Wellbeing	Participation of local business in procurement opportunities	Positive	High Positive	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Ensure communities are fully involved and understand the local procurement policy and procedure</li> <li>❖ Ensure capacity is built at an early stage through enterprise development to enable local business to participate in opportunities</li> <li>❖ Identify local only opportunities that is reserved for local business</li> </ul>
E10	Socio-economic Wellbeing	Decline in South African GDP and Trade Balance at Decommissioning	Negative	Moderate Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ None</li> </ul>
E11	Socio-economic Wellbeing	Decline in provincial and local GDP at decommissioning	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Actively promote the development of different economic sectors from an early stage, e.g. through incentivising other industries to locate in the area, providing adequate infrastructure and promoting an increase and diversity of skills in the local population.</li> <li>❖ Actively engage with a range of stakeholders throughout the life-of-mine to discuss potential consequences of mine closure and possible mitigation.</li> <li>❖ Incorporate measures to retrain workers in the Social and Labour Plan.</li> </ul>
E12	Socio-economic Wellbeing	Decline in government revenue at Decommissioning	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ None</li> </ul>

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures
E13	Socio-economic Wellbeing	Decline in employment, income and skills development at decommissioning	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Aim to use local workers as far as possible and formalise this policy in contracts.</li> <li>❖ Consider implementing labour-intensive rather than capital-intensive work methods wherever possible.</li> <li>❖ Purchase resources from local sources wherever possible.</li> <li>❖ Institute training programmes for local workers to raise skills levels.</li> <li>❖ Include training for general life skills such as financial management and health.</li> </ul>
VG1	Vulnerable Group Impacts	Gendered Division of labour	Negative	Moderate Risk	Low Significance	<ul style="list-style-type: none"> <li>❖ Women must have equal employment opportunities,</li> <li>❖ Training and skills development for women, and</li> <li>❖ Salaries of women must be equal to that of men</li> <li>❖ Establish opportunities that are suitable for women employment</li> <li>❖ Implement measures to enable working environment for women</li> <li>❖ Establishing gender-sensitive policy positions, such as for cultural heritage, employment and business development</li> <li>❖ Mainstreaming gender into project planning, particularly for community development</li> <li>❖ Using gender-sensitive indicators, such as employment data disaggregated by gender</li> <li>❖ Consultation with national women's organizations</li> </ul>
VG2	Vulnerable Group Impacts	Potential Infringements on Historically Disadvantaged People's Human Rights	Negative	Moderate Risk	Low Significance	<ul style="list-style-type: none"> <li>❖ Focusing local benefits on those communities previously disadvantaged to ensure upliftment</li> <li>❖ Enter into agreements with local communities to address post closure land use and sustainability</li> <li>❖ Optimization of local employment to minimize impacts of external or migrant workers on the local communities</li> </ul>

## Conclusions and recommendations

The main conclusion arising from the SEIA assessment is that if all the Greater Soutpansberg Projects and other planned mining developments in the region are implemented at the same time and development cannot be staggered, the following cumulative socio-economic impacts and benefits are envisaged:

- Cumulative Socio-economic impacts:
  - Additional influx of people into the area, thereby adding to congestion and pressure on local infrastructure and services.
  - Compounded impact on the area's sense of place, this in turn may cause a decline in tourism and hunting related activities in the surrounding area.
  - Impact on land use and availability for ecotourism and hunting
- Cumulative Socio-economic benefits:
  - Combined increased in local economic growth and employment
  - Combined increase in local procurement opportunities causing local business to expand to fill the demand for goods and services
  - Additional contribution to government tax, balance of payments and national growth

Given the scale of mining planned in the region and if there is a lack of a concerted action by key stakeholders including government, local stakeholders and industry, there is a high likelihood that significant socio-economic impacts will occur to the Generaal area and surrounding communities and landowners. It is therefore recommended that development be staggered in the area to optimise the sustainability of the long term benefits and mitigate the socio-economic impacts.

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# 1 INTRODUCTION

Naledi Development was appointed by MbeuYashu to conduct the Socio-economic Impact Assessment (SIA) for their proposed Generaal Project.

The proposed Generaal project is a proposed mining development that will impact the social environment of the project area, local town and the region, from the time the project is announced until long after it has been decommissioned.

Socio-economic impacts start to emerge, with the first mention of the project, when affected parties use the information to change their way of making decisions about their social world, and the perception they form about the future of their milieu. Residents and potential residents evaluate the information they receive regarding the project against their own lives and that of their neighbours and adjust their actions accordingly. A social impact assessment is a means to explain the social changes that will take place due to the decisions and perceptions formed by affected individuals and groups, as well as the changes that will occur due to the actual project activities.

This document presents the results of a Social Impact Assessment (SIA) for the Generaal Project that MbeuYashu plans to construct in the Vhembe District, close to the Tshipise town.

The objectives of the SIA were to identify:

- The socio-economic characteristics of communities that may potentially be affected by the project;
- The anticipated positive and negative impacts of the proposed project during its construction, and operational phases;
- Practical, cost-effective and auditable management measures to avoid or ameliorate negative social impacts and enhance positive ones;
- Assess the no-go option as project alternative in terms of the anticipated socioeconomic impacts; and
- Identify any additional studies which may be required to determine the full impact of the project throughout and after its lifetime.



## 2 METHODOLOGY

### 2.1 Defining Social Impact Assessments

The International Association for Impact Assessment (2003) states that Social Impact Assessment includes the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by these interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment. The Inter-organisational Committee on Principles and Guidelines for Social Impact Assessment (2003:231) defines Social Impact Assessment in terms of “efforts to assess, appraise or estimate, in advance, the social consequences that are likely to follow from proposed actions”. More specifically, the guidelines can be summarised as follows:

- To understand the local and regional settings to be affected by the mine
- To identify methods of inquiry that take into account assumptions and significance of the project
- To provide quality information that can be used to take decisions
- To ensure inclusiveness, making sure all social groups are considered
- To undertake evaluation / monitoring and mitigation

Social change processes are set in motion by project activities or policies. Change has a way of creating other changes. Social change processes can lead to several other, second-order social change processes. Depending on the characteristics of the local social setting and mitigation processes that are put in place, social change processes can lead to social impacts (Vanclay, 2002:192). Social change processes relevant to the project will be discussed before the potential social impacts will be investigated and mitigation measures proposed.

“Social Impact Assessment is concerned with analysing, monitoring and managing the social consequences of development”. SIA is a methodology used by SIA practitioners to assess the social impacts of planned interventions or events, and to develop strategies for the ongoing monitoring and management of those impacts” (IAIA, 2003).

A social impact is something that is experienced or felt. It can be positive or negative. In Social Sciences one can distinguish between two types of social impacts:

- **Objective social impacts** – i.e. impacts that can be quantified and verified by independent observers, such as changes in population size or composition, in employment patterns, in standard of living or in health and safety. This can typically be quantified
- **Subjective social impacts** – i.e. impacts that occur “in the imaginations” or emotions of people, such as negative public attitudes, psychological stress or reduced quality of life. This kind of impact is much more difficult to identify and describe, as one cannot readily quantify perceptions or emotions. Social Scientist should not refrain from including subjective social impacts, as these can have far-reaching consequences in the form of opposition to, and social mobilization against the project (Du Preez & Perold, 2005: v).

For the purpose of this SIA, the following categories were investigated:

- Demographic processes
- Economic processes
- Geographic processes
- Institutional and legal processes
- Emancipatory and empowerment processes
- Socio-cultural processes
- Biophysical processes

## 2.2 Potential Zone of Influence

The study area includes various different receiving environments that are relevant to the socio-economic assessment. The figure below indicates:

- The National Environment: South Africa
- The Provincial Environment: Limpopo Province
- The Regional Environment: The Vhembe District, Makhado Local Municipal areas
- The Local Environment: Properties bordering the mining areas and infrastructure
- The Project Area Environment: Properties included in the Mining Right Application area and those physically affected by the mine footprint



## **2.3 Data Collection**

### **2.3.1 Desktop Review**

A desktop review has been conducted reviewing the following documentation:

- Stats SA's Census 2011 data
- Stats SA's Community survey 2007
- Stats SA's Quarterly Labour Force Survey 2012 & 2013
- Stats SA's General household survey, 2011
- Stats SA's Income and Expenditure survey 2010/2011
- Stats SA's Mortality and causes of death survey, 2010
- Musina & Makhado Local Municipality IDP, 2012/2013 - 2017
- Musina & Makhado Spatial Development Framework, 2011
- CoAL's Makhado Project Socio-economic Impact Assessment in 2012
- Other Social Impact Assessment (SIA) for similar projects
- Maps and available satellite imagery of the proposed project sites and surrounding environment

### **2.3.2 Site visits to study area**

Site visits and observations were conducted to the project area in order to verify information obtained from secondary sources on potential project impacts and the socio-economic characteristics of the receiving environment.

### **2.3.3 Participant Observation**

Traditionally there are two approaches to conducting a Social Impact Assessment, i.e. a technical approach or a participatory approach. A technical approach entails that a scientist remains a neutral observer of social phenomena. The role of the scientist is to identify indicators, obtain objective measures relevant to the situation and provide an expert assessment and prediction on how the system will change (Becker, Harris, Nielsen & McLaughlin, 2004:178). A participatory approach uses the knowledge and experiences of individuals most affected by the proposed changes as the basis for projecting impacts. In this case the role of the scientist is a facilitator of knowledge sharing, interpretation and reporting of impacts (Becker et al, 2004:178).

It must be emphasised, however, that the research conducted for this report was mainly of a qualitative nature. Qualitative research can be described as an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants and which is conducted in a natural setting (Sogunro, 2001:3). The qualitative approach is concerned with understanding social life and the meaning that people attach to everyday life (Fouché & Delport, 2002:79).

Using a qualitative approach, social scientists are able to address issues such as human perception and behaviour, regardless of how realistic it may be.

In contrast, the quantitative approach aims to measure the social world objectively, to test hypothesis and to predict and control human behaviour (Hoyle, Harris & Judd, 2002:394). Quantitative research can be described as an inquiry into a social or human problem, based on a theory composed of variables, measured with numbers, and analysed with statistical procedures, in order to determine whether the predictive generalisations of the theory hold true (Sogunro, 2001).

For the purpose of this study, a participatory approach was followed. The impact assessment was therefore conducted based on qualitative information and a participatory approach, and then converted into quantitative ratings of impacts.

As part of the participatory approach the following actions were conducted:

- Individual interviews with key informants, stakeholder and public participation meetings including key members of local communities, municipal officials, land users and landowners in the area;
- A sample survey of landowners in the Generaal area was conducted to appraise the nature and extent of land use and other livelihood related activities in the vicinity of the project area; and
- The project zone of influence, in terms of spatial and temporal scales, included both affected and interested populations as well as a range of other interested parties. Accordingly, the study was undertaken in conjunction with a structured Public Participation Process. Comments raised as part of this process was considered in the impact assessment.

#### **2.3.4 Information from other specialist studies and stakeholder consultation process**

The review of information from other specialist studies was conducted as part of the Environmental Impact Assessment (EIA) for the proposed project to provide inputs into the secondary social impacts caused by primary environmental impacts.

## **2.4 Compilation of a Socio-Economic Baseline Profile**

A socio-economic baseline profile was compiled on the basis of the information collected through the desktop review, site visits, participant observation, and the sample survey and

interviews with key informants. The socio-economic baseline is provided on the various zones of influence, i.e. National/Provincial, Regional, Local area and Project Area.

## 2.5 Assessment of Impacts

The positive and negative impacts were assessed on the basis of issues identified through the public participation process, interviews with key stakeholders and specialist opinion. Identified impacts were categorised in terms of the phase of the proposed project that is expected to give rise to the impacts.

Although the impact assessment was conducted based on qualitative information and a participatory approach, it is then converted into quantitative ratings of impacts. The impact tables are supplied for impacts which need mitigation or optimisation in order to clarify the impacts to the reader. Impact tables are not innate to social science, and it must be clearly understood that some meaning may be lost by trying to compartmentalize the social environment. It is understood that the social scientist must translate their findings in order for the reader to understand it correctly, and one way of doing so is by utilising impact tables.

## 2.6 Rating of Impacts

Risk is a combination of the probability, or frequency of occurrence of a hazard and the magnitude of the consequence of the occurrence (Nel 2002). Risk estimation (RE) is concerned with the outcome, or consequences of an intention, taking account of the probability of occurrence and can be expressed as  $P$  (probability)  $\times$   $S$  (severity) = RE. Risk evaluation is concerned with determining significance of the estimated risks and also includes the element of risk perception. Risk assessment combines risk estimation and risk evaluation (Nel 2002).

The following steps will be followed in the risk assessments of potential impacts:

- Issues that may arise as a result of the proposed development, through planning, construction, operation and decommissioning phases
- Potential impacts will be identified for each issue and assessed by considering criteria as outlined in the table below.
- Where the potential impacts are perceived as having a high risk or significance, alternatives, preventative and mitigation measures will be recommended.
- The significance of each impact will be determined “without mitigation” and “with mitigation”, taking into consideration alternatives, preventative and mitigation measures.

Table 2-1: Impact Rating methodology

DURATION					
Short term	6 months	1			
Construction	36 months	2			
Life of project	50 years	3			
Post Closure	Post closure or during decommissioning and downscaling	4			
Residual	Beyond the project life	5			
EXTENT					
Site specific	Site of the proposed development	1			
Local	Farm and surrounding farms	2			
District	Musina Local Municipality	3			
Regional	Vhembe District Municipality	4			
Provincial	Limpopo Province	5			
National	Republic of South Africa	6			
International	Beyond RSA borders	7			
PROBABILITY					
Almost Certain	100% probability of occurrence – is expected to occur	5			
Likely	99% - 60% probability of occurrence – will probably occur in most circumstances	4			
Possible	59% - 16% chance of occurrence – might occur at some time	3			
Unlikely	15% - 6% probability of occurrence – could occur at some time	2			
Rare	<5% probability of occurrence – may occur in exceptional circumstances	1			
SEVERITY					
Critical	Total change in area of direct impact, avoidance or replacement not an option, detrimental effects, huge financial loss	5			
Major (High)	> 50% change in area of direct impact, relocation required and possible, extensive injuries, long term loss in capabilities, off-site release with no detrimental effects, major financial implications	4			
Moderate (medium)	20 – 49% change, medium term loss in capabilities, rehabilitation / restoration / treatment required, on-site release with outside assistance, high financial impact	3			
Minor	10 – 19% change, short term impact that can be absorbed, on-site release, immediate contained, medium financial implications	2			
Insignificant (low)	< 10 % change in the area of impact, low financial implications, localised impact, a small percentage of population	1			
RISK ESTIMATION (Nel 2002)					
RE (Risk Estimation) = P (Probability) X S (Severity)					
	SEVERITY				
PROBABILITY	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Critical (5)
Almost certain (5)	L 5	M 10	H 15	VH 20	VH 25
Likely (4)	L 4	M 8	H 12	H 16	VH 20
Possible (3)	L 3	M 6	M 9	H 12	H 15
Unlikely (2)	VL 2	L 4	M 6	M 8	M 10
Rare (1)	VL 1	VL 2	L 3	L 4	L 5
VH	Very High – immediate action required, Countermeasures and management actions to mitigate risk must be implemented immediately, alternatives to be considered				20 – 25
H	High risk – specific management plans required, determine if risk can be reduced by design and management in planning process, if cannot, alternatives to be considered, senior management responsibility				12 – 16
M	Moderate risk – management and monitoring plans required with responsibilities outlined for implementation, middle management responsibility				6 – 10
L	Low risk – management as part of routine requirements				3 – 5

VL	Very Low risk – no management required	1 - 2
<b>Mitigation</b> - The impacts that are generated by the development can be minimised if measures are put in place to reduce them. These measures are mitigation measures to ensure that the development takes into consideration the environment and the impacts that are predicted so that development can co-exist with the environment as a basis for planning.		
<b>Determination of Significance; without mitigation</b> - Significance is determined through a synthesis of impact characteristics as described in the above paragraphs. It provides an indication of the importance of the impact in terms of both tangible and intangible characteristics. The significance of the impact “without mitigation” is the prime determinant of the nature and degree of mitigation required.		
<b>IMPACT SIGNIFICANCE</b>		
IS (Impact Significance) = D (Duration) + E (Extent) + S (Severity) X P (Probability)		
Insignificant	The impact is non-existent or insubstantial, is of no or little importance to any stakeholder and can be ignored.	
Low	The impact is limited in extent, even if the intensity is major; whatever its probability of occurrence, the impact will not have a significant impact considered in relation to the bigger picture; no major material effect on decisions and is unlikely to require management intervention bearing significant costs.	
Moderate	The impact is significant 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.	
High	The impact could render development options controversial or the entire project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in project decision-making.	
Very high	Usually applies to potential benefits arising from projects.	
<b>Determination of Significance; with mitigation</b> - Determination of significance refers to the foreseeable significance of the impact after the successful implementation of the necessary mitigation measures.		

## 2.7 Mitigation Measures and Recommendations

As part of this report appropriate mitigation measures to avoid or ameliorate negative socio-economic impacts and to enhance positive impacts were identified where possible. The rating procedure described above was then repeated to assess the expected consequence, probability and significance of each impact after mitigation. This post-mitigation rating gives an indication of the significance of residual impacts, while the difference between an impact's pre-and post-mitigation ratings therefore represents the degree to which the recommended mitigation measures are expected to be effective in reducing or ameliorating that impact.

## 2.8 Assessment of Cumulative Impacts

Cumulative impacts are defined as impacts arising from the combined effects of existing activities, the project and foreseeable future projects or actions. The cumulative impacts were assessed on a qualitative basis due to limited information on the scheduling and extent of future projects.

## 2.9 Assumptions and Limitations

It is essential that the socio-economic assessment should be based on current and accurate project information. Similarly the geographic extent of the assessment is influenced by

project design and overall planning processes. As this process is on-going, the Socio-economic Impact Assessment report is based on information received during the Environmental Process. This report takes into consideration project information relating to planning and design, implementation and infrastructure placement available to the team during the compilation of this report. The following assumptions are pertinent:

- The project description is assumed to be a true reflection of the project aspects
- It is assumed that the planning documents supplied by Makhado Local Municipality is reasonably accurate
- It is assumed that the 2011 Census data is not entirely accurate, but it provides a broad reflection of the social environment, and
- It is assumed that the information obtained during the Public Participation Process was accurate and also informed the study.

The following knowledge gaps have been identified:

- Questionnaires and survey forms were sent out to all landowners, but only a few were received back, therefore the assessment of the impact on existing landowners and workers on a number of the properties is estimated due to a lack of accurate data.
- Information provided in the questionnaire was inconsistent with what was observed on site and from mapping
- The project is still in design phase and it is possible that project design and approaches to social impact triggers (for example construction workforce accommodation) may change, if this is the case the socio-economic assessment will need be updated at a later stage



### 3 DESCRIPTION OF THE PROPOSED PROJECT

#### 3.1 Project Locality

The Generaal Project is situated in the magisterial district of Vhembe, in the Limpopo Province, approximately 35 km north of the Makhado Town in the Makhado and Musina Local Municipal areas. Musina is situated approximately 70 km to the north.

The Generaal Project area is located north of the Mutamba River and reaches from west of the N1 north eastwards to 5 km south of Tshipise, and is divided into two (2) sections, namely the Generaal Section and the Mount Stuart Section.

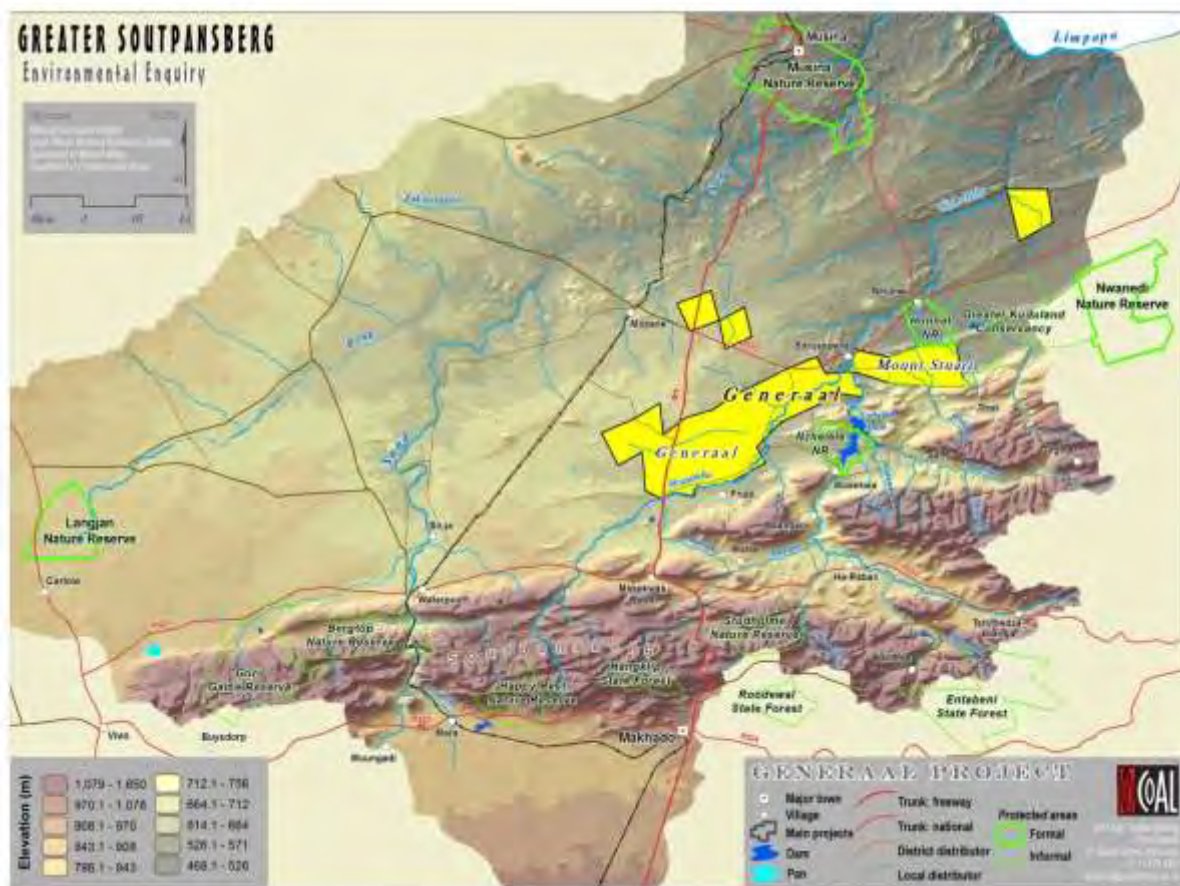


Figure 3-1: Project Locality



Figure 3-2: Project Extent

The area covered by the Generaal NOMR applications includes twenty-three (23) farms and cover an area of 24,859ha of which 1,672ha will be impacted on by the mining and infrastructure footprint.

## 3.2 Institutional Locality

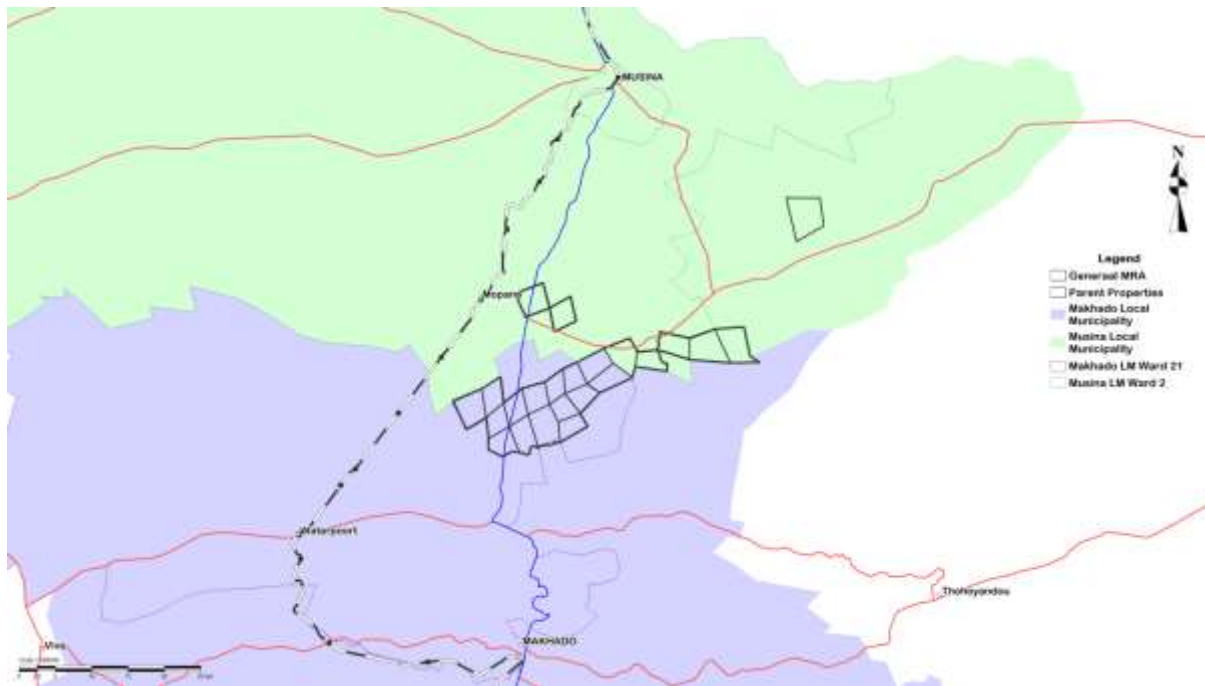


Figure 3-3: Project in relation to the Musina and Makhado Local Municipal area

The proposed Generaal Mine straddles the Musina and Makhado local municipalities in the Vhembe District. Socio-economic profiles for both these municipalities will be provided for the benefit of general context. However, specific local conditions are more accurately reflected in the ward analysis that is also provided and that is based on the results of 2011 census by Statistics South Africa. The relevant wards are Ward 2 (of 6) in Musina and Ward 21 (of 38) in Makhado. The wards are both considerably larger than the footprint of the proposed mine, but results of the 2011 census are not yet available below the ward level.

## 3.3 Mining Operations

The Generaal Project is split into two sections, the Generaal and Mount Stuart Sections. The Generaal Section footprint covers an area of 1 554 ha and the Mount Stuart Section footprint covers an area of 118 ha for mining and infrastructure development.

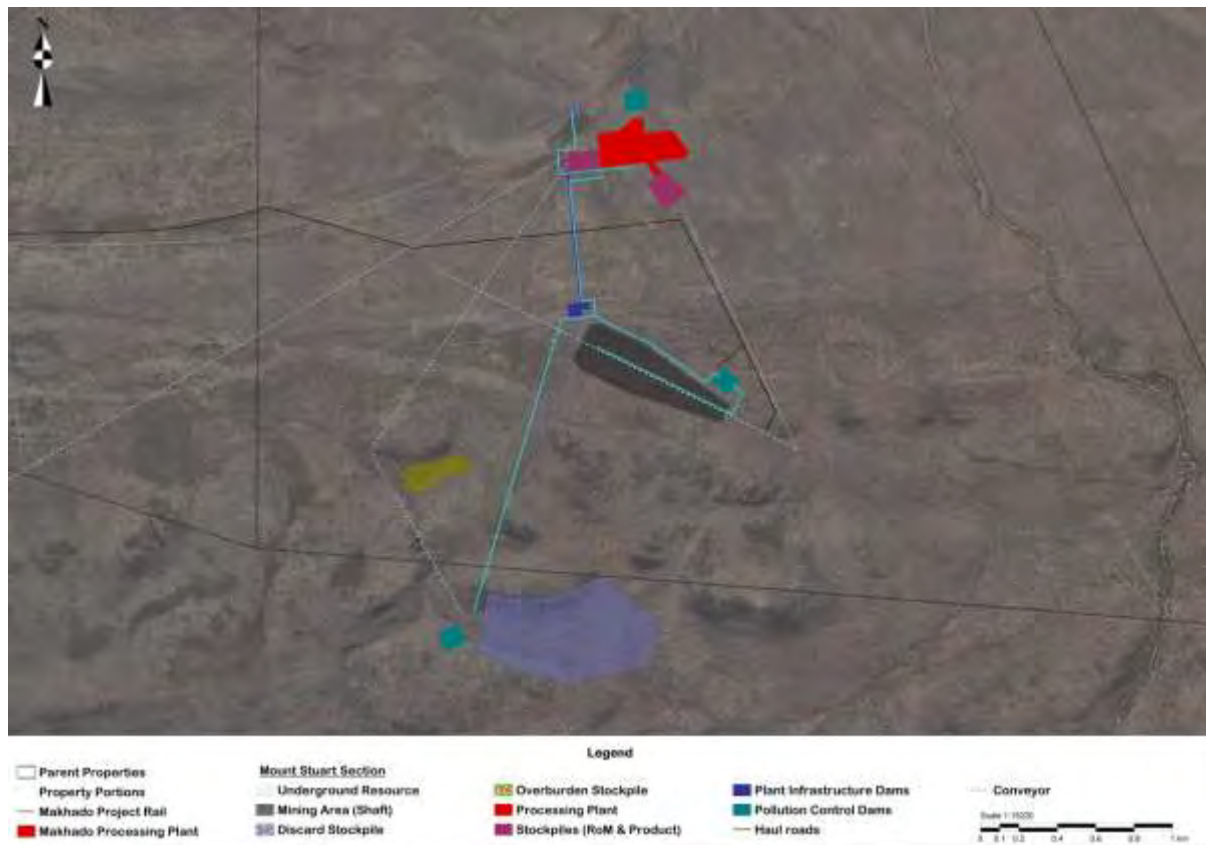
The Generaal Project has the potential to produce good quality hard coking coal and a domestic thermal coal product. The Mount Stuart Section will be mined at 1.4 Mtpa (for 25 years), whilst the Generaal Section will be mined at 1.7 Mtpa, therefore the life of mine is expected to exceed 30 years.

The current planning is that construction and mining will commence at the Mount Stuart Section first where the coking coal yields are the highest. It is expected that mining operations at the Generaal Section will only commence much later as capacity in



infrastructure is developed. From the date of granting of the mining right (anticipated to be in 2014) further feasibility and final design studies will be undertaken and construction will commence at the Mount Stuart Section in 2018 and production will commence in 2019. The Generaal Section is due to commence actual production only in 2034, that is, at the end of the life of the Makhado Colliery, of which it is an extension. From the date of granting of the mining right (anticipated to be in 2015) further exploration, feasibility studies and final design studies will be undertaken. Construction is anticipated only to commence in 2018.

The Mount Stuart Section resource allows for an underground mining method to a depth of 900m and is planned to be a mechanised mine laid out on a bord-and-pillar design using continuous miners and shuttle cars. It is envisaged that the coal will be treated through its own dedicated processing plant, but dispatched through the Makhado Rapid Load-out Terminal (RLT) situated on the farm Boas 642 MS. The product will be transported from the Mount Stuart Section to the RLT via conveyor.



*Figure 3-4: Mount Stuart Section*

The Generaal Section will be mined by the total extraction open pit mining method, up to a depth of approximately 200 m. The open pit will be mined through conventional truck and shovel. The Generaal Section will make extensive use of infrastructure at the Makhado Colliery Project, including its processing plant and rail loading facility.

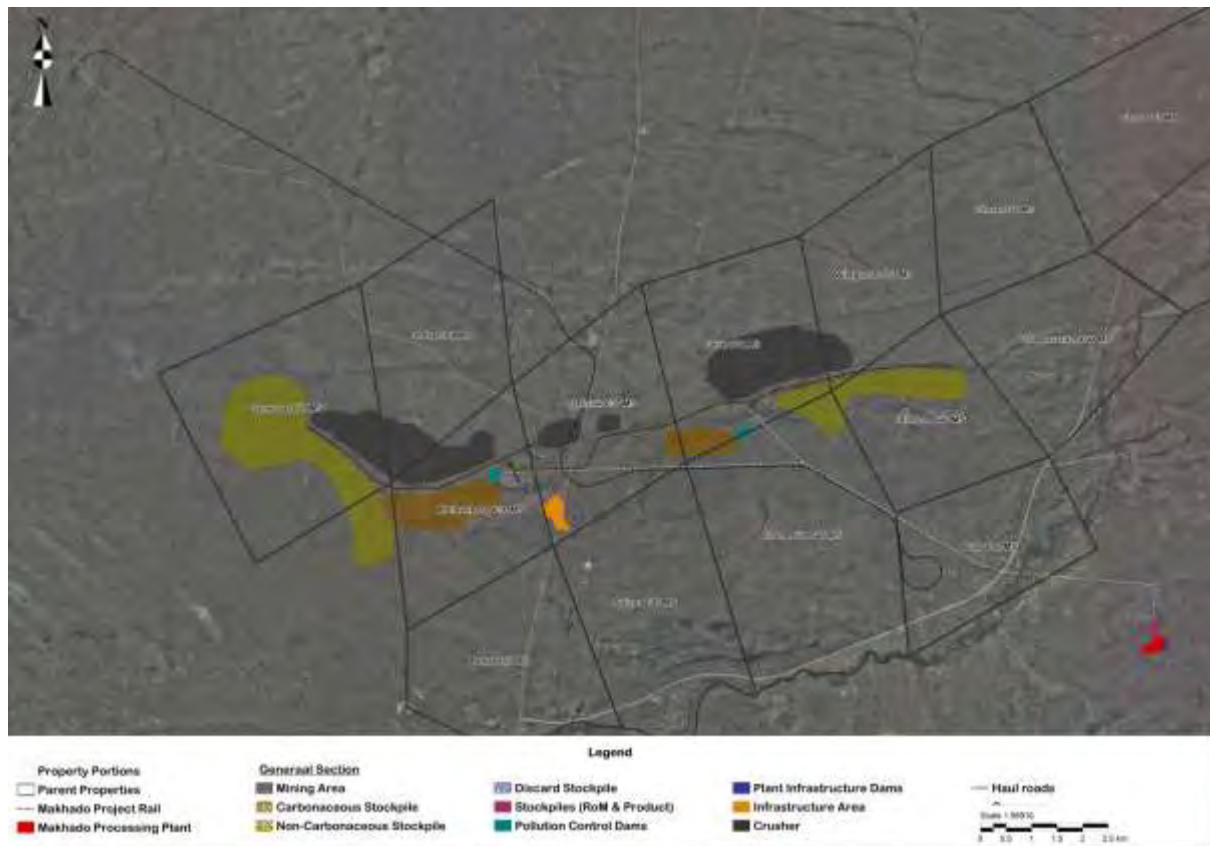


Figure 3-5: Generaal Section

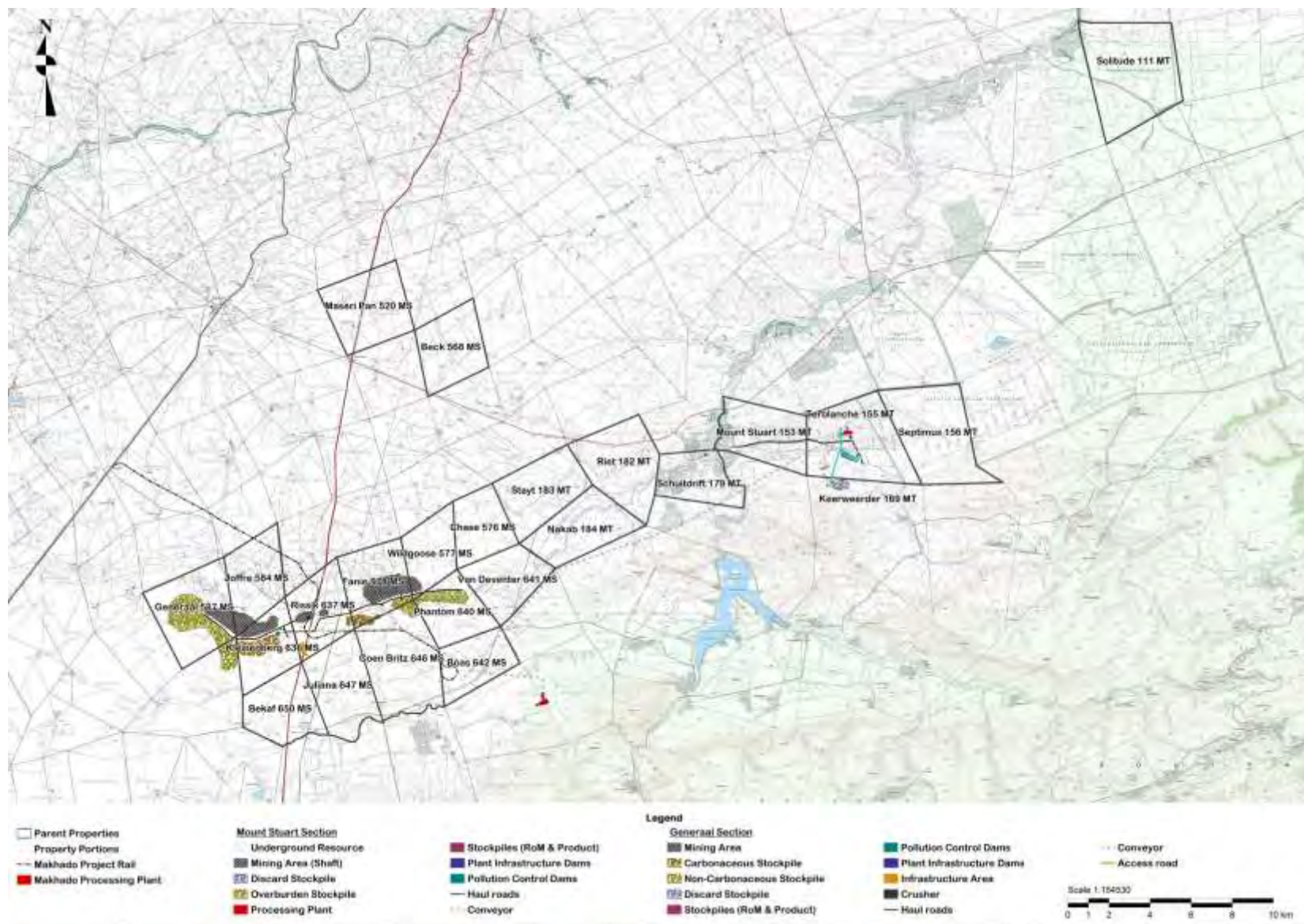


Figure 3-6: Mining and infrastructure layout for Generaal Project

## 3.4 Coal Processing

No processing plant will be required on the Generaal Section, since coal will be transported by overland conveyor to the Makhado Mine processing plant. The Mount Stuart Section will have its own plant and clean coal will be transported by overland conveyor to the Makhado Rapid Load-out Terminal (RLT) for dispatching.

## 3.5 Infrastructure

The mine infrastructure areas (MIA) comprise all the facilities, roads, services and systems required for the mine to operate optimally. The individual mining sections will be provided with workshops and other necessary infrastructure required for the mining operation, such as personnel support structures, vehicle support structures, water management structures and management and monitoring systems. Buildings will include management offices, production offices, change house, medical and firefighting facility, shift changing facility, security and access control, training centre, control room and contractors accommodation camp.

The major infrastructure items were designed and positioned to accommodate mining layouts at both pits, access to stockpiles, location of the Coal Handling and Processing Plant (CHPP), and environmental requirements (including the management of dirty and clean water and protection of water courses and rivers).

### 3.5.1 Mount Stuart Section

The Mount Stuart Mine is designated as an underground mine. As such the mine does not require substantial surface infrastructure to support the mining of the resources. However, the Mount Stuart Section will have its own CHPP and clean coal will be transported by overland conveyor to the Makhado RLT. Due to the long hauling distance a conveyor will be utilised to transport the coal product from the washing plant to the Makhado RLT.

#### 3.5.1.1 Access Road

The Mount Stuart mining site is accessed along the R525 running east towards Tshipise. The R525 is a surfaced road. Approximately 16 km from the N1, at a T-junction to the south, the road leads to the mine access intersection. The access road is approximately 6 km long and runs in an easterly direction. The access road to the mining site will have a gravel wearing surface.

#### 3.5.1.2 Mining Roads

The mine is an underground mine and therefore the surface service roads are not extensive. The necessary roads lead to the plant, mine infrastructure, conveyors and the inclined shaft and also to the stockpiles. Service roads will be constructed gravel roads and provide ease of access to areas travelled by light mining vehicles and delivery trucks.



### **3.5.2    Generaal Section**

The Generaal East and West Pits will share common mine infrastructure comprising of workshops and vehicle support infrastructure located at the West Pit. The ROM hauled from the pits will be crushed in close proximity to the pits before transported to the CHPP at Makhado mine located to the south east of the Generaal Section. Due to the long hauling distance a conveyor will be utilised to transport the ROM from the West Pit to the East Pit and from there to the Makhado CHPP.

#### ***3.5.2.1    Access Road***

The existing intersection with the N1 will be moved approximately 1.2 km south and the road relocated to run along the N1 in a northerly direction past the coal reserve from where it will turn westwards to tie up with the existing Huntleigh road. Access to the Generaal Project site is by way of this new intersection with the N1. The access to the Generaal East Pit is from the West Pit across the N1 by means of an underpass. The access road to the mining site will have a gravel wearing surface.

#### ***3.5.2.2    Mining Roads***

Haul roads and service roads will link the West and the East Pits, the stockpile areas and the infrastructure areas on the east and west sides of the N1 respectively. Haul roads have been planned to be 30m wide with gravel surfaces to meet the requirements of the hauling fleet. Service roads will be constructed gravel roads and provide ease of access to remote areas for light mining vehicles. These roads are separate from the haul roads in order to separate light mine traffic from the heavy traffic (haul trucks) as a site safety measure. The service roads will also cross the N1 by means of an underpass adjacent to the haul road underpass.

### **3.5.3    Logistics**

The primary domestic location for middlings coal is Eskom's Tutuka, Majuba, Camden and Grootvlei Power Stations in Mpumalanga Province. As indicated above, no processing plant will be required on the Generaal Section, since coal will be transported by overland conveyor to the Makhado Mine processing plant, from where the product will be dispatched via the proposed Makhado RLT situated on the farm Boas 642 MS with a railway link to Huntleigh where it links up with the TFR main line. The Mount Stuart Section will have its own CHPP and clean coal will be transported by overland conveyor to the Makhado RLT for dispatching.



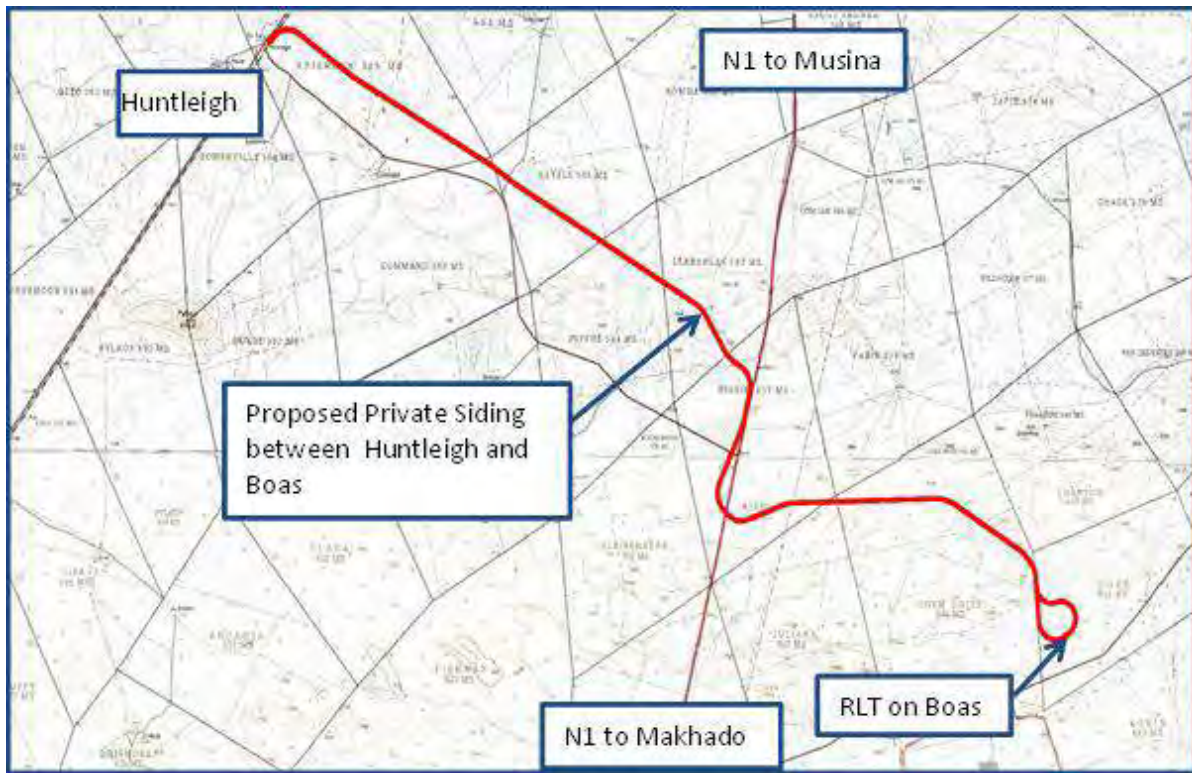


Figure 3-7: Position of the proposed rail loop and sidings

## 3.6 Services

### 3.6.1 Bulk Power Supply

The lengthy Eskom Tabor and Spencer 132 kV Distribution networks stretching 200 km from Polokwane to 50 km away from the Musina border-post result in low voltages and thermal constraints during transformation and line contingencies. The expected Tabor and Spencer 132 kV load growth is located 100 km north of Tabor and 70 km from Spencer - generally the area in which the Generaal Project resides - therefore, the Transmission outreach constraint will cap load growth.

The Polokwane Customer Load Network (CLN), including the Tabor and Spencer power corridor, remains susceptible to voltage instability and is the weakest part of the Northern Grid network due to being operated beyond its reliability power transfer limit. Eskom Transmission Division plan to strengthen the Northern Grid in the areas north of the Soutpansberg with a new 400 kV power line between the Tabor Main Transmission Substation and the newly approved Bokmakirie (Nzhelele) Substation.

Eskom is accordingly establishing additional Distribution and Transmission assets to cater for load north of the Soutpansberg, including the Bokmakirie Distribution Station and the 4x250 MVA 400/132 kV Nzhelele Main Transmission Station (MTS). The proposed network solution meets the 10 year Distribution load requirements in the Tabor and Spencer network area and it is also informed by the 20 year Transmission and Distribution load forecast in meeting the Transmission 20 year plan.

The Generaal Project requires an electrical supply capability of 32 MVA.

An Eskom connection can only be established once the Nzhelele/Bokmakirie 400/132 kV Main transmission Station has been commissioned - this is planned for 2017/8.

The Generaal Project electrical supply will be taken from the 132 kV network and transformed to 11kV/550/400/230V. The exact supply configuration is yet to be determined and the least environmental impact solution will be followed. The project team has evaluated the possible supply options and has identified a direct supply from Nzhelele/Bokmakirie 400/132 kV Main transmission Station.

A 132/11 kV substation will be established at each of the mining operations. Power factor correction equipment will be installed at each of the 132/11kV substations to reduce the amount of reactive power required from Eskom and to improve the voltage regulation over the 11kV/550/400/230V distribution networks.

### **3.6.2 Bulk Water**

The water requirement estimate for the Generaal Project indicates that a maximum of 11 000 m<sup>3</sup>/day of water is required at the mining peak.

The water supply to the mine will come from the following sources:

- Groundwater (boreholes and seepage into the mining pits);
- Storm water run-off impounded on site; and
- Additional buy-out from Nzhelele Irrigation farmers (see below).

Storm water run-off on site is seasonal and, although it will be utilised, it is not a constant water supply and has therefore not been included in the water-supply chain.

The investigation into the most cost-effective source for water supply to the Generaal Project has yet to be completed; however, for the Makhado Colliery Feasibility Study, a reconnaissance was done of all potential water sources to support the mine water requirements. Recently supply from the Nzhelele Dam has been formalised and CoAL has reached an agreement with the Nzhelele irrigation farmers to obtain 7.7% of their irrigation allocation for mining purposes. A further agreement with the farmers is that CoAL will invest significant effort into developing “new water” by investigating the possibilities to increase the yield from the Nzhelele River catchment. The yield of the dam can also be increased by either raising the dam or other methods of increasing the capacity of the dam. One such method that was considered was to de-silt the dam and all of these will be considered in more detail as part of the new water initiative.

The abstraction rights obtained by CoAL from the Nzhelele Dam is such that some spare water will be available from this system (even during the early stages of the mine) which can be utilised for the early stages of the Generaal Project. It will thus be possible to, if conservative assumptions

concerning both demand and availability of groundwater and rain water harvesting in the Makhado Project has been made, to distribute the excess water to the Generaal Project.

## **3.7 Social Capital Support**

### **3.7.1 Workforce**

The workforce for the construction phase is estimated at approximately 2 000 opportunities.

The workforce for the operational phase is estimated at approximately 468 ramping up to 905 opportunities at full production.

### **3.7.2 Accommodation and Housing**

It is anticipated that the appointed contractors will bring specific skilled labour within them and other skilled, semi-skilled and unskilled labour will be sourced from the local area. Staff will be bussed to the mine site as indicated above. The following accommodation arrangements are assumed for this study:

- The total non-local temporary workforce indicated above will be accommodated in a contractor's workforce camp on site as part of the infrastructure development.
- The total local temporary workforce indicated above will be sourced from local communities and other local areas where existing accommodation exist and will be brought to site daily as per shift roster.
- The total non-local permanent workforce indicated above will be housed in either Musina or Makhado, where MbeuYashu will work closely with the Local Municipality to facilitate investment in strengthening / expanding existing infrastructure. It is not MbeuYashu's policy to develop new towns to accommodate housing needs.
- The total local permanent workforce indicated above will be sourced from Musina, Makhado, local communities and other local areas where existing accommodation exist and will be brought to site daily as per shift roster.

### **3.7.3 Human Resource Development Programmes**

MbeuYashu is committed to work with industry stakeholders in creating an enabling environment for the empowerment of HDSAs by providing a comprehensive skills development plan that addresses the HDSA mining skills deficits within the industry. The following aspects are included in this commitment:

- Interfacing with statutory bodies such as the Mining Qualifications Authority (MQA), through the standing consultative arrangements, in the formulation of comprehensive skills development strategies;
- Interfacing with the education authorities and providing scholarships to promote mining-related educational advancement, especially in the fields of mathematics and science at school level;
- Ensuring the provision of scholarships and that the number of registered learnerships in the mining industry will rise from the current level;
- Undertaking to provide skills training opportunities, through the MQA, to employees during their employment to improve their earning capacity after mine closure;

- Providing access to training courses in mining entrepreneurial skills through the MQA and in collaboration with academic institutions, Department of Minerals Resources associated institutions, NGOs, and the Gender Commission;
- Offering every employee the opportunity of becoming functionally literate and numerate;
- Implementing career paths to provide opportunities to employees to progress in their chosen careers; and
- Developing systems through which empowerment groups can be mentored as a means of capacity-building.

### **3.7.4 Local Economic Development Programme**

The Generaal Project LED programme will focus on the local area from which the operation will draw its labour and especially on communities where there will be a high concentration of resident employees.

Projects will be evaluated by Department of Mineral Resources on criteria such as viability, sustainability, accrued benefits, institutional arrangements and job creation and approved before implementation. Local Economic Development will focus on contributing to the following aspect:

- Informal Sector Support

### **3.7.5 Procurement**

Procurement at the Generaal Project will fall into two categories:

- Capital expenditure
- Working cost expenditure

The objective of the procurement programme will be to promote and enhance the constructive participation of HDSA vendors in the mine's upstream value chain, and to ensure that HDSA suppliers have access to the project's supply chain.

A Procurement Procedure and Local Vendor database will ensure the involvement where possible of Local Suppliers.

### **3.7.6 Health Services and Facilities**

On mine health facilities will be provided. Regional health facility requirements will be assessed during the feasibility studies.

### **3.7.7 Education Services and Facilities**

MbeuYashu will work closely with Provincial and Local Government to address any pressures or shortages within the Educational facilities or services to accommodate the influx of human resources into the area.

## 3.8 Implementation Plan

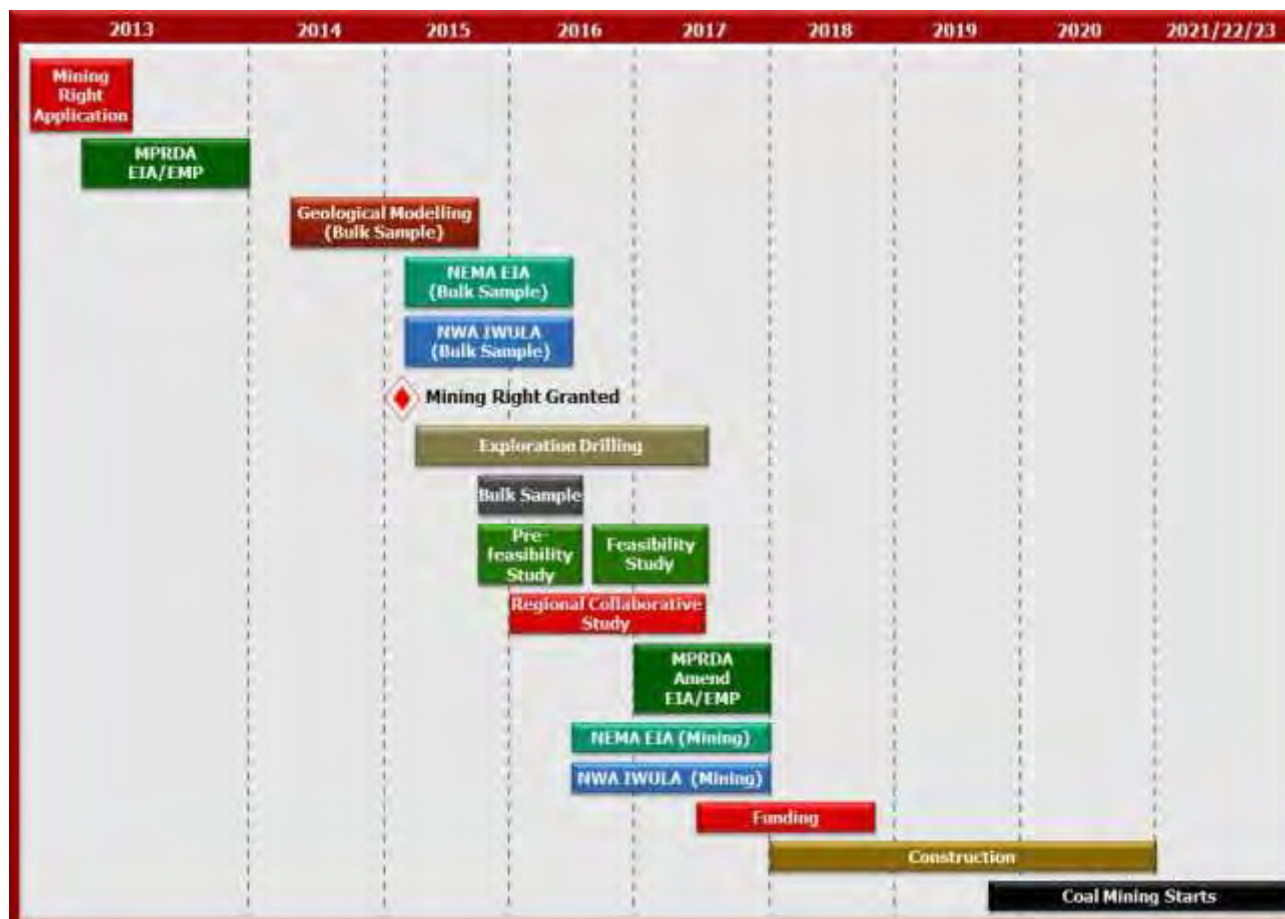


Figure 3-8: Project schedule for Generaal Project over the next 10 years

## 4 SOCIO-ECONOMIC BASELINE

### 4.1 National Overview

A description of South Africa's economy is provided in this section. The section has been populated using secondary information sources such as websites and publications by state and private organisations.

#### 4.1.1 Socio-economic overview

South Africa is a middle-income developing country with an abundance of natural resources. It is one of the most industrialised countries in Africa, leading the continent in industrial output and mineral production, with well-developed financial, legal, communication, energy and transport sectors (Ziramba, 2010, and DTI, no date). South Africa also has a smaller, but well developed, informal economy which interacts with the formal economy.

South Africa is not only an important emerging economy, but it also provides trade linkages to other African markets. The country plays a significant role in supplying relief aid, transport,

communications and investment on the continent (SAinfo, no date). Its well-developed road and rail links provide the platform and infrastructure for land based trade throughout Southern Africa.

One of the biggest challenges facing the growth in the South African economy is poverty and unemployment. Current estimates place unemployment figures in South Africa at approximately 24.9% (Statistics South Africa). The South African government aims to alleviate unemployment and poverty with policies aimed at raising economic growth in a stable economic environment and initiatives to reduce unemployment and improve social conditions.

#### **4.1.2 Recent socio-economic developments and the status quo**

Between 1999 and 2008 South Africa experienced sustained economic growth with GDP growing at an average of 5.4%. During the period from 2004 to 2007, employment levels rose (1.4 million jobs were created in the formal and informal economies), but (endemic) unemployment remained high at 25.5% (Camco and TIPS, 2010).

Despite meaningful gains in the South African economy (32 consecutive quarters of positive economic growth ending in 2009) the recent global financial crisis has had negative impacts on the country's economy, resulting in a reduction in local and international demand for goods and services with South African GDP growth slowing to 2.8% between January 2011 and January 2013, from about 5.5% between January 2005 and January 2007. These changes broadly mirror the recent developments in global economic activity. Employment numbers however, have increased by 0.6% between the fourth quarter (Q4) of 2011 and Q4 2013 (Trading Economics).

The majority of job losses were in the less skilled sectors of the employment market. Because of the demographic profile of South Africa the vast majority of less skilled workers are young males from previously disadvantaged backgrounds (Camco and TIPS, 2010). This placed further challenges on the redistribution goals that the South African government strives to achieve, and extenuated an already severe problem of inequality among the population, with large portions still affected by poor service delivery and limited access to basic services.

During the recession and subsequent recovery economic activity in developing markets was more robust than developed markets, with China and India specifically maintaining strong economic momentum (SARB, 2010). This provided strong support for commodity and resource exporting nations such as South Africa; and consequently GDP growth recovered in the third quarter of 2009. Growth was then strong in the first quarter of 2010 before cooling off to a certain degree thereafter (SARB, 2010). The resumption in growth was led by a recovery in the manufacturing sector which had the largest comparative decline as a percentage of GDP compared to all other sectors (SARB, 2010). The service sector also gained momentum in early 2010.

The increase in domestic demand for goods and services in the secondary and tertiary sectors of the economy was driven by an increase in household expenditure. This was bolstered by a reduction in interest rates, higher than inflation salary increases and an increase in business confidence – all spurred by an increase in demand associated with the 2010 FIFA Soccer World Cup (SARB, 2010). Foreign demand for domestic goods and services by some of South Africa's major

trading partners such as India and China was also maintained in 2010. The deficit on the balance of payments has therefore been contained over the past year.

#### 4.1.3 South African economic sectors

An explanation of the South African economy is presented here as a context for the project, rather than for the purposes of determining the base scenario for the purposes of impact assessment.

During the period 1970 - 2010 the South African economy has undergone a process of restructuring, with pronounced shifts in the contributions of various sectors. In terms of relative contribution to GDP the tertiary sector has grown by ~ 10%, an expansion which coincides with a contraction in the primary and, to a lesser extent, secondary sectors. In 2008 the tertiary sector contributed 55% to GDP, while the secondary and primary sectors contributed 38% and 7% respectively (Camco and TIPS, 2010). This trend has continued with the tertiary sector experiencing proportionate growth throughout the recession to 60.2% of GDP in 2010, while the primary and secondary sectors have contracted to 7.8% and 21.3% of GDP respectively (refer to the table below).

The most important industries in South Africa, from a contribution to GDP perspective, are (in order of importance) financial and other services, manufacturing, commerce, transport and communication and mining and quarrying. The manufacturing and mining and quarrying industries were most vulnerable to the economic recession, with declines in their relative contribution to GDP by 10.7% and 7.2% respectively. The increase in the contribution of the construction industry to GDP during this period is a result of expenditure in projects that commenced prior to the onset of the recession and the impact of government spending on the FIFA Soccer World Cup infrastructure projects. Indications are that demand for construction has decreased significantly following the World Cup in 2010, and it is likely that the relative contribution of this sector to GDP has decreased in Q3 and Q4 of 2010.

*Table 4-1: South African GDP Indicators 2008 - 2010*

<b>Sectors</b>	<b>% change 2007 - 2008</b>	<b>% change in 2008 – 2009</b>	<b>% change in 2009 - 2010</b>	<b>Relative size in Q3 2010</b>
<b>Primary Sector</b>	<b>-1.2</b>	<b>-6.0</b>	<b>2.5</b>	<b>7.8</b>
Agriculture, forestry and fishing	10.9	-3.2	2.3	2.3
Mining and Quarrying	-5.4	-7.2	2.6	5.5
<b>Secondary Sector</b>	<b>3.4</b>	<b>-7.2</b>	<b>6.9</b>	<b>21.3</b>
Manufacturing	2.7	-10.7	8.4	16.4
Electricity, gas and water	1.0	-0.5	2.6	1.9
Construction	9.3	7.8	2.3	3.0
<b>Tertiary Sector</b>	<b>4.7</b>	<b>1.1</b>	<b>2.9</b>	<b>60.2</b>
Commerce (Wholesale, retail trade & accommodation)	1.1	-2.9	2.9	12.1
Transport and communication	3.9	0.5	2.8	8.9
Financial and other services	7.9	1.3	2.5	39.2
<b>Total value added</b>				<b>89.3</b>

Net taxes on production and imports				10.7
GDP at market prices	3.6	-1.7	3.9	100.0

Source: Adapted from SARB, 2010 and StatsSA 2010

The table below indicates that in 2007, just fewer than 10 million people (out of a population of roughly 45 million) were formally employed in the South African economy. The table demonstrates that the tertiary sector is the largest employer, although employment is proportionately lower than the percentage contribution to GDP. Correspondingly, both the primary and secondary sectors have a more than proportionate contribution to employment when compared to their contribution to GDP. The more labour intensive nature of these sectors accounts for their disproportionate contribution to employment.

Table 4-2: South African formal employment and GDP Contribution by sector (2007)

Sectors	% of total jobs – 2007 (thousands)	2007 GDP as a % of total GDP
<b>Primary Sector</b>	<b>9.0</b>	<b>8.4 (excl taxes)</b>
Agriculture, forestry and fishing	5.8 (580)	2.2
Mining and Quarrying	3.2 (321)	5.5
<b>Secondary Sector</b>	<b>24.9</b>	<b>23.6 (excl taxes)</b>
Manufacturing	17.1 (1 697)	15.9
Electricity, gas and water	0.8 (79)	2.1
Construction	7.0 (697)	3.5
<b>Tertiary Sector</b>	<b>66.1</b>	<b>68.0 (excl taxes)</b>
Commerce (Wholesale, retail trade & accommodation)	23.2 (2 301)	14.1
Transport and communication	6.0 (593)	9.8
Financial and other services	36.9 (3665)	38.1
Net taxes on production and imports	N/A	8.9
<b>Total</b>	<b>100 (9 933)</b>	<b>100</b>

Source: StatsSA 2009 and StatsSA 2008

The table examines the relationship between GDP and employment and shows that the 1.7% decrease in GDP corresponds with a 2% decrease in employment, but that the impact on employment within sectors is varied, and does not necessarily correspond with the decrease in the contribution to GDP. It is likely that this is a result of the complexities in the South African labour market (e.g. trade unions) and the nature of the various economic sectors.

The following observations are drawn from the table:

- Employment, which the South African government aims to protect, could not escape the consequences of the global recession and fell by 2%, a significantly greater reduction than the 1.7% decline in GDP;
- In both the manufacturing and mining industries, job losses were less than proportionate to their decline in relative contribution to GDP. It is likely that strong labour unions in the primary and secondary sectors of the economy contribute to this dynamic; and



- Although the tertiary sector grew in contribution to GDP relative to the other sectors, it too experienced a decline in employment. Not only is human capital a major factor of production in the tertiary sector, it is also the most flexible, and is therefore an obvious arena in which to cut costs in a highly competitive economic environment. Therefore, job losses are anticipated during economic downturns. Furthermore, in South Africa, employees in the tertiary sector are generally less protected by labour unions and easier to retrench.

*Table 4-3: Change in employment relative to changes in GDP by sector (2009)*

Sectors	% change in GDP 2008 -2009	% change in jobs Q1 2009 – Q1 2010
<b>Primary Sector</b>		
Agriculture, forestry and fishing	-3.2	Unknown
Mining and Quarrying	-7.2	-1.8
<b>Secondary Sector</b>		
Manufacturing	-10.7	-4.2
Electricity, gas and water	-0.5	-5.4
Construction	7.8	-11.0
<b>Tertiary Sector</b>		
Commerce (Wholesale, retail trade & accommodation)	-2.9	-3.3
Transport and communication	0.5	-0.4
Financial and other services	1.3	-4.6
<b>Total</b>	<b>-1.7</b>	<b>100</b>

*Source: StatsSA 2009 and SARB, 2010*

Employment has not recovered at the same pace as the economic recovery. Although some growth in employment numbers has been recorded this has been offset by job losses in the private sector and a reduction in employment prospects as a result of high wage settlements agreed to by the South African government for public employees (SARB, 2010). Employment creation remains a major social and political challenge for the South African government and a period of sustained economic growth is required before significant gains in the job market will be achieved (SARB, 2010).

## 4.2 Provincial and District Socio-economic overview: Limpopo Province and Vhembe District

Limpopo Province is situated in north-west South Africa and shares a border with Botswana, Mozambique and Zimbabwe. The Province covers an area of ~126 000 km<sup>2</sup>, which represents 10.2% of the area of South Africa (Limpopo Provincial Government, 2009). The geographic location of the Province is seen as an opportunity to promote trade in manufactured goods within the Southern Africa Development Community (SADC) and the rest of Africa. Census 2001 reflects a

total population for Limpopo of 5.2 million, which represents 11.8% of the entire population of South Africa. The total population comprises 54.6% female and 45.4% male. 48% of the total population are children under the age of 15. This latter figure presents an enormous challenge in terms of education and future employment (Limpopo Provincial Government, 2009). The capital city of the Province, Polokwane, has a potential to develop into the logistical centre for the region.

The province is predominantly rural, and the primary economic activity is agriculture (Melico and Oni, 2010). Limpopo Province has five district municipalities, namely Capricorn, Mopani, Sekhukhune, Vhembe and Waterberg District Municipalities. The proposed Generaal Project is located in the Vhembe District Municipality.

The contribution of Limpopo's economy to national GDP increased from 5.7% in 1995, to 6.6% in 2005 and 7% in 2009 (StatsSA, 2010a). This limited incremental improvement is because the provincial growth rate was the fourth highest nationally behind Gauteng, the Western Cape and Kwazulu-Natal accounting for the increase in contribution of the province to national GDP over the period. However, the provincial economic growth rate was below the national average for the period 2002 to 2009 when the provincial economic growth rate was 2.8% compared to the national average of 3.7%.

The impact of the economic recession in Limpopo Province mirrored that of the national economy, and in 2009 the Limpopo economy shrunk by 1.8% (compared to the national average of 1.7%). In 2007 ~930 000 formal and informal sector jobs were available in the province (6.8% of both formal and informal national employment); while ~300 000 economically active persons seeking employment in the province were jobless (8.4% of national unemployment) (StatsSA, 2009). In 2007 the unemployment rate in the province was 24.7% - the second highest unemployment rate in the country (StatsSA, 2009). A lack of skills in the province contributes to the high unemployment rate (Limpopo Provincial Government, 2009).

The province is the second poorest in the country, and close to half of the people living in South Africa in 'outright poverty' or who are 'vulnerable to becoming poor' are located in Limpopo Province, making social programmes and economic development initiatives imperative to the region (Melico and Oni, 2010; and Tshitangoni, Okorie and Francis, 2010).

The Vhembe District is located in the northern portion of the Limpopo Province, and is the second largest of the 5 districts at ~25 597km<sup>2</sup> (Vhembe IDP, 2011/12). The district consists of 4 local municipalities, namely Musina, Makhado, Thulamela and Mutale. The district is rural in nature with urban areas dispersed and fragmented (Vhembe IDP, 2011/12). The Vhembe district unemployment is very high (38.7% in 2011), and the creation of job opportunities in the district is therefore important.

Coal, diamonds, copper and aggregate reserves make the Vhembe District an emerging mining sector player in the country. The district is also home to a ~30 701 km<sup>2</sup> biosphere reserve (across Vhembe and Mopane Districts) with significant tourism potential. Fertile soil in the district has led to

a competitive advantage in the agricultural sector (Vhembe IDP, 2011/12). Like so many other parts of South Africa, agricultural production in Vhembe is undertaken by a small number of relatively large, highly productive commercial producers and a multitude of fragmented, small-scale farmers.

Limpopo Province and Vhembe District have excellent agricultural potential, mineral reserves and tourism resources (Limpopo Provincial Government, 2009; and IDP, 2011). These sectors represent the biggest potential for economic growth and development in the region and are described in greater detail in the remainder of this chapter. The challenge in the district is to enable sustainable co-existence of these sectors.

#### **4.2.1 Regional economic sectors**

In contrast to the structure of the national economy, the agricultural, mining and government services in Limpopo Province contribute a relatively larger portion to the regional economy than manufacturing and tertiary industries (Limpopo Provincial Government, 2009). The growing importance of primary industries to the provincial economy is mainly attributed to growth in the mining sector. It is anticipated that with increased mining activity and the promotion of local mineral beneficiation and other secondary industries that support the mining sector, the secondary sector will grow in terms of its contribution to provincial GDP in the medium to long term. Growth in the secondary sector represents the largest potential for employment generation in the province.

##### ***4.2.1.1 Mining***

Limpopo Province's mineral deposits include platinum, iron ore, chromium, coal, diamonds, antimony, phosphate, copper and other minerals (Limpopo Provincial Government, 2009).

The mining sector in the province has grown from 18% of provincial GDP in 1995 to 25% in 2006 (Limpopo Provincial Government, 2009), 22.8% in 2009 and 31% in 2011 of the mining sector's contribution to national GDP, second only to the North West Province (StatsSA, 2010a). Even though the contribution of the mining sector to provincial GDP is high its contribution to employment is not as high (~6.5% of provincial employment) (Limpopo Provincial Government, 2009).

The mining sector is regarded as one of the three pillars of the Limpopo Province, hence its strategic importance to the development of the economy of the district (Vhembe IDP, 2011/12). The district is also the largest diamond producer in South Africa. The mineral occurrences and zones within the district include:

- Copper in the Messina fault
- Tshipise Magnesite field
- Soutpansberg coal fields
- Tshipise, Pafuri and Mopane coal fields
- Beitbridge Complex (Limpopo Belt) which hosts mineral; ranging from Iron, Diamonds, Graphite, marble
- Talc deposits
- Gemstone deposits

- Clay dominant minerals used in brick making.

One of the principal challenges in Limpopo's mining sector is to ensure that the residents benefit extensively from the province's mineral wealth in order to achieve the social and economic development potential that the sector represents to the province (Limpopo Provincial Government, 2009). According to the Limpopo Provincial Development Strategy the development of this sector is of provincial, regional and national socio-economic importance (IDP, 2011/12).

#### **4.2.1.2 Agriculture**

The Limpopo province has a large variety of agricultural resources including (but not limited to) cattle, game, cotton, maize, sorghum, mangos, papaya, tea, citrus, bananas, litchis, tomatoes and potatoes (Limpopo Provincial Government, 2009).

The agricultural sector in Limpopo Province has shrunk in terms of its contribution to provincial GDP from 4% in 1995 to 3% in 2006 (Limpopo Provincial Government, 2009), and in 2009 accounted for 7.8% by value of South Africa's agricultural output (StatsSA, 2010a). The declining contribution to provincial GDP is attributed to land claims, poor support for land claim beneficiaries and the conversion arable land to game farming (and therefore eco-tourism) (Limpopo Provincial Government, 2009).

Although the agricultural sector only contributes 3% to provincial GDP it employs a significantly higher proportion of the local population (11.47% of provincial employment) (Limpopo Provincial Government, 2009). However, the majority of employment opportunities in this sector are low wage and low skill positions.

The Vhembe District contributes nearly 3% to Limpopo Province's total agricultural activity (Global Insight 2011). Agricultural activity contributes ~11.2% to the district economy (Vhembe IDP, 2011).

The district has got a total area of 2,140,708 ha of which 11.66% are suitable arable land, 57% marginal land and 31% non-arable land. The agricultural system is divided into two type's i.e. Large scale commercial farming and small scale farming. 70% of arable land is owned by commercial farmers while 30% of arable land is owned by small scale farmers (Vhembe IDP, 2011/12).

Low international prices for agricultural goods, the strong value of the Rand and water scarcity place pressure on the districts agricultural sector; and productive crop land is being converted for extensive livestock operations, game farming and eco-tourism. This trend has been encouraged by the establishment of the Vhembe Biosphere Reserve and is expected to continue.

In order to promote the agricultural sector, the Limpopo government has initiated a number of programmes aimed at training and providing support to small scale farmers, and has embarked on a rehabilitation programme for 114 irrigation schemes (Limpopo Provincial Government, 2009). Although investment in and promotion of the agricultural sector is of strategic importance in terms of local food security and because of the province's rural economic structure, using an input-output

model to analyse the contribution of the agricultural sector to the economy of the Limpopo Province, Meliko and Oni (2010) indicate that investment in the manufacturing sector would lead to higher returns in terms of provincial income, output, and employment.

#### **4.2.1.3      Tourism**

Limpopo Province offers a variety of indigenous cultures, game farms, nature reserves, national parks, a biosphere reserve and trans-frontier conservation areas (Limpopo Provincial Government, 2009). As a result the province has high tourist potential. Similarly, the Vhembe District has a number of cultural, historical and natural resources with tourism potential (Vhembe IDP, 2011/12). Major tourist attractions in the Vhembe District include the Vhembe Biosphere Reserve, Lake Fundudzi, Mapungubwe National Park & World Heritage Site and other Cultural / Heritage sites.

The number of tourists visiting Limpopo Province has increased from ~370 000 people in 2002 to ~750 000 in 2007, and the province increased its ranking in terms of its contribution to the national tourism industry from eighth to fifth during the same period (Limpopo Provincial Government, 2009).

Tourism results in an influx of financial resources into a region (or country) thereby stimulating demand for local goods and services. The contribution of tourism to GDP is expressed as a component of demand for goods and services in the secondary (and to a lesser extent tertiary) sector of the economy; and are comparatively small when compared to the mining and agricultural sectors in Limpopo Province. Nevertheless tourism is labour intensive and is therefore already a highly strategic and important sector given the socio-economic challenges which face the province. Because of the dominance of the primary sector in the provincial economy and high rates of return on investment in the manufacturing sector in terms of employment creation, promotion of the tourism industry by encouraging the participation of local inhabitants represents an opportunity to diversify the economy and stimulate provincial employment and therefore social development.

### **4.2.2      Regional Development needs**

In terms of the Vhembe District IDP 2011/2012 the following issues and areas in need of attention was identified in the various clusters:

- **Infrastructure Cluster**
  - Water resource development and demand management
  - Energy supply and demand management
  - Infrastructure Investment programme (Social Infrastructure): Housing, Schools, Police Station, Hospitals, Clinics, Stadia, Libraries and sewerage plants.
  - Transport and Logistics Management
- **Economic Cluster**
  - Municipal Public works /EPWP
  - Integrated Industrial development
  - Enterprises development

- Green economy
- Agriculture, Forestry and Rural development
- ICT & Knowledge enabled economy
- Regional economic development and Integration
- Spatial planning
- Social Cluster
  - Environmental & natural resource management
  - Health surveillance of premises
  - Fire and rescue services
  - Disaster risk management
  - Provision of health and Social services
  - Provision of education services
  - Social cohesion (unity)
- G&A Cluster
  - Municipal transformation and organizational development
  - Financial management and viability
  - Good governance and Community
  - Participation
- 
- Justice Cluster
  - The provision of safety and security services

## 4.3 Regional Context: Makhado Local Municipality

### 4.3.1 Demography and Population Structure

Musina Local Municipality has a relatively small population of less than 69,000 people. The male majority is evident, because females are more than males for Limpopo Province as a whole. This situation is indicative that the municipal area is a destination for male migrant labour. Population growth in this Municipality has been abnormally high during the past decade. Census 2001 recorded a total population of 39,310 people for Musina Local Municipality. Compounded population growth was therefore 5.7% per year for the past ten years, compared to 0.25% per year for the entire Province. Population growth in Musina Local Municipality was concentrated in the urban wards comprising Musina town and Nancefield.

A large part of the proposed Generaal Project is located in Ward 2 of the Musina Local Municipality. The total population of the ward is 16,750 people, who are living on farms. The rest of the municipal population live in the five wards comprising the urban complex of Musina town and Nancefield. It is not possible to extract 2011 census information at any level lower than the ward yet. For indicative purposes it can be estimated that farms in Musina LM each have an average of 37 residents.

*Table 4-4: Population in the Project Area, 2011*

Area	Male	Female	Total
Musina LM	34,506	33,853	68,359
Makhado LM	236,795	279,236	516,031
Musina Ward 2	8,707	8,041	16,747
Makhado Ward 21	11,079	9,959	21,038

*Source: Statistics South Africa, Census 2011*

Makhado Local Municipality, by contrast, is one of the most populated municipalities in Limpopo Province. Females are more than males, which is normal for the Province and for the country. Ward 21 is where part of the proposed Generaal Project is located. This ward is also considerably larger than the project footprint, but a more detailed level of analysis of the 2011 Census is not possible yet. Ward 21 has a population of slightly more than 21,000 people, who all live on farms. It is significant that there are substantially more men than women in this ward.

Ward 2 in Musina has approximately 1,940 children aged 4 and below, which is 11.6% of the ward population. There are approximately 1,600 learners of primary school age and approximately 1,200 learners of secondary school age. This ward has one farm school, one intermediate school and one combined school according to the Municipal Demarcation Board.

Ward 21 in Makhado has 1,965 children aged 4 or younger (9.3%) and 2,600 children of primary school age (12.4%). The number of children in the secondary school age cohort is approximately 1,540 or 7.3% of the ward population. This ward has one primary and one combined secondary school according to the Municipal Demarcation Board.

In both Ward 2 of Musina Local Municipality and Ward 21 of Makhado Local Municipality the proportion of the population aged 19 years and younger is considerably smaller than for the respective municipalities. This proportion is also smaller than the equivalent for Limpopo Province. The peculiar age distribution, as well as the dispersed nature of the population settlement pattern in the project area, has important implications for the planning of education support.

#### **4.3.2 Literacy rates and education**

Less than 22% of the population who have passed school-going age in the two wards under consideration have completed secondary school or obtained a post-school qualification. Almost half of this population have only partially completed secondary school.

*Table 4-5: Education Profile in the Project Area for People Above School-going Age, 2011*

Education Level	Musina Ward 2	Makhado Ward 21	Total
No Schooling	1 558	1 341	2 899
Some Primary	4227	4167	8394
Some Secondary	7 535	10 445	17980

Senior Certificate	1 361	3 923	5284
Post School Qualification	407	2450	2857
<b>Total</b>	<b>15,088</b>	<b>22,326</b>	<b>37,414</b>

Source: Statistics South Africa, Census 2011

This relatively low education level will have a negative implication for employability, as indicated below.

### 4.3.3 General health and welfare

In both the Musina and Makhado Local Municipalities', the urban areas are well serviced with health care facilities, in the rural areas access to health care facilities is a major problem, which is further exacerbated due to limited public transport.

The prevalence of HIV/AIDS is also on the increase in the Vhembe district and both municipalities. HIV/AIDS prevalence has increased from 14% in 2009 to 17% in 2010. Government has embarked on a HIV/AIDS awareness campaign and other strategies in the municipal areas.

Malaria is one of the other main causes of death in the district with a recorded 2890 cases and 23 deaths in 2010-2011. Other main causes of death include Tuberculosis, Respiratory infections, homicide/violence, heart disease, road traffic accidents and diarrhoeal diseases

### 4.3.4 Basic Services and Housing

The Musina and especially the Makhado IDP indicates that current infrastructure is inadequate to service a growing population. This was confirmed by municipal planning managers during a stakeholder consultation meeting on 19 March 2013. Water sources in particular are insufficient and roads are generally in a bad condition. Properties in rural areas are difficult to access, particularly during times of high rainfall.

#### 4.3.4.1 Housing and Settlements

The closest human settlements to the proposed Generaal Coal Project are indicated in the table below:

Table 4-6: Surrounding Settlements

Settlement Name	Population	Households
Mudimeli	2892	678
Makushu- Mosholombi	1506	396
Pfumembe	717	189
Ngudu	810	174
Maranikwe (incl Starlight)	999	264



Settlement Name	Population	Households
DoliDoli	312	90
Thiel	276	84
Ndouvhada (Khomela)	1020	273
Gaarside	267	69
Smokey	234	66
Honnet Nature Reserve Worker village	174	69
<b>Total</b>	<b>9207</b>	<b>2352</b>

*Table 4-7: Dwelling Types in the Project Area*

Type of main dwelling	Musina Ward 2	Makhado Ward 21
House or brick/concrete block structure on a separate stand or yard or on a farm	3,590	5,359
Traditional dwelling/hut/structure made of traditional materials	768	350
Flat or apartment in a block of flats	65	216
Cluster house in complex	10	39
Townhouse (semi-detached house in a complex)	1	66
Semi-detached house	4	19
House/flat/room in backyard	103	230
Informal dwelling (shack; in backyard)	417	386
Informal dwelling (shack; not in backyard; e.g. in an informal/squatter settlement or on a farm)	286	284
Room/flatlet on a property or larger dwelling/servants quarters/granny flat	138	89
Caravan/tent	28	22
Other	70	252
Unspecified	-	-
Not applicable	-	-
<b>Total</b>	<b>5,481</b>	<b>7,312</b>

*Source: Statistics South Africa, Census 2011*

This profile can change completely once project construction gets underway. Historical evidence from other construction and mine development sites indicate that an influx of work seekers should be expected and that their numbers could significantly exceed the number of jobs that may be available.

Historical evidence also indicates that work seekers tend to form a squatter camp as close as possible to the construction or mine site. These squatter camps are often the focal point for xenophobic attacks and violent social unrest.

#### 4.3.4.2 Water and Sanitation

Households are generally well serviced as far as water is concerned, with less than 4% that do not have access to piped water. This is a conventional profile for a predominantly farming community with no settlements.

*Table 4-8: Household Water Service Levels, 2011*

<b>Piped water</b>	<b>Musina Ward 2</b>	<b>Makhado Ward 21</b>
Piped (tap) water inside dwelling/institution	1,249	3,282
Piped (tap) water inside yard	2,447	3,032
Piped (tap) water on community stand less than 200m from dwelling	1,177	664
Piped water on community stand between 200m and 500m from dwelling	288	51
Piped water on community stand between 500m and 1000m from dwelling	53	19
Piped water on community stand: distance greater than 1000m from dwelling	52	2
No access to piped (tap) water	216	262
<b>Total</b>	<b>5,481</b>	<b>7,312</b>

*Source: Statistics South Africa, Census 2011*

The number of households with no toilet facilities in the two wards under consideration is strangely high. This information from the 2011 does not fit the profile of the area. It will require investigation and verification.

*Table 4-9: Household Toilet Facilities, 2011*

<b>Toilet facilities</b>	<b>Musina Ward 2</b>	<b>Makhado Ward 21</b>
None	961	639
Flush toilet (connected to sewerage system)	2 134	4 889
Flush toilet (with septic tank)	505	427
Chemical toilet	18	4
Pit toilet with ventilation (VIP)	426	105
Pit toilet without ventilation	1 179	911
Bucket toilet	119	38
Other	138	298
<b>Total</b>	<b>5 481</b>	<b>7 312</b>

*Source: Statistics South Africa, Census 2011*

#### 4.3.4.3 Electricity

The use of electricity for lighting is not as prevalent in the project area as in urban areas. A significant proportion of households (almost 26% in Musina ward 2 and 14 in Makhado ward 21) still use candles for lighting purposes. The use of wood for cooking is even more prevalent than the use of candles for lighting.

*Table 4-10: Household Energy Source for Lighting, 2011*

Energy or fuel for lighting	Musina Ward 2	Makhado Ward 21
Electricity	3 833	6 013
Gas	15	29
Paraffin	129	178
Candles (not a valid option)	1 402	987
Solar	28	66
None	75	39
<b>Total</b>	<b>5 481</b>	<b>7 312</b>

Source: Statistics South Africa, Census 2011

#### 4.3.5 Local Economic Profile

##### 4.3.5.1 Economic Sectors

Musina LM has a relatively small local economy, with a total value of production of R4.72 billion at current prices for 2011. It contributes 2.5% to the provincial economy, which had a comparative size of R190 billion at current prices in 2011 and 13% to the Vhembe District economy (R36.4 billion at current prices in 2011). There are 25 local municipalities in Limpopo and 4 in Vhembe District.

*Table 4-11: Gross Value Added for Musina LM at Current Prices*

Sector	2009	2010	2011	2011%
Agriculture, forestry and fishing	297	248	248	5.2
Mining and quarrying	1571	1649	1871	39.6
Manufacturing	102	114	122	2.6
Electricity, gas and water	48	56	68	1.4
Construction	76	95	116	2.4
Wholesale and retail trade, catering and accommodation	429	535	636	13.5
Transport, storage and communication	403	419	492	10.4
Finance, insurance, real estate and business services	476	542	587	12.4
Community, social and personal services	75	92	106	2.2
General government	345	404	478	10.1
<b>Total</b>	<b>3822</b>	<b>4155</b>	<b>4724</b>	<b>100.0</b>

Source: Quantec, 2013

The main driver in the municipal economy is clearly mining, which contributed almost 40% to the total value of production in 2011 (at current prices). The primary commodity is diamonds, although coal is also beginning to make a significant contribution. By comparison, the mining sector contributes 9.3% to the production value of the Vhembe District economy, 30% to the provincial economy and 9.8% to the national economy.

The trade sector, transport and government activities are growing rapidly. This growth is being driven by the local mining sector and by trading activities, including consumption expenditure from residents of neighbouring countries. The construction sector is also growing, but off a low base. Growth in the finance sector is more a reflection of the imputed value of land, rather than an increase in actual financial transactions. The agriculture sector, which has a long tradition of considerable significance, is shrinking in relative and in absolute terms.

*Table 4-12: Gross Value Added for Makhado LM at Current Prices*

<b>Sector</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2011%</b>
Agriculture, forestry and fishing	470	457	467	3.6
Mining and quarrying	232	243	274	2.1
Manufacturing	434	442	459	3.5
Electricity, gas and water	306	342	380	2.9
Construction	430	519	616	4.7
Wholesale and retail trade, catering and accommodation	1921	2150	2406	18.6
Transport, storage and communication	1295	1340	1459	11.2
Finance, insurance, real estate and business services	2189	2422	2574	19.9
Community, social and personal services	596	747	823	6.3
General government	2782	3138	3507	27.0
<b>Total</b>	<b>10656</b>	<b>11798</b>	<b>12966</b>	<b>100.0</b>

Source: Quantec, 2013

The Makhado local economy, with a value of production of close to R13 billion, is almost three times larger than that of Musina. Government is the driver of this local economy, mostly because of the public sector needs of the very large population, which includes education, public health, safety and security, as well as local government services.

The finance sector is significant, largely due to the imputed rent estimates of extensive tracts of land that command very high prices.

The third largest sector is trade and catering. Makhado town provides a service function for a large hinterland that stretches beyond its borders. Attractive landscapes have also provided opportunities to create accommodation and catering product offerings.

Agriculture is stagnant at best, but with a tendency to shrink. Important commodities include fruit, timber and meat.

Mining has never been an important sector in the Makhado local economy, but this could change in the foreseeable future due to the interest that the Soutpansberg Coalfield is receiving with its attractive metallurgical properties.

#### **4.3.5.2 Employment Status**

The strict unemployment rate (SUR) in Musina LM at 18.7% is considerably lower than the provincial average and it is even lower in Ward 2 at 9.8%. The expanded unemployment rate (EUR) includes discouraged work seekers (DWS) as unemployed and is therefore always higher than the strict unemployment rate. Discouraged work seekers have given up on trying to find work and are therefore technically not included in the internationally used definition of unemployment.

The total number of people in Musina Ward 2 who could theoretically be employed is 1,218 (967 unemployed plus 251 discouraged work seekers). However, it is likely that only 58% of these people will have completed primary school and only 13% have completed secondary school. More than 11% of residents of appropriate age have never been to school. The potential labour pool with senior certificates is therefore estimated at 158 people.

The strict unemployment rate (SUR) in Musina LM at 18.7% is considerably lower than the provincial average and it is even lower in Ward 2 at 9.8%. The expanded unemployment rate (EUR) includes discouraged work seekers (DWS) as unemployed and is therefore always higher than the strict unemployment rate. Discouraged work seekers have given up on trying to find work and are therefore technically not included in the internationally used definition of unemployment.

Unemployment of more than 36% in Makhado LM is significantly higher than in Musina, although Ward 21 in Makhado is an exception. Most of the residents of this ward work on farms, resulting in a strict unemployment rate of only 7.2%, which is a quarter of the municipal average.

*Table 4-13: Employment Profile in the Project Area*

Area	Employed	Unemployed	DWS <sup>1</sup>	SUR <sup>2</sup> %	EUR <sup>3</sup> %
Musina LM	25,588	5,893	1,869	18.7	23.3
Makhado LM	78,768	45,705	24,383	36.7	47.1
Musina Ward 2	8,887	967	251	9.8	12.1
Makhado Ward 21	10,636	821	269	7.2	9.3

Source: Statistics South Africa, Census 2011

<sup>1</sup> DWS: Discouraged Work Seeker

<sup>2</sup> SUR: Strict Unemployment Rate

<sup>3</sup> EUR: Expanded Unemployment Rate

Unemployment in Makhado LM is significantly higher than in Musina, although Ward 21 in Makhado is an exception. Only 35% of the theoretically employable people in Ward 21 are likely to have completed secondary school, which numbers approximately 382 people.

The total number of unemployed people (strictly unemployed as well as discouraged work seekers) in the two wards who have completed secondary school is therefore approximately 540. This suggests that the proposed Generaal Project will have to recruit from outside the project area unless this skills gap can be bridge through skills development programmes.

The census does not indicate employment per sector, but useful information in this regard can be obtained from commercial providers of statistical information such as Quantec. The information below has been procured from them. It indicates that more than 16% of the workforce in Musina LM is already employed in the mining sector and the number is growing. Only 1.2% of the workforce in Makhado LM is employed in the mining sector, but this could change in the foreseeable future considering the pipeline of potential coal mining projects. Increased employment in the mining sector will have a positive impact on employment in other sectors through the indirect employment effect, particularly on construction, trade and transport.

The Trade, Accommodation and Catering sector is the biggest employer in both municipalities. Agriculture is also a major employer, especially in Musina LM.

*Table 4-14: Employment by Sector in Makhado and Musina Municipalities, 2011*

<b>Sector</b>	<b>Makhado</b>	<b>Makhado %</b>	<b>Musina</b>	<b>Musina %</b>
Agriculture, forestry and fishing	5578	7.8	3774	18.3
Mining and quarrying	832	1.2	3424	16.6
Manufacturing	4735	6.6	976	4.7
Electricity, gas and water	264	0.4	29	0.1
Construction	6062	8.5	1155	5.6
Wholesale & retail trade, catering and accommodation	21193	29.7	5072	24.6
Transport, storage and communication	2943	4.1	765	3.7
Finance, insurance, real estate and business services	5622	7.9	1326	6.4
Community, social and personal services	10320	14.5	1814	8.8
General government	13801	19.3	2242	10.9
<b>Total</b>	<b>71350</b>	<b>100.0</b>	<b>20578</b>	<b>100.0</b>

Source: Quantec 2013

#### **4.3.5.3 *Income profile***

Compared to the provincial and national averages, there are very few households in the project area with no income at all. This is presumably because there are no settlements and almost all households live on a farm, which implies that at least one member of the household is likely to earn an income. However, household incomes are generally low, with 84% of households in Musina Ward 2 earning less than R38,200 per year or approximately R3,180 per month. Household income is slightly higher in Makhado Ward 21 where 64% of households earn less than R38,200 per month.

*Table 4-15: Annual Household Income in the Project Area, 2011*

<b>Annual Household Income</b>	<b>Musina</b>	<b>Ward 2 %</b>	<b>Makhado</b>	<b>Ward 21 %</b>
<b>Income Category</b>	<b>Ward 2</b>		<b>Ward 21</b>	
No income	374	6.8	546	7.5
R 1 - R 4800	99	1.8	207	2.8
R 4801 - R 9600	600	10.9	453	6.2
R 9601 - R 19 600	2154	39.3	1935	26.5
R 19 601 - R 38 200	1371	25.0	1540	21.1
R 38 201 - R 76 400	489	8.9	792	10.8
R 76 401 - R 153 800	171	3.1	691	9.5
R 153 801 - R 307 600	136	2.5	595	8.1
R 307 601 - R 614 400	51	0.9	390	5.3
R 614 001 - R 1 228 800	20	0.4	118	1.6
R 1 228 801 - R 2 457 600	11	0.2	26	0.4
R 2 457 601 or more	6	0.1	19	0.3
<b>Total</b>	<b>5481</b>	<b>100</b>	<b>7312</b>	<b>100</b>

Source: Statistics South Africa, Census 2011

#### **4.3.5.4 *Potential development partners in the area***

The primary development partner for the Greater Soutpansberg Projects is the municipalities, and MbeuYashu is aligning its development projects such as in its Social and Labour Plan with local governments' integrated development plans. MbeuYashu is also investigating potential linkages with provincial and national imperatives, for example, with building of a school for mining excellence.

Partners with significant capacity such as the Development Bank of South Africa's Siyenze Manje programme could be mobilised to assist with some challenges such as the provision of water and sanitation services. Non Government Organisations (NGOs) or Community Based Organisations (CBOs) who are active in area and who work in specific fields of development can be brought on board as service providers or partners.

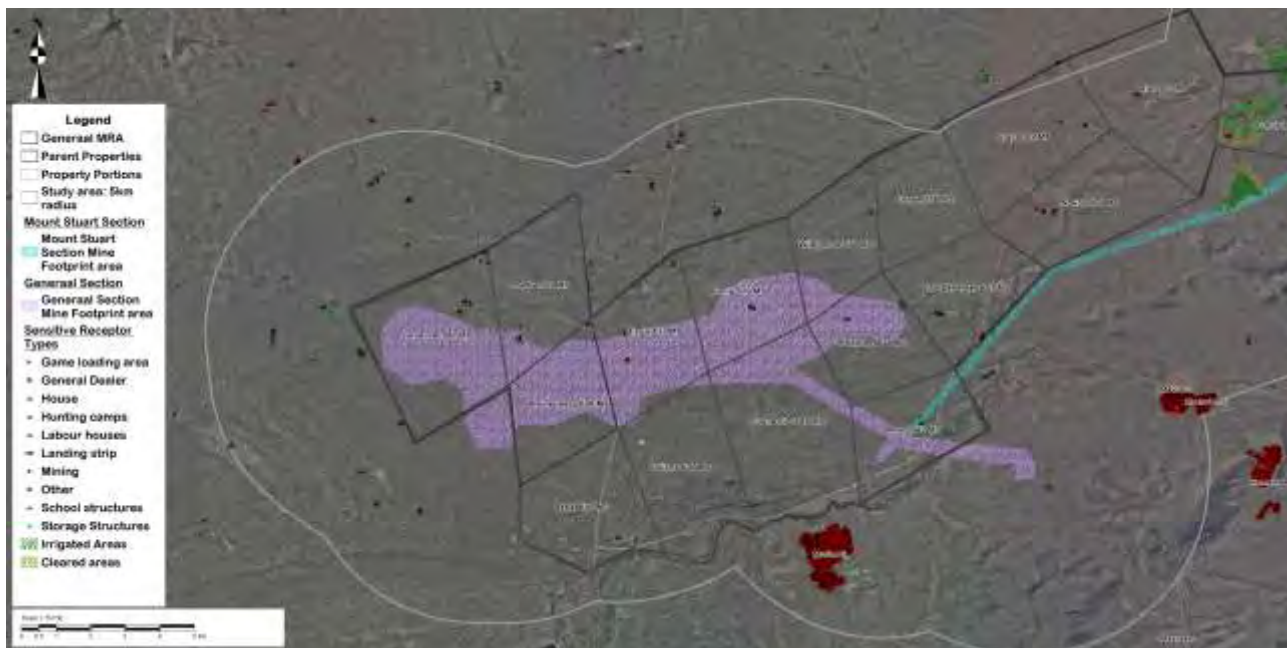






*Figure 4-2: Sensitive receptors and activities in the Mount Stuart Section areas*

The land use in the Generaal Section of the Generaal project is predominantly hunting, game farming and ecotourism. Hunting, game trading and Ecotourism is an established socio-economic driver in the area. There are a number of properties utilized for trophy (for local and foreign tourists) and biltong hunting with ecotourism spin-off activities. Excess game is harvested by means of live capturing or other methods. All the game ranches are fenced in with game proof fencing. The figures below indicates where hunting camps and other game activities could be determined via aerial photography and where possible were confirmed on site.



*Figure 4-3: Sensitive Receptors and activities in the Generaal Section Area*

The location of all structures, houses, institutional buildings such as schools, post offices, etc. is important in the evaluation of their susceptibility to nuisance, noise, visual and air quality impacts. Changes to the sense of place and ambiance of the area have an impact on the socio-economic

environment. Housing, labour houses and other structures are scattered throughout the area, as can be seen in the figures above.

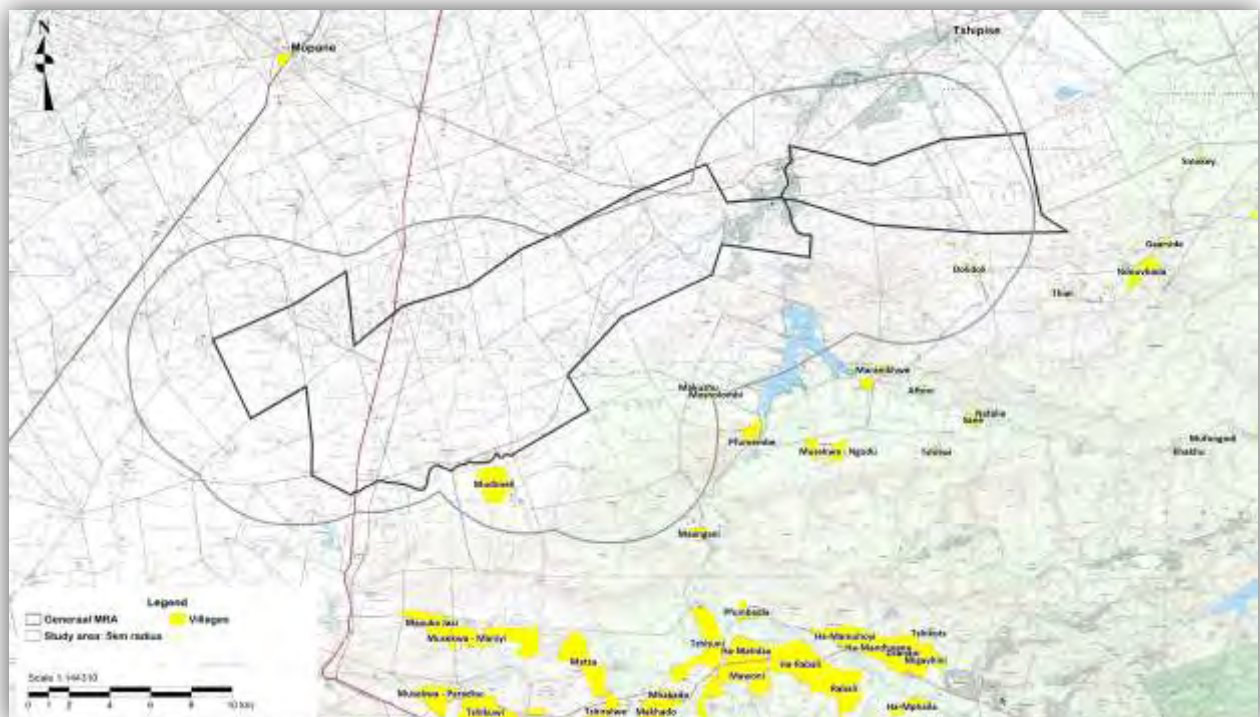
#### 4.4.3 Communities in the surrounding area

Community can refer to a social unit of any size that shares common values. In communities, intent, belief, resources, preferences, needs, risks, and a number of other conditions may be present and common, affecting the identity of the participants and their degree of cohesiveness. The sense of connectedness and formation of social networks comprise what has become known as social capital<sup>1</sup>.

A number of ways to categorize types of community have been proposed; one such breakdown is:

- **Geographic communities:** range from the local neighbourhood, region, village, town or city, region, nation or even the planet as a whole. These refer to communities of location.
- **Communities of culture:** range from the local clique, sub-culture, ethnic group, religious, multicultural or pluralistic civilisation, or the global community cultures of today.
- **Community organizations:** range from informal family or kinship networks, to more formal incorporated associations, political decision making structures, economic enterprises, or professional associations.

The communities located within the vicinity of the Generaal project is indicated in the figure below:



*Figure 4-4: Communities in the vicinity of the Generaal Project*

<sup>1</sup> Putnam, D. 2000. *Bowling Alone: The Collapse and Revival of the American Community*

In analysing the Census 2011 data available at village level for these communities the following is revealed:

*Table 4-16: Surrounding Settlements*

<b>Settlement Name</b>	<b>Population</b>	<b>Households</b>	<b>% of population Economically active</b>	<b>Unemployed<sup>1</sup></b>	<b>Economically not active</b>	<b>Younger than 15yrs</b>
Mudimeli	2892	678	17%	285 people (57%)	35%	48%
Makushu-Mosholombi	1506	396	25%	276 people (73%)	27%	48%
Pfumembe	717	189	21%	111 people (76%)	30%	50%
Ngudu	810	174	21%	111 people (66%)	31%	48%
Maranikwe (incl Starlight)	999	264	15%	81 people (54%)	37%	48%
DoliDoli	312	90	17%	24 people (44%)	38%	47%
Thiel	276	84	24%	51 people (77%)	28%	49%
Ndouvhada (Khomela)	1020	273	20%	129 people (62%)	28%	51%
Gaarside	267	69	10%	18 people (67%)	43%	47%
Smokey	234	66	1%	3 people (100%)	51%	48%
Honnet Nature Reserve Worker village	174	69	48%	0 people (0%)	76%	9%
<b>Total</b>	<b>9207</b>	<b>2352</b>	<b>18%</b>	<b>1089 people (61%)</b>	<b>39%</b>	<b>45%</b>

## 4.5 Mining Right Application Area

The main agricultural enterprises found in the study area and adjacent areas are game ranching, extensive cattle production and irrigated crop production which is focussed on citrus production.

Several marketing strategies are exercised with respect to game ranching, such as hunting, which includes trophy hunting, biltong hunting and bow hunting. Excess game is captured alive and translocated or sold at auctions. Eco-tourism is also practiced in the area where visitors enjoy wildlife and nature.

Extensive cattle production is practiced, and mainly weaners are sold to feedlots.

<sup>1</sup> Including unemployed and discouraged work seekers



### 4.5.1 Mount Stuart Section

The figure below indicates the planned development in relation to the sensitive receptors and properties.

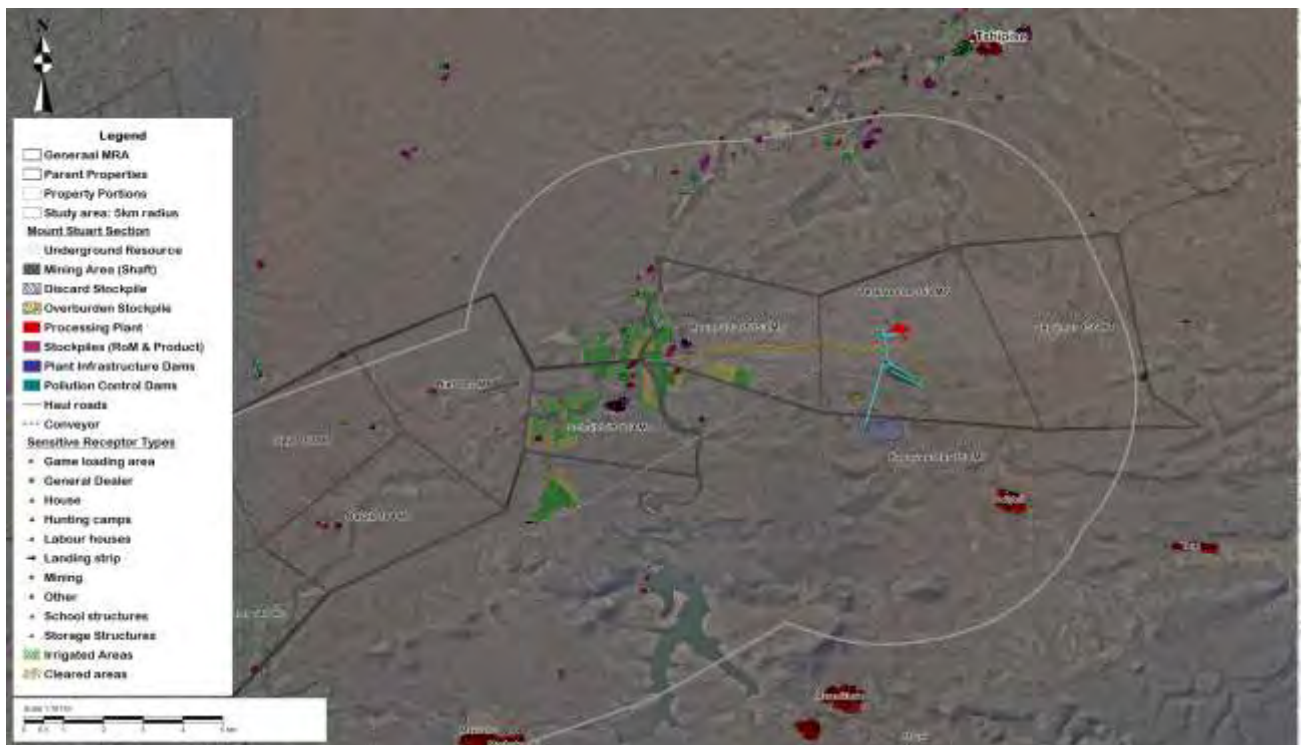


Figure 4-5: Mount Stuart Section - Planned development in relation to Sensitive Receptors

#### 4.5.1.1 Properties Septimus 156 MT and Remaining Extent of Terblanche 155 MT

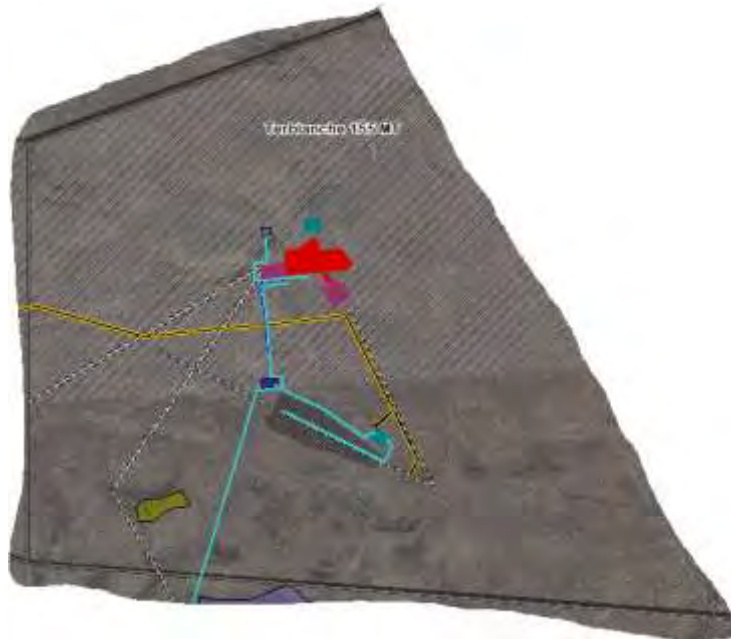
These two properties form part of the Greater Kuduland Safaris. Kudu Founded in 1974 by Peter Knott, a pioneer in the South African Game Ranching Industry. Greater Kuduland has established a service for rifle and bow hunting as well as trophy hunting. The family operation is run by Howard Knott, and utilised for wildlife conservation and ethical hunting.



#### **4.5.1.2      Properties Terblanche 155 MT Portion 1**

This property is owned by Julius Raal and utilised for hunting under management of Mount Stuart Boerderye.

The property will be impacted by the majority of the Mount Stuart Section infrastructure.



#### **4.5.1.3      Property Mount Stuart 153 MT**

The property is owned and managed by Mount Stuart Boerderye as a primarily citrus producing business. Hunting is done on the remainder of the property. The property has been in the Voster family for generations and it's preservation is of high importance to the family.

The property will be directly impacted by the mine development through a conveyor belt that will pass in the south-east corner of the property. Indirect impacts include dust, visual and noise pollution, as well as a potential impact on groundwater sources.



#### **4.5.1.4     Property Schuitdrift 179 MT**

This property is owned by Maswiri Boerdery, who also owns other surrounding properties. The owner has contracted the business to Farmsecure, who produces citrus for the export and local markets.

Maswiri has a legacy of history behind its name. The first of the Fourie family commenced farming activities (under a lease with the British Government) on the farm Naus (to the north of Schuitdrift) in 1916 and was focused on wheat. In 1929 the first potato harvest was made and in 1931 the first tomato harvest. At first the family also leased Schuitdrift and finally purchased it from the British Government in 1934. Production was eventually changed from tomatoes to citrus.

The combined properties of Maswiri currently employ 350 permanent staff and 1200 seasonal staff (during harvest season). Farmsecure is a privately-owned commercial agriculture business and has a lease contract for Maswiri of 10 years that commenced in 2010.





#### ***4.5.1.5      Properties Riet 182 MT, Stayt 183 MT and Nakab 184 MT***

The properties are owned by the Clint Howes Trust. On the farm Stayt there is a Copper mine. The rest of the properties are utilised for game farming.

The southern property, The Duel will be affected by a conveyor belt. The other properties are not directly affected by the mine footprint.





## 4.5.2 Generaal Section



### 4.5.2.1 Properties Van Deventer 641 MS Remaining Extent and Chase 576 MS

The properties form part of the game farm named Garamtata Safaris which serve as a trophy and biltong hunting as well as tourism destination. The property has exemption for hunting throughout the year. The facilities provided on these properties include a lodge that can accommodate 16 people (4 families), a Safari tented camp (4 tents), lodge for eating and entertainment, as well as hunting facilities such as guides, skimmers, slaughtering facilities, and taxidermy.



#### **4.5.2.2 Properties Van Deventer 641 MS Portion 1 and Boas 642 MS**

These properties (including Martha 185 MT) have been purchased by Coal of Africa Limited under its subsidiary Fumaria Investments. The property is utilised for game farming at this time, and will be affected by product transport infrastructure.



#### **4.5.2.3 Properties Wildgoose 577 MS and Phantom 640 MS**

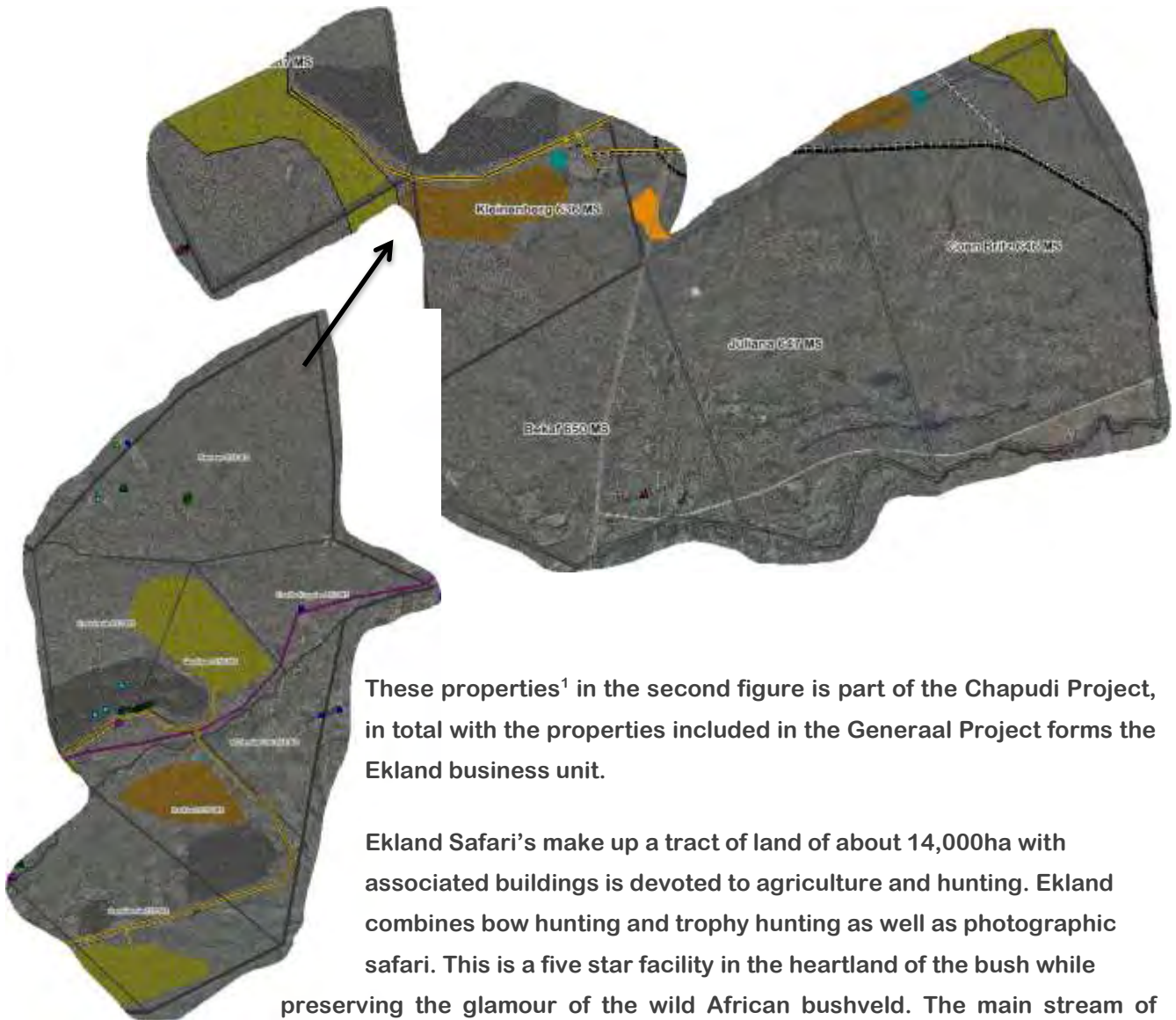
The farms Wildgoose 577MS and Phantom 640MS were bought by Ptyprops (Pty) Ltd as a unit in 2005 as an investment for Dr Toni Zambakides, Mr Terry Savides and Mr Arthur Sacoulis. Named Malakangwe, the farms were planned to be a single game farm (of 1670ha) to be stocked with game for hunting and tourism purposes. The farm was game fenced in 2005/2006 and extra game was introduced in 2006. Water infrastructure was developed from 2005 and all of the farm's water is currently coming from boreholes on Phantom. 2010 was the first year that hunting took place on Malakangwe and 2011 saw the first commercial hunting taking place. A lodge is still planned to be built on the property and the development of irrigated fields for fodder production, sourcing groundwater for the irrigation from the Tshipise break is another development still planned. With the extra fodder, the breeding of rare game will also be a future option to look at by the owners.



The properties will be directly impacted by the Generaal Section Mine footprint through an open pit, stockpile and haul road.



**4.5.2.4 Properties Coen Britz 646 MS, Juliana 647 MS, Bekaf 650 MS, Kleinenberg 636 MS and a portion of Generaal 587 MS Remaining Extent**



**4.5.2.5 Property Fanie 578 MS**

The property is owned by Mrs Susan van der Merwe but is managed by Mr Ben van der Merwe. The property is utilised for hunting and game breeding programmes.

The property may be affected by the Generaal Section mine footprint through an open pit, haul road, stockpiles and other infrastructure.



<sup>1</sup> Properties Kalkbult 709 MS, Koschade 657 MS (was Mapani Kop 656 MS), M'tamba Vlei 654 MS, Ptn 1 & RE, Pienaar 635 MS, Qualipan 655 MS, Castle Koppies 652 MS and Sandilands 708 MS

#### **4.5.2.6 Property Rissik 637 MS Portion 1**

This property is owned by Mr Wessel Christoffel Fourie who resides in Gauteng. The property is occupied by his son, Mr Johan Fourie who is a lecturer at the University of Venda. The property is utilised as a residence as well as for hunting activities. As part of the Makhado Project Railway line negotiations, an agreement has been reached with the landowner to swap the property for properties to the north of the Rissik property. Apart from the Makhado railway line the property may also be affected by the Generaal Project through an open pit, stockpile, haul road and infrastructure area.



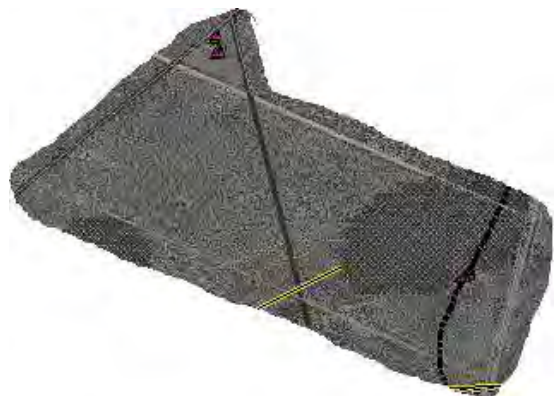
#### **4.5.2.7 Property Rissik 637 MS Portion 2**

This property belonged to Mr Petrus Matodzi, who utilised it for livestock. As part of the Makhado project, this project was purchased from Mr Matodzi for the Makhado railway line.



#### **4.5.2.8 Rissik 437 MS Remaining Extent (now Farm 842 MS)**

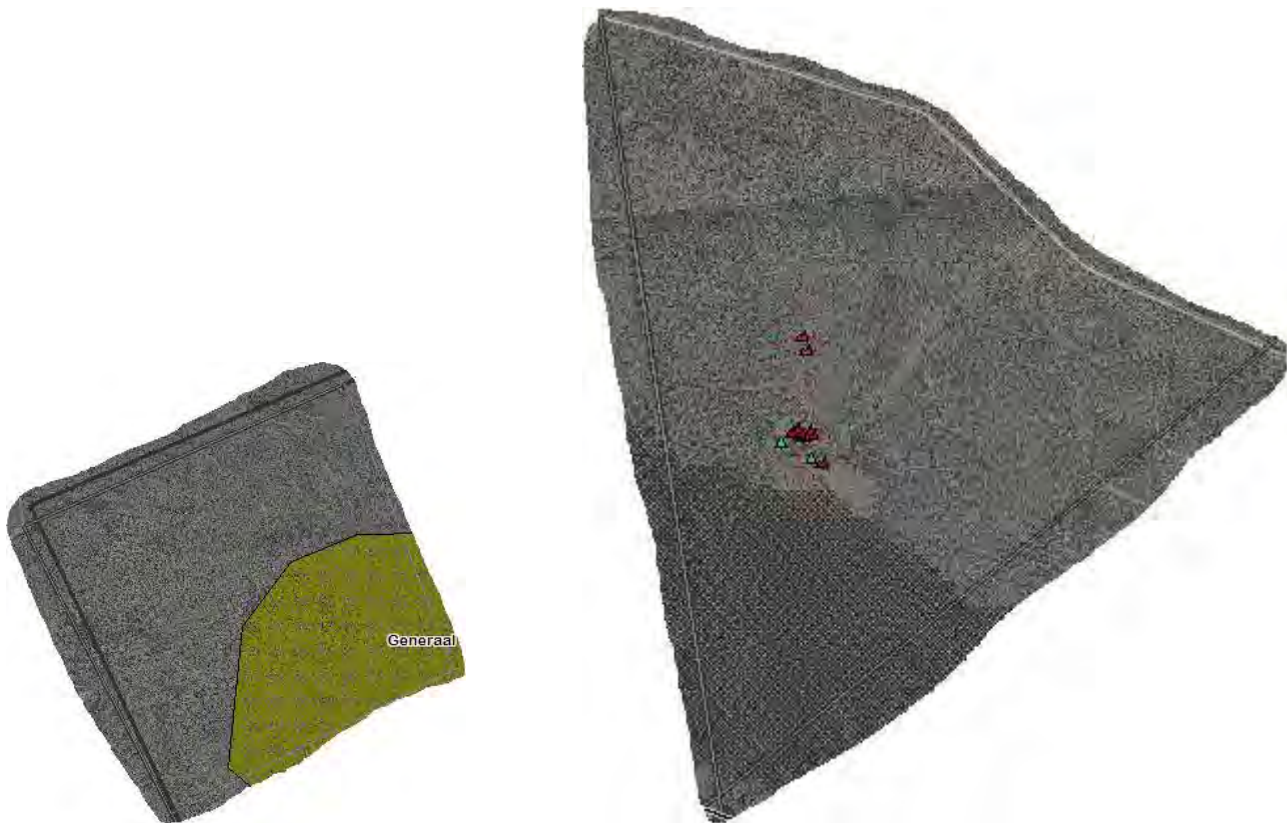
This property belongs to Prof Sebola, who is a lecturer at the University of the North. The property is utilised for livestock farming as well as harvesting of Mopane worms from the Mopane trees that occur on this farm in abundance. The property will be affected by the Generaal Section mine footprint through open pits and haul roads.





#### **4.5.2.9 Property Joffre 584 MS Remaining Extent and a Portion of Generaal 587 MS Remaining Extent**

These properties have recently been purchased by Mr Petrus Visagie, who has established livestock farming on the property. Mr Visagie resides on the farm Overwinning, south of the Makhado project where he produces vegetables. The Joffre property will be directly affected by the Generaal Section Open Pit, and the Generaal property by stockpiles.



#### **4.5.2.10 Property Joffre 584 MS Portion 1**

The property has been restored to the Mulambwane Communal Property Association through the land restitution process. The community utilise the property for livestock grazing. The property is affected by the Makhado railway line and an agreement has been reached with the community for the rail servitude. The community also owns further properties to the north of the Generaal Project.



#### **4.5.2.11 Property Generaal 587 MS Remaining Extent**

This portion of the farm Generaal 587 MS is owned by the Joubert family and is utilised for livestock farming. There is also some livestock feed and maize produced. The Joubert family have resided on this property for generations, and sustains the family from its produce.



#### **4.5.2.12 Property Generaal 587 MS Portion 1**

The small portion of the farm Generaal 587 MS north of the Huntleigh road has been purchased by Valmaggia Trust. The property is utilised for small scale hunting, tourism and is also the home to the Valmaggia family.

The property will not be directly affected by the mine footprint which is located to the south of the property (1.6km).



# 1 IMPACTS AND RECOMMENDED MITIGATION MEASURES

## 1.1 Demographic and Population Related Aspects

### 1.1.1 Impact DP1: Influx of work seekers into the area

- Aspect: Demographic and Population Related Aspects
- Impact: S1: Influx of work seekers
- Nature: Negative
- Activity generating this impact: Mine Construction and Operation
- Description of Impact Assessment pre-mitigation
  - Mining developments are usually associated with a potential for attracting people from outside the area, thus leading to an influx of non-local people into the area to look for employment opportunities especially during the construction phase of the mine.
  - Even if it is the intent of MbeuYashu to source workers locally, it is unlikely to discourage people from elsewhere entering the area. It is this perceived prospect of employment opportunities, fuelled by potential rumours about the number of jobs to be created that would attract outsiders. Furthermore, introducing job opportunities into a resource-starved environment (see unemployment figures) is a potential source of competition between unemployed locals - a situation that would be exacerbated by outsiders, potentially resulting in conflict – the felt impact of the change process.
  - The impact could include secondary influences on:
    - *Impact on social dynamics of informal areas and its infrastructure and services*
    - *Conflict between job seekers and local communities*
    - *Secondary impacts on infrastructure, services, housing, crime, safety and risk to the local area*

#### • Impact Rating

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
<i>Construction</i>	<i>District</i>	<i>Likely</i>	<i>Moderate</i>	<i>Moderate Risk</i>	<i>Moderate Significance</i>	<i>Low Risk</i>	<i>Low Significance</i>

#### • Mitigation / Optimization Measures

- Optimise the use of local labour as far as possible. Establishing early on skills development programmes in the local area will support to possibility of finding skilled people locally
- Development and Implementation of an Influx and Land use Management Plan
- Develop a code of conduct with which contractors and their employees must comply. The code should deal with the interaction with local communities and substance abuse among other things.
- Develop a Stakeholder Engagement Plan (SEP) which clarifies the principles of engagement with community and other stakeholders, sets in place appropriate liaison forums (a community forum is recommended), and describes the grievance management procedure to be adopted by the Generaal Project. Establishment of a local labour

recruitment committee to monitor recruitment procedures and results

- Communicate through media the recruitment procedures and priorities to discourage work seekers from outside the area
- Description of Impact Assessment post-mitigation
  - If the mitigation measures are implemented effectively it is envisaged that influx could be minimized
- Cumulative Impact
  - Broader development in the region is likely to compound problems around influx and the Municipality's ability to provide housing in the area. The implementation of joint influx management between MbeuYashu and the Local Municipalities in the area is recommended. The timing for the construction and operational phases of the other mines is not finalised at this point, it is difficult to assess what the cumulative impact could be.

### 1.1.2 Impact DP2: Influx of construction labour with pressure on services and social structures

- Aspect: Demographic and Population Related Aspects
- Impact: S2: Influx of construction labour with pressure on services and social structures
- Nature: Negative
- Activity generating this impact: Mine Construction
- Description of Impact Assessment pre-mitigation
  - It is anticipated that some construction labour would be brought in from outside the area for specific skilled areas. Contract workers moving into the area will require housing and access to services and amenities. Depending on where the construction workforce will be housed this will lead to an increased demand for municipal (e.g. water and sanitation) and provincial (e.g. health and education) services. Water, sanitation and electricity are still lacking in a large proportion of the area. The current labour forces on the agricultural properties are a mixture of local and foreign (Zimbabwean) labour. Although agriculture and mining requires different skills there may also be competition for local labour.
  - The impact could include secondary influences on:
    - *Informal settlement in Open Areas*
    - *Impact on social dynamics in the area and its infrastructure and services*
    - *Conflict between job seekers and local communities*
    - *Secondary impacts on infrastructure, services, housing, crime, safety and risk to the local area*
- Impact Rating

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
<i>Construction</i>	<i>District</i>	<i>Likely</i>	<i>Moderate</i>	<i>Moderate Risk</i>	<i>Moderate Significance</i>	<i>Low Risk</i>	<i>Low Significance</i>

- Mitigation / Optimization Measures
  - Facilitate the provision of housing and associated infrastructure. Establishment of a construction accommodation camp to house those employees that cannot be sourced from the local community due to a lack of skills



- Optimise the use of local labour as far as possible. Establishing early on skills development programmes in the local area will support to possibility of finding skilled people locally
- Development and Implementation of an Influx and Land use Management Plan
- Develop a code of conduct with which contractors and their employees must comply. The code should deal with the interaction with local communities and substance abuse among other things.
- Develop a Stakeholder Engagement Plan (SEP) which clarifies the principles of engagement with community and other stakeholders, sets in place appropriate liaison forums (a community forum is recommended), and describes the grievance management procedure to be adopted by the Generaal Project. Establishment of a local labour recruitment committee to monitor recruitment procedures and results
- Develop and communicate a clear and concise employment and recruitment policy to prevent opportunistic job seekers from settling in the area.
- Implementation of a programme of STD and HIV/AIDS screening, counselling and (where possible) treatment.
- Description of Impact Assessment post-mitigation
  - The negative impact resulting from an influx of construction labour may be mitigated by facilitating the provision of housing and associated services in consultation and partnership with the local and provincial authorities. The use of local labour, which already reside in the area and are currently catered for in terms of services and infrastructure, should be considered for employment opportunities. In instances where local labour does not meet the requirements and non-local labour will be hired, social relations among construction workers and between construction groups and the wider residential communities will have to be managed closely.
- Cumulative Impact
  - Project-related traffic and population influx (caused both by the presence of non-local construction workers and migrant job-seekers) will add to the existing pressure on services and infrastructure (roads, water, sanitation, housing, health and educational facilities etc.) caused by various developments and planned developments in the area.

### **1.1.3 Impact DP3: Influx of operational workforce with pressure on services and social structures**

- Aspect: Demographic and Population Related Aspects
- Impact: S3: Influx of operational workforce with pressure on services and social structures
- Activity generating this impact: Mine Operation
- Description of Impact Assessment pre-mitigation
  - At the end of the construction period and build-up of operations, operational staff will also be recruited and will take up residence in the area. Operational staff for the Generaal Project, currently estimated at 906 people at steady state, will need housing, infrastructure and services (including health and education facilities). Their presence will, as with construction staff before them, introduce new social dynamics in the local communities. If not properly mitigated, the influx will potentially place pressure on current infrastructure and services.

- **Impact Rating:**

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
<i>Life of Project</i>	<i>District</i>	<i>Likely</i>	<i>Moderate</i>	<i>Moderate Risk</i>	<i>Moderate Significance</i>	<i>Low Risk</i>	<i>Low Significance</i>

- **Mitigation / Optimization Measures:**

- Contribution towards the provision of housing, infrastructure and services for operational staff.
- The establishment of partnerships with other private sector stakeholders, government authorities and civil society organisations to integrate planning around the provision of services and infrastructure, and to ensure that Mine inputs in this context compliment initiatives led by other players, especially the local and district municipality.
- Development and Implementation of an Influx and Land use Management Plan
- Optimise the use of local labour as far as possible. Establishing early on skills development programmes in the local area will support to possibility of finding skilled people locally
- Induction of contractors and workforce with regard to their code of conduct in the local communities
- Develop and communicate a clear and concise employment and recruitment policy to prevent opportunistic job seekers from settling in the area.
- Implementation of a programme of STD and HIV/AIDS screening, counselling and (where possible) treatment.
- Continuous assessment and monitoring of infrastructure and services capacity in focal points (assessment every 5 years)
- Determine scale of assistance required at focal points and enter into an agreement with the municipality
- Establish a development, infrastructure and service monitoring forum with the municipality to continuously assess and monitor capacity, determine assistance required and oversee implementation

- **Description of Impact Assessment post-mitigation**

- The negative impact resulting from an influx of operational labour is believed to only be relevant to the initiation of the operational activities, and even out once employment is complete. It may however in the beginning years be mitigated by facilitating the provision of housing and associated services in consultation and partnership with the local and provincial authorities. The use of local labour, which already reside in the area and are currently catered for in terms of services and infrastructure, should be considered for employment opportunities. In instances where local labour does not meet the requirements and non-local labour will be hired, social relations among construction workers and between construction groups and the wider residential communities will have to be managed closely.

- **Cumulative Impact**

- Mining development opportunities in the regional area influencing especially the Makhado

focal points are considered to be present and foreseeable. Project-related traffic and population influx (caused both by the presence of non-local workers and migrant job-seekers) will add to the existing pressure on services and infrastructure (roads, water, sanitation, housing, health and educational facilities etc.) caused by various developments and planned developments in the area. This impact can be increased to a level that cannot be sustained by the local area without mitigation and external intervention. The recommended mitigation measures include:

- *Detailed assessment of current services and infrastructure capacity and sensitivity to development*
- *Continuous assessment as new development is identified and implemented (assessment every 5 years)*
- *Incorporate new development players in the region into the development, infrastructure and service monitoring forum with the municipality to continuously assess and monitor capacity, determine assistance required and oversee implementation*
- *Identification of critical intervention projects to mitigate specific capacity problems within the current services and infrastructure (dependent on the findings of the continuous assessment)*

#### **1.1.4 Impact DP4: Influx of people and the development of spontaneous settlements near project facilities, in the rural villages, Tshipise Town and surrounding areas**

- Aspect: Demographic and Population Related Aspects
- Impact: S4: Influx of people and the development of spontaneous settlements near project facilities, in the rural villages, Tshipise town and surrounding areas
- Nature: Negative
- Activity generating this impact: Mine Construction and Operation
- Description of Impact Assessment pre-mitigation
  - Apart from workers themselves and their families or dependents, a large number of job-seekers and other people may come to the project area in search of work and other related opportunities (petty trade, commercial sex, etc.), as unemployment is high in the Municipal areas as a whole, and mining jobs are usually expected to be better paid than others. While this influx has been noted to increase pressure on social services such as water supply, sanitation, existing housing, and the limited infrastructure that is already present in the area, the development of spontaneous unplanned settlements, which create tensions between in-migrants and existing communities (as a result of competition for existing resources and opportunities), and brings about increased health problems and sexually transmitted diseases cannot be underestimated. All properties not secured or actively operated in the area may be easy targets, thus opening a door for the construction of informal houses due to the development of the Generaal Project and other surrounding mines in the area. It is anticipated that influx and opportunistic settlement will occur during the construction and the early operational phases of the mine when demand for unskilled local labour is at its highest.

- **Impact Rating:**

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Construction	Local	Likely	Major	High Risk	Moderate Significance	Moderate Risk	Low Significance

- **Mitigation / Optimisation Measures:**

- Develop a Community Development Plan with the existing stakeholder structures which addresses issues relating to provision of housing for the workforce through on-going communication and engagement between the mine and local authorities for implementation of this plan.
- Develop and adoption of an Influx Management Plan in consultation with the local government that outlines proactive management measures to discourage and manage influx, outlines and refines relevant stakeholders and their roles and responsibilities and the way in which each role-player intends to manage influx and spontaneous settlements.
- Support the compilation of a development master plan, in cooperation with relevant local and regional authorities for the Musina and Makhado areas, whereby new development areas for workers' and new arrivals' accommodation will be catered for and duly planned
- Support local government capacity for integrated development planning.
- Develop and communicate a clear and concise employment and recruitment policy to prevent opportunistic job seekers from settling in the area.
- Continuous assessment and monitoring of infrastructure and services capacity in focal points (assessment every 5 years)
- Determine scale of assistance required at focal points and enter into an agreement with the municipality
- Establish a development, infrastructure and service monitoring forum with local stakeholder structures and the municipality to continuously assess and monitor capacity, determine assistance required and oversee implementation

- **Description of Impact Assessment post-mitigation**

- This impact can be mitigated by ensuring that an agreement is reached among the company, local stakeholder structures and the Local Municipality to develop an influx management programme that would seek to address the following:
  - *Develop a framework and reference document to ensure harmonious development of urban areas.*
  - *To assist local government with developing management plans required to address the impacts of influx on existing social services;*
  - *To develop an infrastructure and facilities investment program to upgrade and equip the town in response to population growth.*

- **Cumulative Impact**

- Broader development in the region is likely to compound problems around influx and the Municipality's ability to provide housing in the area. The implementation of joint influx

management between MbeuYashu and the Local Municipalities in the area is recommended. The timing for the construction and operational phases of the other mines is not finalised at this point, it is difficult to assess what the cumulative impact could be.

### 1.1.5 Impact DP5: Conflicts arising at the end of construction due to the termination of job opportunities for contractors

- Aspect: Demographic and Population Related Aspects
- Impact: S5: Conflicts arising at the end of construction due to the termination of job opportunities for contractors
- Nature: Negative
- Activity generating this impact: Mine Construction
- Description of Impact Assessment pre-mitigation
  - Even if pro-actively managed during the construction phase, experience elsewhere indicates that labour conflicts are difficult to avoid at the end of a construction period, when numerous work contracts are terminated. The main reasons for these labour conflicts usually include the following:
    - *Poor understanding by the workers of the terms and conditions of their work contracts, and/or of the provisions of the Labour Code;*
    - *Poor human resources policies and implementation thereof, with failure of the employer to pro-actively explain termination provisions;*
    - *Non-compliance with Labour Code or work contract provisions by employers (including contractors and the whole chain of subcontractors), and failure to provide legally agreed packages or to provide sufficient notice of termination;*
    - *Poor workers' organization, coupled with failure or inability of unions to fulfil their negotiation and conflict resolution missions; and*
    - *Manipulation of workers by dishonest individuals seeking to cause conflict in the anticipation that they may benefit from the situation and its eventual resolution.*
  - Work conflict may not only result in legal action against the companies forming part of the project, but also in strikes and other undesirable consequences, including local civil unrest. It has the potential to be most damaging to community relations, notwithstanding efforts made in other areas to engage and establish a proper long-term relationship with neighbouring and land claimant communities. No community relations program can be successful if labour relations are not appropriately managed.
- Impact Rating:

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Construction	Local	Likely	Major	High Risk	Moderate Significance	Moderate Risk	Low Significance

- Mitigation / Optimisation Measures:
  - Investigate the possibility of transferring labour from one operation to another – depending on the phasing of the projects
  - Develop the MbeuYashu grievance procedure to capture and address grievances arising due to retrenchments and downscaling.

- Ensure compliance with all applicable Labour Regulations of South Africa
- Consider compliance with Best Practice , i.e. IFC's Performance Standard 2 "Labour and Working Conditions"
- Monitoring of all contractors and sub-contractors for compliance with the above standards, with contractually-established financial sanctions for observed non-compliances
- Communicate the termination conditions to the communication structure established
- Communicate the termination conditions to all employees – including contractors and sub-contractors
- Description of Impact Assessment post-mitigation
  - This impact can be better managed if the labour from one construction phase can be transferred to another, if at all possible. While there might not be many new job opportunities for new people, continued employment of those who were supposed to be retrenched would reduce the negative impacts associated with retrenchments.
- Cumulative impacts
  - Having noted that there are other mines which could potentially follow or run concurrently with the Generaal Project, it is possible that the end of construction periods might coincide with the Generaal Project construction end, thus compounding the impact. The timing for the construction and operational phases of the other mines is not finalised at this point, it is difficult to assess what the cumulative impact could be.

## 1.2 Health and Social Wellbeing Aspects

### 1.2.1 Impact HSW1: Increased chances of the spread of communicable diseases<sup>1</sup> such as HIV/AIDS and STDs linked to influx of predominantly male job-seekers and workers

Aspect: Health and Social Wellbeing Aspects

- Impact: S7: Increased chances of the spread of communicable diseases such as HIV/AIDS and STDs linked to influx of predominantly male job-seekers and workers
- Activity generating this impact: Mine Construction and Operation
- Description of Impact Assessment pre-mitigation
  - With a development of this nature and magnitude, there are always concerns that HIV/AIDS might become a greater problem in the future particularly due to the influx of single males and construction workers into the area that already has high HIV/AIDS prevalence rates. This would be further increased by the significant disposable income among construction workers which could encourage transactional and commercial sex work in the area.
  - Increase of the following potential diseases: HIV/AIDS, STDs, Tuberculosis
- Impact Rating:

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
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<sup>1</sup>Health aspects are included from a social perspective and will be expressed in nonmedical terminology.

Life of Project	Regional	Likely	Major	High Risk	Moderate Significance	Moderate Risk	Moderate Significance
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- **Mitigation / Optimisation Measures:**
  - Develop a comprehensive HIV/AIDS and STD program to employees through employee wellness programmes which should include prevention, voluntary counselling for HIV testing, as well as anti-retroviral treatment for employees.
  - Develop a Community Health Action Plan which focuses on HIV/AIDS, tuberculosis.
  - Repeated awareness campaigns that is focused beyond employees, and includes contractors and the communities near project facilities
- **Description of Impact Assessment post-mitigation**
  - If an integrated HIV/AIDS programme instituted in the municipal areas it will bring together different role players employing a series of measures to both prevent and deal with the spread of the disease and its consequences. The programme should focus on the co-ordination of local organisations providing health care and welfare services, and emphasises the implementation of education campaigns.
- **Cumulative impacts**
  - Broader development in the region is likely to compound problems around influx and the potential increases in communicable diseases. The implementation of joint influx management between MbeuYashu and the municipalities is recommended in order to jointly address this impact. The timing for the construction and operational phases of the other mines is not finalised at this point, it is difficult to assess what the cumulative impact could be.

### 1.2.2 Impact HSW2: Safety and Risk Exposure through an increase in crime

- Aspect: Health and Social Wellbeing Aspects
- Impact HSW2: Safety and Risk Exposure through an increase in crime
- Nature: Negative
- Activity generating this impact: Mine Construction and Operation
- **Description of Impact Assessment pre-mitigation**
  - A central change processes associated with the construction and development process of a development such as the Generaal Project is the presence of contracting firms and construction workers, usually accommodated in workforce accommodation camps. This may include workers as well as opportunists and burglars/robbers posing as construction workers. The bigger the project, the more opportunity, the more people involved, could result in a crime increase.
  - It is anticipated that the area would be exposed to safety and risk aspects due to the influx of strangers entering the local communities. Stakeholders noted their concern about the potential increase in crime in the area if construction workers accessing private property. Concerns regarding access to properties and the regulation thereof have also been noted.
  - Crimes linked with large and/or mining development include:
    - *Local sex workers and prostitution*
    - *Substance (drugs, alcohol) abuse*

- *Opportunistic theft*
- *Vandalism*
- *Burglary and/or armed robbery*

- **Impact Rating**

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of Project	District	Possible	Major	Moderate Risk	Low Significance	Low Risk	Low Significance

- **Mitigation / Optimization Measures**

- Increased security on mine premises
- Construction and permanent workers are identified and marked with clear identifiable clothing
- Code of Conduct to form part of induction of new workers with a clear statement and procedure regarding access, conduct and identification. All construction workers should wear clothing marked (and reflective vests) with the logo of the construction firm/contractor or sub-contractor as well as identification cards that cannot be easily forged, so that they can be easily recognized as being legitimate.
- Workers to be screened including criminal background checks.
- Properly constructed and secured fences can control access to construction sites. Implementing strict access control of the project site and specifically the contractor's workforce camp.
- Workers should be urged to recognize and report suspicious activity and signs of burglary and be informed of crime prevention measures that they themselves can take.
- Employment of local people on the mine to improve the poverty levels in the host and neighbouring communities
- CoAL to liaise with existing community policing forums and project security to properly secure the project area and surrounding area
- Investigate the implementation of an anti-poaching unit in collaboration with local stakeholders, policing forums and police

- **Description of Impact Assessment post-mitigation**

- If the implementation measures are implemented, and especially if collaboration can be established with local landowners, these impacts can be mitigated to a low risk.

- **Cumulative Impact**

- If further developments take place in the vicinity of Generaal Project, the anticipated impacts will be intensified, should construction of these developments and the construction of the Generaal Project occur concurrently.

### 1.2.3 Impact HSW 3: Safety and Risk Exposure due to an increase in poaching on neighbouring game farming properties

- Aspect: Health and Social Wellbeing Aspects
- Impact HSW3: Safety and Risk Exposure due to an increase in poaching on neighbouring game farming properties
- Nature: Negative



- Activity generating this impact: Mine Construction and Operation
- Description of Impact Assessment pre-mitigation
  - The construction and development process of the Generaal Project may create an increase in poaching activities in the adjacent areas due to an influx of job seekers, contracting firms and construction workers.
  - Poaching is the illegal taking of wild plants or animals contrary to local and international conservation and wildlife management laws. Violations of hunting laws and regulations are normally punishable by law and, collectively, such violations are known as poaching. Poaching is in effect the illegal “hunting” of fauna and flora. Poaching can generally be divided into three different classes: Subsistence, Commercial and Syndicated. All poaching levels are as equally critical, as they are often interlinked and intelligence passes through all three levels.
  - Poaching is already present in the development area, and is further worsened by the lack of police capacity and Provincial Nature Conservation to assist in managing and/or mitigating the situation. A mine development may increase the occurrence and spatial spread of poaching and theft of game/livestock.

- Impact Rating

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of Project	Local	Possible	Major	Moderate Risk	Low Significance	Low Risk	Low Significance

- Mitigation / Optimization Measures

- Establishment of an anti-poaching unit available to adjacent land owners, and establishing a security forum in collaboration with these land owners. Land owners are to be actively involved in the selection of the contracting company employed to conduct anti-poaching in the area.
- Increased security measures (fencing, access control and monitoring) on mine premises. Properly constructed and secured fences can control access to construction sites. Implementing strict access control of the project site and the contractor’s workforce camp. Curfew times to be established in on site workforce accommodation areas. Construction workers accommodated on mine are identified and marked with clear identifiable clothing
- Code of Conduct to form part of induction of new workers with a clear statement and procedure regarding access, conduct and identification. All construction workers should wear clothing marked (and reflective vests) with the logo of the construction firm/contractor or sub-contractor as well as identification cards that cannot be easily forged, so that they can be easily recognized as being legitimate.
- Workers to be screened including criminal background checks.
- Employment of local people on the mine to improve the poverty levels in the local communities

- Description of Impact Assessment post-mitigation

- If the implementation measures are implemented, and especially if collaboration can be established with local landowners, these impacts can be mitigated to a low risk.

- Cumulative Impact
  - If further developments take place in the vicinity of Generaal Project, the anticipated impacts will be intensified, should construction of these developments and the construction of the Generaal Project occur concurrently.

## 1.3 Quality of Life Aspects

### 1.3.1 Impact QL1: Change in “sense of place”

- Aspect: Quality of Life Aspects
- Impact: QL1: Change in “sense of place”
- Activity generating this impact: Mine Construction and Operation
- Description of Impact Assessment pre-mitigation
  - Sense of place is an important consideration before any development, since sprawl development tends to eliminate unique features of the landscape. The notion that places are more than just locations is at the core of ideas about place and sense of place. In its simplest form, sense of place encompasses the idea that each person forms close relationships with the spaces and settings in which he or she interacts. As they work, play, spend time with their families and friends, travel in their neighbourhoods and immediate environments individuals have positive and negative experiences in, and of, places and as a result ascribe meaning to them (Buttimer, 1980; Damer, 1974; Lewis, 1979; Meinig, 1979; Perkins, 1988a, 1988b, 1989; Perkins, Thornsand Newton, 2008; Relph, 1976).
  - Social impacts experienced in the physical environment relates to exposure to dust, noise, risk, odour, vibration, artificial light etc. Community members are concerned about the aesthetic impact of the development on the area. During the construction phase, it is anticipated that there will be a decrease in the quality of the physical environment. Noise levels and traffic in and around the affected communities will increase as result of the construction activities. The extent, magnitude and impact on the physical environment and the nuisances this will create are addressed in various other specialist studies. The impact is mentioned in the social impact assessment report as a linkage to the other specialist reports and mainly caused by:
    - *Noise levels as a result of construction and operation*
    - *Increase in traffic with a disruptive effect and noise*
  - The development will introduce rapid changes in a previously rural municipality. The aggregate impact of these changes might be expressed as a “change in the sense of place”. This sense is of course subjective. The impact described here is a change in sense of place that might leave receptors uncertain about the future (at best) and / or compromised by collective pessimism about that future. Sense of place has a number of characteristics, namely (James, 2001):
    - *It is difficult to quantify and it is abstract.*
    - *It is comprised of natural features, patterns of human settlement and social relationships.*
    - *It is determined by local knowledge.*
    - *It is embodied in folklore, personal narrative and amateur history.*

- Putting up unnatural structures in a natural area will impact on the sense of place. Vistas will be broken and the rural feeling will get lost. The tourism potential of the area must also be taken in consideration, as it strongly relates to the sense of place. Most tourism initiatives are based on the remoteness and uniqueness of the area. An influx of new comers and loss of local culture as result will add to the loss of sense of place, as the cultural uniqueness is another attraction to the area.

- **Impact Rating**

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of Project	Local	Likely	Major	High Risk	Moderate Significance	Moderate Risk	Low Significance

- **Mitigation / Optimization Measures**

- Regular and effective engagement with stakeholders through the SEP.
- An effective grievance management procedure managed within the framework of the SEP. Grievance mechanisms must be in place throughout the life of the mine, including for a determined period post-closure, to address any impact for affected communities.
- Implementation of traffic management measures
- Implementation of insulation and mitigation measures for noise
- Implementation of visual barriers and other mitigation measures as recommended in the visual study
- Colour schemes must complement the local environment.
- Minimising disturbance to vegetated areas outside the critical development areas where possible
- Revegetation/rehabilitation of disturbed sites in parallel with development
- Successful mitigation interventions can reduce the intensity of the impact to at least moderate and ultimately moderate-low levels. If grievances are addressed adequately, and communication and engagement is effective affected communities may be able to adjust more easily to the changes.

- **Description of Impact Assessment post-mitigation**

- The mitigation of physical impacts relating to noise, visual and air quality is extremely important in this area, firm commitment is required to address these impacts and implementation of the mitigation measures are of high importance. Even if these mitigation measures are effective, it is envisaged that there will still be a moderate impact on the sense of place.

- **Cumulative Impact**

- In the event of increased development in the region, the aesthetic environment and sense of place will be further impacted which may render other land use activities that rely on the aesthetic environment such as hunting and tourism non-viable.

### 1.3.2 Impact QL2: Disruption of Social Networks and decrease in Social Capital

- Aspect: Quality of Life Aspects
- Impact QL2: Disruption of Social Networks and decrease in Social Capital
- Nature: Negative
- Activity generating this impact: Mine Construction and Operation
- Description of Impact Assessment pre-mitigation
  - This impact relates to the social interaction of household members with other people in the community. A huge portion of the local community is poor and there is a high unemployment rate. An influx of people with disposable income might lead to an increase in prostitution, which can impact on the HIV and unwanted pregnancy rate in the area. There can be a number of social pathologies like alcohol abuse and disintegration of families.
  - Interference by construction workers/job seekers from elsewhere in local social networks can be considered a change process associated with the proposed Generaal Project development and operational process. Impacts will result if:
    - *locals perceive this interference as adversely affecting the manner which they go about servicing their social networks, including how they relate to each other socially or in pursuit of religious and cultural practices / seek to fulfil their instrumental and/or emotional social support related needs; and*
    - *such interference and perceived impacts result in frustration or anger as well as potential conflict with newcomers.*
  - If present, the above impacts would adversely affect the creation of social capital (a crucial ingredient in producing safe, happy, and productive communities), bearing in mind that social capital derives from a person's membership of groups and institutions and social networks, including religious participation with others. The interference and resulting impacts manifesting would depend on a number of factors, including whether newcomers:
    - *are foreigners or S.A. nationals from elsewhere. As noted previously, research shows that foreigners exist as discrete networks and don't readily assimilate into local communities. If this research is correct, interference and impacts on social networks would therefore be more readily attributable to foreigners/ other SA nationals (newcomers) than locals.*
    - *will be able to secure employment or are already employed by the Generaal Project or contractor(s), thus being able to meet their primary needs, e.g. shelter and food, thus not needing to interfere in existing social networks with the objective to secure instrumental support;*
    - *will be in the area only to secure employment at the proposed Generaal Project (in the case of job-seekers) and leave if they are unsuccessful in doing so. (Construction workers who are part of a stable, permanent contractor workforce are expected to vacate the area following completion of the construction process).*

- **Impact Rating-** Bearing in mind the above uncertainties, but given the importance of social capital for community safety and stability and the role of social networks in this regard, this variable has been rated as follows:

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of Project	Local	Possible	Moderate	Moderate Risk	Low Significance	Low Risk	Low Significance

- **Mitigation / Optimization Measures**
  - Employment of local people already part of the community.
  - Code of conduct to form part of induction for all new workers
  - Grievance Procedure within the local communities
- **Description of Impact Assessment post-mitigation**
  - In the case of the variable ‘disruption of social networks’, mitigation is anticipated to be difficult, but probably more achievable in terms of a stable workforce already employed by, or yet to be employed by the MbeuYashu’s appointed contractor(s). The contractor would be able to put in place certain rules and regulations with the objective to prevent interference in local social networks.
  - Sourcing employees locally and housing those sourced from outside the area in main urban centres will most probably reduce the risk of disrupting social networks
- **Cumulative Impact**
  - If other developments in proximity to the Generaal Project (i.e. Chapudi / Mopane Project) are implemented at the same time, it will be very difficult for the mitigation measures to be effective. A holistic approach to the sourcing and management of the workforce will be required to mitigate the overall risk.

### 1.3.3 Impact QL3: Perceptions of and Feelings in relation to the project

- Aspect: Quality of Life Aspects
- Impact QL3: Perceptions of and Feelings in relation to the project
- Nature: Negative
- Activity generating this impact: Short term, Mine Construction
- **Description of Impact Assessment pre-mitigation**
  - Feelings in relation to the project may result in the formation of interest groups. Proposed projects often generate uncertainty or fear and sometimes the impacts perceived in anticipation of the planned intervention can be greater than the impacts that ultimately result from the intervention. These impacts include uncertainty, annoyance, dissatisfaction due to a failure of the project to deliver promised benefits, and an experience of outrage, for example where a project leads to violation of deeply belief systems or planned development programmes. The concerns raised on this project have been focussed on visual impacts to neighbouring tourism facilities and activities and the disruption of future development of conservation programmes.

- **Impact Rating:**

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Short term	District	Likely	Major	High Risk	Moderate Significance	Moderate Risk	Low Significance

- **Mitigation / Optimization Measures**

- Establish on-going Consultative Forums with concerned groups to air concerns, find possible mitigation measures for their perceived impacts, solutions to co-existence and monitor implementation and effectiveness of mitigation measures
- Continuous communication with all stakeholders providing information on anticipated impacts and planned mitigation measures

- **Description of Impact Assessment post-mitigation**

- The perceptions and feelings towards coal mining in South Africa and internationally are very difficult to change. Current examples from the Mpumalanga coal field influence anticipation of the project development, and gains in terms of environmental management and technology since the start of coal mining in the country is not taken into consideration. The perceived inability of government to regulate damages to the environment further exacerbates this situation. Where stakeholders are convinced that coal mining only have negative impacts, these perceptions will not be easily changed.

- **Cumulative Impact**

- The Soutpansberg area do not having large industrial development, therefore the idea and plan to develop the coal fields in this area creates uncertainty about other land uses. The perception of the effect more than one project will have on the area is a major concern for stakeholders, and a number of requests have been made to Government and MbeuYashu to evaluate the plans on a regional and strategic basis.

## 1.4 Family and Community Aspects

### 1.4.1 Impact FC1: Impacts on land owner and labourers

- Aspect: Family and Community Aspects
- Impact FC1: Impacts on land owner and labourers
- Nature: Negative
- Activity generating this impact: Mine Construction and Operation
- Description of Impact Assessment pre-mitigation:
  - Proposed projects often generate uncertainty or fear and sometimes the impacts perceived in anticipation of the planned intervention can be greater than the impacts that ultimately result from the intervention.
  - The construction process of the Generaal Project will bring about tangible social impacts on the project farm land owners and labourers. Impacts will be located on the properties of the Mount Stuart Section first followed by those properties affected by the Generaal Section.
  - Landowners will be displaced as well the workers currently residing on the property and/or working on the property.

- **Impact Rating**

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Construction	Site specific	Almost Certain	Major	Very High Risk	Moderate Significance	Moderate Risk	Low Significance

- **Mitigation / Optimization Measures**

- Development of a land acquisition and lease policy defining the negotiation process to minimize the feelings of uncertainty
- Financial compensation of affected property owners/tenants, employees and their families in terms of the relevant legislation.
- Displacement of workers and their dependents requires an equitable policy, principles, financial guidelines and clarification of operational approaches.
- Land Acquisition, lease and compensation agreements reached with affected landowners that include arrangements and measures for labour tenants

- **Description of Impact Assessment post-mitigation:**

- Once agreements have been reached that encompass all related risks such as the labour tenants, this risk will reduce substantially

- **Cumulative Impact**

- If future developments are implemented at the same time, available alternative land will decrease. Although land can still be acquired and compensation paid, landowners that prefer to remain in the area will have difficulty to obtain land to purchase that is available and not affected by mine development.

#### 1.4.2 **Impact FC2: Change processes and impacts related to daily movement patterns**

- **Aspect: Family and Community Aspects**

- **Impact FC2: Change processes and impacts related to daily movement patterns**

- **Nature: Negative**

- **Activity generating this impact: Mine Construction and Operation**

- **Description of Impact Assessment pre-mitigation:**

- In terms of impacts on daily movement patterns (construction phase), a number of roads are of particular importance as change process focal points relating to daily population movement
- Change processes would result from construction vehicles accessing, crossing and using roads during construction of the proposed Generaal project. The disruption of daily movement patterns (the impact) on the roads mentioned, as a result of change processes associated with construction, would obtain in the case of: (1) the general population, e.g. individuals on their way to work; parents taking children to school; or people on their way to local towns and beyond; (2) tourists visiting/traversing the area; and (3) businesses taking their products to market or farmers going about their farming activities (intra-farm movement). Impacts would present differentially for these groups, ranging potentially from a mere nuisance factor giving rise to frustration, to more serious ramifications where farming activities are impeded, deadlines play a role or goods are being transported.



- The impacts anticipated include: a) Increase in traffic numbers caused by supplying of goods during construction and operational phases; and b) Increase traffic numbers caused by transport and/or traffic of employees from their place of residence to their place of work.

- **Impact Rating**

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of Project	Local	Likely	Moderate	Moderate Risk	Moderate Significance	Low Risk	Low Significance

- **Mitigation / Optimization Measures**

- Traffic minimized through bus and combi services to transport workers to the project site
- Low speed limits on access roads with public drop-off / pick-up areas as to not disrupt the flow of traffic
- Road crossings should be managed by signing and traffic management measures
- Issues and Grievance Procedure available to local people to report bad driving or rules traversing

- **Description of Impact Assessment post-mitigation:**

- The project description defines that no hauling will take place along existing farm roads or regional / national roads. It is planned that the run-of-mine (ROM) coal will be transported for short distances by truck, on the in-pit haul roads to the crushing and screening facilities. The crushed and screened ROM product will be transported to the coal beneficiation plant at the Infrastructure area via conveyor/haul road. It is further planned that the product will be loaded directly onto trains at the Rail Load-out Terminal which links up with the existing Musina-Makhado railway line.
- Therefore only supplier light-vehicles and employee busses will disrupt movement patterns, these will stabilize once the mine is fully operational

- **Cumulative Impact**

- The existing land use activities are mostly high income tourism and game farm developments considered change processes that can manifest as cumulative impacts when added to the Generaal Project. They are anticipated to intensify daily movement related impacts, should construction of the Generaal Project and other future developments (such as Makhado Colliery) occur concurrently.

### 1.4.3 Impact FC3: Conversion of land use

- Aspect: Family and Community Aspects
- Impact FC3: Conversion of land use
- Nature: Negative
- Activity generating this impact: Mine Construction, Operation and Post Closure
- Description of Impact Assessment pre-mitigation:
  - The surrounding study area has a variety of land uses, which vary from agricultural to conservation and tourism related industries such as game farms, irrigation, commercial activities. The construction of the proposed project is perceived by adjacent landowners to impact on the economic viability of the current land uses in the study area.



- Landowners owning land with high tourism potential, or those with existing hunting activities, will be affected in terms of the aesthetic value of their properties and have potentially negative impacts on the economic viability thereof.
- Change in land use is likely to lead to subsequent social change processes as well as indirect social impacts on adjacent landowners.
- There is a critical need for collaboration between Government, local landowners and stakeholders and MbeuYashu to determine whether co-existence is possible

- **Impact Rating**

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Post Closure	Local	Likely	Major	High Risk	Moderate Significance	Moderate Risk	Low Significance

- **Mitigation / Optimization Measures**

- Acquisition and/or leasing of directly impacted land
- Fair compensation negotiated and agreed with land owners that will lose agricultural land
- Continuous consultation with landowners discussing co-existence and feasibility
- Educate landowners in terms of their rights and responsibilities prior to the construction phase
- Assist landowners in identifying ways to adapt their land uses, to the benefit of both the landowner and MbeuYashu
- Implement a consultation programme with regional stakeholders in the development of a closure plan and rehabilitation programme
- Determine the regional needs and characteristics to ensure post mining use of land enhances the regional characteristics

- **Description of Impact Assessment post-mitigation:**

- Once agreements have been reached that encompass all related aspects this risk will reduce substantially

- **Cumulative Impact**

- If future developments are implemented at the same time, available alternative land will decrease. Although land can still be acquired and compensation paid, landowners that prefer to remain in the area will have difficulty to obtain land to purchase that is available and not affected by mine development.

## 1.5 Institutional Aspects

### 1.5.1 Impact I1: Challenge to local government capacity

- Aspect: Institutional Aspects
- Impact I1: Challenge to local government capacity
- Nature: Negative
- Activity generating this impact: Mine Construction and Operation
- Description of Impact Assessment pre-mitigation:
  - In order for the Generaal Project to contribute meaningfully towards the development of infrastructure in the area and the region, it will depend on the contributions by local and provincial government initiatives, as well as other businesses in the area. The Makhado

municipality has expressed concerns about its institutional capacity for planning and providing additional services and facilities in an area experiencing rapid growth.

- **Impact Rating**

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Construction	District	Possible	Major	Moderate Risk	Low Significance	Low Risk	Low Significance

- **Mitigation / Optimization Measures**

- Intensive engagement between MbeuYashu / CoAL and the municipality well in advance of construction. In this context the responsibilities of local government should be well understood, and potential problems defined and addressed as early as possible.
- Establishment of a limited and time-bound municipal support function. MbeuYashu / CoAL should contribute funding and appropriate technical resources. The participation of other major mines and industries in the area should be promoted by both MbeuYashu / CoAL and the local municipality.

- **Description of Impact Assessment post-mitigation**

- It is noted that although the tax base for the municipality will increase, the resources to develop the capacity will lag behind the pressure on existing resources.

- **Cumulative Impact**

- While similar infrastructure development initiatives by other major developments in the region will enhance the social benefits, the Local Municipalities will experience more pressure to perform and facilitate infrastructure development in the area. Joint planning has the potential to optimise the benefits.

## 1.5.2 Impact I2: Participation and Consultation in process

- **Aspect: Institutional Aspects**

- **Impact I2: Participation and Consultation in Process**

- **Nature: Negative**

- **Activity generating this impact: Life of Project**

- **Description of Impact Assessment pre-mitigation:**

- Interested and affected parties have already experienced an impact due to the Mining Right Application process, Environmental Impact Assessment and Management Plan. The I&APs need to give up their time to attend meetings and in some cases travel long distances on own cost to participate in meetings.

- **Impact Rating**

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Short term	Regional	Possible	Moderate	Moderate Risk	Low Significance	Low Risk	Low Significance

- **Mitigation / Optimization Measures**

- Provide transport and/or reimbursement to the Historical Disadvantaged Communities
- During the Operational phase, the structures established for participation should have a proper constitution that addresses reimbursement of costs
- Arrangement of meetings in proximity to the mine or in affected communities to minimize

the distance of directly affected parties to travel

- Cluster meetings together on the same day or over 2 days to minimize disruption of personal schedules
- Description of Impact Assessment post-mitigation
  - If the mitigation measures are implemented, this risk especially evident during the planning phases could be reduced to a low risk
- Cumulative Impact
  - An increase in new applications for further developments places a higher demand on stakeholder's time and effort to attend to all aspects. Developments and applications should as far as possible be combined to decrease the number of required sessions to be held

### 1.5.3 Impact I3: Impact equity

- Aspect: Institutional Aspects
- Impact I3: Impact Equity
- Nature: Negative
- Activity generating this impact: Life of Project
- Description of Impact Assessment pre-mitigation:
  - Impact equity is related to the fairness of the distribution of impacts across the community. It must be ensured that the people who will benefit from the development must also share in carrying the costs.
  - The project will lead to gain on a regional level, whereas, the local people who will be impacted on, will not necessarily benefit in terms of employment opportunities.
- Impact Rating

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of Project	District	Likely	Major	High Risk	Moderate Significance	Moderate Risk	Low Significance

- Mitigation / Optimization Measures
  - Tax and Profit benefits must be ploughed back into the Local Municipal areas and immediate communities
  - Employment should be prioritized to local communities
  - Local beneficiation programmes to be investigated and implemented
- Description of Impact Assessment post-mitigation
  - The project will have a regional negative impact and local positive impact. Negative impacts will be mitigated by specific programmes minimizing the effects locally.
- Cumulative Impact
  - The larger the overall development the larger the local impact, but at the same time the national / provincial / regional benefit.
  - Special care must be given to an holistic strategy of project scheduling and staggering development programmes to ensure the local impact is minimize but still attaining the national/provincial/regional benefit

## 1.6 Socio-economic Aspects

### 1.6.1 Impact E1: Increase in South African GDP and Trade Balance

- Aspect: Economic
- Impact: Increase in South African GDP and Trade Balance
- Nature: Positive
- Activity generating this impact: Mine construction and operation
- Description of Impact Assessment pre-mitigation / optimisation:
  - Mining requires high capital investment and creates significant downstream business opportunities, resulting in an increase in general economic activity and GDP. By procuring goods and services from other businesses and increasing the purchasing power of the workforce in an area, investment creates an amplified downstream effect through indirect and induced spending, which increases overall economic value by a factor of the original investment.

- Impact Rating

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of Project	National	Likely	Major	Positive High	Moderate Significance	Positive Very High	High Significance

- Mitigation / Optimisation Measures:
  - Procure goods and services from South African suppliers as far as possible.
  - Procure ancillary services for goods procured abroad, such as installation, customisation and maintenance, from South African companies as far as possible.
- Description of Impact Assessment post-mitigation / optimisation
  - The benefit resulting from an increase in GDP may be enhanced further by procuring as much labour and equipment as possible within South Africa. However, as technical requirements and local capacity limit procurement options, MbeuYashu's scope to expand the project's contribution to GDP is considered limited. The benefit thus remains of high (positive) significance post mitigation.
- Cumulative Impact
  - Several new coal mines are proposed in the area, which, if executed, will result in a significant contribution to GDP. The overall impact on GDP will depend on the precise capital expenditure and revenue streams of the mines and the phasing of mine construction and operations. A cumulative long term impact and rating can be determined during the regional assessment in the Feasibility Phase of the project.

### 1.6.2 Impact E2: Increase in provincial and local GDP

- Aspect: Economic
- Impact: Increase in provincial and local GGP
- Nature: Positive
- Activity generating this impact: Mine construction and operation

- Description of Impact Assessment pre-mitigation / optimisation:
  - The predominant land uses in the region is agriculture, game farming and eco-tourism, although mining do contribute to the regional GGP.
  - Industries in Limpopo likely to benefit most from spending associated with the mine are:
    - *Construction, retail and wholesale trade, transport and communications, business services and community and personal services during the construction phase; and*
    - *Retail and wholesale trade, transport and communications and food products during the operation phase.*

- Impact Rating

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of Project	Provincial	Likely	Major	Positive High	Moderate Significance	Positive Very High	High Significance

- Mitigation / Optimisation Measures:
  - Procure goods and services from local or provincial suppliers as far as possible.
  - Procure ancillary services for goods purchased from outside of the Limpopo Province, such as installation, customisation and maintenance, from local or provincial companies as far as possible.
- Description of Impact Assessment post-mitigation / optimisation
  - These contributions to provincial GDP must be offset against potential losses in local GDP due to the impact of mining on existing businesses. However, contribution by the mine to provincial GDP is expected to remain significant.
- Cumulative Impact
  - Several new coal mines are proposed in the area, which will also include improvements of infrastructure, such as roads, and water supply to the area, some of which might be available to other non-mining businesses. If executed, the development of mines across the region will result in a significant contribution to GDP and stimulus of general economic activity. The overall impact on GDP will depend on the precise capital expenditure and revenue structures of the mines and the timing of mine construction and operations. A cumulative long term impact and rating can be determined during the regional assessment in the Feasibility Phase of the project.

### 1.6.3 Impact E3: Increase in government revenue

- Aspect: Economic
- Impact: Increase in government revenue
- Nature: Positive
- Activity generating this impact: Payment of taxes on profits, wages, exports, imports
- Description of Impact Assessment pre-mitigation / optimisation
  - The South African state receives revenue from taxation of mining profits, royalties, import and export duties and taxes on wages. Locally taxes are paid for property tax and service charges.

- **Impact Rating**

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of Project	National	Likely	Major	Positive High	Moderate Significance		

- **Mitigation / Optimisation Measures:**

- None

- **Description of Impact Assessment post-mitigation / optimisation:**

- No effective optimisation of this benefit is possible

- **Cumulative Impact**

- The commissioning of other planned mines in the area is likely to create an overall significant increase in government revenue from taxation of mining profits, royalties, import and export duties and taxes on wages. A cumulative long term impact and rating can be determined during the regional assessment in the Feasibility Phase of the project.

#### 1.6.4 Impact E4: Increase in employment, income and skills development

- **Aspect: Economic**

- **Impact: Increase in employment, income and skills development \**

- **Nature: Positive**

- **Activity generating this impact: Employment for mining construction and operation**

- **Description of Impact Assessment pre-mitigation / optimisation**

- Employment provides many socio-economic benefits to employees and their dependants, including improved material wealth and standard of living, enhanced potential to invest and improved access to social services such as education, health services, etc.
- During the construction phase, the mine will create or sustain direct employment for the construction workforce and indirect employment at the companies contracted to supply equipment and services. Much of the equipment is likely to be sourced outside of Limpopo or abroad, and most benefits related to procurement are likely to accrue outside of the local area. Local employees and companies are likely to be tasked with direct construction and ancillary services such as security. The number of construction workers required for the construction of the project is approximately 2000.
- Approximately 906 workers will be directly employed by the mining operation at steady state, the majority of them semi-skilled. The total number of direct jobs created by the mine during operations at steady state is estimated at 906 (refer to the Macro-Economic Impact Assessment). The proportion of jobs that will accrue to the local and national workforce is not clear at present. It is likely that more workers from outside the region will be employed initially, especially for more skilled positions due to the low skills level of the local population and a potential local deficit of workers if several mining projects start up at the same time. The proportion of local workers is likely to increase over time as more people employed by the project move into the area and/or more local people acquire the necessary skills to obtain employment at the mine.
- Direct salaries and wages for mine employees will not only benefit direct recipients, but



also; a) Contribute to household income, thereby directly benefitting a larger number of people; and b) Create downstream income if the money is used to buy goods and services in the community.

- The project presents an opportunity to develop skills in the workforce and wider community. Skills development improves the future employment prospects of people and the economic development potential of a community in general. MbeuYashu has stated that employment, training and bursaries will be targeted at residents from the local community as far as possible, to improve skills levels. Skills development will be more intense during this stage when a new workforce is employed. In addition, MbeuYashu will pay an annual national skills levy of 2% of labour cost.
- Employment created by the project must be offset against employment lost due to the impact of mining on existing businesses. During the Mount Stuart Section, losses are expected to be limited as mining is only proposed in a small area, although even the prospect of mining can affect existing businesses and employment in the area (see impact E5). The contribution by the mine to employment in the area is expected to exceed the number of jobs lost and to remain significant.
- Competition for jobs between agriculture and mining could be a counter action in this positive impact.

• **Impact Rating:**

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of Project	Regional	Likely	Major	Positive High	Moderate Significance	Positive Very High	Moderate Significance

• **Mitigation / Optimisation Measures:**

- Aim to use local workers as far as possible and formalise this policy in contracts.
- Consider implementing labour-intensive rather than capital-intensive work methods wherever possible.
- Procure resources from local sources wherever possible.
- Establish a database of local people with information on qualifications and skills, utilize this database to develop skills plans and recruit local people.
- Implement early on skills development programmes in the areas where most job opportunities will be created, i.e. operators and drivers
- Include training for general life skills such as financial management and health.
- Implement portable skills development programmes
- Design and implement economic development programmes that will assist people being retrenched in sustaining their livelihoods
- Establish a future forum with representation from the workforce to discuss potential difficulties and solutions
- Implementation of programmes to minimize and mitigate the impact of downscaling and retrenchment
- Implement measures that ensure only agricultural labour that is lost due to mining is taken up in the employment drive and existing workers on neighbouring properties are not poached.

- **Description of Impact Assessment post-mitigation / optimisation:**
  - The benefit resulting from increased employment, income and skills development may be enhanced further by procuring as much labour as possible within South Africa and providing training to local workers. However, MbeuYashu has already committed to a skills development plan that forms part of the Social and Labour Plan.
- **Cumulative Impact**
  - Several new coal mines are proposed in the area, which, if executed, will result in a significant increase in employment, income and skills development in the local area, albeit in the context of increasing in-migration to the area. The net effect of the mining developments on local (un)employment, given that there may be a larger worker pool, cannot be predicted at this stage. Depending on the approval and timing of new mine establishments, operations may compete for better skilled or more experienced workers in the area. The development of numerous coal mines in the area will also affect more of the existing businesses and hence existing employment in the area, which must be offset against newly created employment. A cumulative long term impact and rating can be determined during the regional assessment in the Feasibility Phase of the project.

### **1.6.5 Impact E5: Impact on existing businesses in surrounding areas**

- **Aspect:** Economic
- **Impact:** Impact on existing businesses in surrounding areas
- **Nature:** Negative
- **Activity generating this impact:** Conversion of land and sense of place
- **Description of Impact Assessment pre-mitigation / optimisation**
  - Land use in the vicinity of the proposed Generaal Project is dominated by game farming, with some livestock farming and very limited agriculture. Many animals are killed for biltong, though some farms are stocked with trophy and other game species and cater for local and overseas trophy hunters and ecotourism. Even farms not engaging directly in tourism activities are often integrated into the industry as they breed game or allow hunting by guests of other farms.
  - The game industry is in a very robust growth phase and generates considerable value and (often part-time) employment opportunities (Conningarth Economists, 2013). The game industry aims to provide guests with an African Bushveld experience and hence depends on a general sense of wilderness, which is profoundly altered by visual, noise or air quality impacts of mining in the vicinity. Visual impacts from lighting at night are of particular concern in this regard and will be widely experienced in the surrounding area. Guest numbers on game farms may drop as a result.
  - Even the prospect of mining will already affect businesses in the area, by making owners hesitant to invest in businesses in the face of considerable uncertainty regarding the future of the area. Workers might choose to leave the industry at this stage in anticipation of future changes.
  - Cattle farming generally employ far fewer people and generate less income than game farming. Cattle farming are not considered sensitive to mining activities in adjacent areas,



provided pollution does not affect production. Demand for beef due to a larger and wealthier population might increase.

- The adjacent properties might be particularly affected by visual, noise or air quality impacts as they are surrounded by or share several borders with the proposed mine.
- Due to the proposed phasing of the Generaal Project, those properties affected by the Mount Stuart Section as well as their adjacent properties are most likely to be affected first. The Generaal Section and properties affected with this phasing of the development as well as neighbouring properties will be affected much later in the life of mine
- The impact of mining on surrounding activities, particularly on the game farming industry, is assessed to be of high (negative) risk.

• **Impact Rating:**

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of mine	Local	Likely	Major	High Risk	Moderate Significance	Moderate Risk	Low Significance

• **Mitigation / Optimisation Measures:**

- Devise a compensation plan and policy for direct impacts of mining on adjacent farms, such as loss or pollution of land.
- Screen mining activities from the adjacent farms and the main access road to minimize the impact on the general sense of place and tourists.
- Identification of employees that may lose their employment and enrol in skills programme

• **Description of Impact Assessment post-mitigation / optimisation:**

- The impact of mining on existing activities in surrounding areas may be reduced by effectively screening mining activities from farms that accommodate tourism operations and compensating affected landowners for direct impacts on their land. If mitigation measures are effectively implemented, the impact of mining on surrounding activities, particularly in the game farming industry, is assessed to be of medium risk.

• **Cumulative Impact**

- Several new coal mines are proposed in the area, which, if executed, will result in large-scale conversion of land use and transformation of sense of place in the area. These will likely result in the closure of businesses in the vicinity, especially those based on tourism. The establishment of several new mines also increases the perimeter of the total mining area and therefore the number of properties that are affected. Furthermore, development of surrounding areas for mining is likely to render mitigation from one mine ineffective in mitigating impacts of that mine on adjacent businesses, as the business will be exposed to additional impacts from other mines. The cumulative impact will largely depend on the approval, timing and final layout of new mines. In some cases it may be economically beneficial to affected, adjacent farm owners if their farms are included in other mining projects, if owners cannot continue with their existing businesses but have also not been bought out. In these instances, cumulative impacts may present a benefit to individual owners.

### 1.6.6 Impact E6: Change in property values

- Aspect: Economic
- Impact: Change in property values
- Nature: Negative
- Activity generating this impact: Conversion of land and sense of place
- Description of Impact Assessment pre-mitigation / optimisation
  - Property value reflects the desirability of and demand for a certain property. These aspects in turn are influenced by the potential activities that can be undertaken on the property and its location. To date, properties in the area are likely to be valued in relation to their potential for game farming and other forms of agriculture, as there is little scope to undertake other types of activities (e.g. residential development).
  - Mining, particularly large-scale surface mining restricts the type of activities that can be undertaken in adjacent areas due to visual, noise and air pollution impacts. Mining is not particularly compatible with the currently predominant land use of game farming without specific interventions being implemented. Other forms of agriculture that are not reliant on tourism are more compatible with mining in adjacent areas, but also tend to be less profitable than game farming. As such, the value of properties adjacent to and directly impacted by operations at the proposed mine is likely to decrease.
  - Although mining will commence on a small area at the Mount Stuart Section, properties adjacent to the whole mine area are likely to be affected. The impact is likely to be most pronounced at the beginning of the project, when the possibility of future mining is priced into the value of surrounding properties.
  - Notwithstanding the above, mine employment will result in increased demand for accommodation and increased disposable income in the region. These may present new opportunities for the establishment of guesthouses and other amenities and facilities in the vicinity of the mine to serve the mining workforce and increase the price of properties strategically located for such purposes.
  - The impact of mining on surrounding property values is thus potentially ambivalent. As the appreciation of property prices due to the establishment of new businesses serving the mine workforce is highly uncertain at present, the overall impact on property values in the surrounding area is assessed to be of high-moderate risk.
- Impact Rating:

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of mine	Local	Likely	Major	High Risk	Moderate Significance	Moderate Risk	Low Significance

- Mitigation / Optimisation Measures:
  - Attempt to minimize impacts through implementation of mitigation strategies focusing on aspects that may affect tourism characteristics including traffic, noise, and visual aspects such as screening mining activities from the adjacent farms and the main access road to minimize the impact on the general sense of place.
  - Establish a baseline of property values by conducting baseline valuations on

- representative properties and providing such to landowners, thereafter conducting monitoring valuations in periods of 5 years or as may be agreed with landowners
- Establish a communication channel with direct adjacent land owners to address impacts and grievances
- Adopting principles of good corporate citizenship focused on conservation of natural resources such as water, biodiversity, etc. Inclusion of these principles and actions into information disseminated in the local area (“how mining can be done differently”)
- Description of Impact Assessment post-mitigation / optimisation
  - The impact of mining on property values in surrounding areas may be partially reduced by effectively screening mining activities from surrounding areas. However, residual impacts and a general change in the sense of place will remain. The impact of mining on surrounding activities post-mitigation is assessed to remain of moderate risk.
- Cumulative Impact
  - Several new coal mines are proposed in the area, which, if executed, will result in an increase in the size and wealth of the local population, as well as better access to the area. With higher total disposable income in the area, demand for properties may increase and the value of properties not directly affected by the mines may increase over time, presenting a potential benefit for those property owners.
  - The establishment of several new mines will impact the property values of a larger number of farms, as the periphery of the total mining area increases and the number of farms located between but not in mining areas increases. Values of those farms are expected to be most affected. Development of surrounding areas for mining is likely to render mitigation from one mine ineffective in mitigating impacts on adjacent properties.
  - The cumulative impact will largely depend on the approval, timing and final layout of new mines. A cumulative long term impact and rating can be determined during the regional assessment in the Feasibility Phase of the project.

### **1.6.7 Impact E7: Decrease of visitors, tourists and hunting parties**

- Aspect: Economic
- Impact: Decrease of visitors, tourists and hunting parties
- Nature: Negative
- Activity generating this impact: Conversion of land and sense of place
- Description of Impact Assessment pre-mitigation / optimisation
  - The development in a different economic sector (mining) than the current prevalent activities and land uses in the area may have an impact on the residents, tourists and hunting parties coming to the area. This impact could be caused as a secondary impact to the loss of sense of place (dealt with under Quality of Living Environment).
  - During the construction phase, the disruption of daily movement patterns and the nuisances this causes will impact on the sense of place and therefore have an impact on visitors, tourists and hunting parties to the area.
  - During the operational phase, it is expected that there may be a decrease in tourists, visitors, hunting parties as well as those wishing to settle in the area permanently. The proposed project is expected to play an important role in the economic growth of the area. This

growth however will most probably not build on the existing tourism orientated characteristics of the area. Whilst potentially being a negative impact, it is anticipated that there would be more demographic diversity among visitors or those planning to settle in the area.

- **Impact Rating:**

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of mine	Local	Likely	Major	High Risk	Moderate Significance	Moderate Risk	Low Significance

- **Mitigation / Optimisation Measures:**

- Attempt to minimize impacts through implementation of mitigation strategies focusing on aspects that may affect tourism characteristics including traffic, noise, and visual aspects such as screening mining activities from the adjacent farms and the main access road to minimize the impact on the general sense of place.
- Collaborate with local stakeholders in terms of regional planning to ensure certain areas are protected for tourism and hunting activities.
- Adopting principles of good corporate citizenship focused on conservation of natural resources such as water, biodiversity, etc. Inclusion of these principles and actions into information disseminated in the local area (“how mining can be done differently”)

- **Description of Impact Assessment post-mitigation / optimisation**

- The impact of mining on tourism and hunting visitors in the project and surrounding areas may be partially reduced by effectively screening mining activities from surrounding areas. However, residual impacts and a general change in the sense of place will remain. The impact of mining on surrounding activities post-mitigation is assessed to remain of moderate risk.

- **Cumulative Impact**

- Additional development initiatives in the area in the mining sector may have a cumulative impact that will adversely affect the tourism and hunting industry as whole in the area. Regional development planning with a focus on determining sensitivities and priority areas for development versus no development should be developed in partnership with government and local stakeholders.

### 1.6.8 Impact E8: Equity Participation of the Local Communities

- Aspect: Economic
- Impact: Equity Participation of the Local Communities
- Nature: Positive
- Activity generating this impact: Mine Operation
- Description of Impact Assessment pre-mitigation / optimisation
  - Equity – a share of ownership in the project, and subsequent share of dividends paid to shareholders, in return for financial payments, or in recognition of the value of support from the local communities or the rights which the group has over the local resources. The

principal benefits of an equity share are that the shareholder will have a direct share of the profits from the project and hold some degree of ownership in the company or project.

- MbeuYashu has made a commitment to ensure participation of the local communities in equity / shareholding in the project.

- **Impact Rating:**

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of mine	Local	Likely	Moderate	Moderate Positive	Moderate Significance	High Positive	Moderate Significance

- **Mitigation / Optimisation Measures:**

- Ensure communities are fully involved and properly represented in the structures
- Ensure capacity is built at an early stage for communities to understand how equity and dividends work
- Place protective measures in place that will shield the communities from any business risk or liabilities

- **Description of Impact Assessment post-mitigation / optimisation**

- The implementation of local community equity is not seen in many mining developments and are a positive step towards closing the gap between the super-rich and the poor

- **Cumulative Impact**

- If the same approach is followed for all mining development in the region, it will optimise the positive impact in the region

### 1.6.9 Impact E9: Participation of local business in procurement opportunities

- **Aspect: Economic**

- **Impact: Participation of Local business in Procurement opportunities**

- **Nature: Positive**

- **Activity generating this impact: Mine Construction and Operation**

- **Description of Impact Assessment pre-mitigation / optimisation**

- CoAL has committed that local communities will be provided with opportunities and capacity to participate in contracts that would become available during construction and operational phase of the proposed Generaal project.
- Enterprise development and local procurement need to be implemented in line with a good practical policy with set targets to increase local involvement with time.

- **Impact Rating:**

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of mine	Local	Likely	Moderate	High Positive	Moderate Significance		

- **Mitigation / Optimisation Measures:**

- Ensure communities are fully involved and understand the local procurement policy and procedure
- Ensure capacity is built at an early stage through enterprise development to enable local business to participate in opportunities
- Identify local only opportunities that is reserved for local business

- Description of Impact Assessment post-mitigation / optimisation
  - The implementation of local procurement opportunities and enterprise development programmes will stimulate local economic growth
- Cumulative Impact
  - If the same approach is followed for all mining development in the region, it will optimise the positive impact in the region

#### 1.6.10 Impact E10: Decline in South African GDP and Trade Balance at Decommissioning

- Aspect: Economic
- Impact: Decline in South African GDP and Trade Balance
- Nature: Negative
- Activity generating this impact: Mine closure
- Description of Impact Assessment pre-mitigation / optimisation
  - Limited and short-term economic activity will be generated during the decommissioning phase, related to decommissioning of mine structures and rehabilitation. Production will have ceased and the workforce reduced significantly to a skeleton decommissioning workforce. Economic activity is thus expected to decline significantly during decommissioning relative to the previous production phases, and cease entirely during closure.
  - The negative economic consequence of decommissioning and closure is expected to be limited on the South African economy, as other projects are likely to mitigate the impact in the national context. The impact of project decommissioning and closure on national GDP at the time is thus expected to be of moderate (negative) risk and significance. It must be noted, however, that the confidence in the impact assessment is relatively low as conditions prevailing at the time cannot be predicted with any certainty.
- Impact Rating:

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Mine Closure	National	Likely	Moderate	Moderate Risk	Moderate Significance	Low Risk	Moderate Significance

- Mitigation / Optimisation Measures:
  - None
- Description of Impact Assessment post-mitigation / optimisation
  - The impact on the national economy cannot be meaningfully mitigated.
- Cumulative Impact
  - Several new coal mines are proposed in the area, which, if executed, will result in a significant contribution to GDP. The overall impact on GDP and of decommissioning will depend on the timing of other mine operations. The impact will be cumulative and more pronounced if other mines decommission at the same time. Should mines close at different times, this could mitigate the impact of individual mine closures.

### 1.6.11 Impact E11: Decline in provincial and local GDP at decommissioning

- Aspect: Economic
- Impact: Decline in provincial and local GDP
- Nature: Negative
- Activity generating this impact: Mine closure
- Description of Impact Assessment pre-mitigation / optimisation
  - Limited and short-term economic activity will be generated during the decommissioning phase. Production will have ceased and the workforce reduced significantly. Economic activity is thus expected to decline significantly during decommissioning relative to the previous production phases and cease entirely during closure.
  - Local towns and businesses are likely to have become highly dependent on mine activities by this time and decommissioning and closure can thus have devastating effects on the local and regional economy. Due to long life-of-mine, the impacts of decommissioning are highly uncertain and will be affected by the:
    - *Actual life of mine, which could be influenced by the: a) Actual mining rate; and b) Future demand for coal, which could change; and*
    - *The interim economic, social and infrastructural development of the region, which will determine the region's resilience to a change in the economic base and ability to take up alternative economic opportunities.*
  - Any negative economic consequence of decommissioning and closure is expected to be higher for the regional and local economy compared to the South African economy, as there are fewer other projects that could mitigate the impact. The impact of project decommissioning and closure on the provincial and local GDP at the time could be of high risk (negative) and moderate significance in the absence of effective mitigation. It must be noted, however, that the confidence in the impact assessment is relatively low as conditions prevailing at the time cannot be predicted with any certainty.

- Impact Rating:

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Mine Closure	Provincial	Likely	Major	High Risk	Moderate Significance	Moderate Risk	Moderate Significance

- Mitigation / Optimisation Measures:
  - Actively promote the development of different economic sectors from an early stage, e.g. through incentivising other industries to locate in the area, providing adequate infrastructure and promoting an increase and diversity of skills in the local population.
  - Actively engage with a range of stakeholders throughout the life-of-mine to discuss potential consequences of mine closure and possible mitigation.
  - Incorporate measures to retrain workers in the Social and Labour Plan.
- Description of Impact Assessment post-mitigation / optimisation
  - To effectively mitigate the impact of decommissioning and closure, diversification of the local and regional economic base must be maintained and promoted throughout the life of mine to allow other sectors to compensate for the loss of economic activity from mining. The establishment of a local Development Forum as a potential vehicle for the creation and



implementation of such policies and projects. Measures to retrain the workforce should also be incorporated in the Social and Labour Plan.

- With effective mitigation the impact from decommissioning and closure will be less significant. The impact is assessed to be of moderate risk (negative) and moderate significance post mitigation.

- **Cumulative Impact**

- Several new coal mines are proposed in the area, which, if executed, will result in a significant contribution to GDP and stimulus of general economic activity. The overall impact on GDP and of decommissioning will depend on the timing of other mine operations. The impact will be intensified if other mines decommission at the same time. Should mines close at different times, this could mitigate the impact of individual mine closures to some extent.

### 1.6.12 Impact E12: Decline in government revenue at Decommissioning

- Aspect: Economic
- Impact: Decline in government revenue
- Activity generating this impact: Mine closure
- Description of Impact Assessment pre-mitigation / optimisation
  - Limited and short-term activity will take place during the decommissioning phase. However, production will have ceased and the workforce reduced significantly. Government income from the operation is thus expected to decline significantly and cease altogether in the decommissioning and closure stages.
  - The negative economic consequence of decommissioning and closure is expected to be limited with regards to national government revenue, as other projects are likely to make up the loss. The reduction in revenue is likely to be more pronounced for local government, which might depend to a larger degree on this income. The impact of project decommissioning is thus expected to be of low-medium (negative) significance. It must be noted, however, that the confidence in the impact assessment is relatively low as conditions prevailing at the time cannot be predicted with any certainty.
- Impact Rating:

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Mine Closure	National	Likely	Major	High Risk	Moderate Significance	Moderate Risk	Moderate Significance

- Mitigation / Optimisation Measures:
  - None
- Description of Impact Assessment post-mitigation / optimisation
  - No effective optimisation of this benefit is possible, although economic diversification will reduce the government's dependence on income from the mine
- Cumulative Impact
  - Several new coal mines are proposed in the area, which, if executed, will result in a significant contribution to GDP and stimulus of general economic activity. The overall impact on GDP and of decommissioning will depend on the timing of other mine

operations. The impact will be intensified if other mines decommission at the same time. Should mines close at different times, this could mitigate the impact of individual mine closures to some extent.

### 1.6.13 Impact E13: Decline in employment, income and skills development at decommissioning

- Aspect: Economic
- Impact: Decline in employment, income and skills development
- Nature: Negative
- Activity generating this impact: Mine Closure
- Description of Impact Assessment pre-mitigation / optimisation
  - The workforce will be reduced and eventually fully laid off during decommissioning and closure of the mine. Due to the size of the workforce and significant number of other people who depend on the mining income, decommissioning and closure will have a significant and negative effect on employment and income in the area. Due to the long life-time of the mine, which may employ generations of workers, many people in the area are likely to have focused on a career in mining and the acquisition of mining skills which may not be adequate for employment in other sectors. Depending on the social support network in place at the time, individual workers and their families could be highly vulnerable to the loss of employment at the end of the mine life.
  - The impact of project decommissioning and closure could thus be of high risk (negative) and significance in the absence of effective mitigation. It must be noted, however, that the confidence in the impact assessment is relatively low as conditions prevailing at the time cannot be predicted with any certainty.

- Impact Rating:

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Mine Closure / Residual	Regional	Likely	Major	High Risk	Moderate Significance	Moderate Risk	Moderate Significance

- Mitigation / Optimisation Measures:
  - Aim to use local workers as far as possible and formalise this policy in contracts.
  - Consider implementing labour-intensive rather than capital-intensive work methods wherever possible.
  - Purchase resources from local sources wherever possible.
  - Institute training programmes for local workers to raise skills levels.
  - Include training for general life skills such as financial management and health.
- Description of Impact Assessment post-mitigation / optimisation
  - Diversification of the local and regional economic base and local skill level, as discussed, would reduce this impact by providing workers with opportunities for alternative employment.
- Cumulative Impact
  - Several new coal mines are proposed in the area, which, if executed, will result in a

significant combined contribution to national and local government revenue. The overall impact on government revenue from mine decommissioning and closure will depend on the timing of other mine operations. The impact will be cumulative and more pronounced if other mines decommission at the same time. Should mines close at different times, this could mitigate the impact of individual mine closures.

## 1.7 Vulnerable Groups

There is a strong body of evidence demonstrating that women, children and the elderly are more likely to be adversely affected by mining development.

### 1.7.1 Impact VG1: Gendered Division of labour

- Aspect: Vulnerable Groups
- Impact: Gendered Division of Labour
- Nature: Negative
- Activity generating this impact: Mine Construction & Operation
- Description of Impact Assessment pre-mitigation / optimisation
  - Inequitable gender relations due to traditional beliefs and practises are wide spread in the region. Females often struggle to obtain access to and control over resources, in economic opportunities, in power and in political voice. Women tend to bear the largest and most direct social impacts, and therefore as a core social impact issue it should be assessed (Vanclay, 2003:88).
- Impact Rating:

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of Project	Local	Possible	Moderate	Moderate Risk	Low Significance	Low Risk	Low Significance

- Mitigation / Optimisation Measures:
  - Women must have equal employment opportunities,
  - Training and skills development for women, and
  - Salaries of women must be equal to that of men
  - Establish opportunities that are suitable for women employment
  - Implement measures to enable working environment for women
  - Establishing gender-sensitive policy positions, such as for cultural heritage, employment and business development
  - Mainstreaming gender into project planning, particularly for community development
  - Using gender-sensitive indicators, such as employment data disaggregated by gender
  - Consultation with national women's organizations
- Description of Impact Assessment post-mitigation / optimisation
  - With the implementation of the mitigation measures and regular monitoring this risk can be satisfactorily reduced
- Cumulative Impact
  - None

### 1.7.2 Impact VG2: Loss of employment of Farm workers creating a new Vulnerable Group

- Aspect: Vulnerable Group
- Impact VG2: Loss of employment of Farm workers creating a new Vulnerable Group
- Nature: Negative
- Activity generating this impact: Mine Construction and Operation
- Description of Impact Assessment pre-mitigation:
  - The mine will impact on existing operations currently employing people, if these people are retrenched due the mine and do not have the required mining skills to take up mining employment they will become a vulnerable group in the area.

#### • Impact Rating

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Construction	Site specific	Almost Certain	Moderate	High Risk	Moderate Significance	Moderate Risk	Low Significance

- Mitigation / Optimization Measures
  - Displacement of workers and their dependents requires an equitable policy, principles, financial guidelines and clarification of operational approaches.
  - Portable skills development of those people being retrenched to ensure sustaining of families
- Description of Impact Assessment post-mitigation:
  - If a policy to protect these groups are compiled and implemented this risk may be mitigated to an extent, but will remain a moderate risk
- Cumulative Impact
  - If future developments are implemented at the same time, the number of workers in this group will increase and the impact will become a very high risk.

### 1.7.3 Impact VG3: Potential Infringements on Historically Disadvantaged People's Human Rights

- Aspect: Vulnerable Groups
- Impact: Potential Infringements on Historically Disadvantaged People's Human Rights
- Nature: Negative
- Activity generating this impact: Mine Construction & Operation
- Description of Impact Assessment pre-mitigation / optimisation
  - Equality and non-discrimination: Although South Africa is building a democratic country, some communities especially rural communities are still in a state of poverty.
  - Recognition of their identity, language and culture
  - Rights to land and resources
  - Access to and enjoyment of economic social and cultural rights
- Impact Rating:

Duration	Extent	Probability	Impact Severity	Pre-mitigation Risk Map	Pre-mitigation Impact Significance	Post-mitigation Risk Map	Post mitigation Impact Significance
Life of Project	Local	Possible	Moderate	Moderate Risk	Low Significance	Low Risk	Low Significance

- **Mitigation / Optimisation Measures:**
  - Focusing local benefits on those communities previously disadvantaged to ensure upliftment
  - Enter into agreements with local communities to address post closure land use and sustainability
  - Optimization of local employment to minimize impacts of external or migrant workers on the local communities
- **Description of Impact Assessment post-mitigation / optimisation**
  - With the implementation of the mitigation measures and regular monitoring this risk can be satisfactorily reduced
- **Cumulative Impact**
  - None

## 2 SUMMARY OF IMPACTS AND MITIGATIONS

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures	Risk Map	Impact Significance
DP1	Demographic and Population Impacts	Influx of work seekers into the area	Negative	Moderate Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Optimise the use of local labour as far as possible. Establishing early on skills development programmes in the local area will support to possibility of finding skilled people locally</li> <li>❖ Development and Implementation of an Influx and Land use Management Plan</li> <li>❖ Develop a code of conduct with which contractors and their employees must comply. The code should deal with the interaction with local communities and substance abuse among other things.</li> <li>❖ Develop a Stakeholder Engagement Plan (SEP) which clarifies the principles of engagement with community and other stakeholders, sets in place appropriate liaison forums (a community forum is recommended), and describes the grievance management procedure to be adopted by the Generaal Project. Establishment of a local labour recruitment committee to monitor recruitment procedures and results</li> <li>❖ Communicate through media the recruitment procedures and priorities to discourage work seekers from outside the area</li> </ul>	Low Risk	Low Significance

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures	Risk Map	Impact Significance
DP2	Demographic and Population Impacts	Influx of construction labour with pressure on services and social structures	Negative	Moderate Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Facilitate the provision of housing and associated infrastructure. Establishment of a construction accommodation camp to house those employees that cannot be sourced from the local community due to a lack of skills</li> <li>❖ Optimise the use of local labour as far as possible. Establishing early on skills development programmes in the local area will support to possibility of finding skilled people locally</li> <li>❖ Development and Implementation of an Influx and Land use Management Plan</li> <li>❖ Develop a code of conduct with which contractors and their employees must comply. The code should deal with the interaction with local communities and substance abuse among other things.</li> <li>❖ Develop a Stakeholder Engagement Plan (SEP) which clarifies the principles of engagement with community and other stakeholders, sets in place appropriate liaison forums (a community forum is recommended), and describes the grievance management procedure to be adopted by the General Project. Establishment of a local labour recruitment committee to monitor recruitment procedures and results</li> <li>❖ Develop and communicate a clear and concise employment and recruitment policy to prevent opportunistic job seekers from settling in the area.</li> <li>❖ Implementation of a programme of STD and HIV/AIDS screening, counselling and (where possible) treatment.</li> </ul>	Low Risk	Low Significance



ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures	Risk Map	Impact Significance
DP3	Demographic and Population Impacts	Influx of operational workforce with pressure on services and social structures	Negative	Moderate Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Contribution towards the provision of housing, infrastructure and services for operational staff. The establishment of partnerships with other private sector stakeholders, government authorities and civil society organisations to integrate planning around the provision of services and infrastructure, and to ensure that Mine inputs in this context compliment initiatives led by other players, especially the local and district municipality.</li> <li>❖ Development and Implementation of an Influx and Land use Management Plan</li> <li>❖ Optimise the use of local labour as far as possible. Establishing early on skills development programmes in the local area will support to possibility of finding skilled people locally</li> <li>❖ Induction of contractors and workforce with regard to their code of conduct in the local communities</li> <li>❖ Develop and communicate a clear and concise employment and recruitment policy to prevent opportunistic job seekers from settling in the area.</li> <li>❖ Implementation of a programme of STD and HIV/AIDS screening, counselling and (where possible) treatment.</li> <li>❖ Continuous assessment and monitoring of infrastructure and services capacity in focal points (assessment every 5 years)</li> <li>❖ Determine scale of assistance required at focal points and enter into an agreement with the municipality</li> <li>❖ Establish a development, infrastructure and service monitoring forum with the municipality to continuously assess and monitor capacity, determine assistance required and oversee implementation</li> </ul>	Low Risk	Low Significance

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures	Risk Map	Impact Significance
DP4	Demographic and Population Impacts	Influx of people and the development of spontaneous settlements near project facilities, in the rural villages, Tshipise Town and surrounding areas	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Develop a Community Development Plan which addresses issues relating to provision of housing for the workforce through on-going communication and engagement between the mine and local authorities for implementation of this plan.</li> <li>❖ Develop and adoption of an Influx Management Plan in consultation with the local government that outlines proactive management measures to discourage and manage influx, outlines and refines relevant stakeholders and their roles and responsibilities and the way in which each role-player intends to manage influx and spontaneous settlements.</li> <li>❖ Support the compilation of a development master plan, in cooperation with relevant local and regional authorities for the Musina and Makhado areas, whereby new development areas for workers' and new arrivals' accommodation will be catered for and duly planned</li> <li>❖ Support local government capacity for integrated development planning.</li> <li>❖ Develop and communicate a clear and concise employment and recruitment policy to prevent opportunistic job seekers from settling in the area.</li> <li>❖ Continuous assessment and monitoring of infrastructure and services capacity in focal points (assessment every 5 years)</li> <li>❖ Determine scale of assistance required at focal points and enter into an agreement with the municipality</li> <li>❖ Establish a development, infrastructure and service monitoring forum with the municipality to continuously assess and monitor capacity, determine assistance required and oversee implementation</li> </ul>	Moderate Risk	Low Significance

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures	Risk Map	Impact Significance
DP5	Demographic and Population Impacts	Conflicts arising at the end of construction due to the termination of job opportunities for contractors	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Investigate the possibility of transferring labour from one operation to another – depending on the phasing of the projects</li> <li>❖ Develop the MbeuYashu grievance procedure to capture and address grievances arising due to retrenchments and downscaling.</li> <li>❖ Ensure compliance with all applicable Labour Regulations of South Africa</li> <li>❖ Consider compliance with Best Practice , i.e. IFC's Performance Standard 2 "Labour and Working Conditions"</li> <li>❖ Monitoring of all contractors and sub-contractors for compliance with the above standards, with contractually-established financial sanctions for observed non-compliances</li> <li>❖ Communicate the termination conditions to the communication structure established</li> <li>❖ Communicate the termination conditions to all employees – including contractors and sub-contractors</li> </ul>	Moderate Risk	Low Significance
HSW 1	Health and Social Wellbeing	Increased chances of the spread of communicable diseases such as HIV/AIDS and STDs linked to influx of predominantly male job-seekers and workers	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Develop a comprehensive HIV/AIDS and STD program to employees through employee wellness programmes which should include prevention, voluntary counselling for HIV testing, as well as anti-retroviral treatment for employees.</li> <li>❖ Develop a Community Health Action Plan which focuses on HIV/AIDS, tuberculosis.</li> <li>❖ Repeated awareness campaigns that is focused beyond employees and includes contractors and the communities near project facilities</li> </ul>	Moderate Risk	Moderate Significance

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures	Risk Map	Impact Significance
HSW 2	Health and Social Wellbeing	Safety and Risk Exposure through an increase in crime	Negative	Moderate Risk	Low Significance	<ul style="list-style-type: none"> <li>❖ Increased security on mine premises</li> <li>❖ Construction and permanent workers are identified and marked with clear identifiable clothing</li> <li>❖ Code of Conduct to form part of induction of new workers with a clear statement and procedure regarding access, conduct and identification. All construction workers should wear clothing marked (and reflective vests) with the logo of the construction firm/contractor or sub-contractor as well as identification cards that cannot be easily forged, so that they can be easily recognized as being legitimate.</li> <li>❖ Workers to be screened including criminal background checks.</li> <li>❖ Properly constructed and secured fences can control access to construction sites. Implementing strict access control of the project site and specifically the contractors workforce camp.</li> <li>❖ Workers should be urged to recognize and report suspicious activity and signs of burglary and be informed of crime prevention measures that they themselves can take.</li> <li>❖ Employment of local people on the mine to improve the poverty levels in the host and neighbouring communities</li> <li>❖ MbeuYashu to liaise with existing community policing forums and project security to properly secure the project area and surrounding area</li> <li>❖ Investigate the implementation of an anti-poaching unit in collaboration with local stakeholders, policing forums and police</li> </ul>	Low Risk	Low Significance

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures	Risk Map	Impact Significance
HSW 3	Health and Social Wellbeing	Safety and Risk Exposure due to an increase in poaching on neighbouring game farming properties	Negative	Moderate Risk	Low Significance	<ul style="list-style-type: none"> <li>❖ Establishment of an anti-poaching unit available to adjacent land owners, and establishing a security forum in collaboration with these land owners. Land owners are to be actively involved in the selection of the contracting company employed to conduct anti-poaching in the area.</li> <li>❖ Increased security measures (fencing, access control and monitoring) on mine premises. Properly constructed and secured fences can control access to construction sites. Implementing strict access control of the project site and the contractors workforce camp. Curfew times to be established in accommodation areas. Construction workers accommodated on mine are identified and marked with clear identifiable clothing</li> <li>❖ Code of Conduct to form part of induction of new workers with a clear statement and procedure regarding access, conduct and identification. All construction workers should wear clothing marked (and reflective vests) with the logo of the construction firm/contractor or sub-contractor as well as identification cards that cannot be easily forged, so that they can be easily recognized as being legitimate.</li> <li>❖ Workers to be screened including criminal background checks.</li> <li>❖ Employment of local people on the mine to improve the poverty levels in the local communities</li> </ul>	Low Risk	Low Significance

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures	Risk Map	Impact Significance
QL1	Quality of Living Environment	Change in "sense of place"	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Regular and effective engagement with stakeholders through the SEP.</li> <li>❖ An effective grievance management procedure managed within the framework of the SEP. Grievance mechanisms must be in place throughout the life of the mine, including for a determined period post-closure, to address any impact for affected communities.</li> <li>❖ Implementation of traffic management measures</li> <li>Implementation of insulation and mitigation measures for noise</li> <li>❖ Implementation of visual barriers and other mitigation measures as recommended in the visual study</li> <li>❖ Colour schemes must complement the local environment.</li> <li>❖ Minimising disturbance to vegetated areas outside the critical development areas where possible</li> <li>❖ Revegetation/rehabilitation of disturbed sites in parallel with development</li> <li>❖ Successful mitigation interventions can reduce the intensity of the impact to at least moderate and ultimately moderate-low levels. If grievances are addressed adequately, and communication and engagement is effective affected communities may be able to adjust more easily to the changes.</li> </ul>	Moderate Risk	Low Significance
QL2	Quality of Living Environment	Disruption of Social Networks and decrease in Social Capital	Negative	Moderate Risk	Low Significance	<ul style="list-style-type: none"> <li>❖ Employment of local people already part of the community.</li> <li>❖ Code of conduct to form part of induction for all new workers</li> <li>❖ Grievance Procedure within the local communities</li> </ul>	Low Risk	Low Significance
QL3	Quality of Living Environment	Perceptions of and Feelings in relation to the project	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Establish on-going Consultative Forums with concerned groups to air concerns, find possible mitigation measures for their perceived impacts, solutions to co-existence and monitor implementation and effectiveness of mitigation measures</li> <li>❖ Continuous communication with all stakeholders providing information on anticipated impacts and planned mitigation measures</li> </ul>	Moderate Risk	Low Significance

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures	Risk Map	Impact Significance
FC1	Family and Community Impacts	Impacts on land owner and labourers	Negative	Very High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Development of a land acquisition and lease policy defining the negotiation process to minimize the feelings of uncertainty</li> <li>❖ Financial compensation of affected property owners/tenants, employees and their families in terms of the relevant legislation.</li> <li>❖ Displacement of workers and their dependents requires an equitable policy, principles, financial guidelines and clarification of operational approaches.</li> <li>❖ Land Acquisition, lease and compensation agreements reached with affected landowners that include arrangements and measures for labour tenants</li> </ul>	Moderate Risk	Low Significance
FC2	Family and Community Impacts	Change processes and impacts related to daily movement patterns	Negative	Moderate Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ The project description defines that no hauling will take place along existing farm roads or regional / national roads. It is planned that the run-of-mine (ROM) coal will be transported for short distances by truck, on the in-pit haul roads to the crushing and screening facilities. The crushed and screened ROM product will be transported to the coal beneficiation plant at the Infrastructure Hub via conveyor. It is further planned that the product will be loaded directly onto trains at the Rail Load-out Terminal situated at the Infrastructure Hub which links up with the existing Musina-Makhado railway line.</li> <li>❖ Therefore only supplier light-vehicles and employee busses will disrupt movement patterns, these will stabilize once the mine is fully operational</li> </ul>	Low Risk	Low Significance
FC3	Family and Community Impacts	Conversion of land use	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Acquisition and or leasing of directly impacted land</li> <li>❖ Fair compensation negotiated and agreed with land owners that will lose agricultural land</li> <li>❖ Continuous consultation with landowners discussing co-existence and feasibility</li> <li>❖ Educate landowners in terms of their rights and responsibilities prior to the construction phase</li> <li>❖ Assist landowners in identifying ways to adapt their land uses, to the benefit of both the landowner and MbeuYashu</li> <li>❖ Implement a consultation programme with regional stakeholders in the development of a closure plan and</li> </ul>	Moderate Risk	Low Significance



ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures	Risk Map	Impact Significance
						rehabilitation programme ❖ Determine the regional needs and characteristics to ensure post mining use of land enhances the regional characteristics		
I1	Institutional/Legal/Political/Equity Impacts	Challenge to local government capacity	Negative	Moderate Risk	Low Significance	❖ Intensive engagement between MbeuYashu / CoAL and the municipality well in advance of construction. In this context the responsibilities of local government should be well understood, and potential problems defined and addressed as early as possible. ❖ Establishment of a limited and time-bound municipal support function. MbeuYashu / CoAL should contribute funding and appropriate technical resources. The participation of other major mines and industries in the area should be promoted by both MbeuYashu / CoAL and the local municipality.	Low Risk	Low Significance
I2	Institutional/Legal/Political/Equity Impacts	Participation and Consultation in process	Negative	Moderate Risk	Low Significance	❖ Provide transport and/or reimbursement to the Historical Disadvantaged Communities ❖ During the Operational phase, the structures established for participation should have a proper constitution that addresses reimbursement of costs ❖ Arrangement of meetings in proximity to the mine or in affected communities to minimize the distance of directly affected parties to travel Cluster meetings together on the same day or over 2 days to minimize disruption of personal schedules	Low Risk	Low Significance

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures	Risk Map	Impact Significance
I3	Institutional/Legal/Political/Equity Impacts	Impact equity	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Tax and Profit benefits must be ploughed back into the Local Municipal areas and immediate communities</li> <li>❖ Employment should be prioritized to local communities</li> <li>❖ Local beneficiation programmes to be investigated and implemented</li> </ul>	Moderate Risk	Low Significance
E1	Socio-economic Wellbeing	Increase in South African GDP and Trade Balance	Positive	High Positive	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Procure goods and services from South African suppliers as far as possible.</li> <li>❖ Procure ancillary services for goods procured abroad, such as installation, customisation and maintenance, from South African companies as far as possible.</li> </ul>	Very High Positive	High Significance
E2	Socio-economic Wellbeing	Increase in provincial and local GDP	Positive	High Positive	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Procure goods and services from local or provincial suppliers as far as possible.</li> <li>❖ Procure ancillary services for goods purchased from outside of the Limpopo Province, such as installation, customisation and maintenance, from local or provincial companies as far as possible.</li> </ul>	Very High Positive	High Significance
E3	Socio-economic Wellbeing	Increase in government revenue	Positive	High Positive	Moderate Significance	<ul style="list-style-type: none"> <li>❖ None</li> </ul>	High Positive	Moderate Significance

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures	Risk Map	Impact Significance
E4	Socio-economic Wellbeing	Increase in employment, income and skills development	Positive	High Positive	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Aim to use local workers as far as possible and formalise this policy in contracts.</li> <li>❖ Consider implementing labour-intensive rather than capital-intensive work methods wherever possible.</li> <li>❖ Procure resources from local sources wherever possible.</li> <li>❖ Establish a database of local people with information on qualifications and skills, utilize this database to develop skills plans and recruit local people.</li> <li>❖ Implement early on skills development programmes in the areas where most job opportunities will be created, i.e. operators and drivers</li> <li>❖ Include training for general life skills such as financial management and health.</li> <li>❖ Implement portable skills development programmes</li> <li>❖ Design and implement economic development programmes that will assist people being retrenched in sustaining their livelihoods</li> <li>❖ Establish a future forum with representation from the workforce to discuss potential difficulties and solutions</li> <li>❖ Implementation of programmes to minimize and mitigate the impact of downscaling and retrenchment</li> </ul>	Very High Risk	Moderate Significance
E5	Socio-economic Wellbeing	Impact on existing businesses in surrounding areas	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Devise a compensation plan for direct impacts of mining on adjacent farms, such as loss or pollution of land.</li> <li>❖ Screen mining activities from the adjacent farms and the main access road to minimize the impact on the general sense of place and tourists.</li> <li>❖ Identification of employees that may lose their employment and enrol in skills programme</li> </ul>	Moderate Risk	Low Significance

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures	Risk Map	Impact Significance
E6	Socio-economic Wellbeing	Change in property values	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Attempt to minimize impacts through implementation of mitigation strategies focusing on aspects that may affect tourism characteristics including traffic, noise, and visual aspects such as screening mining activities from the adjacent farms and the main access road to minimize the impact on the general sense of place. Establish a baseline of property values by conducting baseline valuations on representative properties and providing such to landowners, thereafter conducting monitoring valuations in periods of 5 years or as may be agreed with landowners</li> <li>❖ Establish a communication channel with direct adjacent land owners to address impacts and grievances</li> <li>❖ Adopting principles of good corporate citizenship focused on conservation of natural resources such as water, biodiversity, etc. Inclusion of these principles and actions into information disseminated in the local area ("how mining can be done differently")</li> </ul>	Moderate Risk	Low Significance
E7	Socio-economic Wellbeing	Decrease of visitors, tourists and hunting parties	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Attempt to minimize impacts through implementation of mitigation strategies focusing on aspects that may affect tourism characteristics including traffic, noise, and visual aspects such as screening mining activities from the adjacent farms and the main access road to minimize the impact on the general sense of place.</li> <li>❖ Collaborate with local stakeholders in terms of regional planning to ensure certain areas are protected for tourism and hunting activities.</li> <li>❖ Adopting principles of good corporate citizenship focused on conservation of natural resources such as water, biodiversity, etc. Inclusion of these principles and actions into information disseminated in the local area ("how mining can be done differently")</li> </ul>	Moderate Risk	Low Significance

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures	Risk Map	Impact Significance
E8	Socio-economic Wellbeing	Equity Participation of the Local Communities	Positive	Moderate Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Ensure communities are fully involved and properly represented in the structures</li> <li>❖ Ensure capacity is built at an early stage for communities to understand how equity and dividends work</li> <li>❖ Place protective measures in place that will shield the communities from any business risk or liabilities</li> </ul>	High Positive	Moderate Significance
E9	Socio-economic Wellbeing	Participation of local business in procurement opportunities	Positive	High Positive	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Ensure communities are fully involved and understand the local procurement policy and procedure</li> <li>❖ Ensure capacity is built at an early stage through enterprise development to enable local business to participate in opportunities</li> <li>❖ Identify local only opportunities that is reserved for local business</li> </ul>	High Positive	Moderate Significance
E10	Socio-economic Wellbeing	Decline in South African GDP and Trade Balance at Decommissioning	Negative	Moderate Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ None</li> </ul>	Low Risk	Moderate Significance
E11	Socio-economic Wellbeing	Decline in provincial and local GDP at decommissioning	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Actively promote the development of different economic sectors from an early stage, e.g. through incentivising other industries to locate in the area, providing adequate infrastructure and promoting an increase and diversity of skills in the local population.</li> <li>❖ Actively engage with a range of stakeholders throughout the life-of-mine to discuss potential consequences of mine closure and possible mitigation.</li> <li>❖ Incorporate measures to retrain workers in the Social and Labour Plan.</li> </ul>	Moderate Risk	Moderate Significance
E12	Socio-economic Wellbeing	Decline in government revenue at Decommissioning	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ None</li> </ul>	Moderate Risk	Moderate Significance

ID	Environmental (Social) Aspect	Potential Impact	Nature of Impact	Risk Map	Impact Significance	Proposed Mitigation measures	Risk Map	Impact Significance
E13	Socio-economic Wellbeing	Decline in employment, income and skills development at decommissioning	Negative	High Risk	Moderate Significance	<ul style="list-style-type: none"> <li>❖ Aim to use local workers as far as possible and formalise this policy in contracts.</li> <li>❖ Consider implementing labour-intensive rather than capital-intensive work methods wherever possible.</li> <li>❖ Purchase resources from local sources wherever possible.</li> <li>❖ Institute training programmes for local workers to raise skills levels.</li> <li>❖ Include training for general life skills such as financial management and health.</li> </ul>	Moderate Risk	Moderate Significance
VG1	Vulnerable Group Impacts	Gendered Division of labour	Negative	Moderate Risk	Low Significance	<ul style="list-style-type: none"> <li>❖ Women must have equal employment opportunities,</li> <li>❖ Training and skills development for women, and</li> <li>❖ Salaries of women must be equal to that of men</li> <li>❖ Establish opportunities that are suitable for women employment</li> <li>❖ Implement measures to enable working environment for women</li> <li>❖ Establishing gender-sensitive policy positions, such as for cultural heritage, employment and business development</li> <li>❖ Mainstreaming gender into project planning, particularly for community development</li> <li>❖ Using gender-sensitive indicators, such as employment data disaggregated by gender</li> <li>❖ Consultation with national women's organizations</li> </ul>	Low Risk	Low Significance
VG2	Vulnerable Group Impacts	Potential Infringements on Historically Disadvantaged People's Human Rights	Negative	Moderate Risk	Low Significance	<ul style="list-style-type: none"> <li>❖ Focusing local benefits on those communities previously disadvantaged to ensure upliftment</li> <li>❖ Enter into agreements with local communities to address post closure land use and sustainability</li> <li>❖ Optimization of local employment to minimize impacts of external or migrant workers on the local communities</li> </ul>	Low Risk	Low Significance

## 3 SOCIAL MANAGEMENT PLANS

### 3.1 Influx Management Plan

A common impact of major mining and infrastructural projects in developing countries is the influx of opportunity seekers. The influx may be motivated by expectations around the project itself, or it might be the result of a more general perception of opportunity in the region. Influx is not negative by definition, but its impacts can be damaging where the migrants are not readily assimilated, placing stress on services, disrupting existing communities, and in some cases living in unhealthy and crowded conditions.

This Influx Management Plan outlines the proposed Generaal Project's contribution to the mitigation of negative impacts associated with uncontrolled influx. The plan recognizes that a single mining company has limited influence to stem or manage the effects of influx, but it is believed that the measures proposed will make a contribution. If done in with a holistic approach the mitigation on the cumulative effects of influx management should be significant.

The Land use and Influx management plan can only be successfully implemented if there is buy-in and partnership with Local Municipalities and Landowners.

The following actions are included in the Influx Management Plan:

- **Management of expectations.** This will be done via regular briefings on labour, recruitment and procurement to the Generaal Project Stakeholder Committees to be established
- **Recruitment and supply chain transparency.** Recruitment / procurement rules and opportunities must be transparent and accessible. Communication in this context should be the joint responsibility of the Human Resource Manager and the Community Engagement Manager. The Generaal Project Recruitment Office must follow transparent rules and procedures, and must be the point of entry for employment. This will remove the incentive for people to gather 'at the gate' or to squat adjacent to the mine area. Generaal Project must express commitment to:
  - The use of local labour wherever possible and
  - The use a local skills database to source employees
  - Collaborate with Department of Labour and the Local Municipalities to source local skills.
- **Mine area security arrangements.** Mine access roads will have boom gates and access control, and major facilities will be fenced. All security arrangements will be in line with international best practice.
- **Land allocation and usage.** Landowners of open land in the project-impacted area will be informed of the risks of opportunistic influx, and will be provided with tools to address problems if these arise. The tools will include:



The following Implementation Plan is proposed:

Action	How	Target	When	Who
Communicate policy on procurement & recruitment	Special Newsletter Municipal Notice Board Public Places	Local area Municipal area	Upfront & thereafter Yearly	Community Engagement Manager
	Meetings with Stakeholder Committees	Local area	Upfront & thereafter Yearly	Community Engagement Manager
Notice of opportunities	Placement of Community Notice Boards Municipal Notice Board	Local area Municipal area	Monthly	Human Resource & Procurement manager
Briefing on labour and procurement statistics	Section in Newsletter Municipal Notice Board	Local area Municipal area	Quarterly	Human Resource Manager
	Meetings with Stakeholder Committees	Local area	Quarterly	Community Engagement Manager
Recruitment procedure	Compile and workshop of recruitment procedure	Local Municipalities Department of Labour Ward Councillor & Committee Stakeholder Committees	Prior construction in take Prior to operational intake	Human Resource Manager Outsourced
Improve local labour recruitment	Skills development programme identification of talent pool identification of programmes, scheduling and enrolment	Identified talent pool from local area Stakeholder Committees	Prior construction in take Prior to operational intake	Human Resource Manager Outsourced
Define mine areas and fencing requirements	As per the safety procedure	Mine management	Prior to construction – all areas	Mine management
Monitor the fence-lines for breakages	All fence lines to be patrolled.	Safety and Security on mine	Weekly	Safety and security

Action	How	Target	When	Who
	Procedure and line of communication to be established for reporting of any fence breaks			
Security measures of open land	Notification boards Security access if possible	Local area	Prior to construction	Safety and security
Agreement with Landowners for security monitoring of open land	Agreements reached	Local area Open land owners	Prior to construction	Legal Safety and Security
On-going monitoring of open land for activity	Monitoring schedule Monitoring reports	Local area Open land owners	Upfront & thereafter Monthly At steady state Quarterly	Legal Safety and Security

The following resources from MbeuYashu will be required for the implementation of this strategy:

No	Resource	Frequency
1	Human Resource Manager	Upfront, thereafter Monthly
2	Community Engagement Management	Continuously
3	Social Specialists to conduct reviews	Quarterly for first year, thereafter annually
4	Safety and Security Personnel	Continuously
5	Legal representative	Upfront to compile agreements with landowners to monitor open land

## 3.2 Crime Management Plan

A central change processes associated with the construction and development process of a development such as the Generaal Project is the presence of contracting firms and construction workers, usually accommodated in workforce accommodation camps. This may include workers as well as opportunists and burglars/robbers posing as construction workers. The bigger the project, the more opportunity, the more people involved, could result in a crime increase.

A further secondary impact due to the influx of job seekers and creation of access to a previously remote area is the increase in poaching activities in the adjacent areas.

The increase in the safety and security risk in the surrounding area requires a mitigation measure that is implemented in partnership with various stakeholders including:

- Development companies (including MbeuYashu) in the project area
- The Local Municipalities
- The Local Police Services
- The landowners
- Community leaders
- Outsourced specialists

### **3.2.1 Crime management through Community Policing**

Crime management on the mine and adjacent area can only be successful if the current stakeholders operating in this environment collaborates in implementing the mitigation measures. It is therefore recommended that a Community Policing Forum be established to develop and implement the crime management plan. The actions that must form part of the action plan include the following:

- Increased security on mine premises: Properly constructed and secured fences can control access to construction sites. Implementing strict access control of the project site and specifically the contractor's workforce camp.
- Construction and Permanent Mine workers:
  - Identified and marked with clear identifiable clothing
  - Include a code of conduct in project induction of new workers
  - Employees screened
- Awareness creation
  - Employees and Landowners to be urged to recognize and report suspicious activity and signs of burglary and be informed of crime prevention measures that they themselves can take.
- Mapping of Target Areas
  - Identify area to be included in the Community Policing area
  - Map routes and access to mine areas and surrounding properties
  - Identify hot spot areas
- Registrations as a Community Policing Forum
  - Partnership with local municipalities and police service
- Community Policing Patrols
  - Schedules and involvement
- Community Policing Reporting and Evaluation of effectiveness

### 3.2.2 Anti-poaching through Collaboration

Poaching is the illegal taking of wild plants or animals contrary to local and international conservation and wildlife management laws. Violations of hunting laws and regulations are normally punishable by law and, collectively, such violations are known as poaching. Poaching is in effect the illegal “hunting” of fauna and flora. Poaching can generally be divided into three different classes: Subsistence, Commercial and Syndicated. All poaching levels are as equally critical, as they are often interlinked and intelligence passes through all three levels.

Poaching is already present in the development area, and is further worsened by the lack of police capacity and Provincial Nature Conservation to assist in managing and/or mitigating the situation. A mine development may increase the occurrence and spatial spread of poaching and theft of game/livestock.

Anti-poaching in the adjacent area can only be successful if the current landowners and property managers collaborate in implementing the mitigation measures. The actions that must form part of the implementation plan include the following:

- Finalisation of the Anti-poaching Approach and Policy
- Selection of a contracting company / selected parties to implement the anti-poaching unit and measures. Land owners are to be actively involved in the selection of the contracting company employed to conduct anti-poaching in the area.
- Awareness creation. Creation of awareness amongst local communities regarding the situation to ensure understanding of why anti-poaching is being done
- Registrations of Anti-poaching unit with local police service and Nature Conservation
- Anti-poaching patrols
- Anti-poaching reports and evaluation of effectiveness
- 
- 

### 3.2.3 Implementation Plan

The following Implementation Plan is proposed:

Action	How	Target	When	Who
Complete Community Policing Plan and Anti-poaching plan	Participation amongst all stakeholders	Communities Landowners Mine Local Municipalities Local Police Service	Upfront	Mine management Community Engagement Manager

Action	How	Target	When	Who
		Outsourced specialists		
Increased security on mine premises	Fencing Access control	Mine premises	Upfront	Safety and Security
Construction and Permanent Mine workers identified	Clearly marked code of conduct Screening of employees	Mine premises	Upfront and continuously	Human Resource Department
Awareness creation	Newsletter Meetings	Employees Communities Landowners	Upfront and continuously	Community Engagement Manager
Mapping of Target Areas – Policing & Anti-poaching	GIS mapping	Communities Landowners Mine	Upfront thereafter yearly	Community Engagement Manager
Registrations as a Community Policing Forum & Anti-poaching unit	Registration with local municipalities and police service	Local Municipalities Local Police Service	Upfront	Community Engagement Manager
Community Policing Patrols Anti-poaching Patrols	Volunteers Schedule Costs	Communities Landowners Mine	Continuously	Safety and Security
Community Policing & Anti-poaching Reporting and Evaluation of effectiveness	Report Evaluation Meetings	Communities Landowners Mine	Quarterly for first year thereafter yearly	Community Engagement Manager Safety and Security
Anti-poaching contractor / selected parties	Interview, evaluate and appoint in collaboration with stakeholders	Communities Landowners Mine Local Municipalities Local Police Service Outsourced specialists	Upfront thereafter Yearly re-evaluate	Community Engagement Manager Safety and Security

The following resources from MbeuYashu will be required for the implementation of this strategy:

No	Resource	Frequency
1	Human Resource Manager	Upfront, thereafter Quarterly
2	Community Engagement Management	Continuously
3	Safety and Security Personnel	Continuously

## 4 CONCLUSIONS AND RECOMMENDATIONS

The results of the study indicate that the recommended mitigation measures are expected to reduce the significance of negative impacts to acceptable levels, while positive impacts will on average be significantly enhanced to maximise benefits to surrounding communities.

The socio-economic cumulative impacts have been addressed in detail in the SEIA (Naledi, 2013) and are not repeated here. Refer to ANNEX-8.

The main conclusion arising from the SEIA assessment is that if all the Greater Soutpansberg Projects and other planned mining developments in the region are implemented at the same time and development cannot be staggered, the following cumulative socio-economic impacts and benefits are envisaged:

- Cumulative Socio-economic impacts:
  - Additional influx of people into the area, thereby adding to congestion and pressure on local infrastructure and services.
  - Compounded impact on the area's sense of place, this in turn may cause a decline in tourism and hunting related activities in the surrounding area.
  - Impact on land use and availability for ecotourism and hunting
- Cumulative Socio-economic benefits:
  - Combined increased in local economic growth and employment
  - Combined increase in local procurement opportunities causing local business to expand to fill the demand for goods and services
  - Additional contribution to government tax, balance of payments and national growth

Given the scale of mining planned in the region and if there is a lack of a concerted action by key stakeholders including government, local stakeholders and industry, there is a high likelihood that significant socio-economic impacts will occur to Generaal area and surrounding communities and landowners. It is therefore recommended that development be staggered in the area to optimise the sustainability of the long term benefits and mitigate the socio-economic impacts.

## **5 APPENDIX**

Curriculum Vitae – Lizinda Dickson

Curriculum Vitae – Carien Joubert





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## CURRICULUM VITAE

Surname: Dickson

First Name: Lizinda

Birth date: 1975 – 11 - 11

Nationality: South African

Gender: Female

### 1 PROFESSION

Director Project Management

### 2 EDUCATION

Degrees	Main course of study
Masters in Environmental Management	Environmental Management
Honours in Environmental Management	Environmental Management & Analysis
Degree Geography	Environment and Geography

### 3 OTHER FORMAL TRAINING OR EDUCATION

Course	Main course of study
Microsoft Accredited Certificate	Microsoft Accredited Diploma: MS Access database management
ESRI accredited Certificate	ArcGIS
PlanetGIS Accredited Certificate	PlanetGIS
SETA Accredited Certificate	HIV/AIDS Peer educator

### 4 PROFESSIONAL SOCIETIES

Member of the International Association of Impact Assessments  
Member of the International Resettlement Specialist Association

### 5 SIGNIFICANT PUBLICATIONS

van Koppen, B., Joubert, C. & Grobbelaar, L (2000). Gender and Irrigation in Mathabatha Land. South Africa Working Paper. Colombo, Sri Lanka: International Water Management Institute (IWMI)

**6 EMPLOYMENT RECORD**

Timeframe	Position	Company
August 1997 to date	Project Director	Naledi Development (Pty) Ltd
1996 to July 1997	Research Assistant	University of Pretoria

**7 KEY PROJECTS****7.1 International Projects**

Project Name	Country / Province	Role / Duties
Driekoppies Dam Development	Swaziland	Health Impact Assessment
Pemba Bay Protected Area Development	Mozambique	Set-up an action plan for the acquiring of investment funding

**7.2 National Projects**

Project Name	Client	Role / Duties
Greater Soutpansberg Project	Coal of Africa Limited	Public Participation and Socio-economic Impact Assessment
Makhado Colliery	Coal of Africa Limited	Stakeholder and Community Engagement Public Participation for NOMRA Socio-economic Impact Assessment Social and Labour Plan
Vele Colliery	Coal of Africa Limited	Public Participation for NOMRA Socio-economic Impact Assessment Social and Labour Plan
Goedgevonden Colliery	Xstrata / Glencore	Public Participation for NOMRA Socio-economic Impact Assessment
Sefateng Chrome mine	Metmar	Public Participation for NOMRA Socio-economic Impact Assessment
Ergosat Prospecting	Ergosat (Pty) Ltd	Negotiate access for prospecting drilling
Tivani Mine	Tivani (Pty) Ltd	Public Participation for NOMRA Socio-economic Impact Assessment
Mooiplaats Colliery	Coal of Africa Limited	Social and Labour Plan
OR Tambo Essential Oils	Impala Platinum	Implementing SLP community based essential oil project including training, project management and stakeholder management.
Vuna Colliery	Coal of Africa Limited	Social and Labour Plan Annual Report
Mohlabas Localtion	Tivani (Pty) Ltd	EIA/EMP Public Participation Social and Labour Plan
Vlakfontein Colliery	Optimum Coal	Public Participation for NOMRA Social and Labour Plan
Bengwenyama Minerals	Eerstegeluk	Social Development and Benefit plan for

Project Name	Client	Role / Duties
		Prospecting
Twickenham Community Hall	Anglo Platinum	Community interaction, Training
Twickenham Platinum Mine Development	Anglo Platinum (Pty) Ltd	Involuntary Resettlement Management, Environmental Impact Assessment, Social Development, Public Participation, Conflict Resolution Social and Labour Plan
Boitumelo Diamonds	Boitumelo Diamonds	Social and Labour Plan
SA Gemstones	SA Gemstones	Social and Labour Plan
Temporary Water Supply for the Sedibelo project	Barrick Gold	Environmental Impact Assessment and Public Involvement Programme
Drought Relief	Magalies Water Board	Environmental Impact Assessment and Public Involvement Programme
Mooihoek Burgersfort Bulk Pipeline development	Sekhukhune District Municipality	Environmental Impact Assessment, Public Involvement Programme and Traditional Authority land acquisition
Lebalelo Community Water Supply	BKS	Environmental Impact Assessment, Public Involvement Programme and Traditional Authority land acquisition
Taung Commercial Development	VILDEV (Pty) Ltd	Environmental Impact Assessment, Public Involvement Programme and Traditional Authority land acquisition
7 Sand mines in Western Cape	Tip Trans Resources (Pty) Ltd	Social and Labour Plans
Power supply, Mafikeng	ESKOM (Pty) Ltd	Environmental Impact Assessment and Public Involvement Programme
Limpopo Casino Development	Peermont Global Resort	Environmental Impact Assessment and Public Involvement Programme
Mbombela Sport Stadium	Mbombela Local Municipality	Socio-economic Impact Assessment and Public Involvement Programme
Taung Dam Protected Area development	NWPTB	Strategic Environmental Assessment, Environmental Impact assessment and Public Involvement Programme
Giyani Mining Development	Desert Charm Trading	Traditional Authority project consent, Environmental Impact Assessment and Management Plan
Burnstone Mine Development	Great Basin Gold	Environmental Impact Assessment, Management Plan and Public Involvement Programme Social and Labour Plan
Lothlokwane Power line	Wandma Consulting	Environmental Impact Assessment, Management Plan and Public Involvement

Project Name	Client	Role / Duties
		Programme
Lebowa Platinum Mine Expansion	Anglo Platinum (Pty) Ltd	Involuntary Resettlement Management, Environmental Impact Assessment, Social Development, Public Participation, Conflict Resolution
Annesley Andalusite Mine Development	SAMREC (Pty) Ltd	Public Involvement, Social & Environmental Assessment, Involuntary Resettlement Management
Rooipoort Dam Development	Department of Water Affairs and Forestry	Involuntary Resettlement Management, Environmental Impact Assessment, Social Development, Public Participation, Conflict Resolution, Feasibility Study
Flag Boshielo Dam Development	Department of Water Affairs and Forestry	Feasibility Study, Social Impact Assessment, Social Cost-benefit analysis, Public Participation Programme
Bengwenyama EMP	Bengwenyama Minerals	Environmental Impact Assessment
Harmony Gold	Matakoma Heritage Consultants	Environmental Impact Assessment: Public Participation
Mbombela Sport Stadium	Mbombela Local Municipality	Socio Economic Impact Assessment, Public Participation
Polokwane Stadium	Grant Thornton	Socio Economic Impact Assessment
Rural Water Supply Programme	Magalies Water Board	Management of the implementation of 20 water supply projects Establishment of cost recovery systems for service delivery
Crocodile-West/Marico Catchment Management Agency	Department of Water Affairs and Forestry	Establishment of the Catchment Management Agency (CMA) Establish the Governing Board Capacity Building, Public Participation Programmes
Letaba / Luvuvhu Catchment Management Agency	Department of Water Affairs and Forestry	Initiation and Public Participation Programmes
Lebalelo Multi-sectoral Water User Association	Lebalelo WUA	Establishment, Public Involvement between 5 mining groups and 86 rural villages, operation of the WUA
Rapitsi Upgrading of Water Supply	Mvula Trust	Planning and implementation water supply systems to ensure sustainability
Seroka Upgrading of Water Supply	Mvula Trust	Planning and implementation water supply systems to ensure sustainability
School Awareness and Education towards Sanitation Project	Mvula Trust	Launching awareness campaigns in schools where Household Sanitation Project are currently running
Capricorn Toll Plaza	National Road Agency	Public participation, communication and negotiation for the implementation of the

Project Name	Client	Role / Duties
		project
Margate Landfill Site Rehabilitation	Margate Local Municipality	Part of the team that worked on the rehabilitation of Social and Environmental analysis
Mooiplaats Landfill Site	Mini-Waste	Social Impact Assessment for possible Landfill site
Olifants River In stream Flow Requirements	Department of Water Affairs and Forestry	Participatory information gathering to identify important uses of the Olifants River to be able to calculate the In stream Flow Requirements
Nondweni Weir Development	Department of Water Affairs and Forestry	Communication and Capacity Building with the communities in the vicinity of the Weir
Nondweni Pedestrian Bridge Development	Department of Water Affairs and Forestry	Environmental Impact Assessment and Public Involvement Programme
Lebowakgomo Water "Turnaround" Projects -	Department of Water Affairs and Forestry	The facilitation and implementation of a system that will prove successful in management a system
Affordable Rental Accommodation	Department of Housing	Data capturing, Report Writing, Administrative Support
Baobab Toll Plaza	National Road Agency	Public participation, communication and negotiation for the implementation of the project
Coronation Park Development	Lefika	Socio-economic Impact Assessment
Hostel regeneration	DGSD Consulting	Social Impact Assessment
Diamond Hill Toll Plaza	National Road Agency	Public participation, communication and negotiation for the implementation of the project

## 8 LANGUAGES

Language	Speak	Read	Write
Afrikaans	Excellent	Excellent	Excellent
English	Excellent	Excellent	Excellent

**9 COMPUTER SKILLS**

Software	Good working knowledge	Average working knowledge	Poor Working knowledge
Windows 8	Yes		
Microsoft Office 2003, 2007, 2010	Yes		
Microsoft Project 2003, 2007, 2010	Yes		
Corel Office		Yes	
Corel Draw		Yes	
ESRI ArcGIS (mapping)	Yes		
Planet GIS (mapping)	Yes		
Global Mapper (view shed analysis)	Yes		
Microsoft Access 2003, 2007, 2010	Yes		
SAS Statistical analysis (database)		Yes	
Adobe Acrobat Reader / Writer 6	Yes		
Visual Mind 9	Yes		

**10 CONTACT DETAILS**

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## CURRICULUM VITAE

Surname:	Joubert
First Name:	Carien
Birth date:	02 June 1956
Nationality:	South African
Gender:	Female

### 1 PROFESSION

Chief Executive Officer of various businesses in the social development sciences and other fields

### 2 EDUCATION

Degrees	Main course of study
Doctor of Philosophy	Business Management: Qualitative & Quantitative Research Social and Behavioural Sciences
Master of Philosophy	Social and Behavioural Sciences
Degree in Philosophy	Social and Behavioural Sciences
Certificate	Participatory Community Development
Certificate	Food Microbiology
Diploma	Environmental & Public Health
Diploma (Cum Laude)	Occupational Safety

### 3 OTHER FORMAL TRAINING OR EDUCATION

Course	Main course of Study
ESRI accredited Certificate	ArcGIS
PlanetGIS Accredited Certificate	PlanetGIS 2.3

### 4 PROFESSIONAL SOCIETIES

- Award of Excellence, Social and Behavioural Science Project , 2001
- Award of Excellence, Business Management Project, 2011
- Certificate of Distinction, Preparatory Theses V, 2001
- Certificate of Distinction, Qualitative and Quantitative Research, 2011
- Membership in the Students' Council, 2001
- Member of the International Association of Impact Assessments
- Member, Institute of Waste Management
- Member, South African Health Association
- Member, Chamber of Commerce, Gauteng

## 5 SIGNIFICANT PUBLICATIONS / ACHIEVEMENTS

- Van Koppen, B., Joubert, C. & Grobbelaar, L (2000). Gender and Irrigation in Mathabatha Land. South Africa Working Paper. Colombo, Sri Lanka: International Water Management Institute (IWMI)
- Sub Task Team of Department of Health (1995) – Development of the National Environmental Service Policy
- SAAICE award (1997): Excellence for Community-based Engineering projects: Zoetvelden Water Supply project
- Task Team for Department of Water Affairs (1994) – National Sanitation Policy

## 6 EMPLOYMENT RECORD

Timeframe	Position	Company
October 1996 to date	Managing Director	Naledi Development (Pty) Ltd
1995 to Sept 1996	Associate, Institutional & Social Development	Consultburo Civil Engineers
1991 - 1995	Environmental Health Practitioner	Africon Civil Engineers
1985 to 1991	Senior Environmental Health Practitioner	Nelspruit Municipality
1983 - 1985	Environmental Health Practitioner	Department of National Health and Population Development
1981 - 1982	Product development	Creamline Diaries, Nelspruit
1978 to 1981	Environmental Health Practitioner	Department of National Health and Population Development

## 7 KEY PROJECTS

### 7.1 International Projects

Project Name	Country / Province	Role / Duties
Driekoppies Dam Development	Swaziland	Health Impact Assessment
Pemba Bay Protected Area Development	Mozambique	Set-up an action plan for the acquiring of investment funding
World Bank: Community-based Waste Disposal in Tamale, Takoradi & Kumasi	Ghana	Project Management, Community Participation, Government Liaison and Capacity Building
Bobonong capacity building for waste removal	Botswana	Capacity building for waste removal, health, sanitation & water services
Gabarone small contractor development	Botswana	Training and Capacity building of small contractors to partake in the refuse removal system

### 7.2 National (South Africa) Projects

Project Name	Client	Role / Duties
Municipal Service Delivery	City of Tshwane	Assessment of the technical and social capacity and



Project Name	Client	Role / Duties
Mechanisms		proposing mechanisms of service delivery and management
Land Acquisition to establish mining development	Anglo Platinum	Land Acquisition and negotiations to conform to Department of Land Affairs policies
Greater Soutpansberg Project	Coal of Africa	Formulate a strategy on the stakeholder management procedures, which will include methods statements, tools, and practical action plans
Makhado Colliery	Coal of Africa	Socio-economic Impact Assessment and Public Participation Programme Social Development Plans
Phabeni Agri-Village Development	Dovetail Development	Preparation, Implementation and Management of a Community Social Development Programme for the empowerment of land claimants (previously dispossessed of land in Apartheid South Africa)
Vele Colliery	Coal of Africa	Socio-economic Impact Assessment and Public Participation Programme Social Development Plans
OR Tambo Essential Oils	Impala Platinum	Implementing community based essential oil project including training, project management and stakeholder management.
Development of Natural Gas fields in South Africa	Msix	Preparation of social development plans for the Empowerment of Previously Disadvantaged Businesses to enter the Gas production industry in South Africa
Mogale City Sport Academy and inner city refurbishment Mbombela 2010 Soccer Stadium feasibility study	Lefika Emerging Equity	SEIA study for the feasibility of a sport academy and refurbishment of the inner city of Krugersdorp. SEIA study for the feasibility of the Mbombela 2010 soccer stadium
Polokwane 2010 Soccer Stadium feasibility study	Grant Thornton	SEIA study for the feasibility of the Polokwane 2010 soccer stadium
Diamond Hill Toll Plaza	National Road Agency	Public participation, communication and negotiation for the implementation of a socio-economic investment assessment (SEIA) for the project
Lebowa Platinum Mine Expansion	Anglo Platinum (Pty) Ltd	Involuntary Resettlement Management, Environmental Impact Assessment, Social Development, Public Participation, Conflict Resolution
Lebalelo Multi-sectoral Water User Association	Lebalelo WUA	Establishment, Public Involvement between 5 mining groups and 86 rural villages, operation of the WUA
Affordable Rental Accommodation	Department of Housing	Data capturing, Report Writing, Administrative Support
Baobab Toll Plaza	National Road Agency	Public participation, communication and negotiation for the implementation of the project
Flag Boshielo Dam Development	Department of Water Affairs and Forestry	Feasibility Study, Social Impact Assessment, Social Cost-benefit analysis, Public Participation Programme

Project Name	Client	Role / Duties
Letsitele Water User Association	Department of Water Affairs and Forestry	Conversion from Irrigation Board to Water User Association
Letaba / Luvuvhu Catchment Management Agency	Department of Water Affairs and Forestry	Initiation and Public Participation Programmes
Twickenham Platinum Mine Development	Anglo Platinum (Pty) Ltd	Involuntary Resettlement Management, Environmental Impact Assessment, Social Development, Public Participation, Conflict Resolution
Crocodile-West/Marico Catchment Management Agency	Department of Water Affairs and Forestry	Establishment of the Catchment Management Agency (CMA) Establish the Governing Board Capacity Building, Public Participation Programmes
Olifants River In stream Flow Requirements	Department of Water Affairs and Forestry	Participatory information gathering to identify important uses of the Olifants River to be able to calculate the In stream Flow Requirements
Nondweni Pedestrian Bridge Development	Department of Water Affairs and Forestry	Environmental Impact Assessment and Public Involvement Programme
Annesley Andulusite Mine Development	SAMREC (Pty) Ltd	Public Involvement, Social & Environmental Assessment, Involuntary Resettlement Management
Rooipoort Dam Development	Department of Water Affairs and Forestry	Involuntary Resettlement Management, Environmental Impact Assessment, Social Development, Public Participation, Conflict Resolution, Feasibility Study
Rural Water Supply Programme	Magalies Water Board	Management of the implementation of 20 water supply projects Establishment of cost recovery systems for service delivery
Nondweni Weir Development	Department of Water Affairs and Forestry	Communication and Capacity Building with the communities in the vicinity of the Weir
Capricorn Toll Plaza	National Road Agency	Public participation, communication and negotiation for the implementation of the project
Lebowakgomo Water "Turnaround" Projects -	Department of Water Affairs and Forestry	The facilitation and implementation of a system that will prove successful in management a system
Rapitsi Upgrading of Water Supply	Mvula Trust	Planning and implementation water supply systems to ensure sustainability
Seroka Upgrading of Water Supply	Mvula Trust	Planning and implementation water supply systems to ensure sustainability
Mooiplaats Landfill Site	Mini-Waste	Social Impact Assessment for possible Landfill site
School Awareness and Education towards Sanitation Project	Mvula Trust	Launching awareness campaigns in schools where Household Sanitation Project are currently running

Project Name	Client	Role / Duties
Margate Landfil Site Rehabilitation	Margate Local Municipality	Part of the team that worked on the rehabilitation of Social and Environmental analysis
Integrated Development Plans for Water Management	Mvula Trust	Development of the Institutional and Social Development requirements in Water Management for various Municipalities, previously known as Transitional Local Councils
Hlogotlou, Zoetvelden & Bethani Water Supply Projects	Department of Water Affairs & Forestry	Community-based training for water supply and cost recovery
Spitskop, Dindela & Vlakfontein Water Supply	Department of Water Affairs & Forestry	Community-based training for water supply and cost recovery
Letaba Water Resource Development	Department of Water Affairs & Forestry	Social Impact Assessment for 4 alternative dam sites R400 mil project Preparation for resettlement of affected parties and public participation throughout the project
Water Resource Management, Caledon River, Wepener	Department of Water Affairs & Forestry	Social Impact Assessment on the Wepener Town and the preparation for resettlement and public participation
Jericho, Kopela, Bethanie, Berseba, Modikwe Water Supply Projects	Department of Water Affairs & Forestry	Training for water systems - informal rural settlements
Gundjani water project	Department of Water Affairs & Forestry	Training & facilitation for water systems
Modderfontein -upgrading environmental health services, solid waste management, waste water purification	Local Municipality	Projects included coordination of informal traders' occupational health, upgrading of hostels and taxi-ranks, pollution monitoring and representing Modderfontein on Waste, Sewerage and Health Forums of East Rand Regional Services Council, NORKOK and other organisations.
Coordination of health & community development projects, implementation of refuse removal schemes, and community liaison for various informal settlements	Department of Health	Doornkop, Ivory Park, Lenasia Homeless Camp, Swaneville, Finetown 300 000 people: Coordination of health & community development projects, implementation of refuse removal schemes, community liaison etc. It included establishment of creches, food garden projects and training of traditional healers.
Waterval/Elim waste management system	Local Municipality	Community-based waste management system
Hartbeespoort, Bon Accord, Brakpan and Garstkloof Landfills- pollution monitoring	Kosmos City Council	Community-based waste management system
Botshabelo & Doornkop Food for Refuse	Local Municipality	Community-based waste management system, re food for refuse to alleviate poverty
Training of Transitional Local	Local Municipality	Institutional development, capacity building of

Project Name	Client	Role / Duties
Councils in Ndebele, Waterfall and Siyabuswa, Limpopo		infrastructure and water projects
Atteridgeville Clean-up campaign	Local Municipality	Community liaison, training, capacity building - Atteridgeville cleanup campaign and services
37 Mafefe Tribe communities - labour intensive electrical project	Department of Public Works	Community liaison, training, capacity building

## 8 LANGUAGES

Language	Speak	Read	Write
Afrikaans	Excellent	Excellent	Excellent
English	Excellent	Excellent	Excellent
Swazi	Excellent	Good	Average Good
Zulu	Excellent	Good	Average
Pedi	Average	Poor	Poor
Tswana	Average	Poor	Poor
Xhosa	Average	Poor	Poor

## 9 COMPUTER SKILLS

Software	Good working knowledge	Average working knowledge	Working knowledge
Windows 8	Yes		
Microsoft Office 2010	Yes		
Microsoft Access 2010		Yes	
Microsoft Project 2010		Yes	
Corel Office		Yes	
Corel Draw			Yes
ESRI ArcGIS		Yes	
Planet GIS		Yes	
SAS Statistical analysis			Yes
Adobe Acrobat Reader / Writer 10	Yes		

## 10 CONTACT DETAILS

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