

**APPENDIX R**

**Socio-Economic Impact  
Assessment**



**REPORT**

**Social Impact Assessment for the Proposed  
Metsimaholo Underground Coal Mine**  
*Seriti Coal (Pty) Ltd*

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## Executive summary

Seriti Coal (Pty) Ltd (Seriti) has commissioned Golder Associates Africa (Pty) Ltd (Golder) to undertake an Environmental and Social Impact Assessment (ESIA) for the proposed new Metsimaholo underground coal mine project within the jurisdiction of the Metsimaholo Local Municipality, Free State Province. This document presents the socio-economic implications associated with the proposed Metsimaholo underground coal mine project. It is anticipated that the proposed project will have socio-economic implications for the receiving environment. To understand the socio-economic conditions within the project area, Golder conducted a desktop review and stakeholder consultation process. According to the outcomes of the desktop review, communities in the receiving environment are exposed to high rates of unemployment and generally do not have access to adequate social services and infrastructure. Based on the desktop findings, stakeholder consultation findings and expert knowledge, impacts were identified and categorised according to the project phase in which the impacts are likely to occur viz., construction, operation and decommissioning and closure phase.

- The construction phase impacts include:
  - Three positive impacts, namely temporary employment opportunities, increased economic revenue, and improved infrastructure; and
  - Three negative impacts, namely loss of farmland, health and safety risk, and population influx.
- The operational phase impacts include:
  - Five positive impacts, namely long-term employment opportunities, skills transfer and development, community development, regional and economic development, and increased coal supply; and
  - Two negative impacts, namely loss of temporary construction phase employment and health and safety risk.
- The decommissioning and closure phase impacts include:
  - Four negative impacts, namely loss of long-term operational phase employment, reduced regional economic development, reduced coal supply and reduced community investment.

From these impacts, only one construction phase impact (loss of farm land) has been rated as a high significance negative impact. Other impacts during the construction, operation and decommissioning phases have been rated as moderate negative and low to moderate positive impacts. If mitigation measures are implemented accordingly, it is anticipated that the consequence and probability of moderate, and high negative impacts will be reduced, while moderate positive impacts on average will be enhanced to maximise benefits to the directly affected communities.

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## APPENDICES

### APPENDIX A

#### Document Limitations

**APPENDIX B**

## Specialist Declaration and CV

**ACRONYMS/ ABBREVIATIONS**

| Acronym or Abbreviation | Full Term                                       |
|-------------------------|-------------------------------------------------|
| CM                      | Continuous miners                               |
| ESIA                    | Environmental and Social Impact Assessment      |
| ESIA                    | Environmental and Social Impact Assessment      |
| FDDM                    | Fezile Dabi District Municipality               |
| HDSA                    | Historically Disadvantaged South Africans       |
| I&AP                    | Interested and Affected Parties                 |
| IDPs                    | Integrated Development Plans                    |
| LED                     | Local Economic Development                      |
| MLM                     | Metsimaholo Local Municipality                  |
| MPRDA                   | Mineral and Petroleum Resources Development Act |
| NEMA                    | National Environmental Management Act           |
| NGO                     | Non-Governmental Organisation                   |
| SDF                     | Spatial Development Framework                   |
| SIA                     | Social Impact Assessment                        |
| SLP                     | Social and Labour Plan                          |
| SP                      | Significance Points                             |
| TB                      | Tuberculosis                                    |

## 1.0 INTRODUCTION

Seriti Coal (Pty) Ltd (Seriti) has commissioned Golder Associates Africa (Pty) Ltd (Golder) to undertake an Environmental and Social Impact Assessment (ESIA) for the proposed new Metsimaholo underground coal mine project. Seriti obtained the remaining Metsimaholo reserves (previously known as Coalbrook 1 and 3) as part of a purchase agreement. The proposed development aims to start Metsimaholo colliery with these remaining reserves. It is expected that the proposed project will have socio-economic impacts on the receiving environment. Consequently, Golder has undertaken this Social Impact Assessment (SIA) for the proposed project. The following sections provide the terms of reference and the legislative requirements which apply to this SIA.

### 1.1 Terms of reference

The terms of reference for this SIA are to;

- describe the socio-economic conditions of the receiving environment;
- identify and describe the socio-economic implications associated with the proposed project;
- identify, describe, and rate the significance of the socio-economic implications that may result from the proposed project; and
- recommend feasible (practical and cost effective) mitigation measures to enhance positive impacts and reduce negative impacts.

### 1.2 South African legislative requirements

This section provides an overview on the South African acts for mining development projects viz., National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998) and the Mineral and Petroleum Resources Development Act (MPRDA), 2002 (Act No. 28 of 2002). In addition to NEMA and MPRDA, this section provides an overview of other South African acts and regulations which apply to the SIA.

#### 1.2.1 National Environmental Management Act, 1998 (NEMA) (Act No 107 of 1998)

According to NEMA, sustainable development requires the integration of social, economic, and environmental factors in the planning, implementation, and evaluation of decisions to ensure that development serves present and future generations. NEMA also sets out the process for public participation.

#### 1.2.2 Mineral and Petroleum Resources Development Act, 2002 (MPRDA) (Act No. 28 of 2002)

The MPRDA states that “any mining operation must be conducted in accordance with generally accepted principles of sustainable development by integrating social, economic and environmental factors into the planning and implementation of prospecting and mining projects.” The MPRDA also identifies the timeframes and manner, in which the public should be consulted.

The MPRDA also identifies the need for the development of a social and labour plan to be submitted with the mining rights application.

#### 1.2.3 The Constitution of South Africa

Table 1 shows the objectives and development duties of municipalities, including the legal rights of all South Africans as per the Constitution of the Republic South African, 1996 (Constitution).

**Table 1: Aspects of the South African Constitution applicable to the SIA**

| Regulation                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 25 of the Constitution | <p>“(1) No one may be deprived of property except in terms of the law of general application, and no law may permit arbitrary deprivation of property;</p> <p>(2) Property may be expropriated only in terms of general application – (a) for a public purpose or in the public interest; and (b) subject to compensation, the amount of which and the time and manner of payment of which have either been agreed by those affected or decided or approved by a court; and</p> <p>(6) A person or community whose tenure of land is legally insecure as a result of past racially discriminatory laws or practices is entitled, to the extent provided by an act of Parliament, either to tenure which is legally secure or to comparable redress.”</p> |
| Section 26 of the Constitution | <p>(1) Everyone has the right to have access to adequate housing; and</p> <p>(3) No one may be evicted from their home, or have their home demolished, without an order of court made after considering all the circumstances. No legislation may permit arbitrary evictions.”</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

### 1.2.4 The South African Mining Charter

The Broad-Based Socio-Economic Empowerment Charter for the Mining and Minerals Industry, 2018 (Mining Charter) seeks to achieve the following objectives:

- To promote equitable access to the nation’s mineral resources to all the people of South Africa;
- To substantially and meaningfully expand opportunities for historically disadvantaged South Africans (HDSA) to enter the mining and minerals industry and to benefit from the exploitation of the nation’s mineral resources;
- To utilise and expand the existing skills base for the empowerment of HDSA and to serve the community;
- To promote employment and advance the social and economic welfare of mine communities and major labour sending areas;
- To promote beneficiation of South Africa’s mineral commodities; and

- To promote sustainable development and growth of the mining industry.

Consequently, social management and mitigation measures, which have been developed as part of the SIA, were aligned with the Mining Charter.

### 1.2.5 National Spatial Development Perspective

According to the National Spatial Development Perspective, spatial development should, where appropriate, accommodate and promote private economic ventures, which can aid sustainable economic growth, relieve poverty, increase social investment, and improve service delivery. Consequently, municipal-level spatial planning has been considered where possible.

## 2.0 METHODOLOGY

### 2.1 Data collection

To understand the socio-economic baseline conditions of the project-affected areas and the socio-economic implications of the proposed project to the receiving environment, Golder conducted secondary desktop data collection and primary data collection as part of the stakeholder consultation process. These two methods are elaborated further in the next sections.

#### 2.1.1 Desktop review

Golder reviewed available documents to obtain information regarding the socio-economic conditions in the study area. The documents reviewed include the following:

- Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs) of the affected local and district municipalities;
- Socio-economic and demographic statistics (sourced from Statistics South Africa's 2011 census data, 2012 municipal report 2018 provincial data and the 2016 community survey);
- Documents concerning the proposed project, which include project description document, scoping report and social and labour plan (SLP) for the proposed project;
- Other specialist studies conducted as part of the Environmental and Social Impact Assessment (ESIA) viz., Archaeological and Heritage Impact Assessment Report (Sativa Travel and Environmental Consultants (Pty) Ltd, 2019), Aquatic Biomonitoring Baseline and Impact Assessment Report (Golder, 2019a), Visual Impact Assessment Report (Golder, 2019b), Air Quality Report (Golder, 2019c); Noise Impact Assessment Report (Golder, 2019d) and Groundwater Baseline and Impact Assessment (Golder, 2019e)
- Available maps and satellite imagery; and
- Results of the public participation process.

#### 2.1.2 Public participation

Golder consulted with interested and affected parties (I&AP) (Table 2). The information derived from the public participation process and minutes of the various meetings were used to develop a better understanding of the stakeholders' concerns, issues, and expectations.

**Table 2: Stakeholder meetings**

| Date        | Type of Meeting          | I&AP                                                                                                                                                                                                                                              | Venue                                                                 | Number of Attendees |
|-------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------|
| 26-Sep-2018 | Pre-consultation meeting | <ul style="list-style-type: none"> <li>■ Mrs Reade Nienaber, owner of Katbosch 93 Portion 0 and 4, representing Seriso 534 (Pty) Ltd.</li> <li>■ Mr Hugh Nienaber, owner of Excelsior 1797 Portion 0, representing Hugh Nienaber Trust</li> </ul> | Nienaber Trust Farm (Mr Nienaber's mother's farm). Off R82, Sasolburg | 2                   |
| 26-Sep-2018 | Pre-consultation meeting | <ul style="list-style-type: none"> <li>■ Hennie Claasen, owner of Pistor 1029 Portion 2</li> </ul>                                                                                                                                                | A8 Deo Volente Retirement Home, Langenhoven Street, Sasolburg         | 1                   |
|             |                          | <ul style="list-style-type: none"> <li>■ Mrs Lettie Janse van Rensburg, owner of Katbosch 93 Portion 5</li> </ul>                                                                                                                                 | A8 Deo Volente Retirement Home, Langenhoven Street, Sasolburg         | 1                   |
| 26-Sep-2018 | Pre-consultation meeting | <ul style="list-style-type: none"> <li>■ Mrs Tharina Terblanche, trustee for the deceased estate that is the owner of Katbosch 93 Portion 3</li> </ul>                                                                                            | Tharina Centre, Vaalpark, Sasolburg                                   | 1                   |

| Date        | Type of Meeting                     | I&AP                                                                                                                                                                  | Venue                                                                    | Number of Attendees |
|-------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------|
| 16-Oct-2018 | Pre-consultation meeting            | <ul style="list-style-type: none"> <li>■ Mr Tshitereke Masheleni (Town Planner)</li> <li>■ Mr Sicelo Molefe, Urban Planner, Metsimaholo Local Municipality</li> </ul> | Metsimaholo Local Municipality, 7th Floor, 10 Fichardt Street, Sasolburg | 2                   |
| 12-Nov-2018 | Meeting called by Municipal Council | <ul style="list-style-type: none"> <li>■ Metsimaholo Ward Councillors and Ward Committee Members</li> </ul>                                                           | Harry Gwala Multipurpose Hall, Zamdela                                   | 37                  |
| 15-Nov-2018 | Public Meeting                      | <ul style="list-style-type: none"> <li>■ Meeting with community members, municipal representatives, landowners, NGOs, and media</li> </ul>                            | Harry Gwala Multipurpose Hall, Zamdela                                   | 316                 |

Please refer to the Public Participation chapter of the EIA report for details on concerns raised during the various consultation meetings.

## 2.2 Impact assessment

### 2.2.1 Identification of impacts

Based on the collected secondary data, outcomes of the stakeholder consultation and expert knowledge, impacts were identified and categorised according to the project phase in which the impacts are likely to occur viz., construction, operation, and closure and decommissioning phases.

### 2.2.2 Rating of impacts

The significance of the identified impacts will be determined using the approach outlined below (terminology from the Department of Environmental Affairs Guideline document on ESIA Regulations, April 1998). This approach incorporates two aspects for assessing the potential significance of impacts, namely occurrence and severity, which are further sub-divided as shown in Table 3.

**Table 3: Aspects for assessing the potential significance of impacts**

| Occurrence                |                        | Severity                   |                                |
|---------------------------|------------------------|----------------------------|--------------------------------|
| Probability of occurrence | Duration of occurrence | Scale/extent of the impact | Magnitude (severity) of impact |

To assess each of these factors for each impact, Table 4 shows the four ranking scales used.

**Table 4: Scoring system for evaluating impacts**

| Magnitude                  | Duration                                                                                       | Scale             | Probability              |
|----------------------------|------------------------------------------------------------------------------------------------|-------------------|--------------------------|
| 10 - Very high/do not know | 5 - Permanent                                                                                  | 5 – International | 5 - Definite/do not know |
| 8 - High                   | 4 - Long-term (longer than 10 years, with the impact ceasing after the closure of the project) | 4 - National      | 4 - Highly probable      |
| 6 - Moderate               | 3 - Medium-term (4-10 years)                                                                   | 3 - Regional      | 3 - Medium probability   |
| 4 - Low                    | 2 - Short-term (1-3 years)                                                                     | 2 - Local         | 2 - Low probability      |
| 2 - Minor                  | 1 – Immediate (less than a year)                                                               | 1 - Site only     | 1 - Improbable           |

Once these factors are ranked for each impact, the significance of the two aspects, occurrence, and severity, is assessed using the following formula:

**SP (significance points) = (magnitude + duration + scale) x probability**

The maximum value is 100 significance points (SP). The impact significance will then be rated as follows:

|                   |                                               |                                                                                                                                            |
|-------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SP &gt;75</b>  | Indicates a high environmental significance   | An impact which could influence the decision about whether or not to proceed with the project regardless of any possible mitigation.       |
| <b>SP 30 – 75</b> | Indicates moderate environmental significance | An impact or benefit which is sufficiently important to require management, and which could influence the decision unless it is mitigated. |
| <b>SP &lt;30</b>  | Indicates low environmental significance      | Impacts with little real effect and which should not have an influence on or require modification of the project design.                   |
| <b>+</b>          | Positive impact                               | An impact that is likely to result in positive consequences/effects.                                                                       |

In the methodology outlined above, the following definitions were used:

- **Magnitude** is a measure of the degree of change in a measurement or analysis (e.g., the area of pasture, or the concentration of a metal in water compared to the water quality guideline value for the metal), and is classified as none/negligible, low, moderate, or high. The categorisation of the impact magnitude may be based on a set of criteria (e.g. health risk levels, ecological concepts and professional judgement) pertinent to each of the discipline areas and key questions analysed. The specialist study must attempt to quantify the magnitude and outline the rationale used. Appropriate, widely recognised standards are to be used as a measure of the level of impact.
- **Scale/Geographic extent** refers to the area that could be affected by the impact and is classified as site, local, regional, national, or international.
- **Duration** refers to the length of time over which an environmental impact may occur: i.e. immediate/transient, short-term (one to three years), medium-term (four to 10 years), long-term (greater than 10 years with impact ceasing after the closure of the project), or permanent.
- **Probability of occurrence** is a description of the probability of the impact actually occurring as improbable (less than 5% chance), low probability (5% to 40% chance), medium probability (40% to 60% chance), highly probable (most likely, 60% to 90% chance) or definite (impact will definitely occur).

### 2.2.3 Mitigation measures

Mitigation measures were formulated to avoid or reduce negative impacts and to enhance positive ones. Golder used the following criteria when recommending mitigation measures:

- Ability to avoid the impact without having significant negative secondary consequences; and
- Feasibility and cost effectiveness.

After suitable mitigation measures were identified for each impact, the rating procedure described in the section above was repeated to assess the expected significance. The difference between pre- and post-mitigation rating represents the degree to which the recommended mitigation measures are expected to be effective in reducing the impacts.

## 3.0 PROJECT DESCRIPTION

### 3.1 Project location

The project area is situated within the jurisdiction of the Metsimaholo Local Municipality (MLM), in the northern part of the Fezile Dabi District Municipality (FDDM), Free State Province. The project area covers approximately 34 378 ha. The towns that are in proximity and next to the project area within the MLM include Sasolburg, Deneysville and Refenggotso. The Emfuleni and Midvaal Local Municipalities border the project area to the north, both located within the jurisdiction of the Sedibeng District Municipality. The nearest towns are Refenggotso, which straddles the northeast corner of the project area, and Deneysville which lies a further 3km to the east as shown in (Figure 1).

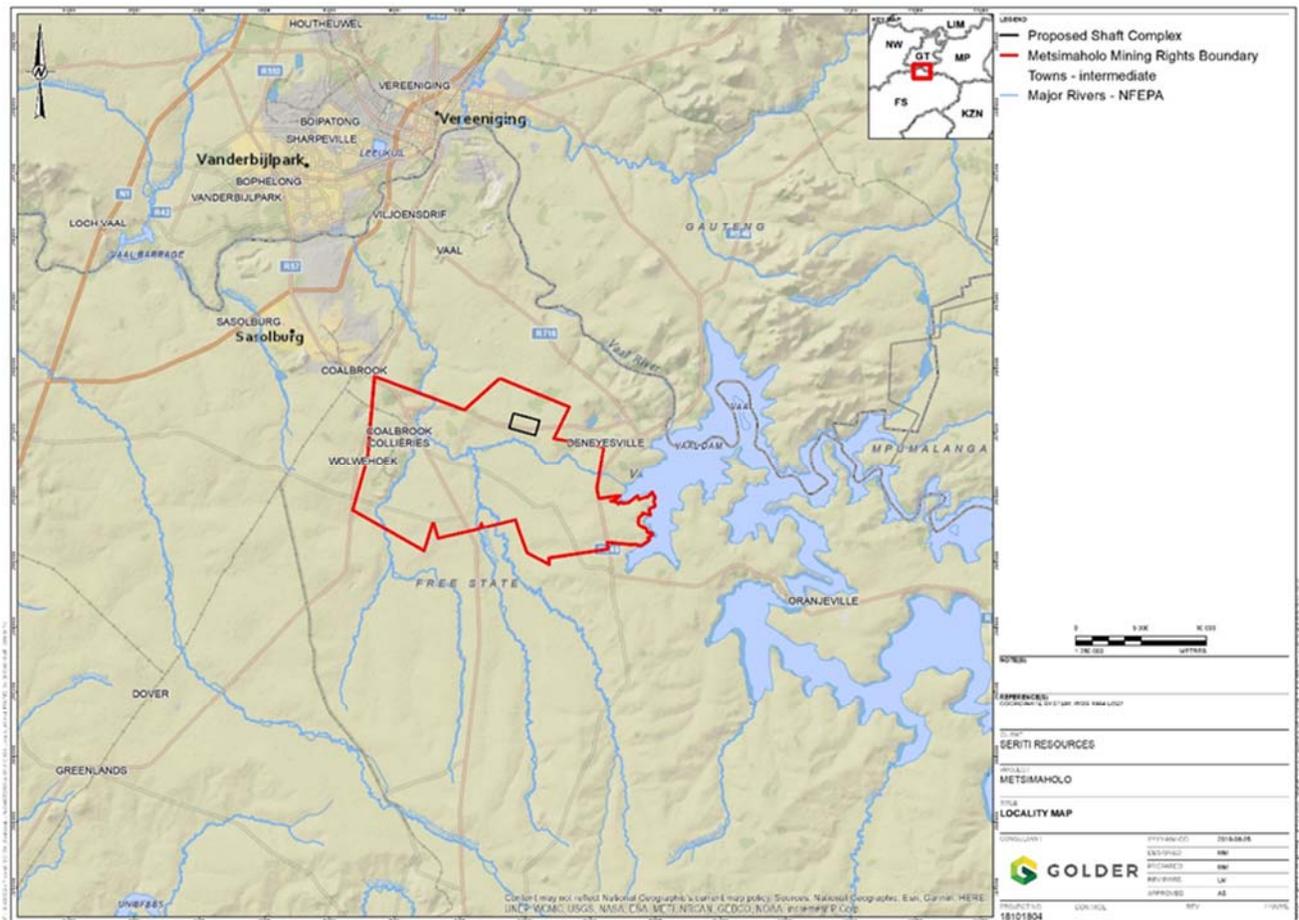


Figure 1: Locality map showing Metsimaholo study area

### 3.2 Project duration and activities

The Metsimaholo mine is proposed to be an independent mine producing thermal coal from one operational decline shaft. Planned mine production is approximately three million tonnes per annum (Mtpa), depleting in 2054. Pending government authorisation, the project is planned to start in 2023 with the pre-construction and construction phase. Mine establishment and access development are scheduled to begin in quarter three of 2023. The project is planned to commence initial production in 2025. The operational phase of the mine will run for 24-hours a day, seven days a week. Access to the orebody is planned through a box-cut development, with a twin decline shaft system to intersect the top seam (TMH) floor and the middle seam (MLMH) floor, from which the shaft bottom development and main primary development would be initiated. MLMH will be accessed from underground via a developed decline. Main access development is planned from the decline shaft floor as a 7-road development providing access to men, material, and services. The total depth of the decline will reach approximately 240m below ground.

Bord-and-pillar mining using continuous miners (CM's) was selected as the primary coal extraction method. In bord-and-pillar mining, parallel roadways are developed in the mining direction. Perpendicular roads, called splits, are developed at predetermined intervals to the parallel roads. These roads interlink, creating pillars. The roads

that are mined concurrently are determined by the size of the pillars required to support the overburden above the coal seam and the length of the production equipment's trailing cables. The roads are 7.2m wide with an average mining height of 3m. The pillar strength divided by the pillar load is the safety factor which determines the pillar size. The main development and production sections consist of either seven or nine roadways which constitute a mining panel.

The following main mining activities are part of the bord-and-pillar mining method:

- Coal cutting and loading – the CM uses the cutting head which is a rotating drum with cutting picks attached to cut the coal face. A loading mechanism picks up cut coal and delivers it into the central part of the machine. A conveying system, usually a chain conveyor, is used to run the coal in a steel trough from front to rear of the miner. A rear jib section capable of vertical and horizontal movement is used to enable the coal to be delivered into a shuttle car.
- Coal hauling and tipping – the loaded shuttle car is used to haul the coal to the section feeder breaker which crushes and feeds the coal on the conveyor belt system.
- Roof support – a roof bolt machine is used for making safe the roadways by installing roof bolts according to a systematic support procedure.
- Coal transportation – a conveyor belt system is used to transport the coal from the mining section to surface silos, ready for distribution to the market.

The potential life-of-mine is anticipated to be 30 years delivering an average of 2.8 to 3.0 million tonnes per annum of coal to steady state production. The total saleable product is estimated at approximately 80 million tonnes over the life-of-mine with an average calorific value of 19 megajoules per kilogram. Based on the above tonnages, the mine will start producing approximately 900 000 tonnes a year in 2025 and slowly ramp up to full production of 3.0 million tonnes per annum in 2031.

The coal will be transported to the market by haulage truck. The market at this stage is inland with possible clients based east and west of the mine (Grootvlei Power Station and Sasolburg).

At the start of mining, there will be four trucks an hour, increasing to 12 trucks an hour once the mine reaches full production. Coal will be transported on a seven-days a week.

### 3.2.1 Employment

The proposed mine is expected to create temporary employment for approximately 350 people during construction and access development, and 450 long-term vacancies during operations.

### 3.2.2 Community investment

In accordance with MPRDA requirements, Seriti has prepared a Social and Labour Plan (SLP). The SLP outlines Seriti's envisaged commitments to human resource development and local economic development (LED). The objectives of the SLP are to:

- promote employment and advance the social and economic welfare of all the stakeholders in the communities in which it operates;
- contribute to the transformation of the coal mining industry; and

- ensure that as a holder of mining rights, Metsimaholo Colliery contributes to the socio-economic development of the communities within which it operates, including major labour sending areas.

It is important to note that the objectives of the MPRDA and the SLP are central to the strategic and operational parameters of Seriti Coal, and Seriti will endeavour to meet these objectives for the benefit of employees, local communities, the mining industry and South Africa as a whole. Additionally, Metsimaholo Colliery will support the well-being of its communities through initiatives that will be integrated with the local and district municipalities' Local Economic Development and Integrated Development Planning forums and processes.

## 4.0 SOCIAL BASELINE

### 4.1 Socio-economic demographics

#### 4.1.1 Population

According to Statistics South Africa's 2016 Community Survey, the total combined urban and rural population of MLM is estimated at 163 564 with an estimated 45 757 households (Table 5). Accordingly, the Metsimaholo Municipality accounts for an estimated 33% of the total district population of 494 777, and it is the most populated area within the FDDM followed by Moqhaka Local Municipality. The municipality population mostly consists of young people between the age of 0 – 34, who make up 63% of the total municipal population while adults between the ages of 35 and 64 make up 29% of the total population. (Source: Stats SA: CS 2016).

**Table 5: Population Statics of the Free State, Fezile Dabi District Municipality and Metsimaholo Local Municipality**

| Area                | Area (km <sup>2</sup> ) | Total population | Population density /km <sup>2</sup> | Population growth rate% (2001 - 2011) |
|---------------------|-------------------------|------------------|-------------------------------------|---------------------------------------|
| Free State Province | 129 825                 | 2 745 590        | 21                                  | 1.4                                   |
| Fezile Dabi DM      | 20 668                  | 494 777          | 22.3                                | 0.6                                   |
| Metsimaholo LM      | 1739                    | 163 564          | 95.26                               | 2.51                                  |

Source: Stats SA CS 2016

According to the Census (2011), there is approximately 144 980 households in the FDDM and approximately 45 757 within the MLM. This equates to an average household size of 3.2 people in the FDDM and 3.1 people in the MLM (see Table 6). Approximately 32.5% of those households are headed by females, and most of the population reside in formal dwellings (Census 2011).

**Table 6: Distribution of average household size and type**

| Area                | Number of households | Average | Household type: Formal | Household type: Traditional | Household type: Informal |
|---------------------|----------------------|---------|------------------------|-----------------------------|--------------------------|
| Free State Province | 823 316              | 3.3     | 81.6%                  | 2.3%                        | 15.6%                    |
| Fezile Dabi DM      | 144 980              | 3.2     | 83.5%                  | 0.4%                        | 15.3%                    |
| Metsimaholo LM      | 45 757               | 3.1     | 87.5%                  | 0.1%                        | 12.2%                    |

Source: Stats SA 2011 and community survey 2016

### 4.1.2 Age distribution

The age distribution of FDDM and MLM is shown in Table 7. The majority of the population in the FDDM and MLM are in the age group 15-64 years.

**Table 7: Age distribution (Stats SA, 2011)**

| Area | < 15 Years | 15- 64 Years | > 65 Years |
|------|------------|--------------|------------|
| FDDM | 28.10      | 69.32        | 4.37       |
| MLM  | 26.31      | 65.82        | 6.08       |

### 4.1.3 Gender ratio

The gender ratio for FDDM and MLM is shown in Table 8. There is a slight increase in males in the Fezile District Municipality as more employment opportunities were created in the District.

**Table 8: Gender ratio**

| Area | Males per 100 females |       |
|------|-----------------------|-------|
|      | 2001                  | 2011  |
| FDDM | 96.8                  | 98.6  |
| MLM  | 104.4                 | 108.6 |

### 4.1.4 Ethnicity and language

The population distribution of the municipal population groups and prominent languages indicates that the local municipalities are likely to be culturally similar. Most of the population belong to the Black African group, and the most spoken language is Sotho at 71.7% followed by Afrikaans at 16.2%. Table 9 demonstrates a comparison of the population and language distribution in the province, district municipality and local municipality.

**Table 9: Population groups and language distribution (Source: Census 2011)**

| Area                | Population groups |          |               |       | Predominant languages |           |
|---------------------|-------------------|----------|---------------|-------|-----------------------|-----------|
|                     | Black African     | Coloured | Indian/ Asian | White | Sotho                 | Afrikaans |
| Free State Province | 87.6%             | 3.1%     | 0.4%          | 8.7%  | 64.2%                 | 12.7%     |
| Fezile Dabi DM      | 86.1%             | 1.9%     | 0.3%          | 11.4% | 67.3%                 | 13.8%     |
| Metsimaholo LM      | 82.3%             | 0.7%     | 0.3%          | 16.4% | 71.7%                 | 16.2%     |

### 4.1.5 Education

The census 2011 Free State report indicates that most of the population aged 20 years and older have some secondary education at a provincial, district and local level. A small percentage of the population has completed Grade 12 or have a higher education, this means that most of the population has a low skill level and would either need employment in the low skill sector, or better education opportunities to improve the skill level of the area and therefore income levels. Education alone cannot eradicate poverty, rather education coupled with greater job opportunities in the economy will be a roadmap out of poverty (Stats SA, 2014). Table 10 demonstrates the level of education/ skills availability in the area and Table 11 reflects on the level of access to education facilities (pre-primary and secondary schools) by communities within the municipal boundaries.

**Table 10: Education levels of population aged 20 years and older**

| Level of Schooling        | Free State Province % | Fezile Dabi DM % | Metsimaholo LM % |
|---------------------------|-----------------------|------------------|------------------|
| No Schooling              | 7.1                   | 7.3              | 5.7              |
| Some Primary              | 16.1                  | 15.9             | 11.9             |
| Completed Primary         | 5.3                   | 4.9              | 4.2              |
| Some Secondary            | 34.6                  | 35.1             | 35.8             |
| Completed Grade 12/Matric | 27.1                  | 28               | 29.9             |
| Higher Education          | 9.4                   | 8.6              | 12.5             |

Source: Stats SA: 2011 and CS 2016

**Table 11: Access to Education Facilities**

| Schools                                             | Total number |
|-----------------------------------------------------|--------------|
| Pre-primary                                         | 105          |
| Primary (public schools =24; Farm schools = 6)      | 30           |
| Secondary (public schools = 12; and independent =1) | 13           |
| FET College                                         | 01           |

Source: MLM IDP 2016-2017

### 4.1.6 Employment

MLM is largely populated by a potentially economically active population. The unemployment rate in the MLM stood at 32% in 2011 with approximately 20 528 people being unemployed as shown in Table 12. This scenario implies that there is a lot of human capital available for any work, but there is scope for training and developing an economically active population in the relevant fields needed. This could reduce poverty levels and increase employment in the local study area. Local workers should be utilised as much as possible for the proposed project to alleviate local unemployment.

**Table 12: Distribution of population aged 15-64 years by employment status**

| Area                              | Employment | Unemployment | Unemployment rate |
|-----------------------------------|------------|--------------|-------------------|
| Free State Province               | 638 331    | 309 857      | 33%               |
| Fezile Dabi District municipality | 115 844    | 59 594       | 34%               |
| Metsimaholo Local municipality    | 43 220     | 20 528       | 32%               |

Source: Census 2011

## 4.2 Social and physical infrastructure

### 4.2.1 Health facilities

The Free State has a well-developed and serviced health infrastructure. The province is currently serviced by 58 ambulance service providers (excluding vehicles), three AIDS information training centres, three blood banks, 23 community health centres, 332 fixed clinics, nine private clinics, two academic hospitals, 27 district hospitals, one military hospital, 12 private hospitals, five regional hospitals, four specialised hospitals, one tuberculosis (TB) hospital, nine laboratories and 145 mobile clinics (SDF, 2012). In the rural area of Metsimaholo, health facilities are provided by mobile clinics. For major health services, people are required to go to the clinics that are in Deneysville, Oranjeville and Sasolburg. Just over one third (33%) had an operational municipal clinic that is within one kilometre from home. Just over one quarter (29%) has a municipal clinic that is between one and two kilometres away from their homes, and just over one fifth has a municipal clinic that is between two and five kilometres away from home (IDP 2012).

### 4.2.2 Water and sanitation

The MLM has a good record for the provision of sanitation and water services. The management of the water provision services to approximately 48 000 households is done in two categories: bulk supply by Rand Water Board (Sasolburg zone) and water extracted from the Vaal Dam and purified. There is no challenge as to the supply of water to the Municipality (2014/15 MLM Annual Report).

In Metsimaholo the predominant sanitation system used is waterborne, septic tanks in temporary establishments and long drops. Sasolburg predominantly uses waterborne sewage with limited long drops in the informal areas and septic tanks on small holdings and farms, while Deneysville and Orangeville use septic tanks. On the proposed shaft complex site, infrastructure is provided by individual property owners, and the Municipality is responsible for emptying the septic tanks. The new developments within Deneysville such as new areas of the suburb and the township are all supplied with waterborne sewage. In informal settlements, temporary long drops or septic tanks are provided to families who make use of communal facilities.

### 4.2.3 Waste management

Due to the high growth rate of informal settlements, municipalities are experiencing large volumes of illegal dumping, which in turn, can impact on public health. The challenges of waste management can be attributed to the following:

- Informal settlement and illegal dumping;
- Poor management and maintenance of landfill sites; and

- Lack of a recycling model or system in the district.

#### 4.2.4 Electricity

Access to electricity as a source of energy in the FDDM has increased to 90.8% compared to 52% in 1996 (IDP 2016). Table 13 below details access to electricity across the MLM during 2001, 2007 and 2011. The 2011 Census information shows that more households utilise electricity for heating, lighting, and cooking compared to the status quo in 2001. 67.7% of households used electricity for heating, 86.4% for lighting and 83.1% for cooking in 2011.

**Table 13: Access to Electricity in MLM**

| Year | Electricity |          |         |
|------|-------------|----------|---------|
|      | Heating     | Lighting | Cooking |
| 2001 | 55.4%       | 77.0%    | 65.3%   |
| 2007 | 69.0%       | 87.1%    | 84.4%   |
| 2011 | 67.7%       | 86.4%    | 83.1%   |

Source: MLM IDP, 2015/2016

#### 4.2.5 Roads

Currently, Metsimaholo has 216km of surfaced roads and 300km of dirt roads. The road network linking Sasolburg proper to the rest of the areas within the jurisdiction of the Municipality is well established, although some areas of the road network are in a poor state of maintenance, which affects mobility.

### 4.3 Economic trends

The primary economic sectors in the FDDM include agriculture; mining; manufacturing; electricity; construction; trade; transport; finance and community services. FDDM is the second largest contributor to the provincial GDP (31%), the economy of Fezile Dabi (4%) has been the largest growing economy in the province (FDDM IDP 2012-2017). Table 14 shows the growth rate trends in each economic sector in the Free State Province and FDDM.

**Table 14: Growth rate trends per economic sector (Source: FDDM IDP 2012-2017; Stats SA, 2011)**

| Sector                | Free State growth trend 2003 - 2010 (%) | FDDM growth trend from 2000 - 2006 (%) |
|-----------------------|-----------------------------------------|----------------------------------------|
| Agriculture           | 1.7                                     | -6.1                                   |
| Mining                | -0.5                                    | -6.9                                   |
| Manufacturing         | 2.6                                     | 1.3                                    |
| Electricity and water | 2.3                                     | 0.9                                    |
| Construction          | 7.1                                     | 3.8                                    |
| Transport             | 2.5                                     | 3.3                                    |

| Sector             | Free State growth trend 2003 - 2010 (%) | FDDM growth trend from 2000 - 2006 (%) |
|--------------------|-----------------------------------------|----------------------------------------|
| Trade              | 3.5                                     | 5.1                                    |
| Finance            | 5.4                                     | 5.6                                    |
| Community Services | 3.6                                     | -0.1                                   |

MLM contributes 68.1% of the district gross domestic product (GDP) and dominates the district economy in all sectors within the district of Metsimaholo, due to the large petrochemical hub in Sasolburg and related economic activities. From the nine main sectors within MLM's economy, the dominant contributors to GDP is Manufacturing (97.0%) and electricity (97.4%). Other contributors include agriculture (12.2%), mining (27.6%), construction (73.7%), trade (52.5%), transport (55.9%), finance (65.4%) and community services (26.7%) (Department of Rural Development and Land Reform, 2016).

MLM is the only local municipality within the FDDM in which the private sector dominates the economy. The main economic contribution is from the manufacturing sector which is dominated by Sasol (IDP 2016). Retail and community services also contribute substantially to the economy of the region. Sectors that are growing in the MLM are located within the wealthier part of the municipality such as Sasolburg, Vaalpark and in the Deneysville and Oranjeville town centres. Other activities that present opportunities for growth include residential real estate and tourism.

### 4.3.1 Mining

A number of other mining companies are operational within MLM, some of these companies are listed in Table 15.

**Table 15: Mining companies operating in Metsimaholo Local Municipality**

| Name of the company                              | Commodity                 |
|--------------------------------------------------|---------------------------|
| S Bothma and Sons Transport (Pty) Ltd FS 0006 MR | Sand                      |
| S Bothma and Sons Transport (Pty) Ltd FS 161 MR  | Sand general              |
| S Bothma and Sons Transport (Pty) Ltd FS 239 MR  | Sand general              |
| Copper Sunset Trading (Pty) Ltd FS 164 MR        | Sand general              |
| Sasol Mining (Pty) Ltd FS 224 MR                 | Coal                      |
| Mission Point Trading 41 (Pty) Ltd FS 239 MR     | Silica and silica general |
| New Vaal Colliery (Seriti Coal)                  | Coal                      |

### 4.3.2 Agriculture

The current land use within the proposed study area consists primarily of agricultural activities. Historically the proposed site was utilised for grazing purposes and is still presently grazed to a limited extent. Approximately 82% of the proposed study area is classed as grazing land capability with low agricultural potential, and 18% is classed as wetland with low to very low or no agricultural potential (Department of Rural Development and Land Reform, 2016). Lastly, the surrounding land uses comprise a mixture of industrial, commercial, and residential land use activities all within proximity to one another.

### 4.3.3 Tourism

The main tourist attraction in the district is the Vredefort Dome, being the third largest Meteorite site in the world. There are also a few tourist facilities located in the area, but most of the facilities are located along the Vaal River and the Vaal Dam. The Emerald Casino Resort is located along the Vaal River towards the north-west of the project site.

## 5.0 IMPACT ASSESSMENT AND RECOMMENDED MITIGATION MEASURES

Socio-economic implications associated with the proposed project are categorised within the project phase that are likely to occur viz., construction, operation and decommissioning, and appropriate mitigation measures are recommended to reduce negative impacts and enhance positive ones. Where relevant, reference is made to applicable specialist studies, in which more comprehensive information is provided.

### 5.1 Construction phase

#### 5.1.1 Impacts

The construction phase impacts include:

- Three positive impacts, namely temporary employment opportunities, increased economic revenue and improved infrastructure; and
- Three negative impacts, namely loss of farmland, health and safety risk and population influx.

These are discussed further in the subsequent sections.

##### 5.1.1.1 *Employment opportunities*

Communities within the project area face significant socio-economic challenges such as poverty, including the lack of adequate social infrastructure and services (see Section 4.0). Notable is the high unemployment rate in the MLM viz., 32% of the people are unemployed (Census 2011). Seriti estimates that approximately 350 jobs may be created during the construction and access development phase. The number of locally employed people during the construction phase will largely depend on Seriti's recruitment policy and the applicant's level of education, skills, and work experience. The nature of temporary jobs will be explained to prospective job applicants as well as, to those that are successful. In addition to employment opportunities, informal trading is likely to occur during the construction phase.

##### 5.1.1.2 *Increased economic revenue*

During the construction phase, Seriti will require various goods and services. This requirement is likely to generate economic opportunities for local businesses, provided they can meet the client's procurement

requirements. It is, however, anticipated that some required goods and services might not be available in the local study area. In this case, Seriti will procure from businesses elsewhere in the country or outside the country.

It is anticipated that the construction workforce will be housed in local accommodations (private homes, guest houses or rental options); this will also contribute to the growth of the local economy. Provided that a significant proportion of money derived from wages earned would likely be spent near the project area, it is expected to create temporal flows of revenue within surrounding communities, thus acting as a catalyst for growth in the local economy. Although influx is associated with negative socio-economic outcomes such as increased pressure on local resources, infrastructure and social services and increased social pathologies viz., drug and alcohol abuse, prostitution, crime and violence, increased incidence of sexually transmitted diseases and other communicable diseases (see section 5.1.1.6), the influx of people into the project areas may have some positive effects on the local economy. For instance, small businesses may experience improved markets and increased numbers of customers for consumable items they sell.

### 5.1.1.3 Improved infrastructure

The transportation of infrastructure will be required as part of the proposed Metsimaholo underground coal mine project. Consequently, it is anticipated that Seriti will develop access roads on the 60-ha surface infrastructure footprint. The main access road to the project area is planned from the existing R549 provincial road. The main access road will be surfaced providing access to the main office building, stores, and workshops. Gravel service (maintenance access) roads will be constructed for access to operational infrastructure.

### 5.1.1.4 Loss of farmland

During the construction phase, farmland on the 60-ha surface infrastructure site may be lost due to the establishment of the mine shaft, that may require land acquisition. Farmland that may be lost is shown in Table 16, the potential loss of land has been discussed with directly affected landowners.

**Table 16: Farmland that may be lost**

| Portion number | Farm name | Farm owner                           |
|----------------|-----------|--------------------------------------|
| 93 Ptn 5       | Katbosch  | Janse van Rensburg Johannes Frederik |
| 93 Ptn 4       | Katbosch  | Seriso 534 (Pty) Ltd                 |
| 93 Ptn 0       | Katbosch  | Seriso 534 (Pty) Ltd                 |
| 1797 Ptn 0     | Excelsior | Hugh Nienaber Trust                  |
| 1797 Ptn 1     | Excelsior | Republic of South Africa             |

The acquisition of farmland may result in soil erosion due to the construction and operational activities on and around the proposed shaft complex infrastructure site. This aspect is discussed further in a separate specialist study viz., Aquatic Biomonitoring Baseline and Impact Assessment report (Golder, 2019). Additionally, the acquisition of land for development has been reported to impact negatively on cultural heritage (Sativa, 2019). However, land acquisition for the proposed project will not have an impact on cultural heritage such as archaeological and heritage sites, buildings, and structures older than 60 years, burial grounds and graves,

historical monuments and memorials, battlefields, and palaeontology. This aspect is further discussed further in a separate specialist study viz., Archaeological and Heritage Impact Assessment (Sativa, 2019).

#### **5.1.1.5 Health and safety risk**

Apart from the actual construction of project infrastructure, the construction phase also will require the transportation of construction machinery and material on the R549, which is used by private motorists. Consequently, this will result in:

- increased dust levels which may result in respiratory problems for the locals and construction workers;
- increased traffic volumes;
- presence of heavy goods vehicles;
- road accidents, mainly impacting the locals who are not accustomed to heavy traffic and heavy vehicles; and
- deterioration of roads, which will pose a safety risk to motorists.

Additionally, the increased traffic, construction activities and blasting will increase noise in the area, and the surface infrastructure will affect the aesthetic quality of the environment. A comprehensive assessment of these impacts is provided in separate specialist studies undertaken by Golder in 2019 viz., Air Quality, Visual, and Noise Impact Assessments as well as ITS Traffic Opinion, 2019 for the proposed Metsimaholo underground coal mining project.

#### **5.1.1.6 Population influx**

Other mining companies are already operating in the area (see section 4.3.1). It is therefore likely that the presence of mines in the area has resulted in the influx of people in search of jobs and business opportunities. Considering the proposed Metsimaholo colliery project, it is anticipated that employment seekers and other business seekers will continue to migrate into the project areas in search of opportunities. Consequently, this will have social implications such as:

- Increased pressure on local resources, infrastructure and social services; and
- Increased social pathologies such as drug and alcohol abuse, prostitution, crime and violence, increased incidence of sexually transmitted diseases and other communicable diseases.

Additionally, population influx might accelerate the development of informal settlements closer to the project area because opportunity seekers will require accommodation. Unfortunately, informal settlements tend to be associated with poor access to various services such as water, sanitation and electricity. This scenario results in social and health implications such as:

- Increased dependency on government for the provision of goods and services;
- Increased pressure on the supply of available goods and services; and
- Increased social pathologies as mentioned above.

#### **5.1.2 Mitigation measures**

The proposed mitigation measures for the construction phase impacts are shown in Table 17.

**Table 17: Proposed mitigation measures for impacts during the construction phase**

| Impact                              | Mitigation measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Employment opportunities            | <p>Communities within the vicinity of the mine should be given special consideration in terms of the benefits arising from the project because they will be the most affected by the project. It is recommended that the following mitigation measures be implemented:</p> <ul style="list-style-type: none"> <li>■ If not currently in place, a local skills database must be developed and updated regularly. The skills database should be used for recruitment purposes (where practical) to minimise the probability of nepotism or corruption during the recruitment process;</li> <li>■ A monitoring system should be put in place to ensure that Seriti's recruitment policy is adhered to.</li> </ul> |
| Increased economic revenue          | <ul style="list-style-type: none"> <li>■ Seriti will give first preference to appropriate subcontractors/SMMEs located in the surrounding communities, followed by those located in the municipal area and lastly those located elsewhere or outside the province (where practical).</li> <li>■ Seriti will develop and implement its housing model which will be integrated within the greater metropolitan centres and aligned with the IDP of the region. The model will ensure that employees are accommodated in their own formal accommodation located within the metropolitan frameworks of the region where the proposed operation will be based.</li> </ul>                                           |
| Improved infrastructure             | <p>The deterioration of public roads over time must be monitored, and a maintenance plan must be negotiated with the National Road Administration, with specific mention of the Monitoring and Planning departments that should be consulted.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Loss of farmland                    | <p>Landowners will be identified and compensated accordingly.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Risk to community health and safety | <ul style="list-style-type: none"> <li>■ Seriti will need to engage with communities using a dedicated Community Liaison Officer and have in place an effective Stakeholder Engagement Plan, inclusive of a Grievance Redress Mechanism, including a complaints register for communities to access and which will be used by project-affected stakeholders to lodge grievances.</li> <li>■ Seriti's community health and safety plan will be in place and updated regularly.</li> <li>■ Seriti will be implementing dust-and noise suppression measures in areas where vehicles will use unsealed roads.</li> </ul>                                                                                            |

| Impact            | Mitigation measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | <ul style="list-style-type: none"> <li>■ The time for blasting activities should be communicated to the surrounding landowners and the local population.</li> <li>■ A community awareness campaign will be implemented in the surrounding communities to sensitise community members to traffic safety risks and to the need to prevent children (and animals) from wandering into the project sites.</li> </ul>                                                                                                                                                                                                                                                                                                                               |
| Population Influx | <ul style="list-style-type: none"> <li>■ Regarding recruitment, priority will be given to locals, thus reducing the required need for outsiders.</li> <li>■ Seriti will develop a comprehensive influx management plan aimed at identifying areas of potential influx and appropriate influx management measures. The plan should emphasise the need for local recruitment policy, workforce management, promotion of regional diversified growth strategies, implementation of health and safety education programmes and spatial planning, administration, and resource allocation.</li> <li>■ Additionally, relevant stakeholders should be engaged and consulted during the development of the detailed influx management plan.</li> </ul> |

### 5.1.3 Rating of impacts

In this section, construction phase impacts are rated based on their significance before and after mitigation (Table 18). The loss of farm land has been rated as a high significance negative impact pre-mitigation and moderate significance impact post-mitigation. Other negative impacts viz., health and safety risk and population influx have been rated as moderate significance negative impacts pre-mitigation and low significance negative impacts post-mitigation.

**Table 18: Rating of construction phase impacts**

| Indicator of potential impact | Pre-mitigation |          |       |             |              | Post-mitigation |          |       |             |              |
|-------------------------------|----------------|----------|-------|-------------|--------------|-----------------|----------|-------|-------------|--------------|
|                               | Magnitude      | Duration | Scale | Probability | Significance | Magnitude       | Duration | Scale | Probability | Significance |
| Employment opportunities      | 4              | 2        | 2     | 3           | + 24         | 6               | 2        | 2     | 5           | + 50         |
| Increased economic revenue    | 4              | 2        | 2     | 3           | + 23         | 8               | 2        | 2     | 4           | + 48         |

| Indicator of potential impact | Pre-mitigation |          |       |             |              | Post-mitigation |          |       |             |              |
|-------------------------------|----------------|----------|-------|-------------|--------------|-----------------|----------|-------|-------------|--------------|
|                               | Magnitude      | Duration | Scale | Probability | Significance | Magnitude       | Duration | Scale | Probability | Significance |
| Improved infrastructure       | 2              | 2        | 2     | 3           | + 18         | 6               | 3        | 2     | 4           | + 44         |
| Loss of farm land             | 10             | 5        | 2     | 5           | 85           | 6               | 5        | 2     | 5           | 65           |
| Health and safety risk        | 8              | 2        | 2     | 4           | 48           | 4               | 2        | 2     | 3           | 24           |
| Population influx             | 6              | 4        | 3     | 4           | 52           | 4               | 2        | 3     | 3           | 27           |

## 5.2 Operational phase

### 5.2.1 Impacts

The operational phase impacts include:

- Five positive impacts, namely long-term employment opportunities, skills transfer and development, community development, regional and economic development, and increased coal supply; and
- Two negative impacts, namely loss of construction phase temporary employment and health and safety risk.

These are discussed further in the next sections.

#### 5.2.1.1 Employment opportunities

During the operational phase, Seriti estimates that 450 long-term jobs will be available. Seriti will employ local people with relevant qualifications while taking into consideration the requirements of the available positions. The successful applicants will receive long-term employment considering that the mine will be operational from 2025 to 2055. This long-term employment will contribute positively to the income of successful job applicants as they will be able to support their dependants for an extended period. Like the construction phase, the number of locally employed people during the operational phase will largely depend on Seriti's recruitment policy and the applicant's level of education, skills, and work experience. Additionally, the operational phase of the proposed project could also induce some indirect, informal employment opportunities such as the selling of consumables by locals.

#### 5.2.1.2 Skills transfer and development

The skills level of employees will vary from unskilled to highly skilled. Consequently, employees will benefit from work experience as well as formal training programmes, especially those individuals who start with a low-level skill set. As per Seriti's SLP, employees will be exposed to a human resources development strategy which incorporates the following key focus areas:

- Talent management;
- Performance management;
- Competency-based career development, including learnerships, the Seriti Coal bursary scheme and graduate trainee programmes;
- Adult-based education and training; and
- Empowerment group capacity building.

### 5.2.1.3 *Community development*

According to the 2017-2022 IDP of Metsimaholo Local Municipality (MLM), community development priority needs of the municipality include the provision of social infrastructure and services such as upgrading and provision of the following:

- Water infrastructure, including implementing water purification systems;
- Electricity sub-stations;
- Roads and stormwater infrastructure;
- Healthcare facilities such as clinics;
- Housing;
- Waste management systems;
- Land for new graveyards, including fencing; and
- Safety and security institutions.

Other priority needs identified by the MLM include the following key aspects:

- Education youth skills development;
- Community scholarship scheme (education);
- SMME capital assistance programme;
- Community health and safety programmes;
- Agriculture programmes in partnership with other relevant stakeholders (job creation); and
- Infrastructure projects linked to the needs identified in the IDP, as mentioned above.

During the operational phase, it is anticipated that Seriti will continue contributing positively to the community development of the project-affected communities. Seriti will review the identified and prioritised development needs and consult with communities affected by the proposed Metsimaholo colliery project to identify and support necessary development gaps. These development initiatives, especially if implemented in consultation with other community development role-players in the area, can contribute considerably towards education, health, socio-economic development, sustainable jobs, and income stability within the project area.

#### **5.2.1.4 Regional economic development**

Government will receive royalty and tax payments from Seriti as the proposed Metsimaholo underground coal mine involves the extraction of a non-renewable commodity.

Seriti plans to invest capital into its SLP. Most of these funds will be used for the implementation of LED projects, which are intended to fast track sustainable economic development in the site-specific and local study area. Additionally, the employee's wage bill will result in a substantial injection of cash into the economies of the local and regional study areas. Consequently, stimulating the formal and informal retail and service sectors and downstream secondary industries.

#### **5.2.1.5 Increased coal supply**

The mine will potentially contribute to the reduction of the domestic shortfall of coal, helping Eskom to ensure a sustainable supply of power, which the South African economy depends on. Annually, approximately 180Mt of coal is sold into the domestic market of which approximately 53% is used for electricity generation, 33% for petrochemical production by Sasol, 12% for metallurgical industries and 2% for domestic use (Eskom, 2016).

Furthermore, it is anticipated that Seriti will supply coal to Sasol Synthetic Fuels, independent power producers or other domestic consumers, depending on market conditions dictate from time to time. It is highly likely that the consumers will mostly use the coal for electricity generation. The provision of coal for electricity generation may:

- Enable the country's economic growth because most economic activities are dependent on a reliable and steady supply of electricity; and
- Improve the local business environment and local industry due to a stable electricity supply.

#### **5.2.1.6 Loss of employment**

The estimated construction temporary workforce of 350 people will lose their jobs during the operational phase because construction activities will have come to an end at this stage. Unfortunately, this may contribute to various adverse social consequences in the MLM and labour sending area such as:

- Financial hardship and poverty;
- Family tensions and breakdown;
- Alienation, shame, and stigma; and
- Crime.

Nevertheless, Seriti will invest in community development initiatives to lessen negative socio-economic impacts associated with poverty (in line with their SLP).

#### **5.2.1.7 Health and safety risks**

The health and safety risks which will be experienced during the construction phase, as discussed in section 5.1.1.5, will probably continue into the operational phase of the project.

Additionally, during the operational phase, it is likely that underground mining will require large amounts of waste earth and rock to be brought to the surface. Unfortunately, waste can often become toxic when in into contact with air and water, consequently impacting negatively on human and aquatic health. These impacts and appropriate mitigation measures are further discussed in separate specialists reports viz., Groundwater Baseline and Impact

Assessment Report for the Proposed Metsimaholo Underground Coal Mine (Golder, 2019) and Aquatic Biomonitoring Baseline and Impact Assessment Report (Golder, 2019).

## 5.2.2 Mitigation measures

The proposed mitigation measures for the operation phase impacts are shown in Table 19.

**Table 19: Mitigation measures for operation phase impacts**

| Impact                          | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Employment opportunities        | Measures to enhance the benefits derived from employment creation during the operational phase of the proposed project are the same as those recommended for the construction phase (see Section 5.1.2).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Skills transfer and development | <p>As per Seriti's SLP, Seriti will:</p> <ul style="list-style-type: none"> <li>■ Comply with the requirements of the Skills Development Act, which includes the submission of a Workplace Skills Plan and an Annual Training Report as per the Sector Education and Training Authority's requirements</li> <li>■ Appoint a dedicated skills development facilitator within six months of the commencement of operations.</li> <li>■ Submit a five-year plan for learnerships at Metsimaholo colliery once operations commence</li> <li>■ Provide employees with the opportunity to participate in mentoring relationships with an individual they feel could add value to their growth and development</li> <li>■ Implement a bursary scheme which aims to develop suitable students who once they have completed their studies are afforded professional career opportunities within our organisation.</li> </ul> |
| Community development           | A comprehensive community development plan will be developed Seriti before the commencement of the project. During this process, Seriti will engage stakeholders in the area to gauge whether they can align with any of their efforts to collaborate on some development initiatives planned for the communities. Additionally, the selection of project beneficiaries should be fair and directly affected parties should be given first preference.                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Regional economic development   | <ul style="list-style-type: none"> <li>■ Seriti will pay royalties and tax to the government.</li> <li>■ Seriti will adhere to their SLP commitments.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Increased coal supply           | <ul style="list-style-type: none"> <li>■ Seriti will secure contracts and adhere to the terms and conditions of its consumers to avoid contract termination.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Impact                  | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | <ul style="list-style-type: none"> <li>Seriti will ensure the appropriate management of its workforce to ensure that deliverables are delivered accordingly.</li> </ul>                                                                                                                                                                                                                                                                                       |
| Loss of employment      | Skills development programmes should be implemented to capacitate employees, construction workers and community members with the skills necessary to secure other employment opportunities.                                                                                                                                                                                                                                                                   |
| Health and safety risks | <ul style="list-style-type: none"> <li>Seriti must adhere to all requirements contained in the Occupational Health and Safety Act (Act 85 of 1993) and the Mine Health and Safety Act (Act 29 of 1996).</li> <li>The mine will be maintained during its lifetime to minimise the risk of mine personnel being injured because of failed machinery, and so forth.</li> <li>Rigorous operational health and safety programmes should be implemented.</li> </ul> |

### 5.2.3 Rating of impacts

In this section, operation phase impacts are rated based on their significance before and after mitigation (Table 20). The negative impacts during the operational phase viz., loss of employment and health and safety risk have been rated as moderate significance negative impacts pre-mitigation. Loss of employment has been rated as a moderate significance negative impact post-mitigation and health and safety risk has been rated as a low significance negative impact post-mitigation.

**Table 20: Rating of operation phase impacts**

| Indicator of potential impact     | Pre-mitigation |          |       |             |              | Post-mitigation |          |       |             |              |
|-----------------------------------|----------------|----------|-------|-------------|--------------|-----------------|----------|-------|-------------|--------------|
|                                   | Magnitude      | Duration | Scale | Probability | Significance | Magnitude       | Duration | Scale | Probability | Significance |
| Employment opportunities          | 4              | 4        | 4     | 3           | + 36         | 6               | 4        | 4     | 4           | + 56         |
| Skills transfer and development   | 2              | 4        | 2     | 3           | + 24         | 8               | 4        | 2     | 4           | + 56         |
| community development             | 2              | 4        | 2     | 3           | + 24         | 8               | 4        | 2     | 4           | + 56         |
| Regional and economic development | 4              | 4        | 3     | 3           | + 33         | 6               | 4        | 3     | 4           | + 52         |

| Indicator of potential impact | Pre-mitigation |          |       |             |              | Post-mitigation |          |       |             |              |
|-------------------------------|----------------|----------|-------|-------------|--------------|-----------------|----------|-------|-------------|--------------|
|                               | Magnitude      | Duration | Scale | Probability | Significance | Magnitude       | Duration | Scale | Probability | Significance |
| Increased coal supply         | 4              | 4        | 4     | 3           | + 36         | 8               | 4        | 4     | 5           | + 80         |
| Loss of employment            | 8              | 5        | 2     | 5           | 75           | 2               | 5        | 2     | 5           | 45           |
| Health and safety risk        | 6              | 4        | 2     | 4           | 48           | 2               | 4        | 2     | 3           | 24           |

## 5.3 Decommissioning and closure phase

### 5.3.1 Impacts

The decommissioning and closure phase impacts include four negative impacts, namely loss of employment, reduced regional economic development, reduced coal supply and reduced community investment.

These are discussed further below.

#### 5.3.1.1 Loss of employment

During the decommissioning and closure phase, the operation phase workforce will lose their jobs. Unfortunately, this will also escalate various social consequences as discussed in section 5.2.1.6.

#### 5.3.1.2 Reduced regional economic development

There will be reduced local spending by Seriti and its employees, including royalty and tax payments. Consequently, local businesses and the area may be affected from a financial perspective.

#### 5.3.1.3 Reduced coal supply

The supply of coal by Metsimaholo Colliery will end during this phase. Consequently, the supply of coal to South African markets will be reduced.

#### 5.3.1.4 Reduced community investment

All community development initiatives will be handed over to relevant parties by Seriti; after that, there will be a reduction in local community development investment from Seriti.

### 5.3.2 Mitigation measures

The proposed mitigation measures for the decommissioning and closure phase impacts are shown in Table 21

**Table 21: Mitigation measures for decommissioning and closure phase impacts**

| Loss of employment                    | <ul style="list-style-type: none"> <li>■ Timely and adequate consultation with employees who are dependent on the mine for employment.</li> <li>■ Assisting employees in seeking alternative employment at other mines or related facilities.</li> <li>■ Training and education of employees to equip them with skills that could benefit them in other industries. During the operational phase, members of the workforce will be encouraged to obtain skills or qualifications that are recognised by the National Qualifications Framework and are registered through the Mining Qualifications Authority. These qualifications include non-mining skills that will assist employees in areas other than mining.</li> <li>■ Initiatives should be aligned with SLP commitments relating to downscaling and retrenchment.</li> </ul> |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reduced regional economic development | Engage local and regional government with respect to the decommissioning phase.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Reduced coal supply                   | Engage consumers concerning the decommissioning phase.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Reduced community investment          | Seriti will develop exit strategies for all its community development initiatives.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

### 5.3.3 Rating of impacts

In this section, decommissioning and closure phase impacts are rated based on their significance before and after mitigation (Table 22). All impacts during the decommissioning and closure phase have been rated as moderate significance negative impacts pre and post-mitigation.

**Table 22: Rating of decommissioning phase impacts**

| Indicator of potential impact         | Pre-mitigation |          |       |             |              | Post-mitigation |          |       |             |              |
|---------------------------------------|----------------|----------|-------|-------------|--------------|-----------------|----------|-------|-------------|--------------|
|                                       | Magnitude      | Duration | Scale | Probability | Significance | Magnitude       | Duration | Scale | Probability | Significance |
| Loss of employment                    | 8              | 5        | 2     | 5           | 75           | 6               | 5        | 2     | 5           | 65           |
| Reduced regional economic development | 6              | 5        | 3     | 5           | 70           | 4               | 5        | 3     | 5           | 55           |
| Reduced coal supply                   | 6              | 5        | 4     | 5           | 75           | 4               | 5        | 4     | 5           | 65           |
| Reduced community investment          | 8              | 5        | 2     | 5           | 75           | 6               | 5        | 2     | 5           | 65           |

## 6.0 POTENTIAL SOCIAL RISKS

This section highlights aspects identified during the stakeholder engagement process that would represent potential social risks to the proposed Metsimaholo underground coal mine project. As a result of such observations, Golder recommends that an open channel of communication be established and maintained throughout the project lifecycle ongoing to manage expectations and minimise social risk.

### 6.1 Skills development and employment expectations

During the stakeholder engagement process, Golder observed that the local communities have high expectations from Seriti regarding skills development and employment opportunities. Unfortunately, the employment opportunities to be provided by the proposed project during the construction phase and the operational phase will not accommodate the expectations of all community members. It is recommended that Seriti communicates the following key aspects with all stakeholders:

- Employment plans viz., selection criteria, job types, the total number of people to be employed and the duration of employment;
- Procurement policy and process of goods and services;
- Seriti's human resource development strategy; and
- Community investment initiatives as per Seriti's SLP.

### 6.2 Land use planning

Although community members are in favour of the proposed project as they perceive that the project will create employment opportunities and further address their needs, they asserted during the public meeting that they have already been allocated residential stands by the municipality in the broader Metsimaholo mining right application

area. Golder recommends further engagement and consultation with the community and MLM stakeholders to address the land use concern. Additionally, Seriti should ensure that communication channels are open between the communities and Seriti so that stakeholders air their grievances and discuss issues of concerns.

## 7.0 CONCLUSION

A total of 17 social impacts were identified for the proposed Metsimaholo colliery project, of these, eight are positive, and nine are negative. Only one construction phase impact (loss of farm land) has been rated as a high negative significant impact. Other construction, operation and decommissioning phase impacts have been rated as moderate negative and significant positive impacts, respectively. As shown in Table 23, if mitigation measures are implemented accordingly, it is anticipated that the consequence and probability of moderate and high negative impacts will be reduced, while moderate positive impacts will on average be enhanced to maximise benefits to the directly affected communities. Given the above, it is strongly recommended that the mitigation measures described in Section 5.1.2, 5.2.2 and 5.3.2 be incorporated into the Environmental and Social Management Plan for the proposed project. Additionally, measures must be put in place to monitor and assess the implementation of these mitigation measures and take corrective action where necessary.

**Table 23: Summary of impact ratings**

| Impacts                           | Significance rating |                 |
|-----------------------------------|---------------------|-----------------|
|                                   | Pre-mitigation      | Post-mitigation |
| Construction phase                |                     |                 |
| Employment opportunities          | + 24                | + 50            |
| Increased economic revenue        | + 23                | + 48            |
| Improved infrastructure           | + 18                | + 44            |
| Loss of farmland                  | 85                  | 65              |
| Health and safety risk            | 48                  | 24              |
| Population influx                 | 52                  | 27              |
| <b>Operational phase</b>          |                     |                 |
| Employment opportunities          | + 36                | + 56            |
| Skills transfer and development   | + 24                | + 56            |
| Community development             | + 24                | + 56            |
| Regional and economic development | + 33                | + 52            |
| Increased coal supply             | + 36                | + 80            |
| Loss of employment                | 75                  | 45              |

| Impacts                                  | Significance rating |                 |
|------------------------------------------|---------------------|-----------------|
|                                          | Pre-mitigation      | Post-mitigation |
| Health and safety risk                   | 48                  | 24              |
| <b>Decommissioning and closure phase</b> |                     |                 |
| Loss of employment                       | 75                  | 65              |
| Reduced regional economic development    | 70                  | 55              |
| Reduced coal supply                      | 75                  | 65              |
| Reduced community investment             | 75                  | 65              |

## 8.0 SPECIALISTS

This SIA report was prepared by Sithandiwe Ntila and reviewed by David De Waal of Golder. The details of the specialist qualifications and experience are provided in Table 24. APPENDIX B contains the required specialist declaration and CV:

**Table 24: Qualifications and experience of the specialists**

| Role               | Name                | Qualifications and Experience                                                                                                                                             |
|--------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Social Scientist   | Dr Sithandiwe Ntila | <ul style="list-style-type: none"> <li>■ PhD, Research; and</li> <li>■ Sithandiwe has over 5 years' experience in social research and social impact assessment</li> </ul> |
| Technical Reviewer | Dr David De Waal    | <ul style="list-style-type: none"> <li>■ DLitt et Phil; and</li> <li>■ David has more than 30 years' experience in social impact assessment.</li> </ul>                   |

Neither Golder nor the specialists that prepared this report has any vested interest in the proposed project other than fair remuneration for professional services rendered. The findings presented in this specialist report are those of the specialists, without influence from any other parties.

## 9.0 REFERENCES

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## Signature Page

### **Golder Associates Africa (Pty) Ltd.**



Dr Sithandiwe Ntila  
*Social Scientist*



Dr David De Waal  
*Technical Director*

DdW

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**APPENDIX A**

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## **GOLDER ASSOCIATES AFRICA (PTY) LTD**

**APPENDIX B**

## Specialist Declaration and CV

## SPECIALIST DECLARATION

As required under Appendix 6 of the Environmental Impact Assessment Regulations, 2014 (as amended), I, **Dr Sithandiwe Ntila**, declare that:

- I act as an independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of Acts, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with all applicable Acts and Regulations in compiling this report;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing:
  - any decision to be taken with respect to the application by the competent authority; and
  - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All particulars furnished by me in this declaration are true and correct.



---

Signature of the specialist:

**Golder Associates Africa (Pty) Ltd**

---

Name of company (if applicable):

**28 February 2019**

---

Date:

**Education**

*PhD Research, University of KwaZulu-Natal, Pietermaritzburg, 2017*

*MA Research, University of KwaZulu-Natal, Pietermaritzburg, 2014*

*PGDIP Research, University of KwaZulu-Natal, Pietermaritzburg, 2013*

*BSS (Geography and Environmental Management) Research, University of KwaZulu-Natal, Pietermaritzburg, 2012*

**Certifications**

*National Senior Certificate, December 2008*

*Merit Certificate (Research methods), 2014*

*Merit Certificate (Markets for food security), 2014*

**Languages**

*SiSwati – Fluent*

*Zulu – Fluent*

*English – Fluent*

**Midrand****Social Scientist**

Dr S Ntila is a social scientist with valuable experience in social research, including and not limited to the planning and execution of social surveys. Most of her has been in the field of stakeholder engagement, monitoring and evaluation, socio-economic assessments, Social Impact Assessments (SIAs) and the development of Social Management Plans (SMPs) for local and international clients

**Employment History****Golder Associates – Johannesburg**

*Social Scientist (2018 to Present)*

Providing social services to international and local clients.

**Digby Wells Environmental – Johannesburg**

*Social Scientist (2018 to 2018)*

Providing social services to international and local clients.

**Agricultural Research Council – Pretoria**

*Researcher (2015 to 2017)*

Application of research methods viz., quantitative and qualitative.

**University of KwaZulu-Natal – Pietermaritzburg**

*Research assistant (2014 to 2015)*

**CEDARA College of Agriculture – Pietermaritzburg**

*Social Scientist (2013 to 2015)*

Providing social services to clients in the agricultural sector.

---

**PROJECT EXPERIENCE – RESEARCH**

**Cedara College of  
Agriculture**  
Pietermaritzburg South  
Africa

Demographic and socio-economic profiling of project beneficiaries, development of data collection, conducting skills gap analysis, SIAs and RAPs.

**PROJECT EXPERIENCE – RESEARCH**

**University of KwaZulu-  
Natal**  
Pietermaritzburg, South  
Africa

Demographic and socio-economic profiling, Review literature, development of data collection tools, recruiting and training enumerators, Data analysis, report writing, socio-economic profiling

**PROJECT EXPERIENCE – RESEARCH**

**Agricultural Research  
Council**  
Pretoria, South Africa

Review of literature, Development of data collection, Data collection and analysis, report and manuscript writing, recruiting and training enumerators

**PROJECT EXPERIENCE – OIL & GAS**

**CNOOC**  
Uganda

Influx management plan

**PROJECT EXPERIENCE – MINING**

**Kinsevere mine**  
Lubumbashi, DRC

Gap analysis, survey plan, socio-economic survey and SIA

**PROJECT EXPERIENCE – MINING**

**Leeuwan Life Oil  
Project**  
Mpumalanga, South  
Africa

RAP implementation, livelihood restoration plan, Ms projects.

**PROJECT EXPERIENCE – PROJECT MANAGEMENT**

**Leeuwan Life Oil  
Project**  
Mpumalanga, South  
Africa

Drafting contract and project execution plan

**PROJECT EXPERIENCE – MINING**

**Kibali Gold Mine**  
DRC

Contributing to Gorumba RAP monitoring plan

**PROJECT EXPERIENCE – MINING**

**Sibanye Gold Mine**      Contributing to the social aspect of the rehabilitation proposal  
Mpumalanga, South  
Africa

**PROJECT EXPERIENCE – LANDFILL**

**Sierra Leone Landfill site**      Contributing to SIA (development of household survey, FGDs and data analysis),  
Sierra Leone      Desktop review, identification of impacts, report writing.

**PROJECT EXPERIENCE – MINING**

**Ahafo North Gold Mine**      Contributing to SIA (development of household survey, FGDs and data  
Ghana      analysis), Desktop review, identification of impacts, report writing and influx  
management plan.

**PROJECT EXPERIENCE – MINING**

**SASOL**      Compiling SIA and influx management framework and reviewing RAP  
Mozambique

Project management viz., managing the social budget and social team to successfully deliver other social deliverables viz., Stakeholder Engagement Plan (SEP), work camp plan, emergency preparedness and response plan and community safety and security framework

**Statistical analysis**  
*SPSS, Graphprism, TurningPoint*

**Referencing**  
*Endnote, Mendeley*

**Project management**  
*Ms projects, Project execution plans*

**Microsoft Knowledge**  
*Microsoft word, Microsoft excel advanced, power point*

**Social**  
*Emotional intelligence*

**Research methods**  
*Qualitative and quantitative*

**PUBLICATIONS**

**Journal Articles**      Ntila, S et al. Acceptance of a Moringa-Added Complementary Soft Porridge by Caregivers in Hammanskraal, Gauteng Province and Lebowakgomo, Limpopo Province, South Africa. *South African journal of clinical nutrition* (2018).

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