

# Socio-Economic Impact Assessment for the Bokoni Platinum Mines Expansion Project

Report prepared for

**African Rainbow Minerals (ARM) Ltd**



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# Socio-Economic Impact Assessment for the Bokoni Platinum Mines Expansion Project

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# Executive summary

## Report purpose

African Rainbow Minerals Ltd (ARM) owns the Bokoni Platinum Mines (BPM). The mine is located on various farms near the R37 in the Sekhukhune District Municipality (SDM) within the Limpopo Province of South Africa. The area is approximately 70 km to the north-east of Burgersfort and falls within wards 33 and 34 of the Fetakgomo Tubatse Local Municipality (FTLM).

The mine has been operating under two converted mining rights. These rights were renewed for 30 years in 2009 (until 2039). Since 2017, the mine's former owners placed the mine under care and maintenance with no production activities taking place currently (the mine is thus not fully operational). The mine presently consists of mining infrastructure on numerous farms, including open pit mines (which have been mined out and rehabilitated), underground mining shafts, mineral processing plants, Waste Rock Dumps (WRDs), fuel, and chemical storage areas, and water and wastewater treatment areas.

ARM intends to reinstate the mine and commence mining operations. For this, ARM appointed SRK Consulting (South Africa) (Pty) Ltd (SRK) in 2022 as an independent Environmental Assessment Practitioner to undertake an Environmental Impact Assessment (EIA), which is required under the National Environmental Management Act (NEMA) No 107 of 1998.

This report is a Socio-Economic Impact Assessment (SEIA) as part of the EIA process. The SEIA was informed by primary data collected by means of Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) held from 23 February to 3 March 2023.

## Socio-economic baseline

SDM comprises approximately 1.2 million people (2.1% of the South African population and around 21% of the province). A sizeable group of the population (71.49%) is within the working-age group of between 15 and 64. The data indicates a population growth trend for the district and local municipality. Much of this growth is as a result of in-migration and migrant labour largely from the increased mining activities in the region. However, some of the mine's closest communities experienced out-migration when the mine was placed under care and maintenance. Many people used to live permanently or rent in these communities to work on the mine and have subsequently out-migrated when work at the mine stopped.

The district is characterised by traditional land and traditional leaders. Closer to the mine site, the area is known for its tourism potential, as there are several ecologically protected areas in FTLM. The Heritage Impact Assessment (HIA) conducted in 2022-2023 identified one site of cultural heritage importance within the mine site. The site contains around 19 stone terraces likely to be more than 60 years old. In addition, several cultural heritage resources were also recorded on the outskirts of the mine site. From SRK's site observations, several cultural heritage resources were recorded, which include a narrow non-perennial river in Monametse Mokgotho called the Monametse River and several burial sites, of which one might need to be relocated during the mine's expansion.

Most people in SDM and FTLM are connected to the national electricity grid. Nevertheless, about 30.82% of people within FTLM still use wood for cooking, which demonstrates the rural nature of the area and people's dependence on natural resources for subsistence living.

Concerning water, 33.6% of people within SDM have access to piped tap water inside their yards, compared to 28.08% in FTLM. There are several rivers that also supply water to the municipality. Closest to the mine site is the Rapholo River, which is a perennial tributary of the Olifants River. Key

informants mentioned that many of the local rivers and boreholes dry up frequently. Several water reservoirs could be observed, and whilst there are government-supplied taps, the reservoirs are said to remain empty. The quality of the water has also been questioned by the community. Furthermore, concerning sanitation, most households make use of pit latrines.

Unregulated artisanal mining, also called illegal mining, occurs at several locations within the BPM project site. This can be a security threat and operational risk to ARM, since these activities currently occur within the mining right at the current open pits. There is often a poor understanding of the artisanal/illegal mining communities, which creates the potential for inappropriate support initiatives.

FTLM has an average literacy rate of 73%. A substantial proportion of its population (23.49% of people 18 years or older) has no schooling, and 11.92% have completed Grade 12. Few adults have a university or college education. Most of the mine's doorstep communities (within 5 km of the mine) have creches, primary and secondary schools. Two drop-in centres were also seen to assist orphans and vulnerable households.

In terms of health, in the SDM District, mortality is the highest among children under the age of five. For this age group, causes of death largely include diarrhoea (29% of all deaths in this age group), Lower Respiratory Infections (LRIs) (25.5%) and pre-term birth complications (6.6%). The top cause of death for young men and women between the ages of 15-24 is road accident injuries (16% for this group). In the age group of 25-64, the top causes of death for men and women are HIV/AIDs, LRIs and tuberculosis (ibid).

Apart from the mine's own healthcare facility for its staff, the nearest clinic for the doorstep communities is in Sefateng. However, this clinic has limited capacity due to the large number of people that it serves (despite the mine being under care and maintenance).

Most who have been victims of crime in SDM and FTLM have experienced general house break-ins (59.90% and 61.90%, respectively). More than half of this percentage have experienced general robbery (32.82% and 35.90% for SDM and FTLM), whilst approximately 9% of crime victims in the district and 2.74% in FTLM have experienced murder (ibid).

The data confirms the importance of the mining and agricultural sectors around the mine. The area suffers from a high unemployment rate (39.63%). A particular challenge for FTLM in terms of poverty is that a large section of its population and rural village areas (around 60%) is classified under indigent status. Such households are exempt from paying any municipal rates or taxes<sup>1</sup>. Employment and skills development are clearly needed in an area which already succumbs to high levels of in-migration and settlement expansion.

In terms of livelihoods, directly around the mine site, few households are involved in farming, although some do have smaller gardens with crop trees. Many say that they do not farm owing to mining activities<sup>2</sup>. In this regard, the mine is reasoned to have had a negative impact on people's livelihoods.

## Socio-economic impacts

Table ES-1 summarises 21 socio-economic impacts related to project. These have been grouped under themes and change drivers<sup>3</sup>. Refer to Section 6 for proposed impact management measures

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<sup>1</sup> Such status is obtained if a household's total income is below R1,500/month.

<sup>2</sup> Complaining about the dust and land fertility.

<sup>3</sup> A change driver is an activity that "drives" or "influences" the impact. For example, a change driver under the theme "Livelihood assets and activities" could be employment opportunities and local procurement, which may "drive change" under the specific theme. This driver could result in an impact, namely "improved household incomes and livelihoods", which can be seen as "the result" of the change driver.

and plans, including those that will enhance positive impacts and associated potential community benefits.

**Table ES-1: Summary of themes, change drivers and impacts**

Social Processes Model theme	Change drivers	Impact
1 Community/social supports and political context	An influx of job-seekers (in migration)	1.1 Social conflict/unrest
		1.2 Increase in crime and social pathologies
		1.3 Improved local economy
	Tension between mine security workers and residents	1.4 Increased vulnerability related to restrictions on land usage
2 Infrastructure and services	An influx of job-seekers (in-migration) and road deterioration due to soil erosion and increased vehicle usage	2.1 Pressure on existing social infrastructure and services
	Provision of social infrastructure as part of SLP/CSI or Livelihood Restoration Plan (LRP) <sup>4</sup> commitments	2.2 Improved access to basic amenities and social infrastructure
3 Livelihood assets and activities	Employment opportunities	3.1 Improved household incomes and livelihoods from employment and development
		3.2 Social conflict from employment and differential development benefits
	Local Economic Development (LED) as per SLP/CSI and/or LRP requirements	3.3 Upliftment of the local economy
	Mine decommissioning	3.4 Loss of employment opportunities, LED and livelihood restoration support
4 People's capacity and ability	The provision of additional skills training, scholarships and learnerships as per an SLP/LRP	4.1 Skilled local labour force to take advantage of employment opportunities
5 The living environment	Resettlement and/or land alterations/disturbance/acquisition	5.1 Loss/disturbance of land and natural resources
		5.2 Changing place attachment
		5.3 Cash compensation and housing provision as part of resettlement
		5.4 Improved land security as part of resettlement

<sup>4</sup> An LRP is recommended as part of a Resettlement Action Plan (RAP) for any economic/physical displacement.

Social Processes Model theme	Change drivers	Impact
		5.5 Increased housing maintenance and living expenses owing to physical resettlement
		5.6 Disruption to graves and access to graves
	Contamination of water, soil, air, noise nuisance and blasting activities	5.7 Deteriorating health resulting from mining activities
	Increased road traffic and unfenced mining infrastructure	5.8 Increase in safety hazards and accidents from mining operations
	Land rehabilitation as part of mine decommissioning	5.9 Improved land usage post-rehabilitation
6 Artisanal and small-scale mining	Land alterations/disturbance/acquisition	6.1 The impact of illegal mining

## Conclusion

The most significant socio-economic impacts of the project are positive and relate to improved basic amenities, employment, skills training and new houses as part of physical involuntary resettlement. The restart of the mine operations is expected to provide much-needed employment and skills in an area which is highly deprived thereof, with a significant working-age population entering the job market. Some of the most important negative impacts correlate with management measures which can reduce the severity. Key negative impacts include social conflict/unrest (which has been experienced around the mine), involuntary resettlement of households and graves, health and nuisance impacts from blasting, dust or water contamination, as well as increased vulnerability related to restrictions on land usage. As the mine has not been in operation since 2017, there is a possibility that some of these impacts may have been experienced in the past, only to resurface again if not properly managed.

SRK does not believe the project is fatally flawed, and therefore supports the development. This opinion is largely based on the fact that the mine has been operational in the past and has altered the landscape beyond a point where it would be considered as highly cultural from a sense of place perspective.

## Disclaimer

The opinions expressed in this report have been based on the information supplied to SRK Consulting (South Africa) (Pty) Ltd (SRK) by African Rainbow Minerals Ltd (ARM). The opinions are provided in response to a specific request from ARM to do so. SRK has exercised all due care in reviewing the supplied information. Whilst SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them. Opinions presented apply to the project site conditions and features as they existed at the time of SRK's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the release date of this report, about which SRK had no prior knowledge nor had the opportunity to evaluate.

## List of abbreviations

AoI	Area of Influence
ARM	African Rainbow Minerals
AsgiSA	Accelerated and Shared Growth Initiative South Africa
ASM	Artisanal Small-Scale Mining
BA	Basic Assessment
BPM	Bokoni Platinum Mines
CSI	Corporate Social Investment
DARDLR	Department of Agriculture, Rural Development and Land Reform
DHS	Demographic and Health Survey
DW	Digby Wells
EIA	Environmental Impact Assessment
FGD	Focus Group Discussion
FPL	Food Poverty Line
FTLM	Fetakgomo Tubatse Local Municipality
GDP	Gross Domestic Product
GoSA	Government of South Africa
GRI	Global Reporting Initiative
GVA	Gross Value Added
Ha	Hectare
HDI	Human Development Index
HIA	Heritage Impact Assessment
IAIA	International Association of Impact Assessment
ICMM	International Council on Mining and Metals
IDP	Integrated Development Plan
ILO	International Labour Organisation
KII	Key Informant Interview
LED	Local Economic Development
LRI	Lower Respiratory Infection
LRP	Livelihood Restoration Plan
MPRDA	Mineral and Petroleum Resources Development Act
NDP	National Development Plan
NEMA	National Environmental Management Act
NGO	Non-Governmental Organisation
NGPF	New Growth Path Framework
NHRA	National Heritage Resources Act
NSDP	National Spatial Development Perspective
NWA	National Water Act
OHS	Occupational Health and Safety
PAP	Project-Affected Persons/People

PCD	Pollution Control Dam
POPI	Protection of Personal Information Act
RAP	Resettlement Action Plan
RDP	Reconstruction and Development Programme
RWD	Return Water Dam
SDM	Sekhukhune District Municipality
SDF	Spatial Development Framework
SEIA	Socio-Economic Impact Assessment
SED	Socio-Economic Development
SEP	Stakeholder Engagement Plan
SEZ	Special Economic Zone
SLP	Social and Labour Plan
SMME	Small, Medium, and Micro-Enterprise
SPLUMA	Spatial Planning and Land-Use Management Act
StatsSA	Statistics South Africa
TA	Traditional Authority
TIA	Traffic Impact Assessment
TSF	Tailings Storage Facility
UN	United Nations
WGC	World Gold Council
WRD	Waste Rock Dump
WWTP	Wastewater Treatment Plant
ZCC	Zion Christian Church

## Glossary

<b>Area of Influence (Aoi)</b>	The area affected by the activities and facilities of the Bokoni Platinum Mines (BPM) that are directly owned, operated, or managed (including by contractors or third parties). The area can be affected directly (noise, dust, odours) or indirectly (economic spin-off effects). The Aoi is not a static measure and should be reviewed depending on the different strategies followed by the mine. This includes cumulative impacts or changes to the social environment of the mine (expansion/in-migration). The Aoi also includes the nearby (doorstep) and labour-sending settlements/towns.
<b>Doorstep community</b>	Settlement/town that is very close to the mine (within 5 km).
<b>Food Poverty Line (FPL)/extreme poverty line</b>	According to Statistics South Africa (StatsSA), this refers to the amount of money that an individual will need to afford the minimum required daily energy intake (Stats SA, 2022). This was R663/person/month in 2022 ( <i>ibid</i> ).
<b>Labour-sending area</b>	Areas, settlements, and towns where labour is sourced from.
<b>Poverty</b>	<p>Poverty is said to exist when people lack the means to satisfy their basic needs (Stats SA, 2017). The South African Government (GoSA) measures poverty by three threshold points:</p> <ul style="list-style-type: none"> <li>• FPL</li> <li>• Lower-Bound Poverty Line</li> <li>• Upper-Bound Poverty Line</li> </ul> <p>These lines capture different degrees of poverty and allow the country to measure and monitor poverty at different levels (<i>ibid</i>). Poverty is also the absence of capital such as land, access to natural resources, importance of social and intellectual capital, climate of democracy and security necessary to enhance the capabilities of the poor and the excluded.</p>
<b>Stakeholder</b>	Any member either from a public or government entity who is directly or indirectly affected by, or who has an interest in the mine. This includes all employees, Aoi communities, labour-sourcing communities, and relevant government representatives.
<b>Vulnerable individual/group</b>	Individuals/groups who may be more likely to be adversely affected by the mine impacts and/or more limited than others in their ability to take advantage of mine-related benefits. Such an individual/group is also more likely to be excluded from (or be unable to participate fully in) the mainstream consultation process and, as such, may require specific measures and/or assistance to do so. This will consider age, including the elderly and minors, and will include circumstances where they may be separated from their family, the community, or other individuals upon whom they depend. Vulnerable groups also include people living below the FPL, the landless, the elderly, women- and children-headed households.

# 1 Introduction

African Rainbow Minerals Ltd (ARM) owns the Bokoni Platinum Mines (BPM). The mine is located on various farms near the R37 in the Sekhukhune District Municipality (SDM) within the Limpopo Province of South Africa (refer to Figure 1-1 for the mine location). The area is approximately 70 km to the Northeast of Burgersfort and falls within two wards of the Fetakgomo Tubatse Local Municipality (FTLM): 33 and 34. The mining zone forms part of the Olifants River Sub-Catchment Area, with the Rapholo River which flows along its southern boundary into the Olifants River. This stretch of the river lies immediately South of the town of Atok, which is around 3 km South of the R37 between Polokwane and Mashishing.

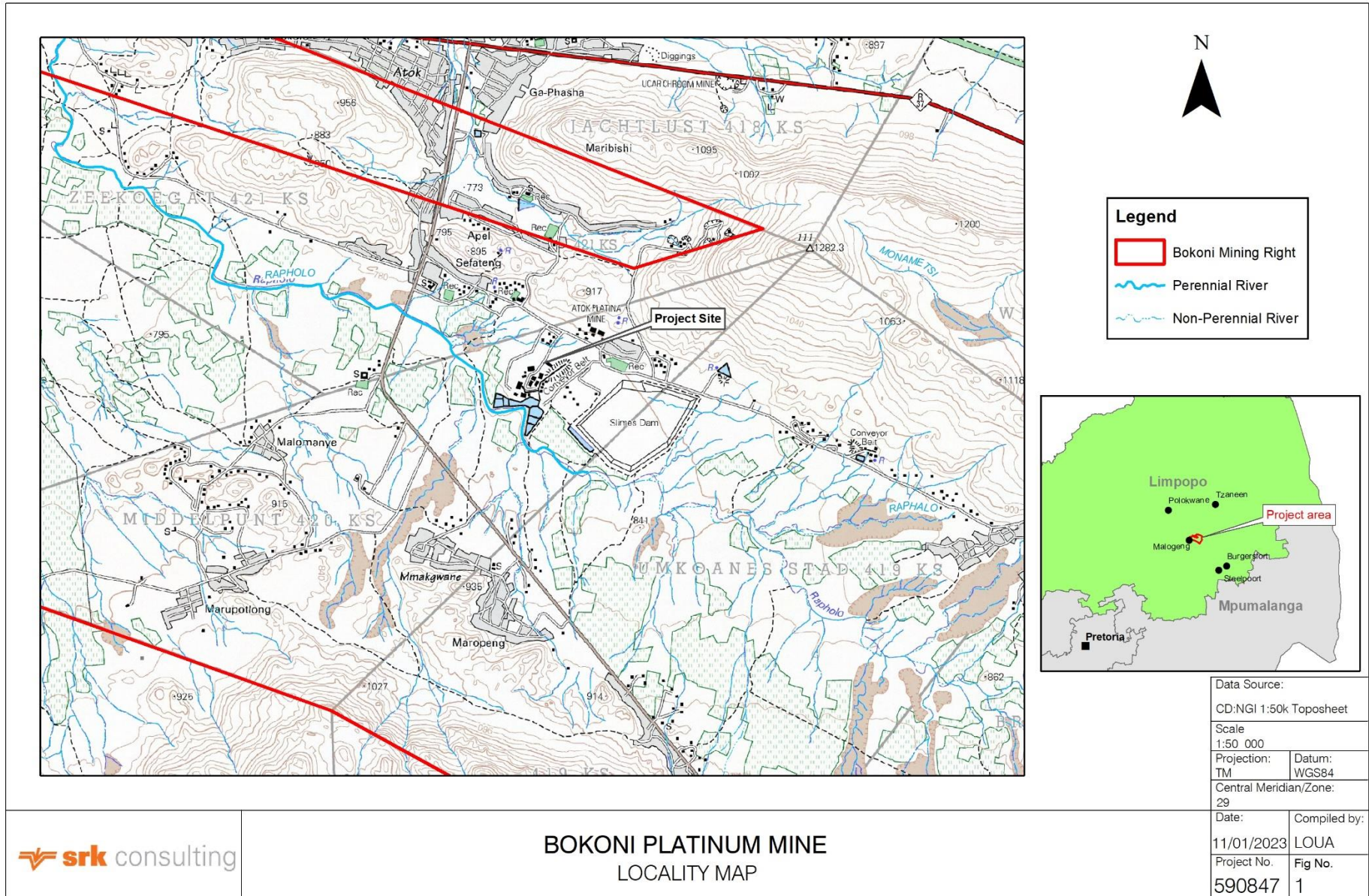
The mine has been operating under two converted mining rights covering several farms<sup>5</sup>. These rights were renewed for 30 years in 2009 (until 2039). Since 2017, the mine's former owners, Atlatza Resources and Anglo American Platinum, placed the mine under care and maintenance (the mine is thus currently not operational). The project site presently consists of mining infrastructure, which includes open pit mines (which have been rehabilitated), underground mining shafts, mineral processing plants, Waste Rock Dumps (WRDs), fuel, and chemical storage areas, and water and wastewater treatment areas.

ARM intends to reinstate the mine and commence mining operations once again by expanding its mining footprint and processing capacity. For this, two environmental authorisations are required in terms of the National Environmental Management Act (NEMA) No 107 of 1998. These are: a Basic Assessment (BA) process for the Klipgat Start-Up Project; as well as an Environmental Impact Assessment (EIA) process for the mine's Expansion Project. SRK Consulting (South Africa) (Pty) Ltd (SRK) was appointed by ARM in 2022 as an independent Environmental Assessment Practitioner to undertake the BA and EIA.

This report is a Socio-Economic Impact Assessment (SEIA) that considers the Expansion Project. A separate BA SEIA was compiled specifically for the Start-Up Project in isolation and can also be referred to for socio-economic impacts relating to the latter project only.

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<sup>5</sup> Under the baseline (Section 4), Figure 4-4 shows the project site and these farm locations, together with the mine's doorstep communities (those settlements within a 5 km radius of the mine). Sections 4.2.4 and 4.2.5 further elaborate on the site's doorstep communities and current land usage.



**Figure 1-1: BPM Expansion Project location**

## 1.1 Project description

As part of the Expansion Project, the mine intends to lease land across the following farms:

- Middelpunt 420 KS;
- Zeekoegat 421 KS;
- Brakfontein 464 KS;
- Klipfontein 465 KS;
- Umkoanesstad 419 KS;
- Jagdlust 418 KS; and
- Wintersveld 417 KS.

Several surface lease agreements will need to be amended to cover new infrastructure needs. The mine is in the process of identifying the affected landowners and extent of agreements to be updated.

Through the proposed Expansion Project, ARM aims to optimally mine the ore at BPM that could support a life-of-mine plan of more than 40 years. The construction period could take approximately 6-12 months.

In order for ARM to achieve this, various new activities and infrastructure will be required to expand the current operational activities and associated footprint.

A description of the key proposed infrastructure required and activities to be undertaken as part of the Expansion Project are provided in Table 1-1.

**Table 1-1: Key infrastructure and activities associated with the proposed Expansion Project**

Infrastructure	Description
<b>Utilisation of existing areas (already authorised)</b>	
<b>Brakfontein shaft</b>	The Brakfontein area will undergo changes, alterations and construction of additional infrastructure to support the Expansion Project. The main site offices, for the new open pit areas on the farms Wintersveld 417 KS and Klipfontein 465 KS, will be located at the existing Brakfontein shaft area. Other supporting infrastructure that will be required at the existing Brakfontein shaft will include a new grout plant, construction laydown areas, offices, parking, diesel storage, and ablution facilities.  In light of the above required project infrastructure at Brakfontein shaft, the following services will be required: potable and service water feed to the area, access and haul roads (from open pits), waste management areas and powerlines.
<b>Middelpunt Hill shaft</b>	A new grout plant is planned for at the existing Middelpunt Hill shaft area in addition to general changes, alterations and additions to existing infrastructure. Due to the area being under care and maintenance since 2017, there is a need to upgrade the existing fire water systems to meet the new operational requirements. Temporary construction facilities in the form of laydown areas, offices, parking, diesel storage, and ablutions are also planned at this area.  Based on the above infrastructure requirements, the following services will be required at the Middelpunt Hill shaft: potable and service water feed to the area, access roads, waste management areas and powerlines.
<b>Utilisation of existing Tailings Storage Facilities (TSFs) associated Return Water Dams (RWDs)</b>	Based on the life of the current existing TSFs (approximately 5 years), all tailings generated from the processing plant operations will be deposited onto the existing TSFs and water managed through the existing RWDs.

Infrastructure	Description								
<b>Upgrade of existing dirty water containment facilities</b>	<p>BPM plans to upgrade all existing dirty water containment facilities to meet the minimum requirements in respect of pollution control measures as well as to be in line with Good Practice Guidelines for water resource protection in the South African Mining Industry, as set by the Department of Water and Sanitation (DWS). Therefore, the following existing dirty water containment facilities will be emptied, de-silted and upgraded with the appropriate barrier systems at the different BPM operations:</p> <table border="1" data-bbox="528 490 1425 712"> <thead> <tr> <th data-bbox="528 490 807 562">At the existing processing plant</th> <th data-bbox="807 490 1027 562">At Klipgat Shaft area</th> <th data-bbox="1027 490 1233 562">At Brakfontein Shaft area</th> <th data-bbox="1233 490 1425 562">At Middelpunt Shaft area</th> </tr> </thead> <tbody> <tr> <td data-bbox="528 562 807 712"> <ul style="list-style-type: none"> <li>• Pollution control dams (PCDs)</li> <li>• RWD</li> <li>• Storm water dam</li> </ul> </td> <td data-bbox="807 562 1027 712"> <ul style="list-style-type: none"> <li>• PCD</li> <li>• Service water storage dam</li> </ul> </td> <td data-bbox="1027 562 1233 712">PCD</td> <td data-bbox="1233 562 1425 712">PCDs</td> </tr> </tbody> </table>	At the existing processing plant	At Klipgat Shaft area	At Brakfontein Shaft area	At Middelpunt Shaft area	<ul style="list-style-type: none"> <li>• Pollution control dams (PCDs)</li> <li>• RWD</li> <li>• Storm water dam</li> </ul>	<ul style="list-style-type: none"> <li>• PCD</li> <li>• Service water storage dam</li> </ul>	PCD	PCDs
At the existing processing plant	At Klipgat Shaft area	At Brakfontein Shaft area	At Middelpunt Shaft area						
<ul style="list-style-type: none"> <li>• Pollution control dams (PCDs)</li> <li>• RWD</li> <li>• Storm water dam</li> </ul>	<ul style="list-style-type: none"> <li>• PCD</li> <li>• Service water storage dam</li> </ul>	PCD	PCDs						
<b>New infrastructure/activities (to be authorised)</b>									
<b>Open pit areas</b>	<ul style="list-style-type: none"> <li>• Based on the location of the ore bodies, two open pits are proposed on the farm Zeekoegat 421 KS to extract from the UG2 reef;</li> <li>• One open pit will be developed and operated to extract from the UG2 reef on the farm Wintersveld 417 KS; and</li> <li>• Two open pits will be developed on the farm Klipfontein 465 KS to extract from the Merensky reef.</li> </ul>								
<b>WRDs</b>	<p>Topsoil will be removed from the pits and will be stored close to the pits. Rock above the ore will be removed and stockpiled adjacent to the pits. Once the pit has been mined out, the waste rock material will be used to continuously partial backfill the pits as part of the proposed rehabilitation process. The WRD will require dirty water management systems to manage runoff water. The runoff is captured to manage pollution resulting from rainwater draining through the WRD into the natural surrounding environment.</p>								
<b>PCDs/settling dams</b>	<p>Water collected in the proposed pits will need to be collected and stored. Therefore, PCDs will be located in and around the areas. BPM currently envisages that potential dirty surface runoff water entering the pits as well as any ingress water will be collected via an in-pit sump, whereafter the water will be collected by trucks and taken to either existing PCDs or new PCDs for storage. The water from the pits will be re-used for dust suppression.</p>								
<b>New wastewater treatment plant (WWTP)</b>	<p>The WWTP will consist of reverse osmosis and ultra-filtration units and will be constructed near the existing security entrance at BPM. The WWTP will be implemented through a phased approach:</p> <ul style="list-style-type: none"> <li>• Phase 1: To treat water from the current raw water dam at the processing plant to potable standards, in order to supply the mine with approximately 1 200 m<sup>3</sup>/d potable water and 550 m<sup>3</sup>/d of secondary water.</li> <li>• Phase 2: To treat water from the current raw water dam to supply mine and communities with potable water. It is anticipated that during Phase 2, the WWTP will produce up to 4 000 m<sup>3</sup>/d of potable water and 1 850 m<sup>3</sup>/d of secondary water.</li> </ul> <p>Any wastewater from the WWTP will be pumped to the new processing plant to be used as process water, and brine will be disposed of at the TSF.</p>								
<b>Additional ventilation shafts</b>	<p>As a result of the underground mining activities that will recommence at the Middelpunt Hill, Brakfontein and later Klipgat shafts, additional ventilation shafts will be required. These proposed ventilation shafts will be constructed at strategic points along the underground working areas to ensure that there is sufficient air flow</p>								

Infrastructure	Description
	<p>underground in order to provide a safe working environment for the underground miners.</p> <p>Access and maintenance roads will be required to these shafts. Power will also be required to some of the ventilation shafts, which will either be sourced from the underground operation or from overhead powerlines on surface.</p>
<p><b>Supporting infrastructure</b></p>	<p>Several portions of existing infrastructure will require alterations, modifications, repairs and maintenance which will form part of the project and may be included as and when identified during the construction process. These may include but not be limited to the following:</p> <ul style="list-style-type: none"> <li>• The relocation of the current post office. This is to ensure the safety of the public utilising the post office since it is currently located within the mining operation;</li> <li>• A new community centre will be constructed for the public outside the mining operational area;</li> <li>• Building changes, alterations and upgrades to existing infrastructure;</li> <li>• Temporary facilities (e.g. laydown areas, offices, parking, diesel storage, and ablutions);</li> <li>• Temporary crushing plant;</li> <li>• Temporary batch plant;</li> <li>• Water reticulation (dirty and clean water);</li> <li>• Electrical supply;</li> <li>• Lining of the existing PCDs at the plant area, as part of the upgrading activities of the plant; and</li> <li>• Road repairs/alterations will be made across the site as needed including: <ul style="list-style-type: none"> <li>- Brakfontein upgrades and repairs;</li> <li>- A community road, separate from the existing haul road, will be provided;</li> <li>- Access roads will be repaired and widened where necessary;</li> <li>- Community roads will be repaired and upgraded; and</li> <li>- Middelpunt Hill road will be repaired and upgraded.</li> </ul> </li> </ul>

## 1.2 Labour and housing

Temporary employment will be available during the construction and rehabilitation phases. During the operational phase, the mine will make more permanent employment opportunities available. Depending on the skills required, all labour opportunities will be prioritised for local residents living next to or close to the mine. External labour will only be sourced if semi-skilled and skilled positions are not available locally. No housing for permanent or contractual employees will be provided.

In addition to the potential socio-economic benefits, BPM may strengthen local procurement and supplier development in the local context. This can be achieved by working with other mining companies and local government to convey regular and accurate information about procurement opportunities. As part of the expansion, BPM will continue to focus on local procurement, and assist suppliers through mentoring to form part of the project supply chain.

## 2 Methodology

### 2.1 Approach to this Socio-Economic Impact Assessment

According to the International Association for Impact Assessment (IAIA) (2003), an SEIA involves analysing, monitoring, and managing the social consequences of development. It constitutes a methodology used to assess the socio-economic impacts of planned interventions or events and develops strategies for monitoring and managing those impacts.

A socio-economic impact is something that is experienced or felt by people. It can be positive or negative. Two types of social impacts can be distinguished:

#### Objective social impacts

These are impacts that can be quantified and verified by independent observers, such as changes in population size or composition, in employment patterns, in standards of living or in health and safety

#### Subjective social impacts

These are mentally or emotionally related impacts of people, such as negative public attitudes, psychological stress or reduced quality of life

Subjective social impacts must be noted and addressed, as these can have far-reaching consequences in the form of opposition to and social mobilisation against a project or development (Du Preez and Perold, 2005).

Different types of information or knowledge may define objective and subjective impacts. According to Glicken (1999), information can either follow a technocratic approach based largely on technical expertise and generated by scientists and experts. However, other types of information or knowledge also play a role in identifying impacts, such as experiential knowledge, which is based on common sense and personal experience (*ibid*). The third type of information, as defined by Glicken (1999), is value-based knowledge, which is seen as moral or normative knowledge: “[...] derived from social interests and based on perceptions of social value” (*ibid*: p.307). It is, therefore, essential to consider both the scientific (cognitive) or objective impacts and the social (experiential and value-based) or subjective impacts.

Cumulative impacts can be seen as changes to the environment that are caused by an action in combination with other past, present, and future human actions. The NEMA EIA Regulations (2014) define cumulative impact as follows: “[...] in relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area” (NEMA, 2014: p.3).

In terms of socio-economic impacts, these cannot be addressed or mitigated in isolation, and usually require the intensive participation of stakeholders. Stakeholders in this report include employees, Area of Influence (AoI) and labour-sending communities<sup>6</sup>, as well as all relevant government representatives. Therefore, this SEIA provides management measures to enhance benefits and mitigate negative socio-economic effects. These mitigating measures need to be implemented by ARM in partnership with its stakeholders.

### 2.2 Primary data collection

Primary data was collected as part of an SRK specialist site visit undertaken between 28 February and 3 March 2023. The data collection tools included Key Informant Interviews (KIIs) and Focus Group

<sup>6</sup> Areas where labour is sourced from.

Discussions (FGDs) with key stakeholders during scheduled face-to-face meetings. Some of the participants included:

- Traditional Authority (TA) representatives;
- Residents living in the mine's doorstep communities (Section 4.2.4 provides the names of these communities); and
- Artisanal miners.

Most of the engagements were arranged by the mine and facilitated by SRK consultants in Setswana<sup>7</sup>. Mine representatives were present during the introductions, however left to allow members to speak freely. During the engagements, SRK distributed a Background Information Document (BID) in English, which provided project details and contact information. The BID was also emailed to key identified stakeholders (mostly government authorities) to inform them of SRK's site visit and obtain issues and/or concerns<sup>8</sup>. Although the relevant ward committee members were contacted, a meeting could not be arranged.

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<sup>7</sup> The predominant language spoken in the area is Sepedi, although most people can understand Setswana.

<sup>8</sup> This email can be provided upon request.

Table 2-1 provides a list of all the stakeholders/groups who were engaged during the site visit<sup>9</sup>.

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<sup>9</sup> The table excludes the presence of SRK and client representatives. Names and contact details are not provided for confidentiality reasons. The attendance register can be provided upon request.

**Table 2-1: Stakeholder engagements**

Date and time	Place	Organisation	Attendees		Objectives
			Details	Gender	
28 February 2023 at 10:20-13:00	Malips Country Club	Monametse Mokgotho Engagement Committee	Committee representatives	04 men and 01 woman	<ul style="list-style-type: none"> <li>• Introduce the mining project</li> <li>• FGD (data collection and impact identification)</li> </ul>
1 March 2023 at 10:30-11:45	Atok TA offices	Baroka ba Nkwana Traditional Council	Council representatives	17 men and 01 woman	
1 March 2023 at 13:00-14:45	Bapedi Kingdom Traditional Council Royal Administrative Offices	Bapedi Kingdom Traditional council	Council representatives	11 men	
2 March 2023 at 10:30-11:15	Roka Selepe Traditional Council Royal Administrative Offices	Roka Selepe Traditional Council	Council representatives	04 women and 18 men	Introduce the mining project and obtain high-level project concerns <sup>10</sup>
2 March 2023 at 13:25-12:15	Manotwana Maesela Traditional Council Administrative Office	Manotwana Maesela Traditional Council	Council representatives	13 men and 06 women	
3 March 2023 at 09:10-10:30	Monametse Mokgotho Community Hall	Artisanal mining representatives	Representatives	30 men	<ul style="list-style-type: none"> <li>• Introduce the mining project</li> <li>• FGD (data collection and impact identification)</li> </ul>
		Women representatives		13 women	

<sup>10</sup> These two FGDs were cancelled as the TA representatives had several reservations regarding the project and public participation process. For example, some felt that their community concerns are not adequately addressed by the mine, and that community meetings are never prioritised. However, the meetings are included in the table, as SRK was introduced, the project background could be provided, and the specialists could use these settings to identify issues and/or concerns.

## 2.3 Secondary data review

For quantitative data analysis, secondary data sources were reviewed to report on the demographics, employment sectors, and general economy of the mine's AoI. The AoI refers to the land affected by the activities and facilities of BPM that are directly owned, operated, or managed (including by contractors or third parties). The terms therefore also include the nearby (doorstep) and labour-sending settlements/towns.

Where necessary, the information was supplemented with data from the South African Census of 2011 (Stats SA, 2011) and the South African Demographic and Health Survey (DHS) of 2016 (Stats SA, 2016). Other secondary data sources included:

- Google Earth imagery;
- The Integrated Development Plans (IDPs) for the district and local municipality;
- The Spatial Development Frameworks (SDFs) for the district and local municipality;
- Limpopo Growth and Development Strategy (2004);
- Limpopo Development Plan (2015-2019); and
- Limpopo Green Economy Plan (2013).

## 2.4 Impact assessment methodology

The SRK impact assessment methodology used as part of the EIA has been formalised to comply with Regulation 31(2)(l) of NEMA to compile an EIA. The methodology allows each potential impact to be identified and clearly described (providing the nature of the impact) and assessed in terms of the factors and ranking scales presented in Table 2-2 below. Refer to Appendix A for a detailed explanation of the methodology.

**Table 2-2: Impact assessment ranking scales**

<b>Occurrence</b>	<b>Duration:</b>	<b>Probability:</b>
	5 - Permanent	5 - Definite/do not know
	4 - Long-term (ceases with the operational life)	4 - Highly probable
	3 - Medium-term (5-15 years)	3 - Medium probability
	2 - Short-term (0-5 years)	2 - Low probability
	1 - Immediate	1 - Improbable
	0 - None	
<b>Severity</b>	<b>Extent:</b>	<b>Intensity:</b>
	5 - International	10 - Very high/uncertain
	4 - National	8 - High
	3 - Regional	6 - Moderate
	2 - Local	4 - Low
	1 - Site only	2 - Minor
0 - None		

## 2.5 Study assumptions and limitations

Assumptions and limitations relevant to this SEIA include:

- Important ward-level data (access to water, electricity, and basic social services) is based on the 2011 Census, as the South African Census data for 2022 is not yet available. Much has changed within the South African context between 2011 and 2022, which means that the 2011 ward-level statistics likely do not accurately reflect the current socio-economic reality of the area around the

mine. To achieve data validity, this data was supplemented by DHS data at the local municipality-level (2016), as well as from a range of other sources referencing more recent statistics<sup>11</sup>;

- Primary data related to specific mine information (such as labour and mine management plans) was not provided by ARM;
- The SEIA was compiled prior to the completion of the EIA public participation process. Therefore, there has been limited stakeholder and community engagement input;
- Although SRK intended to acquire the population figures for all the doorstep communities, this data could not be obtained. One reason is that most FGDs were held with TA structures, and not community residents. Moreover, some of the TAs were reluctant to allow SRK clearance to obtain this information on the mine's doorstep and labour-sending communities falling under their jurisdiction, as they had objections to the mining development and public participation process<sup>12</sup>. Despite this, SRK attempted to organise more FGDs with wider resident representativity. In consequence, three FGDs were held with community members of Monametse Mokgotho, one of the mine's doorstep communities closest to its Brakfontein Shaft, in which several households had already been resettled in the past due to the mine. This community is therefore directly affected by renewed mining activities;
- The land has much cultural value due to observed burial sites, sacred areas, artisanal miners and intensive natural resource usage. At the time of compiling this report, a Heritage Impact Assessment (HIA) was undertaken. However, the findings were not yet finalised for inclusion in this SEIA; and
- SRK is aware of several land claims across the affected farms. Confirmation is still required from the Department of Agriculture, Rural Development and Land Reform (DARDLR) before this can be assessed as an impact<sup>13</sup>.

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<sup>11</sup> Such as from provincial and municipal plans, frameworks, and statistical data forecasting sheets from private companies and organisations.

<sup>12</sup> The most prominent objection was a perception that mine management never reports back to the communities on commitments, and ostensibly rarely prioritises community-requested meetings.

<sup>13</sup> A land claim can be assessed as a possible land-use and tenure arrangement-related impact.

## 3 Legislation and regulatory frameworks

This section provides an overview of the key local legislation and national and international frameworks which bear relevance to this SEIA. Refer to the summary tables in Annexure B for a detailed breakdown of each listed legislation and framework and how each bears relevance to the Expansion Project.

It is the responsibility of ARM to ensure that the company understands all the social and environmental parameters that guide the project. The list is not exhaustive, and others might become more relevant as new standards are developed or when current ones get updated.

### 3.1 Relevant national legislation and frameworks

#### 3.1.1 Relevant legislation

The following list of local legislation is relevant:

- Constitution of the Republic of South Africa, No 108 of 1996;
- NEMA, 1998 (Act No 107 of 1998);
- Mineral and Petroleum Resources Development Act, 2002 (Act No 28 of 2002) (MPRDA);
- National Water Act, 1998 (Act No 36 of 1998) (NWA);
- Protection of Personal Information Act, 2013 (Act No 4 of 2013) (POPIA);
- National Heritage Resources Act, 1999 (Act No 25 of 1999) (NHRA);
- Spatial Planning and Land-Use Management Act, 2013 (Act No 16 of 2013) (SPLUMA) and its regulations of 2013; and
- Broad-Based Socio-Economic Empowerment Charter for the Mining and Minerals Industry (2018).

#### 3.1.2 Relevant frameworks

The following frameworks are relevant. The list is not exhaustive. In addition to the district and municipal IDPs and SDFs, many FTLM by-laws apply from an employment and Socio-Economic Development (SED) perspective. ARM should familiarise itself with these bylaws.

##### National

- The New Growth Path Framework (NGPF);
- The National Development Plan (NDP) (or Vision 2030);
- Accelerated and Shared Growth Initiative for South Africa (AsgiSA); and
- National Spatial Development Perspective (NSDP) (2006).

##### Provincial

- Limpopo Growth and Development Strategy (2005);
- Limpopo Development Plan (2020-2025);
- Limpopo Green Economy Plan (2013); and
- Limpopo SDF (2022).

##### District

- SDM Final IDP (2022-2023); and
- SDM SDF (2018).

##### Municipality

- FTLM IDP (2022-2023); and
- FTLM SDF (2020).

## 3.2 Relevant international standards and guidelines

The following international standards bear relevance:

- United Nations (UN) Declaration on Human Rights, 1948;
- UN Guiding Principles on Business and Human Rights, 2011;
- Initiative for Responsible Mining;
- Voluntary Principles on Security and Human Rights;
- International Council on Mining and Metal's (ICMM's) Position Statement and Good Practice Guide on Indigenous Peoples and Mining;
- The International Covenant on Economic, Social, and Cultural Rights, ratified in 1978;
- The UN Convention on the Elimination of Discrimination Against Women; and
- International Labour Organisation.

## 3.3 Relevant ARM internal policies and subscribed frameworks

ARM is a mining and minerals company that operates under several internal and external policies related to governance and social management. These policies and procedures are designed to ensure that the company operates ethically and responsibly, whilst supporting its employees and contributing positively to society. Some of the key corporate policies and procedures relevant to governance and social management at ARM include:

- Code of Ethics and Conduct: Sets out the ethical principles and values that ARM expects its employees, officers, and directors to uphold in their business dealings. It covers areas such as bribery, corruption, conflicts of interest, and human rights;
- Health, Safety, and Environment Policy: Outlines the company's approach to managing health, safety, and environmental risks;
- Diversity and Inclusion Policy: Presents the company's commitment to creating an inclusive workplace where everyone can thrive regardless of their race, gender, sexual orientation, age, or other characteristics; and
- Human Rights Policy: This sets out the company's position on issues such as child labour, forced labour, and discrimination.

ARM also subscribes to several external standards, frameworks, and guidelines related to governance and social management, including:

- Global Reporting Initiative (GRI): ARM uses the GRI Sustainability Reporting Standards to guide its reporting on environmental, social, and governance issues;
- United Nations Global Compact: ARM is a signatory to the United Nations Global Compact, which is a voluntary initiative that encourages companies to adopt sustainable and socially responsible policies and practices;
- ICMM: ARM is a member of the ICMM, a global industry association that promotes sustainable and responsible mining practices; and
- World Gold Council (WGC): ARM is a member of the WGC, a market development organisation for the gold industry that promotes responsible mining practices and supply chain transparency.

## 4 Socio-economic baseline

The demographic profile of the mine's Aol is important owing to the number of potential socio-economic impacts (positive or negative) that the project may trigger. In this context, the Aol largely refers to the farms, TA areas, settlements/towns/cities directly around the mine, and Ward 34. Such areas could be affected by the mine from either a direct (employment from construction and permanent operation) or an indirect perspective (further spin-off effects and improved local economy from increased local incomes and expenditures). Since the mine sources labour from across the country, the Aol is not limited to those within direct proximity of the mine and may include communities in adjacent wards or even some kilometres away.

In identifying the impacts of the Aol, the following questions were considered:

- What socio-economic impacts are anticipated with this project?;
- Which settlements/towns/cities surrounding the mine site would be directly or indirectly affected by these impacts (including the socio-economic beneficiaries)?; and
- Which other communities/businesses would be the beneficiaries of the project and SED opportunities these create?

The mine had been in operation for many years prior to being placed under care and maintenance in 2017. The project therefore not only includes new developments, but the re-initiation of past activities combined with additional ones.

The baseline only considers the essential data necessary to formulate conclusive impact ratings and management recommendations in Section 5. Baseline data is largely presented at the district-, municipality-, and ward-level as far as this adds value. In many cases, a district-level analysis has been excluded where this is not deemed appropriate or required. This section starts with a contextual analysis of the district and local municipality, followed by an overview of the demographic profile of the most direct Aol. This is followed by a discussion on access to basic social services and related infrastructure and concludes with an overview of the economy and socio-economic livelihoods of the area (how people live and survive).

### 4.1 Municipal contextual analysis

SDM is the smallest of five districts, namely Mopani, Vhembe, Capricorn, and Waterberg. The district (a Category C municipality) consists of four local municipalities: Elias Motsoaledi, Ephraim Mogale, Makhuduthamaga, and FTLM. These comprise 117 wards since the amalgamation of the municipalities of Fetakgomo and Tubatse in 2016.

FTLM is situated North of the N4 Highway (leading to Middelburg, Belfast, and Mbombela) and East of the N1 Highway (Groblersdal and Polokwane). The local municipality functions as a strong economic centre within SDM due to the concentration of mining activities. It therefore features many important roads, such as the R37, R36, and R555 (SDM, 2022). The municipality has a surface area of 5,705.7 km<sup>2</sup>, which is approximately 42% of the entire district (Wazimap, 2023). The project's respective footprints largely fall within Ward 34, which is therefore considered in this report. However, some areas also fall within Ward 33. Together, these represent two out of 39 wards within FTLM.

### 4.2 Socio-demographic profile

#### 4.2.1 Population

Table 4-1 provides the population figures and growth trends for SDM, FTLM, and Ward 34.

According to the SDM IDP, SDM in 2018 comprised approximately 1.2 million people (SDM, 2022). In 2016, this was 1,169,762. This represents 2.1% of the South African population and around 21% of the

province. The district has seen a population growth with an average of 2.49% from 2008 to 2018 (*ibid*). The population of the district grew by an average of 1.36% per annum (between 2008 and 2018), which is similar to the country (1.57%: *ibid*).

Closer to the mine site, the most recent South Africa DHS conducted in 2016 estimates that the FTLM population stands at 490,381, which is approximately 42% of the SDM population (Stats SA, 2016). The second largest local municipality in population size is Makhuduthamaga, at 25% of SDM (*ibid*). The local municipality also experienced a population increase of about 14% of its 2011 figures. The number of households also increased by 15% between 2011 and 2016 (FTLM, 2022). The second largest local municipality is Makhuduthamaga, which represents 283,956 people (24% of SDM) (Stats SA, 2016).

The most accurate population figures at the ward-level remain from the 2011 South Africa Census. As FTLM was an amalgamation of two municipalities in 2016 (Fetakgomo Local Municipality (FLM) and Greater Tubatse Local Municipality), the old Ward 12 of FLM is situated where the mine site is (Ward 34 under FTLM). Data presented in Table 4-1 suggests that just over 8,000 people live directly around the mine site. However, this figure is outdated. Based on SRK's site visit and observations, the ward may currently have well above 15,000 people.

**Table 4-1: Population figures for SDM, FTLM, and Ward 34**

Area	2011	2016
SDM	1,076,840	1,169,762
FTLM	429,471	490,381
Ward 34 (old Ward 12 of FLM)	8,005	Unsure

Source: Stats SA, 2011 and 2016

The data indicates a population growth trend for the district and local municipality (SDM, 2022). Much of this growth has been ascribed by the FTLM IDP as a result of in-migration and migrant labour largely from the increased mining activities in the region (FTLM, 2022). Migrant labour, as described under the MPRDA, refers to workers with no formal local dependents. The 2016 DHS indicates that, although 91.96% of residents within SDM were born in the province, 6.85% were born in other provinces, followed by 1.13% born outside South Africa (Stats SA, 2016). The same trend is observed in FTLM, where most people (95.46%) were born in the province, whilst fewer were born in other provinces (3.26%) (*ibid*). Approximately 1.5% of people in the local municipality were born outside South Africa (*ibid*).

Such growth and in-migration could indicate that FTLM attracts a substantial number of job-seekers due to the mining industry. During FGDs, informants mentioned that there is a significant in-migration of job-seekers from Lesotho and the Eastern Cape. These workers are either regular migrants (who return to their households every week or month), or seasonal migrants (staying for a limited period monthly). Many migrants also reside in the area for prolonged periods, stretching to more than six months at a time (FTLM, 2022). In-migration, and the resulting household and population increases, are adding pressure on the provision of social infrastructure. The dispersed nature of many of the villages, as well as the increase of informal settlements, exacerbate these challenges.

Inasmuch as the area experiences in-migration, the district is also known for its out-migration largely as work is sourced at the surrounding mines. SDM has the fourth largest out-migration in the country, with 6.69% of its total population opting to leave Sekhukhune (SDM, 2022). Many of the mine's closest communities (especially its doorstep villages, such as Monametse Mokgotho), experienced out-migration when the mine was placed under care and maintenance. According to village leadership, the population of this particular village (which is next to the Brakfontein Shaft) shrank from an estimated 5,000 people to 3,000 (2023). Many people used to live permanently or rent in these communities to work on the mine, and have subsequently out-migrated when work at the mine stopped. Evidence was observed during the site visit of unoccupied rental dwellings as shown in Figure 4-1 below.



**Figure 4-1: Out-migration resulting in unoccupied rental units**

Source: SRK, 2023

Considering gender, the male-to-female ratio for Ward 34<sup>14</sup> is 1:0.95 (Stats SA, 2011), meaning that the ward has more men than women. This can be explained by the fact that the area around the mine has more male migrant workers. The 2016 DHS ratio for FTLM was 1:1.06. This is slightly different from the ratio for SDM at 1:1.16 (2011) and 1:1.13 (2016), where women outnumber men (*ibid*).

In terms of racial makeup, the bulk of FTLM’s population comprises Black African citizens (98.74%), followed by White (1.01%) and Coloured (0.25%) people (Stats SA, 2016). The first language, spoken by most residents within the local municipality is Sepedi (91.59% of people), followed by Siswati and Afrikaans (1.91% and 1.11%, respectively) (Stats SA, 2016). At ward-level, approximately 80% of people speak Sepedi, followed by 5.45% who speak Xitsonga, 3.96% Afrikaans, and 2.84% IsiXhosa (*ibid*).

### 4.2.2 Age

The age distribution is essential to determine the economically active population (15-64)<sup>15</sup> in the mine’s Aol. The 2016 DHS provides the most recent age distribution statistics. This data for FTLM is provided in Table 4-2. It indicates that 15.01% of the local municipality’s residents are between 0-6 years of age, followed by 25.05% who are of school-going age (aged 7-18 years).

South Africa’s Youth Policy (2015-2022) defines youth as those between the ages of 14 and 35 (GoSA<sup>16</sup>, 2014). Using this category, nearly half of the population (48.33%) falls within this group. Furthermore, approximately 70% of the residents are of economically active age (15-64 years).

**Table 4-2: Age categories for FTLM (% of all people)**

Age categories	%
0-6	15.01
7-13	13.50
14-18	11.55
19-35	36.78
36-64	18.87
65+	4.29
Total	100

Source: Stats SA, 2016

To determine the age distribution closer to the mine in Ward 34, Table 4-3 provides data from the 2011 census at district, municipality, and ward levels. At ward-level, the largest age category is for those

<sup>14</sup> Old Ward 12 of FLM.

<sup>15</sup> This is a definition adopted by Stats SA for its labour force surveys.

<sup>16</sup> Government of South Africa.

members within the economically active age (15-64) (Stats SA, 2011). Furthermore, 21.59% of residents are of school-going age (7-18 years), and 43.22% fall within the South African youth category (between 14 and 35 years). This suggests a young population who may be economically active and looking for employment opportunities. At 3.81%, the mining area has the fewest residents aged 65 or older (*ibid*).

**Table 4-3: Age categories at district-, municipality-, and ward-level (% of all people)**

Age categories	SDM	FTLM	Ward-level <sup>17</sup>
0-6	18.59	18.16	16.59
7-13	15.17	14.43	12.81
14-18	11.55	11.03	8.78
19-35	26.85	29.60	34.44
36-64	21.10	21.05	23.57
65+	6.75	5.73	3.81
Total	100.0%	100.0%	100.0%

Source: Stats SA, 2011

### 4.2.3 Faith, religion, and cultural resources

All faith-based organisations should be viewed as essential stakeholders and engagement partners. The reason for this is because the traditional authority system governing the mine's Aol is known to have a strong and influential faith foothold, grounded in certain land tenure beliefs and gender roles. Such beliefs, which are often faith-based also, influence stakeholders and how they perceive a project. The province has a predominantly Christian religious society, with many people who are affiliated with the Zion Christian Church (ZCC). The latter is one of the largest African-initiated churches operating across Southern Africa. The church's headquarters are near Polokwane in Limpopo, and it has branches across South Africa and in neighbouring countries.

The area around the mine is part of the Sekhukhune Cultural Region, which the Bapedi and Ndebele people dominate. Several cultural, archaeological, burial and sacred sites were recorded by specialists in the mine's Aol. In an HIA conducted for the mine in 2013 (Digby Wells, 2013), consultants also noted that some of the rocky outcrops, such as around Klipfontein 465 KS, may contain stone scatters, in addition to Late Iron Age sites. A more recent HIA conducted by Archaetnos Culture and Cultural Resource Consultants in 2022-2023 identified one site of cultural heritage importance. The site contains around 19 stone terraces, spanning an area of about 300 x 100 m, and is likely more than 60 years old (Archaetnos Culture and Cultural Resource Consultants, 2022). The latter report should be referred to for more detail on cultural heritage. The HIA for the Expansion Project was still being compiled at the time of drafting the SEIA.

From SRK's site observations, several cultural heritage resources were also recorded. Foremost, areas around the current Brakfontein Shaft contain remains of homesteads which were resettled in the last two decades. In terms of sacred sites, a narrow non-perennial river in Monametse Mokgotho called the Monametse River is claimed to be sacred (refer to Figure 4-2 for this location). A key informant alleged that the river has largely dried up since the mine started. Sacred rivers play an integral part of local culture, as these are often used to signify ancestral powers and enforce a deep place-attachment to the land. SRK also documented several burial sites. One burial site of the Mokgotho Family (in Monametse Mokgotho) was identified which may need to be relocated during the mine's expansion. Figure 4-2 provides a picture of this gravesite. The location of these graves is provided in Figure 4-4.

<sup>17</sup> Ward 12 of the previous FLM (currently Ward 34 of FTLM).

The importance of the landscape in terms of providing an ecosystem service is also noted. Various literature sources refer to the general area around the mine as scenic, with mountain ranges and lush vegetation harbouring a proud, long history and rich cultural attachment to the land. Owing to the mineral-rich environment, it is also not surprising that the area succumbs to illegal artisanal miners who use the land as a source of income. Albeit being an illegal activity, this could be argued to strengthen people's place attachment to the land, as the land and surrounding outcrops have meaningful value to many households who rely on the natural resources for income.



**Figure 4-2: Monametse River (left) and Mokgotho Family graves**

Source: SRK, 2023

#### 4.2.4 Settlements

A very small percentage of people reside in more traditional towns and urban areas in the district (only around 5%) (SDM, 2022). In FTLM, the towns of Atok and Apel represent the most prominent settlement areas closest to the mining area. Towns such as Driekop, Burgersfort (the capital of FTLM), Steelpoort, and Ohrigstad are located toward the eastern parts of the local municipality. Important roads, such as the R37, R36 and R555 service the towns and surrounding areas. Being one of the major trading towns of the province with government offices, Burgersfort has been identified by the FTLM IDP as a provincial growth point (FTLM, 2022). It is, therefore, not surprising that the town has experienced population growth and related challenges, such as the growth of informal settlements, rising land prices, and a lack of bulk social service infrastructure (*ibid*). Towns such as Driekop are also expected to experience growth due to mining-related developments.

Six proclaimed townships in the district can be classified as dispersed settlements connected by a few secondary gravel roads. According to the SDM IDP, the greatest concentration of settlements can be found in the western parts of the municipality (SDM, 2022). The FTLM IDP also refers to the mushrooming of especially informal settlements, most noticeably in an area close to Burgersfort known as Extension 10 (FTLM, 2022).

In addition to towns and townships, the area also has many smaller, more traditional, villages. In SDM, 54 sparsely populated settlements accommodate around 95% of the district's total population (SDM, 2022). In the district, FTLM has the greatest number of villages (387), which represent 44% of all the villages in the district (*ibid*).

Several townships and villages can be found within the immediate surrounding areas of the mine site in Ward 34 of FTLM<sup>18</sup>. Figure 4-4 provides the location of the mine and its nearest settlements. The doorstep communities of the mine (within an approximately 5 km radius of the mine) include:

- Atok (which largely houses approximately 30 mining households and offers essential municipality and mine facilities and services);

<sup>18</sup> Monametse Mokgotho, Sefateng, Mohlahlaneng, Bogalatladi, Mafeane, Mogolaneng, Mabulela, Maruping, Mogabane, Malomanye, Mphaaneng, and Mashikwe (FTLM, 2020).

- Monametse Mokgotho (two areas which are considered one village);
- Maruping;
- Maseyane;
- Malomanye; and
- Sefateng.

Households in several areas around the Brakfontein Shaft (in Monametse Mokgotho) had been physically resettled between 2003 (21 households) and 2009 (45 households). Replacement housing continues to be offered too close to mining operations, which resulted in many of these households needing to be resettled twice due to cracking of houses. Figure 4-3 provides a picture of some resettled Brakfontein households in their replacement houses. The location of the Brakfontein resettlement area is provided in Figure 4-4. This resettlement project is important to take note of, as many of the affected households expressed concern to SRK that their new houses are still too close to the Brakfontein Shaft.

The BPM mining area is also relatively close to other surrounding wards, with several towns and villages (such as Sefateng and Apel), which could be considered part of the mine's direct Aol<sup>19</sup>.



**Figure 4-3: Brakfontein resettlement houses**

<sup>19</sup> These further include Mogabane-Shole, Boselakgaka, Selepe Moshate, Selepe Mashemong, Manotoana-Moshate, Checkers, Mosotse-Motjatjane, Phashaskraal, Swazi-Mnyamane and Manotoana Mashemong (FTLM, 2020).

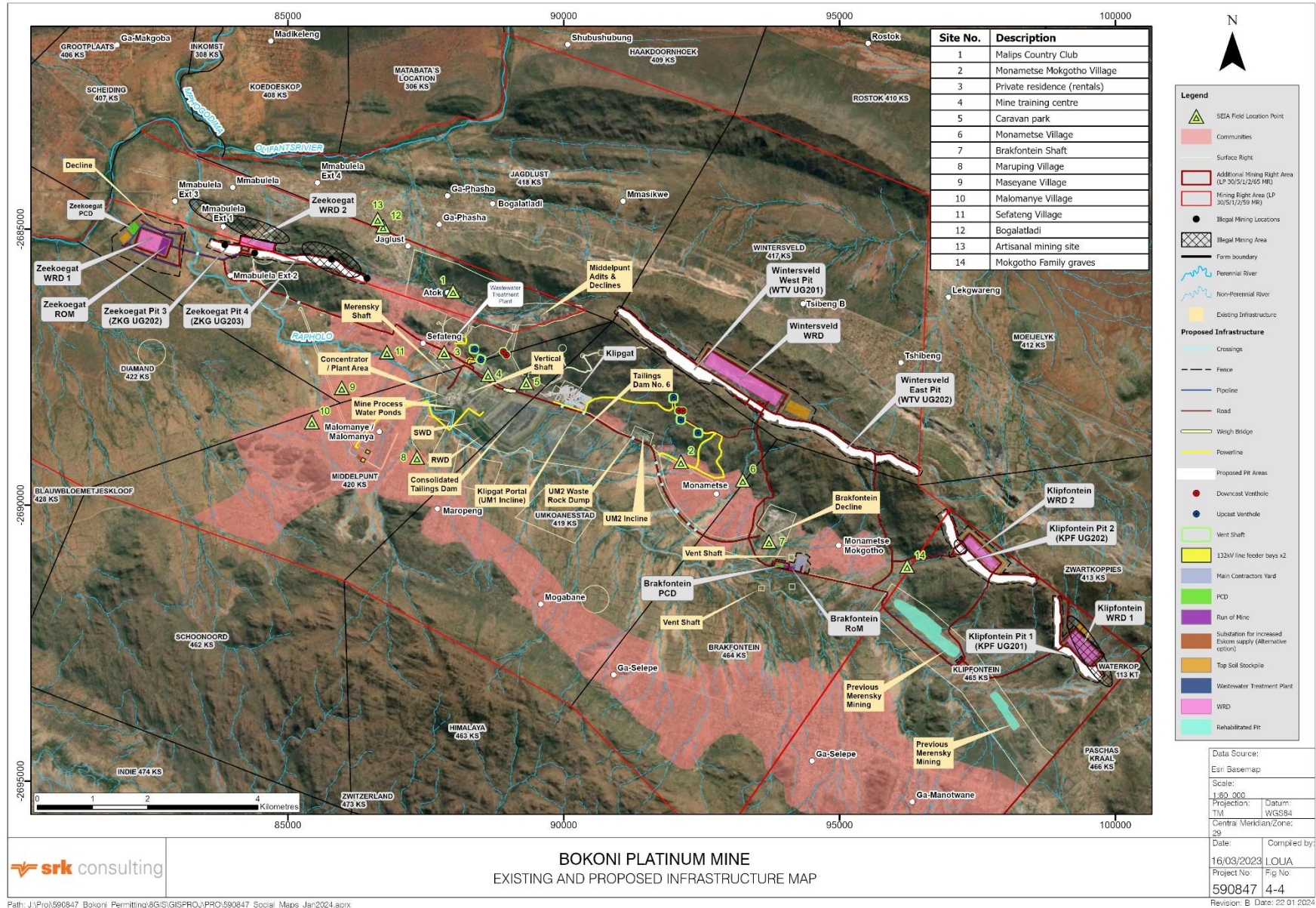


Figure 4-4: BPM location and closest settlements

## 4.2.5 Land-use

Most of the surface area overlying the BPM property is owned by the government and associated TAs of Lebowa and Bapedi, including farms Middelpunt 420 KS and Umkoanesstad 419 KS. The two farms comprise 1,544.91 and 2,635.10 ha, respectively. TAs usually govern or exercise their powers by establishing trusts, such as the Lebowa Minerals Trust.

Several pieces of legislation govern South Africa's TA system<sup>20</sup>. Under this system, households have exclusive residential rights, seasonally exclusive rights to arable land, and shared rights to grazing land and natural resources. Those who have been allocated land by the TA do not receive title deeds, as they have user rights as agreed with the chief. It is also worth noting that a particularly contentious area of customary law relates to women's rights with succession and inheritance. The main elements of this system typically include the subjugation of women to men, the subjugation of children to their father or to the head of the family, and the rule of primogeniture. More information and legislation on the TA system are provided in Appendix C. TA systems often lead to a lack of tenure security. One reason for this is because it frequently clashes with modern land-use systems, which has led to land invasion and the growth of informal settlements (also in response to housing backlogs). This situation is worsened by competing land uses, such as mining, subsistence and commercial agriculture.

In addition to traditional land, FTLM also has a total number of 1,031 farms, according to data from the SDM IDP (SDM, 2022). This represents 43.54% of all farms in SDM. However, closer to the mine site, few large farms were noted. According to key informants, although subsistence farming used to be the main livelihood activity in the area, the mine has reduced the significance thereof due to soil erosion, land disturbance and dust.

Figure 4-5 provides views of BPM showing the concentrator plant (left), some abandoned buildings, and the main road to the mine (left and right). The picture on the right shows the mine access route, an electricity transformer and cables, with housing structures far in the distance.



**Figure 4-5: BPM site**

Source: SRK, 2022

In addition to containing mining infrastructure, the mine site comprises largely land which has already been transformed and altered. Noticeably, soil erosion is prevalent, especially along river courses and gravel roads. This is depicted in Figure 4-7.

<sup>20</sup> These include the Traditional Leadership and Governance Framework Act, 2003 (No. 41 of 2003); Traditional Leadership and Governance Framework Amendment Act, 2019 (No. 2 of 2019); and Interim Protection of Informal Land Rights Act, 1996 (No. 31 of 1996).

Close to the mine's administrative buildings and training centre, there are existing housing rental units, as well as one small settlement which is referred to as the Caravan Park (refer to Figure 4-6 for a picture of the dwellings, and Figure 4-4 for its location). According to BPM, the settlement currently houses five households who started residing in the area in 2005. Most of these residents are currently unemployed and used to be contractors at the mine. The mine intends to resettle these households.



**Figure 4-6: Caravan Park**

Source: SRK, 2023



**Figure 4-7: Soil erosion**

Source: SRK, 2023

Observations during SRK's site visit showed the presence of livestock (mostly cattle, goats and sheep) using and crossing the roads in areas which are largely still unfenced (refer to Figure 4-8 which provides a picture of cattle crossing a mine-used road). The roads need upgrading, particularly those servicing the doorstep communities which are used by mine vehicles. Furthermore, a safety concern was noted in terms of pedestrian traffic on the mine's roads, especially people walking to work and children crossing the roads and using the sidewalks to walk to school.



**Figure 4-8: Livestock crossing roads used by mine vehicles**

Source: SRK, 2023

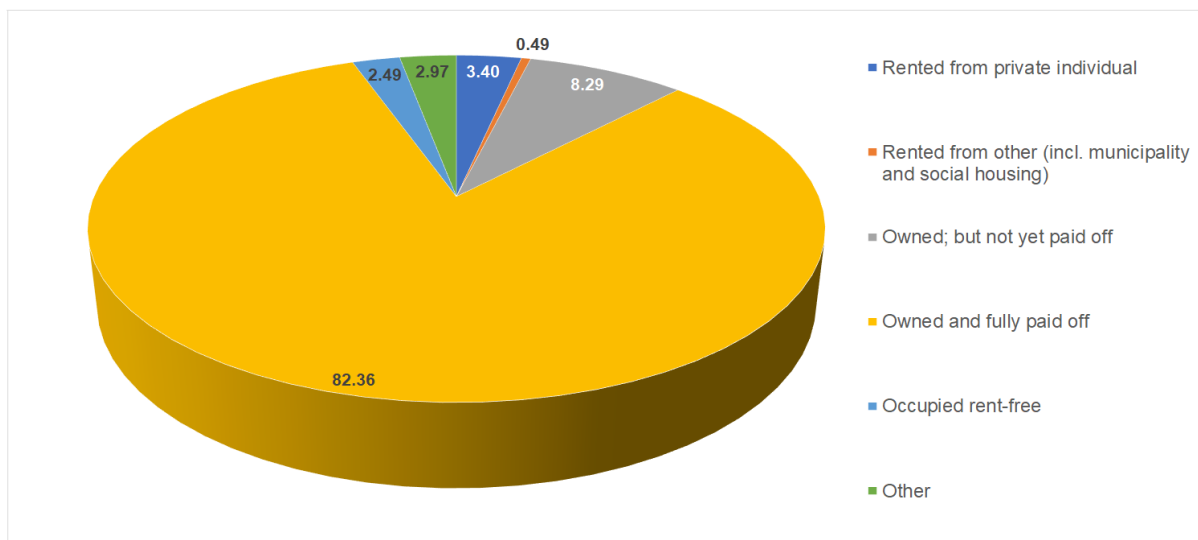
The Aol is held under traditional leadership. Large areas, such as Klipfontein 465 KS, are owned by Ga-Manotwane Community Development Trust, whilst most areas of Umkoanesstad 419 KS fall under the jurisdiction of the Bapedi Tribe. In fact, the entire district is characterised by traditional land. Approximately 658,887 ha of land in SDM is under tribal leadership, representing 48% of the total district area (SDM, 2022). In FTLM, at 329,850 ha, traditional areas cover 58% of the municipal area (SDM, 2022). The district has 74 traditional leaders. Most of these are situated within the jurisdiction of FTLM, as well as Makhuduthamaga, the eastern part of Ephraim Mogale, and the southwestern areas of Elias Motsoaledi Local Municipalities.

The wider area is also known for its tourism potential, as there are several ecologically protected areas in FTLM. This is unsurprising, as approximately 80% of land in the local municipal area is natural environment (FTLM, 2022). Some of the largest nature reserves in the municipality include Presswomen, Glen Ora (private), Luiperdhoek, Blyderivierspoort, and Milford. To the Northeast of BPM is the Kruger to Canyons Biosphere Region, which includes the Northern Escarpment and formally protected Bewaarkloof and Potlake national nature reserves (*ibid.*). The nearest nature reserve to the mine is Ngwaritsi, less than 5 km towards the South. Moreover, there are several known tourism areas within FTLM, which include the Tjate Heritage Site and the Strydom Tunnels.

Several land claims have been lodged in the district. A total of 622,565 ha of land is subject to land claims within SDM; representing 46% of the entire district area (SDM, 2022). In FTLM, 317,538 ha of land (56% of municipal land) is subject to land claims (*ibid.*). Most of this land falls under the Lebowa TA. There are also registered land claims for both farms Umkoanesstad and Middelpunt. At the time of compiling this report (January 2024), clarification on these claims was still being awaited from the DARDLR.

#### 4.2.6 Land tenure and dwellings

Figure 4-9 depicts the land tenure status for FTLM based on the 2016 DHS. The bulk of the population (82.36%) lives on land that is fully owned and paid off, while 8.29% live on the land which they own but have not paid off. Around 4% rent land from a private individual, the municipality, or a government social scheme. Closer to the mine, based on data from the 2011 South African Census, much of this land is rented (46.39% of the population rent land), followed by 33.71% of people who paid off their land, and 10.9% who occupy their land without paying rent (Stats SA, 2011). According to the SDM IDP, this finding is not surprising, as the municipality has many migrants who work at mines.



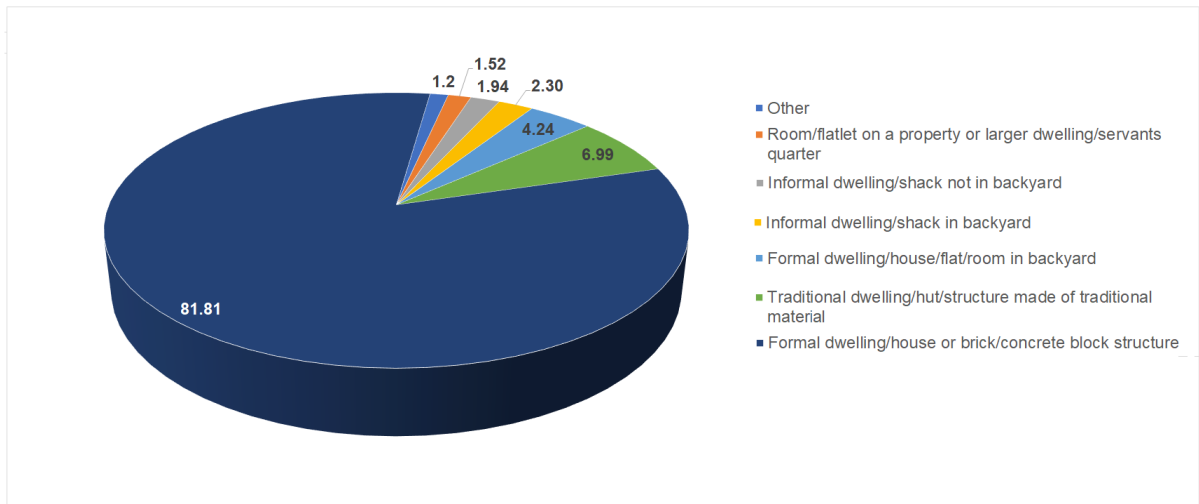
**Figure 4-9: Land ownership in FTLM (% of the total population)**

Source: Stats SA, 2016

Figure 4-10 depicts the dwelling status for FTLM based on the 2016 DHS. The predominant segment of the population (81.81%) lives in a formal or brick/concrete dwelling. Around 7% of people live in residences constructed of traditional materials, while a smaller percentage of people (4.24%) live in informal houses. Considering the dwelling status of residents around the mine, based on the 2011 South African Census, most of the population in the ward (74.06%) live in a brick/concrete house, whereas 15.56% of residents live in rooms/flatlets on a property or larger dwelling/servant quarters (Stats SA, 2011). Approximately 8% live in a house/flat/room in a backyard (*ibid*).

Closer to the mine at ward-level, the 2011 Census shows that most people (74.06%) live in brick/concrete house structures on a separate stand or yard (Stats SA, 2011<sup>21</sup>). This is followed by 15.56% who live in a room/flatlet on a property or more significant development, while approximately 7.5% of people live in a house/flat/room in a backyard (*ibid*). This data was also verified during SRK’s site visit. Around the mine (such as in Monametse Mokgotho and Sefateng areas), there is a variety of dwelling types; ranging from brick and corrugated iron-roof houses to structures made from mud, wood and corrugated iron. Figure 4-11 provides a picture of some formal and informal buildings noted in the mine’s Aol.

<sup>21</sup> Based on the old FLM Ward 12, which is currently Ward 34 of FTLM.



**Figure 4-10: Dwellings in FTLM (% of the total population)**

Source: Stats SA, 2016



**Figure 4-11: Dwellings in the mine's Aol**

Source: SRK, 2023

### 4.2.7 Ecosystem services

This term refers to how an ecosystem provides a socio-economic service to people and communities. Ecosystem services can be grouped into various types, such as:

- Provisioning services, which are the products people obtain from ecosystems;
- Regulating services, which are the benefits people obtain from the regulation of ecosystem processes;
- Cultural services, which are the non-material benefits people obtain from ecosystems; and
- Supporting services, which are the natural processes that maintain the other services.

In the context of this report, households in the mine's Aol benefit from ecosystem services in the following ways:

- The use of natural resources, like plants for cultural, subsistence (animal enclosures, crafts, mats, structures), commercial and/or medicinal purposes and wood (for energy or selling, such as to make charcoal or for construction). Many indigenous plants, such as the Marula and *Artemisia afra* ("Lengana") trees are present in the area;
- Sand-mining in the rivers (sand is used for construction and selling);
- Using culturally significant sites that are normally associated with certain hills or naturally occurring trees and plants;
- Using natural water from rivers and boreholes; and
- Hunting animals for food or leather.

#### 4.2.8 Unregulated artisanal mining

South Africa has seen an upsurge in Artisanal Small-Scale Mining (ASM) in the past years, with artisanal miners colloquially referred to as "Zama Zamas." In South Africa, the total number of artisanal or zama zamas is estimated to be 30,000 (SAHRC 2015:25). The number of dependents is significant. Researchers have estimated that 250,000 people are surviving on the proceeds of ASM in South Africa (Bench Marks Foundation 2017:1). Unfortunately, no concrete figures provide insight into the sector's actions; there is limited data regarding the number of people in the sector, the spectrum of activities, and the geographical distribution of artisanal mining in South Africa (Action Aid 2019:7).

Unregulated artisanal mining, also called illegal mining, occurs at several locations within the BPM project site. This can be a security threat and operational risk to ARM, since these activities currently occur within the mining right at the current open pits. There is often a poor understanding of the artisanal/illegal mining communities, which creates the potential for inappropriate support initiatives. Another reason for failure is that community initiatives from mining companies are often developed without engaging with the targeted community. This mistargeting assumes that the mining community is homogeneous and bounded. The problem with this assumption is that corporate social strategies from mining companies add to social fragmentation at a local level, leaving little room to consider the local group dynamics. Therefore, although not required as part of the regulatory process, it is recommended that BPM consider a baseline study on the social aspects of illegal mining and how this can be managed.

Figure 4-12 provides three pictures of artisanal mine sites. The first two pictures were taken in Monametse Mokgotho, where the loose rock outcrops, boulders and sand rubble indicate excavation areas. The second picture shows a house which appears to be near the point of collapsing due to illegal mining activities around Bogalatladi Village.



**Figure 4-12: Artisanal mining activities**

Source: SRK, 2023

**Concerns related to land usage and degradation around BMP**

A recent study investigated communities in close proximity of BMP and found that many perceive their environment as degraded due to mining (Anders, 2022). Some also claim that mining activities have altered the once-green environment, as trees are cut for mining. Some also believe that the soil has been contaminated to a point where livestock have insufficient grass. Many are concerned that the current land-use practices may further worsen the effects of climate change, resulting in more land degradation. Furthermore, a study conducted by Seloja and Ngole-Jeme in 2022 provided household perceptions on land availability around BMP. The study found that all participants believed land available for farming and livestock grazing has reduced, together with wildlife populations and vegetation cover.

### SUMMARY AND IMPLICATIONS: DEMOGRAPHY AND LAND-USE

As with the district and local municipality, the ward is experiencing a population increase, which may continue in future as there is a significant amount of in-migration of job-seekers. This ultimately presents a challenge for service delivery, as the area succumbs to informal settlements and scattered settlement patterns. Doorstep communities may also further encroach upon BPM in future, which could increase tension between the mine and its communities either from labour protests, or environmental grievances. Along with a population increase is also the growth of a strong youth and working-age population. This implies that employment is needed for a growing number of people entering the labour market. Furthermore, the mine site falls under traditional ownership where subsistence agriculture is practised. As the area is endowed with scenic bushveld and the Rapholo River, it could be considered as having high cultural value. This is further supported by the ward land-use profile, which indicates a degree of ecosystem services (how ecosystems provide a socio-economic service to people and communities): the surrounding landscape and bush are both used for traditional, spiritual/cultural or livelihood purposes (such as to graze cattle or bathe in the river).

## 4.3 Access to basic social services and infrastructure

### 4.3.1 Electricity, water, and sanitation

Determining access to basic social services (electricity, water, and sanitation) is vital for ARM to plan any potential Corporate Social Investment (CSI) or Social and Labour Plan (SLP) related projects. It also assists the mine in understanding how it may negatively affect such services or water consumption and/or quality. Improved access to social services through the provision of infrastructure is also prioritised by most of the province, district and local municipal plans and frameworks. An example would be the seven priorities of the Limpopo Development Plan's Development Strategy (2020-2025). These, amongst others, outline the need for continued improvement in basic education, healthy lifestyles, safe communities, comprehensive rural development, and environmental protection (Limpopo Office of the Premier, 2021).

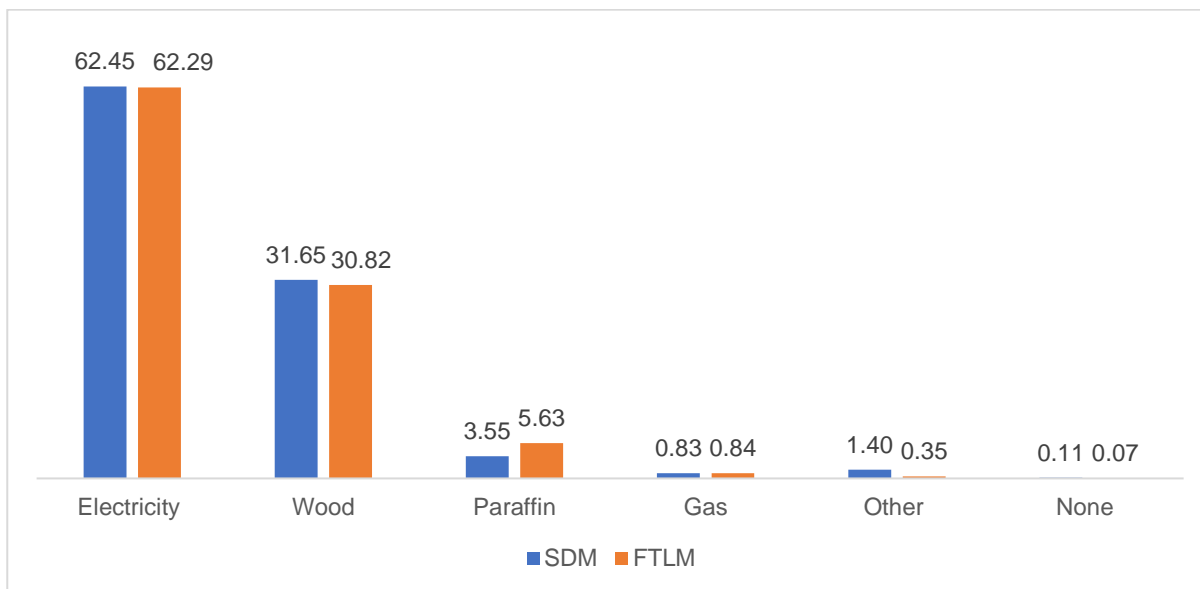
#### Electricity

Figure 4-13 illustrates that most people in SDM and FTLM (62.45% and 62.29%, respectively) have access to in-house electricity. The fact that many use wood for energy (31.65% for SDM and 30.82% for FTLM) may signal the rural nature of the area and people's dependence on natural resources for subsistence living. Few people have no electricity in the broader district (0.11% for SDM), compared to 0.07% for FTLM, signalling a difference in access to electricity for the district and local municipality. This could be explained by the fact that the district is much larger and houses more people than its local counterpart. The "other" category refers to a few people who have/use generators, coal, solar home systems, or batteries.

At ward-level, the most reliable data remains from the 2011 South African Census, which shows that most people have access to electricity for cooking (77.85%), which is higher than for SDM and FTLM (Stats SA, 2011). A sizeable 18.72% of the population uses wood for cooking. This could illustrate the dependence on natural resources and possibly also people's cultural attachment to the place.

The local municipality is currently enrolling on a programme called Operation Mabone, which aims to accelerate household connections and eradicate post-connection of electricity/extension backlog. Still, challenges persist (FTLM, 2022). Some include the fact that there is no electricity authority, or no accurate indigent register for the provision of free basic electricity (there is a high number of indigent households not paying for electricity).

The villages around the mine site have access to electricity.



**Figure 4-13: Access to electricity for SDM and FTLM (% of the total population)**

Source: Stats SA, 2016

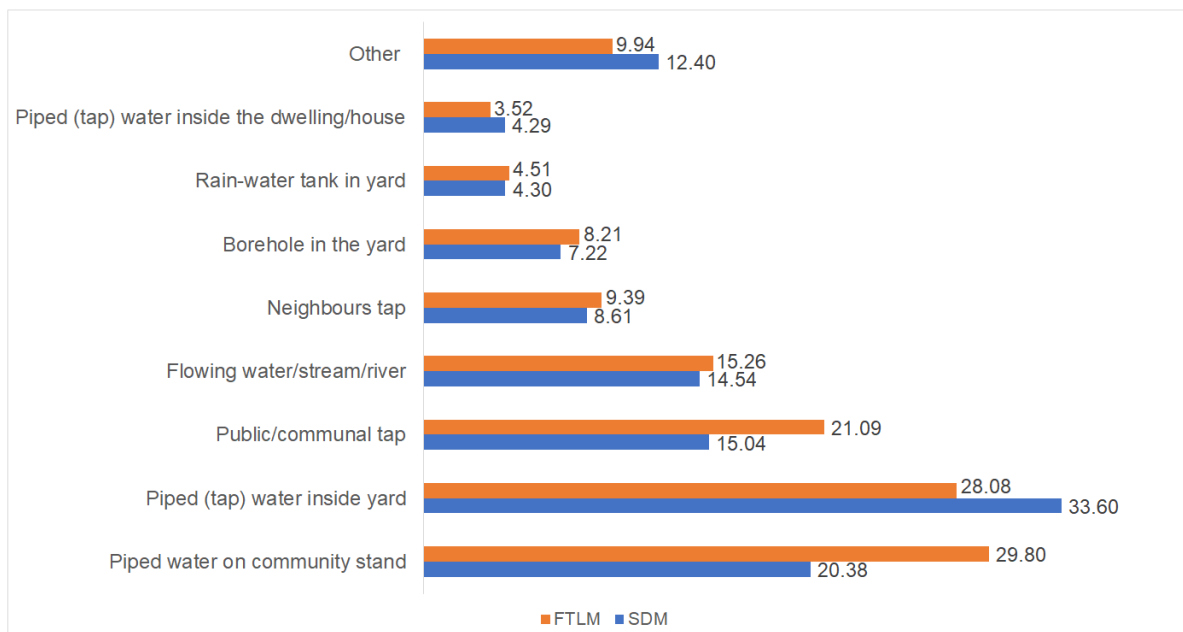
### Water

Figure 4-14 shows that the largest category of people in SDM (33.6%) have access to piped tap water inside their yards, compared to 28.08% in FTLM. A significantly smaller percentage of SDM residents (4.29%) have access to piped water inside their houses compared to more people in this category in FTLM (3.52%). The “other” category refers to those using rainwater tanks, springs/wells, or boreholes. The FTLM IDP notes that there are currently 413 communal and 3,243 privately owned boreholes within the local municipality (FTLM, 2022).

At ward-level, the 2011 South Africa Census data shows that 37.99% of residents have access to piped water inside their yards. This figure is higher than SDM and FTLM (Stats SA, 2011). This is followed by 28.02% of people with access to a tap on a community stand less than 200 m from their dwelling/institution (*ibid*). The largest group of residents (45.78%) obtain their water from a regional/local water scheme (operated by a municipality or other water services provider), followed by 26.24% of people who get water from a nearby dam or stagnant pool. Around 18% obtain water from a borehole.

Several rivers supply water to the municipality<sup>22</sup>. Closest to the site, Figure 4-15 provides an image of the Rapholo River, which is a perennial tributary of the Olifants River. Key informants mentioned that many of the local rivers and boreholes dry up frequently. Several water reservoirs could also be observed, whilst there are government-supplied taps. However, the reservoirs are said to largely remain empty, or do not pump sufficient water to taps. Municipal-provided water infrastructure, in general, is also said to be dilapidated and in need of repair. Most households are therefore reliant on borehole water. Many key informants further complained about the water quality, whilst some claim that it tastes salty. Some households also do not have any access to any water point.

<sup>22</sup> Groot en Kleindwars, Steelpoort, Tubatsane, Moopetsi, Spekboom, Mabitsana, Tshwetlane, Hodupong, Matadi, Mabogwane, Olifants, Motse, Monametsi, Pelangwe, Mohlaletsi, Ohrigstad, Vyehoek, Mantshibi, Waterval, and Eloffspruit.



**Figure 4-14: Access to water for SDM and FTLM (% of the total population)**

Source: Stats SA, 2016



**Figure 4-15: The Rapholo River to the South of the mine site**

Source: SRK, 2022

One challenge in the municipality is water scarcity which, in turn, affects dam levels and boreholes (SDM, 2022). Development in rural areas, especially in agriculture and mining, also places stress on water availability (*ibid*). Illegal water connections, ageing infrastructure, and a lack of financial resources further complicate water provision. Closer to the mine, the FTLM IDP refers to Ward 34 as experiencing the following difficulties related to water provision:

- Some broken down water infrastructure;
- JoJo water tanks are required for most villages;
- Stealing of transformers resulting in a water shortage; and
- Intolerable interruptions of water supply.

### Water challenges

The following issues surfaced in a public participation report of BPM (Enviroroots, 2021):

- There is some concern over the mine's water usage and whether water will be sufficient for the surrounding communities considering the mine's expansion;
- Community members are enquiring as to whether the mine will continue to supply water to the communities. BPM confirmed that it was the mine's intention for all the doorstep communities to have access to clean and purified water;
- Some houses closest to the mine experience water seeping through their yards. This water is from the mine's shafts which are currently not operational and under care and maintenance;
- The previously referred study in 2022 by Selo and Ngole-Jeme indicates an increase in water contamination around BMP due to what households claim to be from mining. Study participants also felt that there was an increase in soil erosion and contamination, which they believe pollute the water; and
- A study by Anders (2022) on villages around BMP found that the communities perceive their water to taste salty, which they blame on mining activities. This resulted in community protests around the mine in 2022, demanding the mine to supply adequate water.

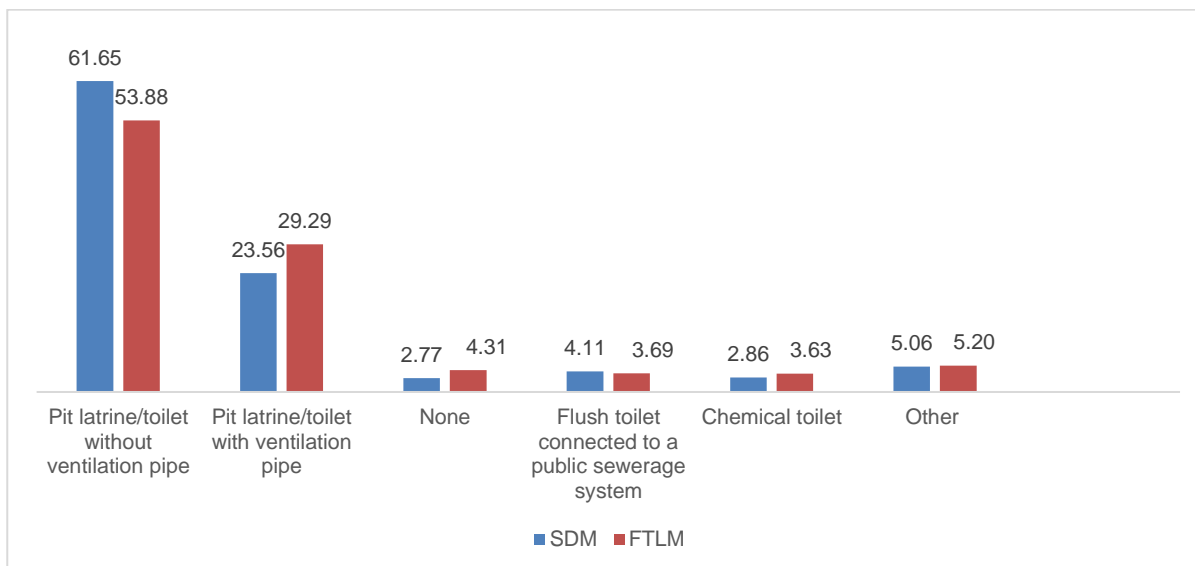
### Sanitation

Figure 4-16 illustrates that less than half of the people in SDM (61.65%) have access to a pit latrine or toilet without a ventilation pipe, more than in FTLM (53.88%). Access to a pit latrine or toilet with a ventilation pipe is nearly similar at district and local municipal levels (23.56% and 29.29% of people, respectively). Few people have access to flush toilets (4.11 in SDM and 3.69 for FTLM), whereas no access to sanitation facilities accounts for 2.77% and 4.31% of people at district and municipal levels. Types of lesser-used sanitation services include bucket toilets (0.58% for SDM and 0.90% for FTLM), which are grouped under the "other" category.

Closer to the mine, the 2011 Census data indicates that nearly 80% of people have access to a pit toilet without ventilation (7.99% with ventilation) (Stats SA, 2011). This was confirmed during SRK's site visit. This percentage is higher than for SDM and FTLM. This is followed by 8.48% who use a flush toilet connected to a sewage system (*ibid*). Around 0.2% of people still use the bucket system, less than in the district and local municipality (*ibid*).

The following sanitation-related challenges are prevalent in FTLM (FTLM, 2022):

- Insufficient sanitation services (backlog in sanitation provision) and poor state of existing facilities;
- Most sewage plants need to be upgraded; and
- There is limited monitoring of sanitation projects.



**Figure 4-16: Sanitation for SDM and FTLM (% of the total population)**

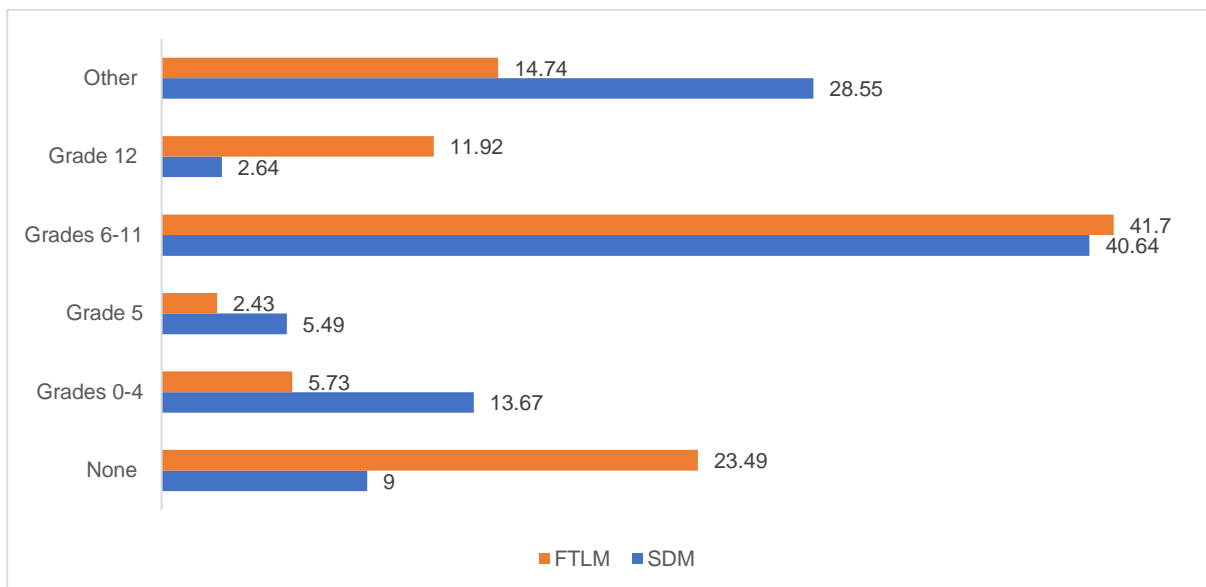
Source: Stats SA, 2016

### 4.3.2 Education

Determining the educational status of those closest to the mine is important for several reasons. The most important is that this could assist ARM in ascertaining where local skills may be required for a job opening or where support could be provided in terms of the company’s SLP or CSI commitments.

As noted in the SDM IDP, SDM has the lowest number of highly skilled individuals in the entire province (SDM, 2022). Figure 4-17 shows that approximately 41% of people aged 18 years or older in SDM have between grades 6 and 11, while this is 41.7% for FTLM. Of this age group, 2.64% have completed Grade 12 in SDM, compared to a higher 11.92% in FTLM. Of those 18 years or older, 9% in SDM do not have any education, compared to a higher 23.49% for FTLM. Around 30% of people who are 18 years or older within SDM have “other” forms of education (occupational certificates, tertiary, diplomas); fewer people than in FTLM (14.74%). Another way to determine educational levels is to consider literacy rates (predominantly referring to reading and writing skills). It is estimated that approximately 73% of people in FTLM are literate (FTLM, 2022).

At ward-level, 2011 census data shows that, of residents 20 years or older, 29.20% have completed Grade 12; a higher percentage than for SDM and FTLM (Stats SA, 2011). Compared to SDM and FTLM, more people in the ward (44.07%) have also completed grades 6-11. Approximately 13% of people have no schooling around the mine, which is less than for FTLM (23.49%).



**Figure 4-17: Educational status for SDM and FTLM (% of total population 18 years or older)**

Source: Stats SA, 2016

According to the SDM IPD, the district has 414 primary schools (106 in FTLM), 319 secondary schools (129 in FTLM) and 47 combined schools (nine in FTLM) (SDM, 2022). There are also several special and private schools, as well as colleges. Most of the mine’s doorstep communities have creches, primary and secondary schools (Figure 4-18 provides a picture of the Motsepe and Malomanye primary schools). Two drop-in centres were also seen to assist orphans and vulnerable households.



**Figure 4-18: Motsepe and Malomanye primary schools**

Source: SRK, 2023

Most schools in the local municipality have access to water and electricity (98.34% and 98.89%, respectively). Water is usually obtained from boreholes. More strikingly, however, is many schools lack sanitation facilities, with 13.85% of schools in FTLM not having any such facilities (*ibid*). The most common type of facility is pit latrines. However, it is a frequent occurrence for learners to have to use the bush when toilets are broken. Many schools are also in need of renovation, replacements, and general upgrades in this regard.

The following list of challenges persists with regard to the provision of education in the municipality (SDM, 2022):

- Lack of educators in rural schools;
- Scholars do not complete secondary education;
- Lack of tertiary institutions;
- The percentage of people with Grade 12 is very low;
- Lack of government support, especially for early childhood development;

- Few literacy campaigns and Adult Basic Education and Training (ABET) centres; and
- Limited learnerships, internships and bursary schemes.

### 4.3.3 Healthcare

Although ARM is not responsible for healthcare, understanding general illnesses and conditions could assist the company in determining where assistance could be provided. Healthcare can also be an indicator of the economically active population, especially if a large section of the population is too sick to work or enrol in training programmes.

One indicator of healthcare is the causes of mortalities. The SDM IDP lists the following top causes of death in the district (ranked from highest to lower number of recorded incidents) (SDM, 2022):

- Covid 19;
- Retroviral disease;
- Lower respiratory tract infection;
- Acute renal failure;
- Hypertension;
- Diabetes;
- Congested cardiac failure;
- Cerebrovascular accidents;
- Tuberculosis; and
- Gastroenteritis.

According to the Department of Health (cited by SDM, 2020), in the district, mortality is the highest among children under the age of five. For this age group, causes of death largely include diarrhoea (29% of all deaths in this age group), LRIs (25.5%) and pre-term birth complications (6.6%). The top cause of death for young men and women between the ages of 15-24 is road accident injuries (16% for this group). In the age group of 25-64, the top causes of death for men and women are HIV/Aids, LRIs and tuberculosis (*ibid*). Regarding HIV/Aids, there are 86,336 people infected in the district, which in 2016 represented 7.21% of the total district population. These numbers represent approximately 19% and 2% of all people infected with HIV/Aids in the Limpopo Province and South Africa, respectively.

Another possible means to understand healthcare is to consider a disability. This term refers to a physical or mental condition that can limit movements, senses and/or activities. It is used in the workplace to measure worker capacity to execute certain tasks or activities. A population with multiple disabled people could therefore affect its economic growth. This means that mitigating disability is crucial for the economy and the population's general livelihood and well-being. According to the 2016 DHS, the most predominant forms of disability in FTLM relate to poor sight and walking difficulties (1.4% of the population in both cases) (Stats SA, 2016). Another two categories worth referring to include those with hearing problems or trouble remembering (approximately 0.6% of the population for both). The local municipality assists the disabled through its Transversal Services Unit, which has community outreach programmes to empower targeted groups (FTLM, 2022).

The local municipality has a total number of 38 clinics and two district hospitals (SDM, 2021). In addition, there are more than 100 mobile clinics that offer weekly or bi-weekly services in rural areas. According to informants, apart from the mine's own healthcare facility for its staff, the nearest clinic for the doorstep communities is in Sefateng. However, this clinic has limited capacity due to the large number of people that it serves (despite the mine being under care and maintenance). The clinic requires more staff and medical supplies, especially as additional migrant workers are expected with the expansion of the mine's operations. There are two larger hospitals in the area in Moroka and Nchabeleng. These two towns are far from the mine and hence the hospitals use ambulances to reach out to the communities close to the

mine. The issue is that ambulances take long to reach the communities, which frequently causes casualties where people die on their way to the hospital.

The SDM IDP estimates that just under half of the local municipality's population (48%) have access to a clinic within a 5 km radius (*ibid*). The capacity of healthcare facilities is also severely stretched: there is around one clinic per 17,000 people and one hospital for every 97,500 (SDM, 2020).

Within the municipality, the following healthcare challenges remain (SDM, 2022):

- Insufficient number of health facilities (there is one clinic for every 17 people and approximately 97,500 people per hospital);
- Inadequate health infrastructure;
- Inaccessibility of health facilities, mainly due to poor roads and a lack of transportation;
- Too few health professionals; and
- A lack of medicine.

#### 4.3.4 Roads and transport

Most households around the mine site use cars, taxis, busses and motorbikes. Several donkey carts were also seen around the mine (Figure 4-19).

SRK's site visit identified a need for the area's roads to be upgraded. Many of the gravel roads feeding the surrounding communities are in poor condition with noticeable soil erosion damage. Road conditions worsen during the rainy season. The gravel roads are also used by the general public (especially children walking to schools and people to clinics), mining vehicles and livestock. Unsurprisingly then, many roads were seen presenting a serious health hazard to pedestrians and motorists. Some key informants allege that the road conditions worsened as a result of mining activities. One particular concern is also the dust which is generated by speeding vehicles.



**Figure 4-19: Donkey cart**

Source: SRK, 2023

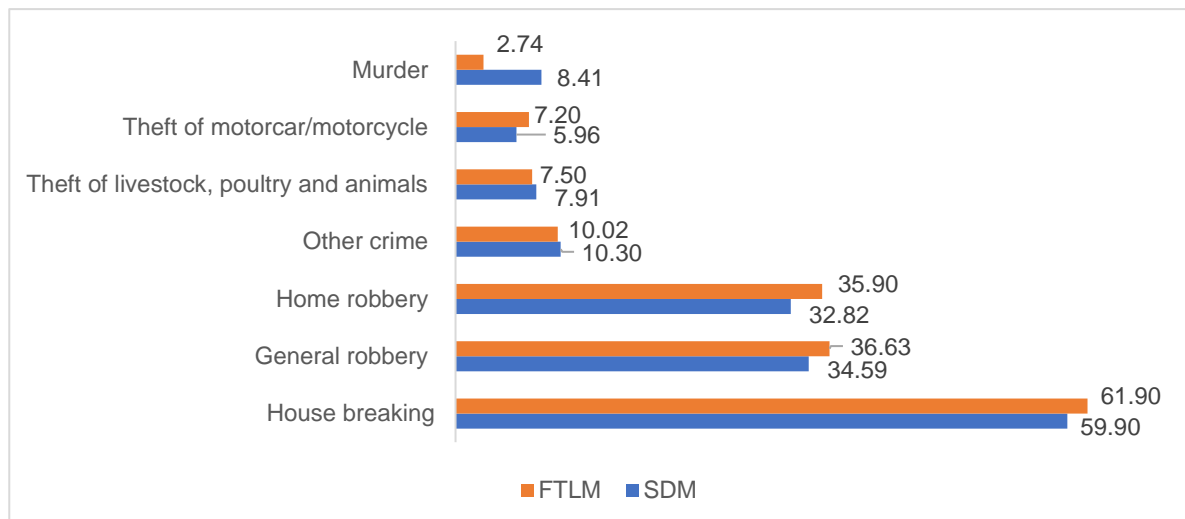
#### 4.3.5 Safety and security

It is important to understand safety and security to determine how the project could potentially add to existing concerns and in what ways.

Figure 4-20 depicts crime as a percentage of those who have been victims of theft 12 months leading up to the 2016 DHS surveys. Most who have been victims of crime in SDM and FTLM have experienced

general house break-ins (59.90% and 61.90%, respectively) (Stats SA, 2016). More than half of this percentage have experienced general robbery (32.82% and 35.90% for SDM and FTLM), while approximately 9% of crime victims in the district and 2.74% in FTLM have experienced murder (*ibid*).

A way to determine crime perception is to consider how safe people feel in their general surroundings. According to the 2016 DHS, 69.12% of people in SDM feel safe during the day, compared to 73.19% for FTLM (Stats SA, 2016). However, fewer people feel unsafe at night: 58.64% at the district- and 51.67% at the local-level (*ibid*).



**Figure 4-20: Crime for SDM and FTLM (% of the total population)**

Source: Stats SA, 2016

In terms of general crime, the lowest crime figure was reported for SDM in 2014, with crime levels rising since (SDM, 2022). Such crimes include a range of offenses from arson, contact-related crimes, assaults, and contact sexual offences to attempted murder. According to the SDM IDP, the district has 21 police stations (*ibid*).

In addition to this data, the following crime challenges are experienced in the mining area:

- Gangs in some communities;
- Petty crime from illegal miners;
- A lack of electricity and proper street lighting (worsened by loadshedding);
- A need to revive and capacitate community policing forums;
- More crime prevention and awareness campaigns are needed; and
- Additional police stations are required, such as satellite stations.

**SUMMARY AND IMPLICATIONS: ACCESS TO BASIC SERVICES**

Although the provision of electricity, water and sanitation has improved between 2011 and 2016, many rural settlements are still poorly serviced, especially concerning sanitation and water. There is also apprehension that this situation is being exacerbated by the increase in informal settlements across the municipality. Water remains a scarce and constrained resource, and many rural households rely on borehole water. The local municipality is also severely stretched in terms of its capacity to offer basic social services, largely as the area is very rural and sparsely populated. Therefore, there remains scope for the developmental sector to support the government with service provision in the area. Lastly, the data also indicates a strong level of ecosystem services. For example, the use of wood for cooking is noteworthy, which means that the environment provides a “service” to the people in terms of its natural resources. This has an implication to ensure that future access to natural resources will not become restricted.

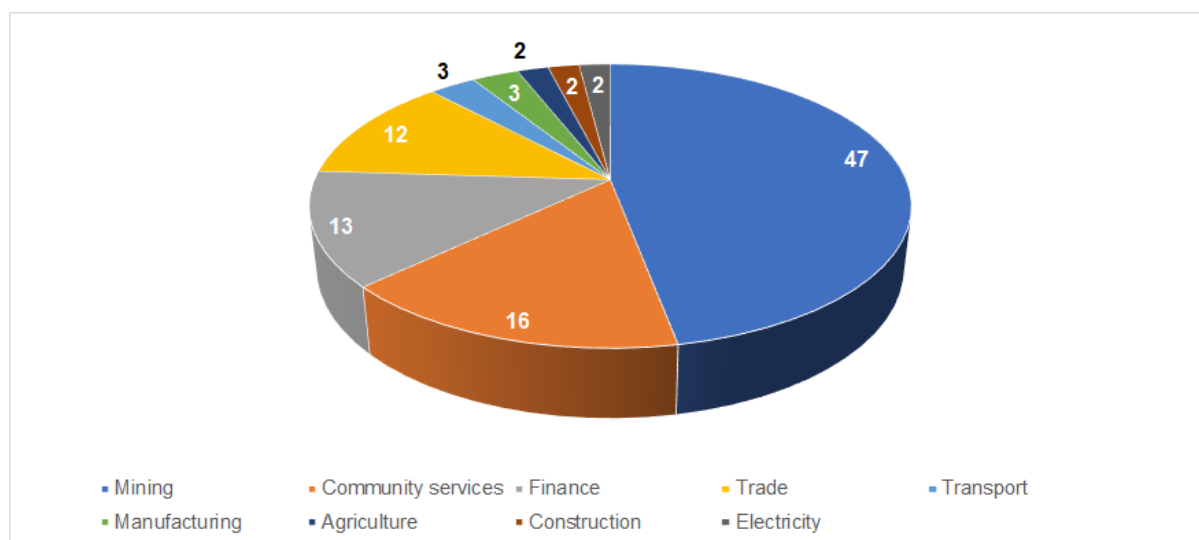
## 4.4 Socio-economic profile

The project will provide employment, which is highly needed in the surrounding area. ARM needs to consider the economy of SDM and FTLM to determine how the mine’s employment figures are aligned with national and local development and growth patterns. A vital component of the economy is the area’s unemployment rate and poverty context. ARM should constantly review this to align its employment equity and CSI contributions more favourably to the needs of its surrounding communities.

### 4.4.1 Economic growth and sectors

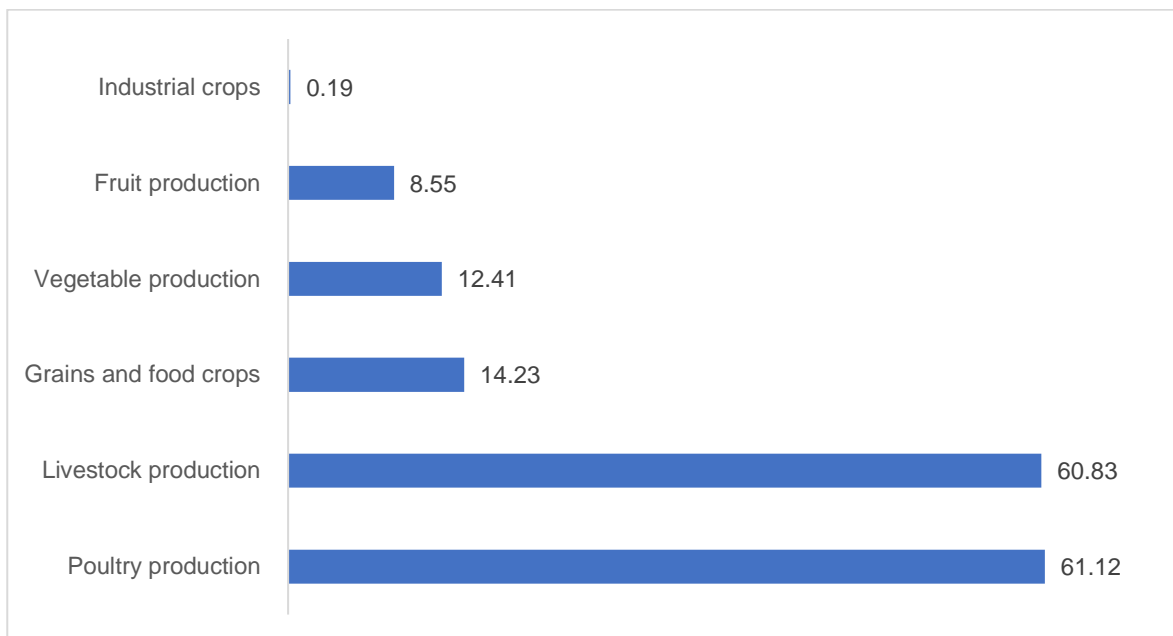
A valuable indication of an area’s economic status and growth is its Gross Domestic Product (GDP), which can be used to compare economies and economic states. At provincial-level, Limpopo contributes 7% to the national GDP (FTLM, 2022). As documented in the SDM IDP, SDM has a GDP of R41 billion (2017), contributing 12.22% to the provincial GDP (SDM, 2022). The district contributes 0.88% to the national GDP compared to South Africa. From a local municipality perspective, FTLM remains the greatest contributor, with a share of 48.58% (R12.2 billion) (2017); which increased from R10.3 billion in 2008 (*ibid*). This is largely due to the weighty contribution of the area’s mining sector. It is also reported that the local municipality’s annual economic growth (averaging 2.3% between 2008 and 2018), is the highest in the district (FTLM, 2022).

The Gross Value Added (GVA) figure can be used to determine an area’s economic sectors, as it measures total outputs in terms of value that was created. Using GVA as an indicator, Figure 4-21 depicts the area’s primary economic sectors: mining (48%; the largest GVA), community services (16%), finance (14%), and trade (12%) (SDM, 2022). Mining also has the largest GVA figure in the province, accounting for R16.2 billion in the district’s economy (or 43.8% of the total GVA). The smallest sector is agriculture, with a contribution of R620 million (2%) to the total GVA in SDM. Following finance, the agricultural sector showed the highest growth in terms of GVA between 2008 and 2018 (2.09%), compared to 1.03% for mining (*ibid*). However, for future forecasting, the mining sector is believed to lead the economy with a projected average annual growth of 5.25% (between 2017 and 2023) (*ibid*).



**Figure 4-21:SDM economic sectors (% of GVA)**

Source: SDM, 2022



**Figure 4-22: Household involvement in agriculture (% of households)**

Source: Stats SA, 2016

### Mining

The area around the mine is acclaimed for its rich mineral resources, such as platinum, chrome, and vanadium. Mining is, therefore, the major source of employment and economic growth. The mining sector is anticipated to be the largest sector in SDM in 2023, with a total share of 49.8% of the total GVA (SDM, 2022). This sector is largely concentrated along the district’s north-eastern nodes and in FTLM along the R37 and R555 (Dilokong Corridor), accounting for 55% of the local municipality’s total labour force (*ibid*). Most mining operations are associated with reefs such as the Merensky Reef. As noted by the SDM IDP, less than 10% of this particular reef has been unlocked to date, meaning that the platinum economy is still in its infant stage (SDM, 2022).

There are 45 issued licenses for mining operations in the district (most around the Burgersfort area) (SDM, 2022). These include Anglo Platinum, Xstrata, BHP Billiton, Implats, ASA Metals, and Marula Platinum. Closer to BPM within its surrounding wards, additional mines include Sefateng Chrome, Bauba Platinum, Marula Platinum, and Modikwa.

Recent history saw many conflicts between mining companies and communities in the district over land-use, claims of environmental degradation, and employment issues. To resolve this, the government in 2011 initiated the Integrated Mining Development and Sustainability Framework to create inclusive economic growth and a shared vision for the mining industry (SDM, 2022). Furthermore, the government continues to facilitate a good working relationship through the Limpopo Mining Forum, through which mines commit to implementing development projects for communities.

### Mining challenges

There are several challenges that persist in the mining sector that adversely erode the value and potential growth of this sector in SDM. BPM is encouraged to reflect on these challenges to see where some of these can be addressed in its own management plans, especially its SLP (SDM, 2022):

- A lack of skills for residents to become employed in the sector
- A large part of input supplies can be manufactured locally, but is rather sourced from other areas
- Excessive dependence on this sector for economic participation and employment
- Land-use conflicts with other uses (agriculture, traditional land, illegal mining)
- Protracted labour unrest, attracting censure among the international investment community
- Poor implementation of SLPs
- Ill-recognition of, and engagement with, community engagement forums
- Pressure on environmentally sensitive areas
- Illegal mining operations and miners (often a health and safety risk to community members and affects stakeholder relations and contributes to land disputes)

## Agriculture

The wider area around the mine is known for its agricultural potential, with fertile soils along several rivers. However, not the most important sector (such as mining), intensive commercial agriculture can be found to the southwest of SDM. The local municipality has a dual agricultural system that supports commercial and smallholder-based farming systems. The DHS (2016) established that 26.29% of people in FTLM practice farming (31.26% in SDM) (Stats SA, 2016). Farming also plays an essential role in subsistence living. The SDM IDP refers to 70% of farmers in the district who may be subsistence farmers (SDM, 2022). However, many residents also work on farms, accounting for over 16% of all jobs in SDM (*ibid*). Products cultivated include lucerne, corn, maize, sorghum, dry beans, cotton, citrus, table grapes, vegetables, poultry, and livestock. Most cattle grazing close to the mine site is done in communal areas and governed by traditional systems. The latter includes selling livestock for cultural reasons (bridal wealth), while small-scale poultry farmers sell their chickens informally to community members (SDM, 2022).

Highly dependent on water availability, this sector is challenged by (SDM, 2022):

- Poor infrastructure;
- Inadequate market access;
- Land ownership disputes, often exacerbated by the area's traditional land-use systems;
- Costly irrigation infrastructure, which is often required due to water scarcity; and
- Limited technical and entrepreneurship skills.

As indicated, directly around the mine site, key informants mentioned that few households are involved in farming, which was observed by SRK. Some households have small gardens with crop trees. Many say that they do not farm owing to mining activities<sup>23</sup>. In this regard, the mine is reasoned to have had a negative impact on people's livelihoods. For example, one farm is said to easily sustain a household of around ten members. In consequence, if 20 farms are acquired by the mine for mining, this would equate to a negative impact on around 200 people. Farming could also be limited as a result of a lack in sustainable water supply.

As an economic coping mechanism, many households farm with livestock, mainly chickens, goats, sheep and cattle. Although animals are also kept for traditional and cultural reasons, having livestock is both a subsistence and economic livelihood strategy. Continued access to grazing land was identified

<sup>23</sup> Complaining about the dust and land fertility.

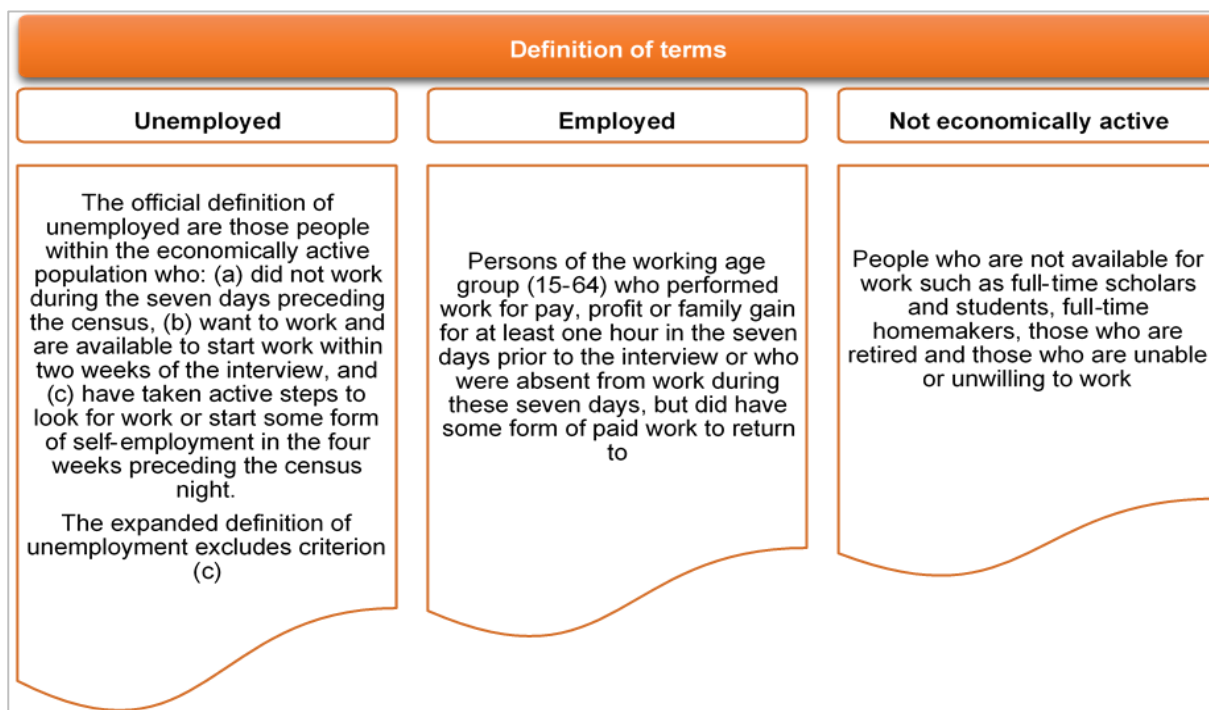
as one possible socio-economic impact, especially as the mine’s doorstep communities share close boundaries with mining infrastructure.

### The Fetakgomo Tubatse Special Economic Zone

The importance of the mining industry is illustrated by a Special Economic Zone (SEZ) established in the district primarily as a mining zone. Land for the SEZ has been secured on a 1,200 ha piece of land within the Dithamanga Trust (Ward 27) (SMD, 2022). The SEZ will be supported through the Limpopo Economic Development Agency providing incubation support to over 100 Small, Medium, and Micro Enterprises (SMMEs). The SDM IDP notes that an EIA is currently being conducted for the SEZ. It is believed that the SEZ will improve economic progress in the region, working with the Dilokong Spatial Economic Initiative to primarily cater to the projected mining and beneficiation outlook of the Platinum Group Metals Industry.

#### 4.4.2 Employment

The local economic sectors are best illustrated by considering employment levels. Figure 4-23 defines employment terms used in this section.



**Figure 4-23: Employment definitions**

Source: SRK, 2022

Table 4-4 provides the 2011 Census data on employment status for SDM, FTLM, and at ward-level. The data indicates that 65.21% of people at ward-level are within the labour force and economically active population (15-64); a percentage which is significantly higher than SDM and FTLM at 57.26.0% and 59.54.9%, respectively. As per Table 4-4, the official unemployment rate<sup>24</sup> for the ward can be calculated at 39.63%, which is considerably lower than for SDM (50.84%) and FTLM (51.91%). A more recent statistic suggests that the official unemployment rate for SDM in 2018 stood at 29.31%, which is higher than the rate at the provincial-level or national levels (27.22% in SA in 2018) (SDM, 2022). Closer to the

<sup>24</sup> The official unemployment rate is calculated by dividing the economically active population by those who are unemployed. The economically active population include people within the labour force (i.e., also those members within the working-age population and who are not searching for work).

mine at ward-level, Stats SA in 2011 estimated that 86.21% of people were employed in the formal sector (mining, community services, finance, and trade), compared to 13.56% in the informal one (Stats SA, 2011)<sup>25</sup>.

Key informants stated that the mine used to employ few household members from its doorstep communities, as contractors would usually be sourced from other districts. Concerns were raised particularly in Monametse Mokgotho, where residents claim that they are not represented by any TA. This, according to its residents, excludes them from public participation and stakeholder engagement, as it is stated that the mine only engages communities through the TA structures.

Unemployment is therefore a significant concern, especially among the youth. It may be for this reason that many household members become involved in artisanal mining.

**Table 4-4: Employment status (% of the population)**

Categories	SDM (No)	SDM (%)	FTLM (No)	FTLM (%)	Ward 12 (No) <sup>26</sup>	Ward 12 (%)
Employed	128,794.00	11.96.00	58,715.79	13.67	1,823.00	22.77
Unemployed	133,273.00	12.38.00	63,388.02	14.76	1,200.00	14.99
Discouraged work-seeker	44,009.00	4.09	13,881.49	3.23	67.00	0.84
Other not economically active	310,446.00	28.83	119,766.17	27.88	2,130.00	26.61
Not applicable	460,316.00	42.75.00	173,818.52	40.46	2,785.00	34.79
Total	1,076,838.00	100.00	429,570.00	100.00	8,005.00	100.00

Source: Stats SA, 2011

Considering incomes, households in the project's Aol largely live off government grants, although some members are employed. Households from the doorstep communities collect their grants from the Atok post office and the bank. When the mine was still operational, many residents were also dependent on rental income from mine workers; an income that they lost when the mine was placed under care and maintenance. Rental income is around R800 per month.

#### 4.4.3 Poverty

ARM needs to understand household income levels in its ward to know which households might be living in poverty. One means of establishing this is to consider poverty indicators. Such indicators usually describe the lack of household income, as well as a lack of resources to ensure sustainable livelihoods. It could also suggest limited access to food, safe drinking water, sanitation, health, shelter, and education. The UN describes someone as being poor if the person lives in extreme poverty: currently estimated at US\$2.15/person/day (World Bank, 2022). In South Africa, poverty is defined by various standards, one being the Food Poverty Line (FPL). This is currently established at R663.00 per person per month and refers to the amount of money an individual will need to afford the minimum required daily energy intake (Stats SA, 2022).

According to the SDM IDP, people living in poverty in the district decreased from 81.83% in 2008 to 74.12% in 2018<sup>27</sup> (SDM, 2022). Using the same poverty definition, approximately 70.4% of people in FTLM live in poverty (*ibid*). Another insightful indicator of poverty which considers life expectancy at birth, education (using average schooling years), and gross national income per capita, is the Human

<sup>25</sup> Ward 12 in the previous FLM (today Ward 34 of FTLM).

<sup>26</sup> *Ibid*

<sup>27</sup> Using the upper poverty line definition: R1,227 (in April 2019 prices) per person per month.

Development Index (HDI). The index provides a figure which ranges from zero to one, with zero being the lowest level of development and one being the highest. In 2018, SDM had an HDI of 0.569 (SDM, 2022). This is slightly lower than 0.595 and 0.657 for the province and South Africa, respectively.

A particular challenge for FTLM in terms of poverty is that a large section of its population and rural village areas (around 60%) are classified under indigent status. Such households are exempt from paying any municipal rates or taxes (FTLM, 2022). Such status is obtained if a household's total income is below R1,500 per month.

#### **ECONOMY AND EMPLOYMENT: SUMMARY AND IMPLICATIONS**

The data confirms the importance of the mining and agricultural sectors around the mine. As the area suffers from a high unemployment rate with poor households (although slightly lower than the figures at provincial and national levels), employment is clearly needed in an area which already succumbs to high levels of in-migration and settlement expansion. Skills development is required to allow a largely youthful, unemployed population to gain the required skills they need to enter the labour market.

## **4.5 Human rights**

Human rights are basic rights and freedoms belonging to all. Human rights challenges faced by mining communities in Southern Africa include alleged corruption connected to employment, environmental degradation and damage, and unfair and unequal access to land. These challenges are not uncommon in South Africa's mining sector.

The primary law of the country is the Constitution of the Republic of South Africa, 1996 giving effect to the International Bill of Rights, which is made up of the Universal Declaration of Human Rights (adopted by the UN in 1948), as well as two further treaties, namely, the International Covenant on Economic Social and Cultural Rights and the International Covenant on Civil and Political Rights in 1966. The legislation affects Section 24 of the South African Constitution by ensuring that the nation's mineral and petroleum resources are orderly and ecologically sustainable, whilst promoting justifiable social and economic development. It further provides that holders of mining and production rights contribute toward the socio-economic development of the areas in which they operate and directly affect a mine's SLP.

Furthermore, ARM is a signatory to, and member of various international industry bodies as listed below:

- ICMM – Standards on Stakeholder Engagement, Risk Management, and Human Rights;
- UN Global Compact – Principles on Human Rights, Environment, and Anti-corruption; and
- Voluntary Principles on Security and Human Rights – Voluntary standard to ensure zero human rights impacts due to its private security companies.

It is advised that BPM conduct ongoing community-level research to assess the social-relational capital impacts in terms of social capacity, social interactions and co-dependency, power relations, and market relations, and how these aspects impact human rights in communities. Through the implementation of stakeholder engagement processes, BPM would engage with affected, potentially affected, and interested stakeholders transparently to ensure that they can express their views on positive opportunities, risks, and adverse impacts, as well as prevention and mitigation measures.

A grievance mechanism is available for the community to raise concerns about security arrangements. Furthermore, the mine will ensure that any unlawful or abusive acts by the security are investigated appropriately.

**Implications: Human rights**

Human Rights are a contentious issue in the South African mining environment, as many Non-Governmental Organisations (NGOs), trade unions and miners actively rally in the area and report on what they deem human rights infringements. Degraded air quality, water contamination and inadequate access to health services have all been noted by various NGOs. Negative impacts from the project may affect these aspects of the environment and will require effective mitigation as per the relevant management plans to ensure that human rights are not threatened.

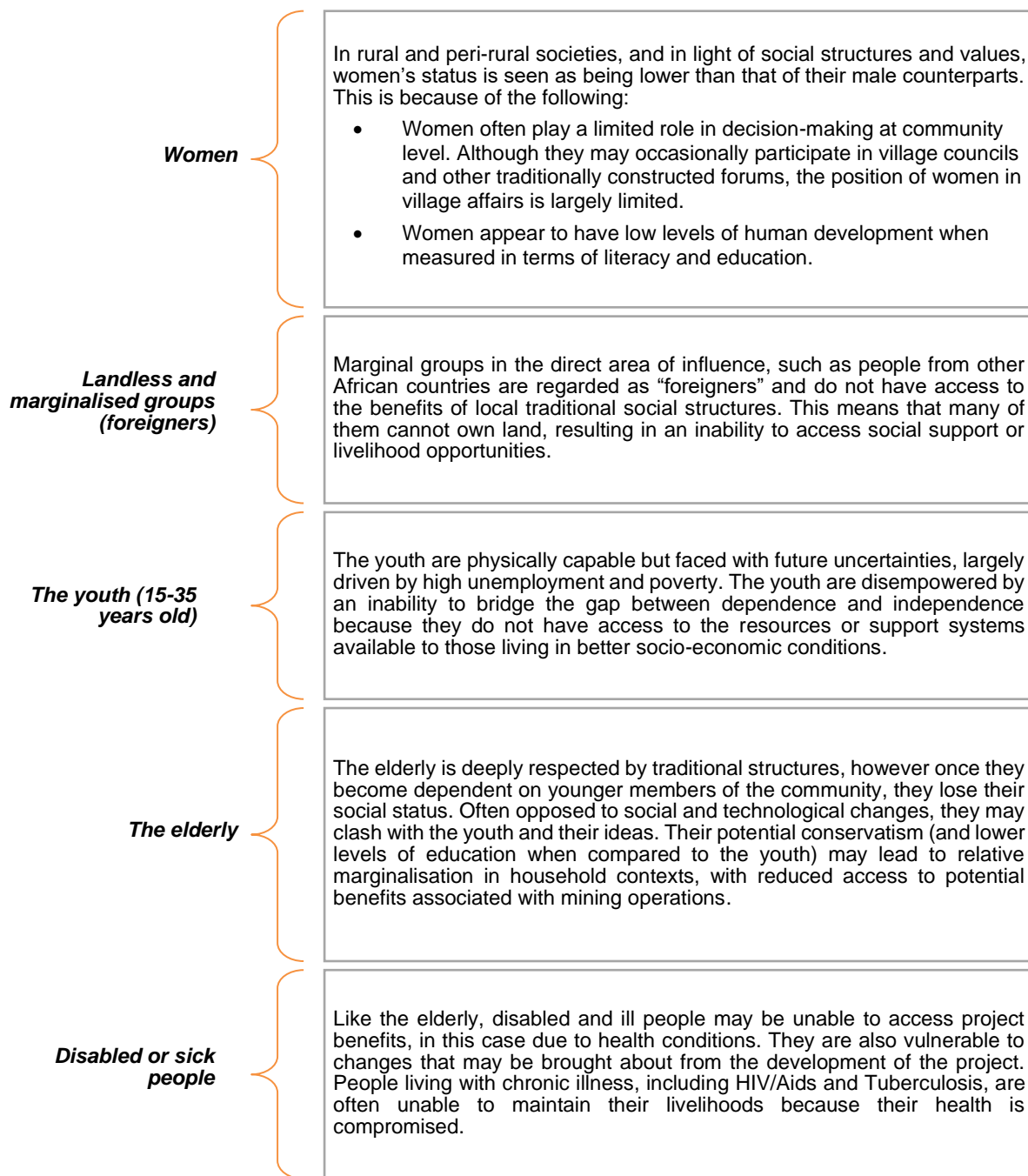
## 4.6 Vulnerability

Blaikie (2005) defines vulnerability as the “[...] ... degree to which a population, individual or organization cannot anticipate, cope with, resist and recover from the impacts of disasters”. Moreover, poverty is a significant contributor to vulnerability. Considering high unemployment and general poverty at ward-level specifically, it is reasonable to conclude that the area could be demographically vulnerable, especially among the doorstep communities or houses closest to mining operations. Population growth is expected to increase in areas where new economic development opportunities are available. This could increase vulnerability if it is coupled with reduced water availability and degradation and loss of land.

**Implications: Vulnerability**

Households in rural areas are more vulnerable and more likely to experience inadequate access to food compared to households in urban areas. Households in rural areas are more likely to be headed by women, and these households are marginally better off in terms of access to food in rural areas. Households headed by those in the age group 35-59 are most likely to experience hunger in both urban and rural areas (GHS, 2016). There is a need to explicitly recognise the causes and effects of vulnerability to ensure that vulnerable groups have access both to mitigation and to potential project-related benefits. BPM would be well placed to address many of these vulnerabilities by ensuring their investment in CSI projects or LED projects is targeted towards infrastructure development and livelihood restoration. Targeting skills and wider economic development in the study area is a good starting point.

With the above in mind, Figure 4-24 provides five broad categories of people who can be considered particularly vulnerable at varying levels. During FGDs, some participants also referred to households being vulnerable if there are absent parents or disabled members.



**Figure 4-24: Vulnerability categories**

## 4.7 Local Economic Development

As indicated in Section 3.3, ARM is required by several local frameworks and the company’s internal policies to provide LED benefits to its surrounding and labour-sending communities.

Based on the desktop review undertaken for this study, the following areas could be considered as departure points for developing LED projects:

- Development of the informal economy;
- Support the local tourism forum to strengthen the area’s tourism potential and natural heritage. This could also include developing cultural/tourism projects;
- Assist/develop further education training facilities to enable the youth to become skilled in mining-related work;

- Diversify the local economy by promoting other opportunities/economic markets (create economic incentives);
- Initiate structured dialogue through conferences/indabas to develop common economic development agendas for the area, considering the needs and aspirations of the traditional authorities;
- Encourage local ownership of strategic mining projects or facilitate joint venture agreements between locals and external investors;
- Refer to the Limpopo Province Strategic Plan (2020-2025) to develop projects to improve the area's economic status. These could include specific poverty reduction programmes around:
  - Building material manufacturing parts for the mining industry;
  - Establishing SMMEs;
  - Collaborating with the proposed SEZ;
  - The hospitality sector and establishing/improving heritage sites (tourism);
  - Development/supporting irrigation schemes;
  - Creating markets for livestock production (there is a potential for commercialisation);
  - Establishing local suppliers for mining-related needs;
  - Capacity building and skill development for subsistence farmers; and
  - Providing technical farming support for subsistence farmers or support existing farming projects (especially around Atok).

As part of SRK's FGDs, participants were requested to list their communities' greatest needs. Some of these are listed below:

- Employment (especially for the youth) and skills;
- More investments in SMMEs;
- A police station;
- Mobile clinics;
- Town/village mass lights (for safety and security);
- Technical schools for the youth;
- Improved roads;
- Sports facilities (especially for the youth and disabled);
- A rehabilitation centre (for substance abuse);
- Improved technical training venues and spaces; and
- Rehabilitation of the old mining pit area for livestock grazing and/or community use.

# 5 Impact assessment

This section considers the anticipated positive and negative socio-economic impacts associated with the project. Measures to mitigate negative impacts and enhance/manage positive ones are also presented.

SRK utilises Vanclay and Smyth’s Social Processes Framework (2017) to identify and analyse socio-economic impacts. This framework is provided in Figure 5-1.



**Figure 5-1: Vanclay and Smyth’s Social Processes Framework (2017)**

Source: Vanclay and Smyth (2017)

According to the framework, social change processes may lead to changes in one or more of the seven categories. These include:

- Community/social support and political context;
- Infrastructure and services;
- Livelihood assets and activities;
- People’s capacity, ability, and freedom;

- The living environment;
- Culture and religion; and
- Land and natural resources.

Rather than occurring in a vacuum, socio-economic impacts occur within the context of human behaviour (which is often unpredictable) and various cultures, traditions, and political and religious beliefs. Different perceptions influence these social, cultural, political, economic, and historical contexts. Similarly, mitigation measures proposed for the anticipated impacts can also not be considered in isolation. Where the expected impact is regarded as a direct consequence of the project, and the mine can mitigate it, it would be recommended in such a way.

## 5.1 Summary of impacts

Table 5-1 lists the anticipated socio-economic impacts according to themes and change drivers. A change driver is an activity that “drives” or “influences” the impact. For example, a change driver under the theme “Livelihood assets and activities” could be employment opportunities and local procurement, which may “drive change” under the specific theme. This driver could result in an impact, namely “improved household incomes and livelihoods,” which can be seen as “the result” of the change driver.

Socio-economic impacts are fluid and subjective. However, there cannot be a “right” or “wrong” impact, merely different interpretations. In some cases, an impact can also have its own resulting impact and can thus be considered a change driver. An example would be an influx of job-seekers. Due to the perception of employment opportunities, people might migrate into the area in search of work (impact). However, this same impact (influx of job-seekers) might trigger another impact associated with this, such as an increase in crime and substance abuse.

Moreover, an influx of job-seekers can have impacts under different themes. For example, this could contribute to the growth of settlements, which could worsen social pathologies (crime and/or substance abuse), but also add more pressure on social infrastructure and services. Therefore, an influx of job-seekers as a change driver is discussed under two themes: community and social support, as well as infrastructure and services. The number of socio-economic impacts can also be infinite depending on the level of analysis and literary interpretation.

Five themes of Vanclay and Smyth’s social processes model (2017) are appropriate, in addition to an extra theme for unregulated artisanal mining (as a stand-alone theme). These themes are summarised in Table 5-1 below, together with various corresponding change drivers and 20 impacts.

**Table 5-1: Impact summary**

Social Processes Model theme	Change drivers	Impact
1 Community/social supports and political context	An influx of job-seekers (in migration)	1.1 Social conflict/unrest
		1.2 Increase in crime and social pathologies
		1.3 Improved local economy
	Tension between mine security workers and residents	1.4 Increased vulnerability related to restrictions on land usage
2 Infrastructure and services	An influx of job-seekers (in-migration) and road deterioration due to soil erosion and increased vehicle usage	2.1 Pressure on existing social infrastructure and services

Social Processes Model theme	Change drivers	Impact
	Provision of social infrastructure as part of SLP/CSI or Livelihood Restoration Plan (LRP) <sup>28</sup> commitments	2.2 Improved access to basic amenities and social infrastructure
3 Livelihood assets and activities	Employment opportunities	3.1 Improved household incomes and livelihoods from employment and development
		3.2 Social conflict from employment and differential development benefits
	LED as per SLP/CSI and/or LRP requirements	3.3 Upliftment of the local economy
	Mine decommissioning	3.4 Loss of employment opportunities, LED and livelihood restoration support
4 People's capacity and ability	The provision of additional skills training, scholarships and learnerships as per an SLP/LRP	4.1 Skilled local labour force to take advantage of employment opportunities
5 The living environment	Resettlement and/or land alterations/disturbance/acquisition	5.1 Loss/disturbance of land and natural resources
		5.2 Changing place attachment
		5.3 Cash compensation and housing provision as part of resettlement
		5.4 Improved land security as part of resettlement
		5.5 Increased housing maintenance and living expenses owing to physical resettlement
		5.6 Disruption to graves and access to graves
	Contamination of water, soil, air, noise nuisance and blasting activities	5.7 Deteriorating health resulting from mining activities
	Increased road traffic and unfenced mining infrastructure	5.8 Increase in safety hazards and accidents from mining operations
	Land rehabilitation as part of mine decommissioning	5.9 Improved land usage post-rehabilitation
6 Artisanal and small-scale mining	Land alterations/disturbance/acquisition	6.1 The impact of illegal mining

<sup>28</sup> An LRP is recommended as part of a Resettlement Action Plan (RAP) for any economic/physical resettlement.

## 5.2 Impacts

### 5.2.1 Theme one: Community/social supports and political context

Under this theme of Vanclay and Smyth's Social Processes Framework (2017), the focus is on identifying impacts that relate to people's social, traditional, economic, and political networks. This includes community cohesion and in/out-migration patterns. Any possible external mine-induced factor, such as in-migration, or political unrest, affects such networks in a myriad of ways. People in a specific community/area usually have an established means of interaction within their social networks. Any abrupt change to their living environment which could affect this is a significant social impact to investigate.

This theme explores two potential factors that could "drive" social change within BPM's Aol communities' social networks and support patterns, namely an influx of job-seekers (in-migration), and tension between security workers and residents. Section 4.2.1 (Population size and density) indicated that the mine's wider Aol is generally experiencing a population increase (despite some out-migration when the mine was under care and maintenance since 2017), partly due to natural population growth patterns. In-migration is well-documented around mining areas. Employment opportunities are also scarce, so any potential mine-related work will attract job-seekers from various districts or even provinces. Since the mine has been under care and maintenance, many workers labourers were laid off, which means that any resurgence of opportunities may attract job-seekers.

The data further indicated a sizeable economically active group at ward-level (refer to Section 4.2.2: around 70% of residents are of the economically active age of between 15 and 64). An influx could permanently change the area's population dynamics, as this is not only expected during specific mining phases. As the life-of-mine is more than 40 years such an influx could also permanently change the social dynamics within the Aol. It is highly possible for settlements to encroach closer to the mining footprint as more work becomes available.

The second change driver under this theme is tension between mine security workers and residents. Security workers will be recruited by a security company, meaning that workers could be from other areas, and not necessarily sourced from the doorstep communities. This could potentially cause tension or, in severe cases, conflict between residents and security personnel or even between security personnel and existing local neighbourhood watches or policing services. However, it is unlikely for this impact to be severe, as a security firm will need strict human resource and recruitment protocols.

Four impacts are discussed under this theme: social conflict/unrest, increased crime, and social pathologies, improved local economy, and increased vulnerability.

#### Impact 1.1: Social conflict/unrest

This is a negative impact.

In most cases, in-migration is likely to result in other cumulative impacts, such as conflict/tension between residents and outsiders (especially if contractors are used). South Africa, in recent years, has seen xenophobic attacks on foreigners due to competition for business opportunities, scarce resources, such as jobs or land, or other conflicts. Although these attacks can be viewed as isolated incidences, these should remind us of the volatile situation in most low-income residential areas.

Conflict could result from tension over the use of existing social services, land disputes/land usage (land claims are exacerbating this possibility), housing demands, or even perceived preferential treatment. The latter refers to when residents may feel that migrant labour who now live in their community receive unfair benefits from the mine. The potential adverse impacts of in-migration on women, children, and groups such as the elderly or disabled can be especially severe (refer to Section 4.5 on vulnerability).

Conflicts/tension can be stirred because of many factors:

- An increase in economic disparities between those with jobs and those without. This is often referred to as “poverty gaps;”
- Illegal mining activities, which could cause unrest over land-use conflicts or project benefits;
- Inflating local food and produce prices;
- Placing increased pressure on already limited social and natural resources (especially as the data indicates natural resource usage, such as wood);
- Changes in values and changes in the “way of life” of those with jobs;
- Changes in power relations between employed youth and elders;
- Perceived unfair recruitment strategies. Existing community members may feel that they have not benefited from opportunities at the mine; and/or
- Perceived preferential procurement strategies.

Table 5-2 provides a rating for this impact.

**Table 5-2: Social conflict/unrest**

Impact 1.1: Social conflict/unrest								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Regional	High	Medium-term	Medium	Definite	Moderate	-ve	Medium
<p>Management measures:</p> <ul style="list-style-type: none"> <li>• Update the existing Stakeholder Engagement Plan (SEP). Some further recommendations:                             <ul style="list-style-type: none"> <li>- Define ways in which community members will have a) Access to relevant information; and b) Prior disclosure and dissemination of information which is in a culturally appropriate local language(s) and format</li> <li>- Outline any risks to, and potential impacts on, its Aol communities and provide relevant mitigation measures</li> <li>- Elaborate on the company’s future envisaged stakeholder engagement process</li> <li>- Include a Grievance Management Procedure</li> </ul> </li> <li>• Revise/update the Grievance Management Procedure incorporating some of the following recommendations:                             <ul style="list-style-type: none"> <li>- Scale the procedure to the risks and adverse impacts of the mine and have doorstep- and labour-sending communities as its primary user</li> <li>- Resolve concerns promptly, using an understandable and transparent consultative process that is culturally appropriate and readily accessible, and at no cost and without retribution to the party that originated the issue or concern</li> <li>- Inform the affected and labour-sending communities about the procedure and general stakeholder engagement process</li> </ul> </li> <li>• Develop an Influx Management Plan</li> <li>• Continuous engagements with a relevant community forum(s) to understand possible social conflict and unrest that may result</li> <li>• Revise/update the existing Recruit Operational Policy and Employment Equity Plan, especially regarding favouring local labour. This should include transparent job advertising methods, such as community information portals and local notice boards. The company should ensure that the policy and plan adhere to the International Labour Organisation (ILO) Convention 97 on Migration for Employment (1949) and 143 on Migrant Workers - Supplementary Provisions (1975). These conventions require that migrants be treated the same way as nationals (concerning freedom of association, salaries, and social security).</li> <li>• Stipulate the requirement to use local labour in all tender documents</li> <li>• Favouring local labour should be a requirement of all contractors who should be accountable to prove to ARM the use of local labour</li> <li>• Manage community expectations:                             <ul style="list-style-type: none"> <li>- Engage with the Aol and labour-sending communities to indicate that the mine is commencing activities again and what benefits can be expected. This should be done via regular briefings on labour, recruitment, and procurement through established community engagement forums.</li> <li>- Provide training in stakeholder engagement and communication to the mine’s relevant social performance team members</li> <li>- Disseminate key communications through relevant community engagement forums</li> </ul> </li> <li>• Provide clear expectations in all communication platforms of the number of jobs available and in which categories/fields (skilled vs unskilled)</li> <li>• Disclose all plans/procedures/policies to stakeholders (including all the Aol and labour-sending communities, employees, and contractors), transparently. This includes the Recruitment Operational Policy and Employment Equity Plan.</li> </ul>								

Impact 1.1: Social conflict/unrest								
<ul style="list-style-type: none"> <li>Assist the relevant community/traditional leadership, community forum(s), and ward committees to keep a close record of the influx of job-seekers and to manage employment expectations</li> <li>As part of the mine's SLP, continue to provide local training opportunities, scholarships and/or bursaries to upskill the Aol and labour-sending communities' working-age population to become the first job applicants</li> <li>Conduct regular skill audits in the Aol communities to verify which skills are readily available</li> <li>Allocate the maximum appropriate share of project-related business opportunities to local SMMEs</li> </ul>								
After management	Regional	Minor	Short-term	Low	Unlikely	Low	-ve	Medium

### Impact 1.2: An increase in crime and social pathologies

This is a negative impact.

An influx of job-seekers/in-migration (or an increase in road users, such as mining trucks) is often associated with increased crime. An influx may also increase social pathologies, such as substance and/or drug abuse, or prostitution, especially with construction workers, and a potential increase in truck drivers from other districts/provinces. In addition, specialist workers coming into the area (particularly during the construction phase) might encourage or exacerbate unsafe sexual practices. An influx could also potentially increase the prevalence of communicable diseases, such as diarrheal diseases, vector-borne diseases, malaria, and even cause a spike in irresponsible sexual behaviour and lead to sexually transmitted diseases, such as HIV/Aids. The local health system is unlikely to cope with additional pressure on current resources.

Table 5-3 provides a rating for this impact.

**Table 5-3: Increase in crime and social pathologies**

Impact 1.2: Increase in crime and social pathologies								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Local	High	Long-term	High	Possible	High	-ve	High
Management measures: <ul style="list-style-type: none"> <li>All management measures under Impact 1.1 apply to reduce an influx, and the significance thereof</li> <li>As part of the mine's general CSI and SLP, ARM should continuously monitor the social infrastructure and amenities on the mine's doorstep and labour-sending communities to be able to assess needs and aid FTLM or communities where needed</li> </ul>								
After management	Local	Minor	Long-term	Medium	Possible	Moderate	-ve	Medium

### Impact 1.3: Improved local economy

This is a positive impact.

In-migration may also have a positive impact in terms of providing residents with business opportunities (prospects for SMMEs). This could be driven by increased demand for local produce and other goods, rental income/increased property prices, as well as opportunities for cultural exchange. More people in the area could also increase disposable income and local purchasing power.

Table 5-4 provides a rating for this impact.

**Table 5-4: Improved local economy**

Impact 1.3: Improved local economy								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence

Impact 1.3: Improved local economy								
Before management	Regional	Minor	Medium-term	Low	Possible	Low	+ve	Medium
Management measures: All previous management measures apply, especially related to maximising employment benefits and reducing the negative impacts of influx and enhance positive ones								
After management	Regional	High	Medium-term	High	Likely	High	+ve	Medium

**Impact 1.4: Increased vulnerability related to restrictions on land usage**

This is a negative impact.

Conflict may occur at the interface between BPM security personnel and its doorstep communities. This could occur when residents are allowed access to some areas of the mine site while restricted from using others. The friction may be exacerbated by livestock grazing patterns, especially along the RapholoRiver, shared road usage, or pedestrian crossings. As the area falls under a TA system where land is an important cultural resource, this impact is linked to vulnerability. Land is already becoming scarce due to mining, and conflict over land use and a reduction in farming activities have been noted in the area. Further restrictions on land access could render certain sections of the population more vulnerable, such as the elderly, disabled, or women, who may already be marginalised.

Table 5-5 provides a rating for this impact.

**Table 5-5: Increased vulnerability related to restrictions on land usage**

Impact 1.4: Increased vulnerability related to restrictions on land usage								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Local	High	Long-term	High	Possible	High	-ve	Medium
Management measures: <ul style="list-style-type: none"> <li>• Use the existing community forums to introduce/communicate a Grievance Management Procedure</li> <li>• Assess BPM's agreement with a security company to ensure the following:                             <ul style="list-style-type: none"> <li>- When hiring security personnel, a reasonable effort must be made to screen them for past abuses</li> <li>- Security personnel needs to be properly trained in the use of force and, most importantly, appropriate conduct towards residents</li> <li>- Severe penalties/disciplinary action should be taken against any security personnel involved in theft or abuse</li> <li>- A code of conduct must be developed for security personnel. This must be consistent with the UN's Code of Conduct for Law Enforcement Officials, the UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials, and the Voluntary Principles on Security and Human Rights.</li> </ul> </li> <li>• All workers are to be informed about the roles and responsibilities of the security personnel</li> </ul>								
After management	Local	Minor	Long-term	Medium	Possible	Moderate	-ve	Medium

**5.2.2 Theme two: Infrastructure and services**

In their Social Processes Framework, Vanclay and Smyth (2017) use this theme to refer to utilities in an area, public and social services, and the quality and maintenance of such services. In the context of BPM, this infrastructure and services range from clinics/schools to roads and electricity. Although FTLM provides such services, the mine has, in the past, offered several services and social infrastructure to its Aol communities.

This theme explores the potential for the project to contribute to BPM's Aol and labour-sending communities in terms of social infrastructure, either through the mine's SLP, CSI commitments or LRP(s) for possible physical/economic resettlement. There are two potential change drivers here, namely a)

The continuous provision of social infrastructure by BPM as part of its SLP/CSI/LRP; and b) An influx of job-seekers (which was also an impact under Theme 1).

A potentially negative change driver is an influx of job-seekers, which may add pressure on existing services and infrastructure. More people in the area generally increases the demand for water, sanitation services, electricity, schools, and medical care. The current social infrastructure, especially the ageing municipal-provided water infrastructure, may not cope with higher usage and demand.

Two impacts are rated below: a) Pressure on existing social infrastructure and services; and b) Improved access to basic amenities and social infrastructure.

**Impact 2.1: Pressure on existing social infrastructure and services**

This is a negative impact.

There are two main causes for this impact, namely an influx of job-seekers, as well as road deterioration due to increased vehicle traffic and soil erosion.

An influx of job-seekers was already discussed as a change driver under Theme 1. This could result in other cumulative (added) impacts, such as pressure on the existing social infrastructure and amenities. One example is water supply. Data illustrated that water is scarce, as referred to by the local and district IDPs. Residents also complained about frequent water supply interruptions, as well as ageing municipal-provided infrastructure (such as community taps and water towers). An influx may furthermore add pressure on the availability of water. In addition, other infrastructure/services such as schools, clinics, and police stations could also be stretched to their capacity should the population of the area increase.

The data indicated that the roads servicing the Aol communities are also being used by mining vehicles. Many claim that the roads deteriorated with the commencement of the mine, which is worsened by rain and erosion. Such deterioration also holds a health and safety risk for the local residents, as poor road conditions could increase accidents. It could furthermore exacerbate poor water drainage and soil erosion which would lead to further loss of productive land (for farming, natural resource usage or livestock grazing).

The mine cannot take responsibility for the overall provision of social services to its surrounding communities, which is the responsibility of FTLM. However, as BPM potentially affects these services through its labour and project-induced migration patterns, it should liaise with FTLM to understand such potential future pressure.

Table 5-6 provides a rating for this impact.

**Table 5-6: Pressure on local amenities and social infrastructure**

Impact 2.1: Pressure on local amenities and social infrastructure								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Regional	Moderate	Long-term	High	Definite	High	-ve	Medium
Management measures: <ul style="list-style-type: none"> <li>• Previously referred measures relate to stakeholder engagement and maximising the positive benefits of the mine.</li> <li>• In addition, closer collaboration with FTLM is required to understand existing provisioning capacity constraints and how the mine could provide assistance to upgrade essential services in its Aol communities. This should include reviewing the relevant IDPs and SDFs for SLP/CSI project alignment annually.</li> </ul>								
After management	Regional	Minor	Long-term	Low	Possible	Low	-ve	Medium

### Impact 2.2: Improved access to basic amenities and social infrastructure

This is a positive impact.

Depending on the types of SLP/CSI projects, the mine could assist its Aol communities through the provision of improved basic amenities and social infrastructure. As explained in Section 4.7, the mine is already in the process of developing a water treatment plant for the benefit of its Aol communities.

This positive impact extends beyond the mine’s construction phase and into its future operations.

Table 5-7 provides a rating for this impact.

**Table 5-7: Improved access to basic amenities and social infrastructure**

Impact 2.2: Improved access to basic amenities and social infrastructure								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Regional	Moderate	Long-term	Moderate	Possible	Moderate	+ve	Medium
Management measures: <ul style="list-style-type: none"> <li>• Previously referred measures are relevant, especially to stakeholder engagement and managing expectations</li> <li>• Develop a suitable SLP/CSI with LED projects.</li> <li>• SRK recommends that the SLP undergoes an external review to ensure its compliance to South African legislation (Broad-Based Socio-Economic Empowerment Charter for the Mining and Minerals Industry), as well as relevant international frameworks and standards.</li> </ul>								
After management	Regional	High	Long-term	Very high	Definite	High	+ve	High

### 5.2.3 Theme three: Livelihood assets and activities

This theme discusses new employment opportunities, which will be a significant positive impact. Under this theme, the change drivers are employment opportunities, local procurement, and LED commitments as part of the mine’s SLP/CSI. Employment improves livelihoods and household savings and credit access. It also strengthens families regarding vulnerabilities (and how they cope with such vulnerabilities), empowerment, aspirations, expectations, and capacity to work.

Three impacts are discussed, namely a) Improved household incomes and livelihoods, b) Social conflict because of potential differential benefits, and c) Upliftment of the local economy.

#### Impact 3.1: Improved household incomes and livelihoods from employment and development

This is a positive impact.

Data in sections 4.4.2 and 0 suggests that the income levels of households in the mine’s Aol are low, with approximately 70.4% of people in FTLM who live in poverty (FTLM, 2022). Improving household income is therefore a positive impact. Also, the cumulative effects of income may have several additional socio-economic benefits, such as the reduction in:

- Crime rates;
- Alcohol and drug abuse rates; and
- Intra-household or gender-based violence.

There are also likely to be some indirect or downstream employment opportunities should future maintenance or construction work be required. This should benefit other businesses (specifically other service providers/SMMs), as some mining materials/infrastructure could be sourced/manufactured locally.

The importance of employing locals cannot be overstated, especially as the doorstep communities complained about this issue<sup>29</sup>. Any development can cause social differentiation within and between communities owing to limited resources and competition over a share of the benefit. Competition for employment opportunities has been recorded in past social uprising occurrences in the district. Hostility towards the mine could be incited if the mine does not provide sufficient local employment opportunities, especially to its doorstep communities. Adding to this, construction work is often outsourced to contractors who procure from other areas, bringing their own labour for various reasons: one being a limited set of local skills. This may result in anger or resentment among local community members.

Table 5-8 provides a rating for this impact.

**Table 5-8: Improved household incomes and livelihoods from employment and development**

Impact 3.1: Improved household incomes and livelihoods from employment and development								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Regional	Low	Long-term	High	Definite	Moderate	+ve	Medium
Management measures: <ul style="list-style-type: none"> <li>• Previously referred measures bear relevance related to stakeholder engagement and maximising mining benefits</li> <li>• Communicate with traditional leaders and community and business forums and request that a database of services be drawn and submitted to BPM. This can be relevant in the sourcing of skills from surrounding communities.</li> <li>• Liaise with the relevant forums/committees, traditional leadership, ward committee(s), and local businesses to find ways to establish and grow more local SMMEs</li> <li>• Maximise employment benefits: Allow labourers involved in the construction phase a fair opportunity to apply for work during the operational phase</li> <li>• Communicate upcoming employment opportunities to surrounding communities to manage expectations</li> <li>• As per SLP requirements, develop and implement, as far as reasonably possible, a plan for gradually replacing migrant labour with local employees</li> </ul>								
After management	Regional	High	Long-term	High	Definite	High	+ve	Medium

### Impact 3.2: Social conflict from employment and differential development benefits

This is a negative impact.

Projects/developments often generate social differentiation within communities due to competition over limited resources (usually land or project benefits). Around the mine, access to resources is linked to the powers of the TAs. If leaders do not engage and share benefits with residents, poor community cohesion levels and conflict may arise. There is also documented competition over land and resources and employment benefits in the district (refer to data in Section 4.2.5), which means that BPM's presence has possibly already, in the past, induced social differentiation between its doorstep and Aol communities. One example is the village of Monametse Mokgotho that feels excluded by the mine which they indicate only liaises with, and through, the TAs. The same community feels that more employment opportunities are provided to the wider Aol communities represented by the TAs.

Indeed, past social unrest (largely over employment concerns) has indicated possible divisions within the mine's Aol communities. One community's slight advantage over another is usually viewed with jealousy and greed. This could be exacerbated by land-use conflicts or even the presence of existing illegal mining (should this be found). Furthermore, when offers to negotiate economic or other benefits become part of the public consultation process, these can create or exacerbate internal tensions within communities and cultural groups. The long-term ramifications of this can be negative for the social fabric of a community.

<sup>29</sup> It was claimed that the mine does not employ sufficient workers from its doorstep communities.

Under this impact, the long history between the Aol communities and the mine must be considered. There is a potential that community structures can use existing feelings of mistrust among the community and the mine to influence public opinion about the project unjustly.

Table 5-9 provides a rating for this impact.

**Table 5-9: Social conflict from employment and differential development benefits**

Impact 3.2: Social conflict from employment and differential development benefits								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Regional	Moderate	Long-term	High	Possible	High	-ve	High
Management measures: <ul style="list-style-type: none"> <li>• Previously referred measures bear relevance related to stakeholder engagement</li> <li>• The use of local businesses and the creation of SMMEs should be promoted as far as possible by providing them with preferential treatment</li> <li>• Ensure that management practices do not exploit or exacerbate the level of mistrust or conflict within the different community groups</li> <li>• Employment and procurement policies should be communicated and implemented in a transparent manner</li> <li>• Clarify the role of the human resources department, and communicate a transparent policy to all stakeholders</li> <li>• Engage communities on fair and transparent terms while respecting traditionally and democratically appointed leadership</li> <li>• Inform and educate communities about the various ways in which the mine contributes to the region’s LED, relating to the company’s SLP and CSI goals</li> <li>• Communicate and disclose the company’s SLP/CSI to manage expectations</li> <li>• Advertise a “local first” policy for construction employment opportunities, especially for semi- and low-skilled employment categories (to enhance employment opportunities in the Aol)</li> <li>• Stipulate the use of local labour in all tender documents as far as possible</li> </ul>								
After management	Regional	Minor	Long-term	Medium	Possible	Moderate	-ve	Medium

**Impact 3.3: Upliftment of the local economy**

This is a positive impact.

The reinstatement of the mine is likely to stimulate other businesses for several reasons. Firstly, workers and building supplies will be required during the construction phase, as well as for routine maintenance during the mine’s operational phase. Secondly, the mine will establish more foot and vehicle traffic, possibly providing opportunities for business development in the broader area. Thirdly, through its SLP/CSI/LRP initiatives, BPM will support not just its doorstep and Aol communities but also the wider region.

The mine is encouraged to invest in its doorstep and Aol communities, especially regarding stimulating and/or supporting the development of SMMEs. Many local industries could benefit from this development, especially during the construction phase. Local construction-related suppliers could be amongst those who would enjoy the most benefits before and during construction. A range of construction-related services should also be required for future maintenance, offering opportunities for local SMMEs. Alignment with the proposed SEZ should also be investigated as far as mine materials can be locally manufactured.

Table 5-10 provides a rating for this impact.

**Table 5-10: Upliftment of the local economy**

Impact 3.3: Upliftment of the local economy								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Regional	Moderate	Long-term	High	Definite	High	+ve	Medium
Management measures: <ul style="list-style-type: none"> <li>• Previously referred measures bear relevance related to stakeholder engagement, recruitment, and maximising project benefits</li> <li>• Investigate ways for the mine to be involved in the proposed SEZ concerning establishing SMMEs and sourcing materials locally</li> </ul>								
After management	Regional	High	Long-term	High	Definite	Very high	+ve	High

### Impact 3.4: Loss of employment opportunities, LED and livelihood restoration support

This is a negative impact.

Section 1.1 indicated that the life-of-mine is approximately 40 years. This could potentially have a significant negative impact on many of the positive impacts the project provides, including employment and LED. The data further indicates that the mine will need to resettle households in the Caravan Park, as well as possibly households and/or graves close to the Brakfontein Shaft. Other households may also still be identified for resettlement. This represents a severe impact, especially for resettled households who may still be dependent on the mine for livelihood restoration support post-closure. This could affect vulnerable household members, especially the women, youth and elderly, more severely. However, management plans could be in place to lessen the significance of this impact.

Table 5-11 provides a rating for this impact.

**Table 5-11: Loss of employment opportunities, LED and livelihood restoration support**

Impact 3.4: Loss of employment opportunities, LED and livelihood restoration support								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
<b>Before Management</b>	Regional	Very high	Long-term	High	Definite	Very high	-ve	High
Management measures: <ul style="list-style-type: none"> <li>• A decommissioning and closure plan, which includes measures related to livelihood restoration and creating community independence. Such a plan needs to be developed with the involvement of the villages and must include a comprehensive stakeholder strategy and disclosure phase.</li> <li>• The LRP should have a clear exit strategy and include ways to conduct post-resettlement monitoring. Such monitoring should include a corrective action plan should resettled households not yet be independent.</li> </ul>								
<b>After Management</b>	Regional	Moderate	Long-term	High	Definite	High	-ve	Medium

## 5.2.4 Theme four: People’s capacity and abilities

The capacity of individuals to work, coupled with their abilities (education and skills), all contribute to their ability to access livelihood resources (food, money, credit facilities). Providing additional skills training and scholarships as a change driver should allow more individuals in BMP’s AoI to benefit from employment opportunities. It should also enable people within the working-age population an opportunity to become employable in different sectors (broadening portable skills). Vulnerability also affects how capacities and abilities are used. Households with a more significant number of children, elderly or sick have limited capacity in terms of labour availability and are more vulnerable to project impacts. Other groups of vulnerable persons (women, the elderly, or the disabled) are often limited from fully engaging in livelihood and community activities due to cultural constraints (especially in rural, traditional areas such as around the mine).

Under this theme, one impact is discussed: Skilled local labour force to take advantage of employment opportunities.

### Impact 4.1: Skilled local labour force to take advantage of employment opportunities

This is a positive impact.

Skills are highly needed in an Aol that suffers from high unemployment rates. The data illustrates a youthful population, with 48.33% of the area’s population at ward-level who are between the ages of 14 and 35. Also, at 71.49%, the economically active population of the ward is significant, implying that more skills are required to allow for a greater percentage of the workforce to become employed.

Sufficient skills and further training opportunities should be created for several reasons. The first is that the mine should see this as an investment for future construction- or maintenance-related work in the area. Training youth members to become familiar with the work required will also allow them to apply for similar positions elsewhere. Another reason is that more local skilled residents could be absorbed in the mine’s operations, reducing the need for migrant labour. This could potentially mitigate any negative impacts associated with an influx of job-seekers.

Table 5-12 provides a rating for this impact.

**Table 5-12: Skilled local labour force to take advantage of employment opportunities**

Impact 4.1: Skilled local labour force to take advantage of employment opportunities								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Regional	Minor	Long-term	Low	Possible	Low	+ve	Medium
Management measures: <ul style="list-style-type: none"> <li>• Previously referred measures bear relevance related to stakeholder engagement and maximising employment benefits</li> <li>• Provide the surrounding communities with opportunities to enrol in practical skills training to upskill themselves and apply for jobs at the mine</li> <li>• Provide annual bursaries, learnerships and portable skills training as per the SLP</li> <li>• Communicate all SLP/CSI programmes to surrounding communities to manage expectations (disclose the SLP, which is a legislated requirement)</li> </ul>								
After management	Regional	Very high	Long-term	High	Possible	Very high	+ve	High

### 5.2.5 Theme five: The living environment

Under Vanclay and Smyth’s “Living Environment” sphere of their Social Processes Framework (2017), the quality of the environment and people’s health are in focus. People need a stable and clean environment to maintain their well-being. Any deterioration of the air, water, or other quality of environment indicators can negatively impact people’s physical and mental health. Project impacts such as noise nuisance, dust, vibration, contamination (water/soil), light, and traffic detract from people’s well-being. Impacts can also relate to the aesthetic components of the environment, such as changes in the landscape, which affect people’s attachment to an environment (or “place attachment”).

This section considers the changes in the living environment of the Aol communities. There are several change drivers, namely:

- Resettlement and/or land alterations/disturbance/acquisition;
- Contamination of water, soil, air, noise nuisance and blasting activities ;
- Increased heavy vehicle road usage;
- Unfenced infrastructure and land usage areas; and
- Land rehabilitation as part of mine decommissioning.

Nine impacts are discussed under this theme.

### Impact 5.1: Loss/disturbance of land and natural resources

This is a negative impact.

Potential land for farming, livestock grazing and/or natural resource usage is being reduced by the disturbance and/or further acquisition of land. Foremost, although farming activities around the mine site are limited, doorstep communities claim that the mine’s development was largely responsible for the reduction in this activity. Regardless, access to farm or grazing land is being affected, as farmers and livestock owners will need to walk further to reach their land. This affects the income and land-based livelihoods of villagers, as a large percentage of households are dependent on the land.

The data further indicates a significant degree of ecosystem services. This refers to how ecosystems provide a socio-economic service to people and communities. The surrounding landscape is used for traditional, spiritual/cultural and/or livelihood purposes. Such dependence also includes artisanal mining activities. Although the project will affect land that has already been significantly altered, there are patches of bushveld that will need to be cleared. Also, further mining development with more fences and restrictive access could further reduce residents’ ability to access such resources. These all reduce people’s ability to use the natural environment and hence for the environment to continue providing a service to them.

There is also the possibility that blasting, soil/water contamination, as well as continuous soil erosion, may affect the available land for communities to utilise. Whilst this issue was raised by several key informants, it cannot be validated without an agricultural and/or soil capability assessment. Increasingly unfertile farmland/livestock grazing areas could be a significant impact in terms of livelihoods, food insecurity or even land conflict. Based on site observation, soil erosion was noted, although this cannot necessarily be the result of mining activities.

Although not at the core of this impact and hence not described in detail, the loss of land can also have other impacts. These include:

- Affecting a household’s status in the community (not having land also affects your position in a community and sense of importance); and
- Dependence on BPM for employment, or support programmes (people do not have the means to obtain food and would therefore become dependent on aid from the mine or government).

Table 5-13 provides an impact rating for this impact.

**Table 5-13: Loss/disturbance of land and natural resources**

Impact 5.1: Loss/disturbance of land and natural resources								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Regional	High	Long-term	High	Definite	Very high	-ve	High
Management measures: <ul style="list-style-type: none"> <li>• Previously referred measures bear relevance</li> <li>• Develop and implement a Resettlement Action Plan (RAP) and LRP(s) for all identified resettlement. This plan should be aligned with all relevant South African legislation guiding resettlement, in particular the Mining Community Resettlement Guidelines of 2022.</li> <li>• An agricultural and/or soil capability assessment should be conducted</li> <li>• As part of a RAP, establish a Resettlement Working Group(s) (RWG)</li> <li>• Develop a standalone resettlement SEP</li> <li>• Develop a Grievance Mechanism which could also be used for resettlement (or a standalone resettlement Grievance Mechanism)</li> <li>• Establish and monitor conservation corridors where this is possible/feasible</li> <li>• Ensure that residents who use existing access routes to natural resource-use areas continue to have such access</li> <li>• All land-clearing activities should allow residents the opportunity to harvest natural resources or materials they could use</li> </ul>								

Impact 5.1: Loss/disturbance of land and natural resources								
After management	Regional	High	Long-term	Medium	Definite	Moderate	-ve	High

### Impact 5.2: Changing place attachment

This is a negative impact.

Changes in well-being and in “place attachment” are difficult to measure and are frequently underestimated. The impact refers to the bonding that occurs between individuals and their environments, and their accustomed ways of using those environments. Three aspects (or dimensions) of “place attachment” should be considered, namely a) Attachment from a personal or group perspective (community land and values); b) From a psychological standpoint (villagers’ feelings toward the living environment); and c) The physical attributes of a place (for example the beauty of the area or farming potential). Considering these together, a “sense of place” can be affected by:

- How long an individual has lived in the area;
- An individual’s personal or family experience on the land, land memory, and knowledge;
- Their social and physical attraction to the land and its natural, as well as built environment; and
- The land’s effect on them, such as instilling a sense of pride, love, or memories.

Although the mine has already altered the landscape, SRK believes that further changes and clearing of vegetation may, to some degree, affect people’s attachment to the land. One rationale for this is that the land has cultural value, which is indicated not only by the land claims and traditional land status, but cultural artefacts/spiritual sites found in the larger project area, especially a potential graveyard which may need to be relocated. Having access to graves is a culturally important activity and any changes to access could potentially impact this cultural practice.

Table 5-14 provides a rating for this impact.

**Table 5-14: Changing place attachment**

Impact 5.2: Changing place attachment								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Local	Moderate -	Long-term	Medium	Possible	Moderate	-ve	Medium
Management measures: <ul style="list-style-type: none"> <li>• Previously referred measures bear relevance related to access to natural resources and stakeholder engagement</li> <li>• All mitigation measures provided in the HIA should be referred to</li> <li>• As part of resettlement, a RAP/LRP should plan for such changes. Houses should also be designed in a bottom-up fashion, allowing beneficiaries to have a real input in the design.</li> </ul>								
After management	Local	Minor -	Medium-term	Low	Possible	Low	-ve	Medium

### Impact 5.3: Cash compensation and housing provision as part of resettlement

This is a positive impact.

As physical resettlement will be required as part of land acquisition/disturbance, cash or in-kind should be offered for disturbance and/or loss of crops/structures, as well as new land, housing and/or infrastructure at a new resettlement site(s) if applicable. This is potentially a positive impact. For

example, compensation may, in the short-term, increase beneficiaries’ disposable income and spending power, with a possible increase in economic activities. The provision of improved housing and land security could also be a significant positive outcome of properly-implemented resettlement.

Although this is rated as a positive impact, for mitigation measures, it is worth outlining the possible negative aspects of this impact. For example, cash compensation may not be wisely spent, leaving households worse off in the long-term. Also, the manner in which money is deposited into a household’s account affects vulnerable household members disproportionately, especially women. In rural areas, household financial management is largely the domain of men and women may have limited access to cash resources. This system could easily support the exploitation of women or render them more vulnerable if they are left alone to raise children and provide food.

Table 5-15 provides a rating for this impact.

**Table 5-15: Cash compensation and housing provision as part of resettlement**

Impact 5.3: Cash compensation and housing provision as part of resettlement								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Regional	High	Short-term	High	Possible	High	+ve	High
Management measures: <ul style="list-style-type: none"> <li>All previous measures bear relevance</li> <li>RAP(s) should include financial training as part of livelihood restoration support</li> <li>Compensation payment should be made to both spouses and separate bank accounts should be considered</li> <li>The RAP(s) should be drafted and implemented with the involvement of the local municipality and TAs to ensure that it meets local requirements and standards</li> </ul>								
After management	Regional	Very high	Medium-term	High	Definite	Very high	+ve	High

**Impact 5.4: Improved land security as part of resettlement**

This is a positive impact.

As physical and/or economic (the resettlement of crops/structures only) resettlement could be required as part of land acquisition/disturbance, one positive outcome is that alternative plots/land must be allocated to Project-Affected Persons (PAPs). This should be accompanied with plot title deeds, whilst the mine is also strongly encouraged to support such households with land for livestock, agriculture and/or cultural practices. Many households do not have secure legal title to their plots, and this should be provided as part of resettlement compensation. This is therefore a positive impact as it improves land security.

Table 5-16 provides a rating for this impact.

**Table 5-16: Improved land security as part of resettlement**

Impact 5.4: Improved land security as part of resettlement								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Local	Moderate	Long-term	Medium	Possible	Moderate	+ve	High
Management measures: <ul style="list-style-type: none"> <li>All previous measures bear relevance</li> <li>The mine is encouraged to provide appropriate compensation if displacement occurs</li> </ul>								
After management	Local	Very high	Long-term	High	Definite	Very high	+ve	High

### Impact 5.5: Increased housing maintenance and living expenses owing to physical resettlement

This is a negative impact.

Resettlement, as a change driver, may be required for particular PAPs/households directly affected by land acquisition/disturbance (particularly community houses, graves and structures within a 400 m radius of potential mining activity). Although the provision of new plots and houses is a positive impact, a possible negative impact with such provision is the resulting housing maintenance and increased living expenses. Often, resettled households need to adjust to paying municipal rates and taxes, or generally have additional expenditures either as part of moving or owing to new surroundings. Pre-resettlement, many houses may have been less formally constructed, whereas resettlement houses are typically constructed with bricks, cement and corrugated iron sheeting. New dwellings at resettlement sites will also have access to electricity and water points. However, this new infrastructure requires maintenance, which often involves money.

Table 5-17 provides a rating for this impact.

**Table 5-17: Increased housing maintenance and living expenses owing to physical resettlement**

Impact 5.5: Increased housing maintenance and living expenses owing to physical resettlement								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Local	Moderate	Long-term	Medium	Possible	Moderate	-ve	Medium
Management measures: <ul style="list-style-type: none"> <li>All previous measures bear relevance</li> <li>As part of an LRP, counselling and training on house maintenance and the management of household budgets should be offered</li> <li>The LRP should include assistance to register households under municipality indigent status, as well as support households to apply for relevant rebates</li> </ul>								
After management	Local	Minor	Long-term	Medium	Possible	Low	-ve	Medium

### Impact 5.6: Disruption to graves and access to graves

This is a negative impact.

The Blast Impact Assessment (Blast Management and Consulting Pty Ltd, 2024) identified one gravesite and two cemeteries which need to be relocated since blasting activities will severely affect its integrity. Graves and gravesites serve an important cultural function in these communities and their tradition. Having access to graves is also a culturally important activity and any changes to access could potentially impact this practice.

Table 5-18 provides a rating for this impact.

**Table 5-18: Disruption to graves and access to graves**

Impact 5.6: Disruption to graves and access to graves								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Local	High	Long-term	Medium	Possible	High	-ve	Medium
Management measures: <ul style="list-style-type: none"> <li>All previous measures bear relevance, especially ones in the HIA</li> <li>Create safe access routes to existing graves (continued access is vital)</li> <li>Develop a Grave Relocation Plan</li> </ul>								

Impact 5.6: Disruption to graves and access to graves								
<ul style="list-style-type: none"> <li>Obtain the relevant permissions for the relocation of graves, both in terms of the National Heritage Resource Act, 1999 (Act No. 25 of 1999) <b>and</b> local cultural customs</li> <li>Develop a Chance-Find-Procedure during the mine's construction phase</li> <li>Develop and implement a monitoring programme to determine the status of the existing graves</li> <li>Fence all affected gravesites</li> </ul>								
After management	Local	Low	Long-term	Low	Possible	Moderate	-ve	Medium

**Impact 5.7: Deteriorating health resulting from mining activities**

This is a negative impact.

It is good international industry practice to consider the health impacts of projects. Although several specialist studies need to be referred to confirm the impact of noise, blasting/vibrations, on air quality and water<sup>30</sup>, SRK believes that water and air contamination could potentially affect the health of people living in the mine's Aol, especially its doorstep communities. This could either be from:

- An increase in air contamination from mining activities or heavy vehicles and machinery;
- Blasting activities (especially houses close to mining operations which may experience cracks, specifically houses close to the Brakfontein Shaft);
- Water contamination which affects both water and soil;
- An increase in dust from the operation and increased usage of vehicles (especially on gravel roads where residents are affected by the dust); and
- An increase in traffic and potential incidents (on the gravel roads which are used by the residents as well).

Households with a greater number of children, the elderly or sick have limited labour availability and are more vulnerable to this impact.

Supporting information from the relevant specialist studies applicable to this impact is summarised below.

*Blast Impact Assessment (2024)*

This report acknowledges that ground vibration, air blasting and fly rocks are potential impacts associated with the project (Blast Management and Consulting, 2024). Receptors (structures/households/people) that are within a 500 m radius of blasting activities are considered highly sensitive to these impacts. Within this radius, most blasting activities are considered unsafe and people are usually cleared when blasting is done. Blasting further produces a dust that can contain toxic fumes, such as carbon monoxide. It is also well-noted that blasting activities can cause physical and psychological effects on people who live close to such activities. Blasting also affects vulnerable groups disproportionately, especially those with disabilities.

The effects of blasting in South Africa, particular in the Limpopo Province, have been widely publicised. In recent years, many communities around mines have voiced concern over cracks and other damages to their houses, which pose a constitutional rights concern (Afro News, 2022; Midgley, 2022; and SABC News, 2019). Blasting is therefore a major inconvenience which can cause severe trauma and livelihood disruptions.

It is here where the Mine Health and Safety Act No 72 of 1997 (amended in 2022) is applicable. The Act makes it the mine's legal obligation to ensure that people living nearby are not exposed to hazards that affect their health and safety. It also prohibits mine blasting within a 500 m radius from public

<sup>30</sup> These include: Noise Impact Assessment, Blasting and Vibrations Impact Assessment, Air Quality Impact Assessment, Surface Water Impact Assessment, TIA, Hydrogeology Impact Assessment and Wetland Impact Assessment.

buildings, thoroughfares, powerlines or places where people gather. However, written permission may be obtained to reduce this, since expected levels of ground vibration and air blast is greatest up to 400 m.

There are plenty of community houses, graves and structures that are within a 400 m radius of potential mining activity. It therefore makes sense that the Blast and Vibration Assessment Scoping Report rates ground vibrations, air blasting and fly rocks as high negative during the operational phase. The report cautions against damage to houses or infrastructure, as well as possible fatalities or injuries from fly rocks. Households with a greater number of children, elderly or sick have limited labour availability and are more vulnerable to this impact. Following the review of the identified impacts it is recommended that households, graves, and other structures within 400 m from the pit boundaries should be relocated.

#### *Freshwater Ecosystem Assessment (2022)*

Of relevance in this report, compiled by Scientific Aquatic Services, is the fact that blasting, vegetation clearing and development of infrastructure for the processing plant will result in impacts such as:

- Smothering of vegetation due to dust generation;
- Increased erosion through the creation of new preferential flow paths;
- Proliferation of alien and invasive vegetation species; and
- Potential reduction in volume of water entering the freshwater habitat due to the loss of catchment yield.

Issues such as increased dust, alien vegetation and a reduction in water volume in the Monametsi River may all further deteriorate the health of the affected residents either physically or physiologically. The salination of the freshwater areas is also of concern and may pose a toxicological risk to the aquatic ecology riverine system. The referred specialist report further notes that this river system is already stressed (elevated salts and low dissolved oxygen) and that any further cumulative impacts must be managed.

#### *Traffic Impact Assessment (TIA) (2022)*

Roads that are likely to be impacted by increased traffic are the R37, the Maandagshoek Road, the D4195 and D4190 (Kolego, 2022). The TIA however confirms that the additional traffic volumes will not have significant impacts on the performance of the existing intersections surrounding the mine. The report notes a significant pedestrian movement where there are no sidewalks, pedestrian crossings, or public infrastructure stops. Surface failures, such as ravelling and potholes, also add a significant health and safety risk, especially as more vehicles will use these roads. During the operational phase, pollution from increased traffic volumes is rated as high negative, whilst road safety as medium-high negative.

#### *Environmental Noise Baseline Assessment (2022)*

Of relevance to this SEIA, the Environmental Noise Baseline Assessment (Grobler, 2022) refers to noise being generated by a variety of factors. Some of these include bulk earthworks (such as from land clearing, preparation, excavation and landscaping), the use of excavators and loaders, demolishing activities, and construction equipment. However, the highest day- and night-time noise levels were measured at a site away from any local communities. Noise generated is still expected to be audible in the mine's doorstep and closest surrounding communities.

#### *Surface Water Report (2022)*

The report rates the possible deterioration of surface water quality due to soil erosion (leading to siltation), spillages and accidental discharges as moderate negative. The impacts are largely associated with the Rapholo River, which has steep granite hills with highly erodible floodplains.

In terms of the mine's future employees, the Occupational Health and Safety (OHS) Act (Act No 85 of 1993) provides for the protection of the health and safety of employees and respective persons in

working environments. Preventative measures and managing work-related incidences are addressed under the OHS Act. New mine employees must be trained in the necessary health and safety processes.

Issues around land/air/soil contamination, land alterations resulting in a loss of place attachment, but mostly noise nuisance (from heavy vehicles/blasting/ventilation shafts), could all potentially affect people’s quality and enjoyment of life. For example, some residents close to the Brakfontein Shaft complained about a ventilation shaft which produces a loud noise. SRK could observe and testify to this nuisance impact. All of these factors could result in depression, fear, anxiety, or an unpleasant living environment.

Table 5-19 provides a rating for this impact.

**Table 5-19: Deteriorating health**

Impact 5.7: Deteriorating health resulting from mining activities								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Regional	Moderate	Long-term	High	Possible	High	-ve	Medium
<p>Management measures:</p> <ul style="list-style-type: none"> <li>Physical resettlement of households/structures within a 400 m radius of potential blasting activities if alternative site locations are not feasible</li> <li>Previously referred measures bear relevance related to stakeholder engagement, particularly the use of the Grievance Management Procedure</li> <li>As part of the SEP, the mine should inform its stakeholders of the potential contamination-related and nuisance impacts</li> <li>Disclose any activity which will result in nuisance (especially dust/blasting) through schedules on-site notice boards, during stakeholder engagement meetings, or any other relevant community forum</li> <li>Implement the following key requirements of the OHS Act (Act No 85 of 1993): <ul style="list-style-type: none"> <li>Identify potential hazards to the workforce and affected communities</li> <li>Provide preventative and protective measures, such as removing substances that are considered dangerous or rectifying situations that may appear dangerous before incidence occurs</li> <li>Record incidences</li> <li>Prepare emergency response plans and ensure they are communicated to the workforce and affected communities effectively</li> </ul> </li> <li>Include the following topics in site inductions and other training: <ul style="list-style-type: none"> <li>Community health and injury profiles</li> <li>Health risks are relevant to the workforce and mitigation strategies</li> <li>Health risks are relevant to community members and mitigation strategies</li> <li>Available health services</li> </ul> </li> <li>Inform affected communities about potential risks and impacts in a culturally appropriate manner, including collaborating with the community and government agencies to respond effectively to emergency situations</li> <li>Involve the Aol communities in discussing these concerns in forum settings, as well as identify mitigation measures</li> <li>Prior to the commencement of any groundwork, the Aol communities should be consulted and prepared for the construction phase. This should include consultations about the possible nuisance impacts, as discussed. Such discussions should inform further appropriate mitigation measures. As an example, particular construction-related activities could be scheduled for certain times of the day using platforms such as WhatsApp groups or local forums to disseminate working schedules.</li> <li>Relevant traditional/community forums, Non-Governmental Organisations (NGOs) and/or the ward committee members should always be consulted prior to the construction or upgrading of the access road(s) or project-related infrastructure changes which could affect nearby/adjacent houses/structures</li> <li>Incorporate project activities into the operation’s existing Emergency Response Plan and inform all employees and stakeholders of the plan</li> <li>Where practicable, stockpiles of soils and materials should be located as far as possible from sensitive receptors, considering prevailing wind directions and seasonal variations in the prevailing wind</li> <li>Disclose relevant health and safety plans with all stakeholders regularly to provide feedback on procedures, report accidents, and improve mitigation measures</li> <li>Always keep first aid supplies on-site</li> <li>Undertake induction training as well as regular refresher training sessions on health and safety for employees</li> <li>Include the respective contractors in health and safety training. Using these recommendations, update the mine’s existing contractor agreements concerning health and safety standards.</li> </ul>								

Impact 5.7: Deteriorating health resulting from mining activities								
After management	Regional	Moderate	Medium-term	Medium	Possible	Moderate	-ve	Medium

**Impact 5.8: Increase in safety hazards and accidents from mining operations**

This is a negative impact.

There are two main change drivers for this impact, namely a) An increase in vehicles; and b) The usage of local roads, as well as unfenced infrastructure and usage areas.

There TIA confirms that there is likely to be a significant increase in heavy vehicles (Kolega, 2022). It also acknowledges that the mine site has significant pedestrian movement where there are no sidewalks, pedestrian crossings, or public infrastructure stops. Individuals living close to the roads or affected infrastructure are highly vulnerable to traffic accidents. The potential of such accidents increases at sites with vehicle turn-offs or main intersections. Heavy vehicles that speed up can also create a safety risk for pedestrians or road users crossing these intersections.

An increase in safety hazards and accidents could also potentially be a result of general infrastructure or new laydown areas that are either not safely fenced or in areas that are unsafe and close to human settlements/dwellings. Similarly, unfenced infrastructure inside the mine during the construction phase could potentially put mine workers at risk from a health and safety perspective.

Table 5-20 provides an impact rating for this impact.

**Table 5-20: Increase in safety hazards and accidents from mining activities**

Impact 5.8: Increase in safety hazards and accidents from mining activities								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Local	High	Long-term	High	Definite	High	-ve	Medium
Management measures: Previously referred measures relate to stakeholder engagement and disclosure of impacts and operations, including those in the TIA. Measures under Impact 5.7 (Deteriorating health) are especially applicable.								
After management	Local	Minor	Medium-term	Low	Possible	Low	-ve	Medium

**Impact 5.9: Improved land usage post-rehabilitation**

This is a positive impact.

The life-of-mine is approximately 40 years. This could potentially have a positive impact should the land be rehabilitated for community use.

Table 5-21 provides an impact rating for this impact.

**Table 5-21: Improved land usage post-rehabilitation**

Impact 5.9: Improved land usage post-rehabilitation								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Local	Minor	Long-term	Low	Possible	Low	+ve	Medium
Management measure: Develop and implement a land rehabilitation plan through proper stakeholder engagement								
After management	Local	Moderate	Long-term	High	Possible	Moderate	+ve	High

## 5.2.6 Theme six: Artisanal and small-scale mining

The artisanal mining sector suffers from critical social issues and ongoing conflict with large-scale mines, mainly due to its questionable legal status. Moreover, artisanal mining may be responsible for ruining landscapes, and, in some instances, mercury pollution released into the natural environment. Also, the working conditions of miners are often dangerous and unsanitary. ASM is known to have a negative impact, not only on the local community in which it operates, but also on the formal mining sector and the mining communities that surround it. This, of course, poses a risk to those working as employees for the mine and to the mine itself. The International Institute for Environment and Development (IIED) (IIED 2015: 10) has described how ASM can be both a danger and an operational risk to a mining company. Nevertheless, artisanal and small-scale mining has the potential for being the biggest problem for mining companies by destabilising the company's social license to operate (SLO) (Buxton 2013: 8).

### Impact 6.1: The impact of illegal mining

This is a negative impact.

During the FGDs, the issue of artisanal mining was raised, and it should be acknowledged that it is a burning issue within the mine's surrounding community. The data that was gathered can mainly be grouped under the following broad themes: misconceptions; women's involvement in the sector; drivers and challenges.

From the FGDs, it was acknowledged that many misconceptions exist around illegal mining in the area of which the matter of illegal immigrants is one. During the discussion, the participants acknowledged that local community members, specifically the youth from the surrounding community, are involved in artisanal mining. There was also an acknowledgment from the participants that the same youth which is involved in this sector are children from the community and not foreign people they have no ties with. This indicates that the involvement of locals is prevalent and the perception that all illegal miners are (illegal) immigrants is a misconception.

It is also important to note that during the discussions with a group of women, reference was made to their children's involvement in the sector and not their own as women miners. However, based on the field observations the women appeared to be wary at times. It is important to acknowledge the role women play in the ASM sector.

There is limited literature on women and children in ASM especially in the South African context, however, global statistics indicate that women make up a substantial number of the ASM workforce. It has been reported that the global ASM gold mining workforce comprises 30% women. Furthermore, the World Health Organisation (2016: 6) reported that women make up ten percent of the ASM mining population in Asia, 20 per cent in Latin America, and 40 to 50 percent in Africa.

It is important to acknowledge the role women and children play in the ASM sector. Women are involved in the grinding and crushing of rocks and many of them prefer to work hard (sometimes with babies on their backs) for them to use their earnings for starting up small businesses such as informal restaurants called "Shisa Nyama" (Gauteng City-Region Observatory 2018: 120). Shisa nyamas serve as the main eating places for many Zama Zamas and people living in informal settlements.

Similar to men, women Zama Zamas also face a number of challenges however, they are more subordinated than men in the same sector. They suffer abuse from the police and are often pressured into sexual favours to avoid arrests. The police take advantage of the fact that most women do not know their rights and are ill-informed about laws governing gender base violations in the country (Action Aid 2019, p. iii). It is crucial to recognise the gender element in artisanal mining because gender issues cut across all the sector's challenges (Action Aid 2019, p. iii). In other words, in an already marginalised group, women are further suppressed and marginalised by the agents in the groups. For instance, women artisanal miners are being discriminated against for where they can work and the resources they

exploit (Action Aid 2019, p. iii). Women's challenges and risks in this sector are significant aspects that should be considered when any initiatives are developed to address the sector. Children's involvement was also confirmed during the fieldwork where several young females (between the ages of 14 – 18 years) were seen with buckets collecting the residues from the open pits.

The high unemployment rate is a significant driving force behind ASM in South Africa. During the fieldwork, the research participants emphasised how the country's unemployment rate and high poverty levels are fuelling ASM. South Africa already had one of the world's highest unemployment rates prior to the COVID-19 pandemic, with an official unemployment rate of 30.1%. Estimates of an acceleration of unemployment to 50% indicate that already high poverty levels and inequality in South Africa are expected to increase exponentially.

Literature on artisanal mining indicates that illegal mining usually happens where formal employment opportunities are limited (Mujere & Isidro 2016:102). During the FGDs, this came to the fore when participants explained that unemployment coupled with high poverty levels are pushing people into this sector. Mining Charter III and the MPRDA underscore mining companies' role and responsibility in job creation. Of course, BPM cannot take sole responsibility for the entire region's unemployment and high poverty levels. However, the often-dire conditions in mining communities and the aforementioned legislative pieces place an onus on mining companies to generate jobs. Therefore, it may be suggested that initiatives to reduce poverty levels that target artisanal miners should be implemented. Such initiatives could include the provision of artisanal miners with skills to improve their employability in the formal sector.

Another significant driver of ASM in South Africa is ongoing retrenchments in the formal mining industry. Several research participants indicated their concern about the ongoing retrenchments in the formal mining sector and stated that mine retrenchments play a massive role in propelling artisanal mining. The retrenched miner has very few other options left to survive. Reliance on previous work experience and skill is pushed into the unregulated artisanal mining sector. During fieldwork, this was also confirmed by the participants who indicated that some former mine employees are also a part of the syndicate and serve as the overseer because of their experience. Measures, for example reskilling strategies, should be put in place to assist workers in times of retrenchment.

The issue of ASM is a burning matter because the mining activities are currently occurring within BPM's mining right. This poses a huge risk to the mine as illegal mining activities take place at abandoned and operating mines with illegal miners often operating under dangerous conditions. During the fieldwork, the participants raised a number of challenges of which health and safety came strongly to the fore. The participants indicated that there exist safety issues relating to the holes where the artisanal miners dig. It was explained that these holes are being dug and left open, posing a huge risk to their children. Community members also mentioned that they are also not generally safe because even talking about the issue is not safe. Poor mine closure and rehabilitation should be looked at closely because for as long as measures are not put in place, BPM will risk experiencing the same social ills. The participants indicated that even the police could not do much to assist with mitigation, thus early prevention is better than cure.

Considering that the ASM sector is associated with certain social and environmental issues within mining communities, mining companies are increasingly being motivated to engage with the ASM sector. The incentive for large-scale mining companies to engage with the ASM sector will differ from operation to operation, but will most likely be classified into at least one of the following broad groups (Business for Social Responsibility 2014: 16):

- Risk minimisation and security: where mining companies and ASM activities occur in proximity, ASM has the potential to cause health and safety concerns for mining companies. Proactively engaging with miners can possibly mitigate risks;

- Maximising development opportunities for communities: supporting the ASM sector can form an important aspect of a mine’s community development strategy. Community development can be described as a mutual process. By helping communities towards being sustainable, a company is, in the end, serving itself too because it is creating a healthier and more equal society; and
- Maximisation of company benefits: mining companies can benefit directly when engaging with the ASM sector. For example, when a good relationship is developed between ASM miners and a mining company, mining companies can more easily retain and gain access to exploration licenses and a SLO. Additionally, when ASM miners are involved in mine closure planning, the legacy of a mining company, as well as the livelihoods of artisanal miners, can be addressed simultaneously.

Based on the findings from the fieldwork, it is vital for BPM to address the matter of illegal mining in a multitude of ways.

Table 5-22 provides an impact rating for this impact.

**Table 5-22: The impact of illegal mining**

Impact 6.1: The impact of illegal mining								
	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Before management	Local	High	Long-term	High	Definite	High	-ve	Medium
Management measures: <ul style="list-style-type: none"> <li>• Conduct a baseline study to determine the nature and scope of the illegal activities</li> <li>• Set up a research team focusing on ASM in the AoI</li> <li>• Engage with communities to understand not only their social issues but also how artisanal mining is positioned within the community</li> <li>• Address unemployment and poverty issues in the broader community by fostering enterprise development opportunities</li> <li>• Relook BPM’s retrenchment and reskilling policies</li> <li>• Provide portable skills training to the workforce throughout the life of mine</li> <li>• Foster sound livelihood strategies in communities</li> <li>• Develop a social closure plan that can be implemented when the time for mine closure comes</li> <li>• Prepare for sound mine closure and rehabilitation</li> <li>• Ensure that portable skills training is aligned with the needs and opportunities in the external social context of the surrounding communities</li> <li>• Partner with civil society and allow for technical support to upgrade artisanal miners to small-scale miners</li> <li>• Evaluate social and labour plans in terms of mine closure and downscaling</li> </ul>								
After management	Local	Minor	Medium-term	Low	Possible	Low	-ve	Medium

### 5.2.7 Cumulative impacts

The following cumulative negative socio-economic impacts could occur as a result of the Project:

- **Physical displacement:** Households that have historically been relocated in the Brakfontein area have had their new houses rebuilt once before and are regularly experiencing perceived blasting impacts. The households that could be relocated as a result of this Project will increase the felt resettlement-related impacts in the AoI overall, as opposed to the single, historical, group of relocated households. The need for regular stakeholder engagements, monitoring and evaluation of all the displaced households will be increased. Resettlement should be planned and undertaken in accordance with GIIP and relevant local legislation.
- **Existing challenges around stakeholder engagements:** Various initiatives currently being undertaken by the mine require engagements with stakeholders, such as EIA-related public participation, the management of legacy issues, engagement forum establishment, recruitment and contracting opportunities, and grievance management. There will no doubt be expectations from the

communities in the AoI regarding benefits from the Project and the overall context of the reopening of the mine. These have to be managed in the context of historical or legacy topics as part of strategic long-term stakeholder engagement.

- **Increased nuisance and environmental impacts:** Communities in the AoI are currently experiencing shortages of good quality water and the effects of poor road conditions. The expansion of mine infrastructure and increased activity in the area could exacerbate the visual, dust and safety impacts associated with current mine infrastructure and activities, as well as pressure on underperforming or lacking public infrastructure.

## 6 Social mitigation and management plan

Table 6-1 provides the key mitigation and management measures proposed in Section 5.

**Table 6-1: Project final social mitigation and management plan**

Impact	Proposed mitigation and/or management measure
<b>Theme one: Community/social supports and political context</b>	
Social conflict/unrest	<ul style="list-style-type: none"> <li>• Update the existing Stakeholder Engagement Plan (SEP). Some further recommendations:                             <ul style="list-style-type: none"> <li>- Define ways in which community members will have a) Access to relevant information; and b) Prior disclosure and dissemination of information which is in a culturally appropriate local language(s) and format</li> <li>- Outline any risks to, and potential impacts on, its Aol communities and provide relevant mitigation measures</li> <li>- Elaborate on the company’s future envisaged stakeholder engagement process</li> <li>- Include a Grievance Management Procedure</li> </ul> </li> <li>• Revise/update the Grievance Management Procedure incorporating some of the following recommendations:                             <ul style="list-style-type: none"> <li>- Scale the procedure to the risks and adverse impacts of the mine and have doorstep- and labour-sending communities as its primary user</li> <li>- Resolve concerns promptly, using an understandable and transparent consultative process that is culturally appropriate and readily accessible, and at no cost and without retribution to the party that originated the issue or concern</li> <li>- Inform the affected and labour-sending communities about the procedure and general stakeholder engagement process</li> </ul> </li> <li>• Develop an Influx Management Plan</li> <li>• Continuous engagements with a relevant community forum(s) to understand possible social conflict and unrest that may result</li> <li>• Revise/update the existing Recruitment Operational Policy and Employment Equity Plan, especially regarding favouring local labour. This should include transparent job advertising methods, such as community information portals and local notice boards. The company should ensure that the policy and plan adhere to the International Labour Organisation (ILO) Convention 97 on Migration for Employment (1949) and 143 on Migrant Workers - Supplementary Provisions (1975). These conventions require that migrants be treated the same way as nationals (concerning freedom of association, salaries, and social security).</li> <li>• Stipulate the requirement to use local labour in all tender documents</li> <li>• Favouring local labour should be a requirement of all contractors who should be accountable to prove to ARM the use of local labour</li> <li>• Manage community expectations:                             <ul style="list-style-type: none"> <li>- Engage with the Aol and labour-sending communities to indicate that the mine is commencing activities again and what benefits can be expected. This should be done via regular briefings on labour, recruitment, and procurement through established community engagement forums.</li> <li>- Provide training in stakeholder engagement and communication to the mine’s relevant social performance team members</li> <li>- Disseminate key communications through relevant community engagement forums</li> </ul> </li> <li>• Provide clear expectations in all communication platforms of the number of jobs available and in which categories/fields (skilled vs unskilled)</li> <li>• Disclose all plans/procedures/policies to stakeholders (including all the Aol and labour-sending communities, employees, and contractors), transparently. This includes the Recruitment Operational Policy and Employment Equity Plan.</li> <li>• Assist the relevant community/traditional leadership, community forum(s), and ward committees to keep a close record of the influx of jobseekers and to manage employment expectations</li> </ul>

Impact	Proposed mitigation and/or management measure
	<ul style="list-style-type: none"> <li>As part of the mine's SLP, continue to provide local training opportunities, scholarships and/or bursaries to upskill the Aol and labour-sending communities' working-age population to become the first job applicants</li> <li>Conduct regular skill audits in the Aol communities to verify which skills are readily available</li> <li>Allocate the maximum appropriate share of project-related business opportunities to local SMMEs</li> </ul>
Increase in crime and social pathologies	<ul style="list-style-type: none"> <li>All management measures under Impact 1.1 apply to reduce an influx, and the significance of this</li> <li>As part of the mine's general CSI and SLP, ARM should continuously monitor the social infrastructure and amenities on the mine's doorstep and labour-sending communities to be able to assess needs and aid FTLM or communities where needed</li> </ul>
Improved local economy	<ul style="list-style-type: none"> <li>All previous management measures apply, especially related to maximising employment benefits and reducing the negative impacts of influx and enhance positive ones</li> </ul>
Increased vulnerability related to restrictions on land usage	<ul style="list-style-type: none"> <li>Use the existing community forums to introduce/communicate a Grievance Management Procedure</li> <li>Assess BPM's agreement with a security company to ensure the following:                             <ul style="list-style-type: none"> <li>When hiring security personnel, a reasonable effort must be made to screen them for past abuses.</li> <li>Security personnel needs to be properly trained in the use of force and, most importantly, appropriate conduct towards residents</li> <li>Severe penalties/disciplinary action should be taken against any security personnel involved in theft or abuse</li> <li>A code of conduct must be developed for security personnel. This must be consistent with the UN's Code of Conduct for Law Enforcement Officials, the UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials, and the Voluntary Principles on Security and Human Rights.</li> <li>All workers are to be informed about the roles and responsibilities of the security personnel</li> </ul> </li> </ul>
<b>Theme two: Infrastructure and services</b>	
Pressure on existing social infrastructure and services	<ul style="list-style-type: none"> <li>Previously referred measures relate to stakeholder engagement and maximising the positive benefits of the mine. In addition, closer collaboration with FTLM is required to understand existing provisioning capacity constraints and how the mine could provide assistance to upgrade essential services in its Aol communities. This should include reviewing the relevant IDPs and SDFs for SLP/CSI project alignment annually.</li> </ul>
Improved access to basic amenities and social infrastructure	<ul style="list-style-type: none"> <li>Previously referred measures are relevant, especially to stakeholder engagement and managing expectations</li> <li>Develop a suitable SLP/CSI/LRP with LED projects. SRK recommends that the SLP undergoes an external review to ensure its compliance to South African legislation (Broad-Based Socio-Economic Empowerment Charter for the Mining and Minerals Industry), as well as relevant international frameworks and standards.</li> </ul>
<b>Theme three: Livelihood assets and activities</b>	
Improved household incomes and livelihoods from employment and development	<ul style="list-style-type: none"> <li>Previously referred measures bear relevance related to stakeholder engagement and maximising mining benefits</li> <li>Communicate with traditional leaders and community and business forums and request that a database of services be drawn and submitted to BPM. This can be relevant in the sourcing of skills from surrounding communities.</li> <li>Liaise with the relevant forums/committees, traditional leadership, ward committee(s), and local businesses to find ways to establish and grow more local SMMEs</li> <li>Maximise employment benefits: Allow labourers involved in the construction phase a fair opportunity to apply for work during the operational phase</li> <li>Communicate upcoming employment opportunities to surrounding communities to manage expectations</li> </ul>

Impact	Proposed mitigation and/or management measure
	<ul style="list-style-type: none"> <li>As per SLP requirements, develop and implement, as far as reasonably possible, a plan for gradually replacing migrant labour with local employees</li> </ul>
Social conflict from employment and differential development benefits	<ul style="list-style-type: none"> <li>Previously referred measures bear relevance related to stakeholder engagement</li> <li>The use of local businesses and the creation of SMMEs should be promoted as far as possible</li> <li>Ensure that management practices do not exploit or exacerbate the level of mistrust or conflict within the different community groups</li> <li>Employment and procurement policies should be communicated and implemented in a transparent manner</li> <li>Clarify the role of the human resources department, and communicate a transparent policy to all stakeholders</li> <li>Engage communities on fair and transparent terms while respecting traditionally and democratically appointed leadership</li> <li>Inform and educate communities about the various ways in which the mine contributes to the region's LED, relating to the company's SLP and CSI goals</li> <li>Communicate and disclose the company's SLP/CSI to manage expectations</li> <li>Advertise a "local first" policy for construction employment opportunities, especially for semi- and low-skilled employment categories (to enhance employment opportunities in the Aol)</li> <li>Stipulate the use of local labour in all tender documents as far as possible</li> </ul>
Upliftment of the local economy	<ul style="list-style-type: none"> <li>Previously referred measures bear relevance related to stakeholder engagement, recruitment, and maximising project benefits</li> <li>Investigate ways for the mine to be involved in the proposed SEZ concerning establishing SMMEs and sourcing materials locally</li> </ul>
Loss of employment opportunities, LED and livelihood restoration support	<ul style="list-style-type: none"> <li>A decommissioning and closure plan, which includes measures related to livelihood restoration and creating community independence. Such a plan needs to be developed with the involvement of the villages and must include a comprehensive stakeholder strategy and disclosure phase.</li> <li>The LRP should have a clear exit strategy and include ways to conduct post-resettlement monitoring. Such monitoring should include a corrective action plan should resettled households not yet be independent.</li> </ul>
<b>Theme four: People's capacity and abilities</b>	
Skilled local labour force to take advantage of employment opportunities	<ul style="list-style-type: none"> <li>Previously referred measures bear relevance related to stakeholder engagement and maximising employment benefits</li> <li>Provide the surrounding communities with opportunities to enrol in practical skills training to upskill themselves and apply for jobs at the mine</li> <li>Provide annual bursaries, learnerships and portable skills training as per the SLP</li> <li>Communicate all SLP/CSI programmes to surrounding communities to manage expectations (disclose the SLP, which is a legislated requirement)</li> </ul>
<b>Theme five: The living environment</b>	
Loss/disturbance of land and natural resources	<ul style="list-style-type: none"> <li>Previously referred measures bear relevance</li> <li>Develop and implement a Resettlement Action Plan (RAP) and LRP(s) for all identified resettlement. This plan should be aligned with all relevant South African legislation guiding resettlement, in particular the Mining Community Resettlement Guidelines of 2022.</li> <li>An agricultural and/or soil capability assessment should be conducted</li> <li>As part of a RAP, establish a Resettlement Working Group(s) (RWG)</li> <li>Develop a standalone resettlement SEP</li> <li>Develop a Grievance Mechanism which could also be used for resettlement (or a standalone resettlement Grievance Mechanism)</li> <li>Establish and monitor conservation corridors where this is possible/feasible</li> <li>Ensure that residents who use existing access routes to natural resource-use areas continue to have such access</li> </ul>

Impact	Proposed mitigation and/or management measure
	<ul style="list-style-type: none"> <li>All land-clearing activities should allow residents the opportunity to harvest natural resources or materials they could use</li> </ul>
Changing place attachment	<ul style="list-style-type: none"> <li>Previously referred measures bear relevance related to access to natural resources and stakeholder engagement</li> <li>All mitigation measures provided in the HIA should be referred to</li> <li>As part of resettlement, a RAP/LRP should plan for such changes. For example, a host site development plan should be prepared as part of the identification process of host sites. This should consider new graveyard settings, planting of trees, and recreational facilities. Houses should also be designed in a bottom-up fashion, allowing beneficiaries to have a real input in the design.</li> </ul>
Cash compensation and housing provision as part of resettlement	<ul style="list-style-type: none"> <li>All previous measures bear relevance</li> <li>RAP(s) should include financial training as part of livelihood restoration support</li> <li>Compensation payment should be made to both spouses and separate bank accounts should be considered</li> <li>The RAP(s) should be drafted and implemented with the involvement of the local municipality and TAs to ensure that it meets local requirements and standards</li> </ul>
Improved land security as part of resettlement	<ul style="list-style-type: none"> <li>All previous measures bear relevance</li> <li>The mine is encouraged to provide title deeds and replacement land for farming, livestock and/or cultural purposes</li> </ul>
Increased housing maintenance and living expenses owing to physical resettlement	<ul style="list-style-type: none"> <li>All previous measures bear relevance</li> <li>As part of an LRP, counselling and training on house maintenance and the management of household budgets should be offered</li> <li>The LRP should include assistance to register households under municipality indigenous status, as well as support households to apply for relevant rebates</li> </ul>
Disruption to graves and access to graves	<ul style="list-style-type: none"> <li>All previous measures bear relevance, especially ones in the HIA</li> <li>Create safe access routes to existing graves (continued access is vital)</li> <li>Develop a Grave Relocation Plan</li> <li>Obtain the relevant permissions for the relocation of graves, both in terms of the National Heritage Resource Act, 1999 (Act No. 25 of 1999) <b>and</b> local cultural customs</li> <li>Develop a Chance-Find-Procedure prior to the mine's construction phase</li> <li>Develop and implement a monitoring programme to determine the status of the existing graves</li> <li>Fence all affected gravesites</li> </ul>
Deteriorating health resulting from mining activities	<ul style="list-style-type: none"> <li>Physical resettlement of households/living structures within a 500 m radius of potential blasting activities</li> <li>Previously referred measures bear relevance related to stakeholder engagement, particularly the use of the Grievance Management Procedure</li> <li>As part of the SEP, the mine should inform its stakeholders of the potential contamination-related and nuisance impacts</li> <li>Disclose any activity which will result in nuisance (especially dust/blasting) through schedules on site notice boards, during stakeholder engagement meetings, or any other relevant community forum</li> <li>Implement the following key requirements of the OHS Act (Act No 85 of 1993): <ul style="list-style-type: none"> <li>Identify potential hazards to the workforce and affected communities</li> <li>Provide preventative and protective measures, such as removing substances that are considered dangerous or rectifying situations that may appear dangerous before incidence occurs</li> <li>Record incidents</li> <li>Prepare emergency response plans and ensure they are communicated to the workforce and affected communities effectively</li> </ul> </li> <li>Include the following topics in site inductions and other training: <ul style="list-style-type: none"> <li>Community health and injury profiles</li> <li>Health risks are relevant to the workforce and mitigation strategies</li> </ul> </li> </ul>

Impact	Proposed mitigation and/or management measure
	<ul style="list-style-type: none"> <li>○ Health risks are relevant to community members and mitigation strategies</li> <li>○ Available health services</li> <li>● Inform affected communities about potential risks and impacts in a culturally appropriate manner, including collaborating with the community and government agencies to respond effectively to emergency situations</li> <li>● Involve the Aol communities in discussing these concerns in forum settings, as well as identify mitigation measures</li> <li>● Prior to the commencement of any groundwork, the Aol communities should be consulted and prepared for the construction phase. This should include consultations about the possible nuisance impacts, as discussed. Such discussions should inform further appropriate mitigation measures. As an example, particular construction-related activities could be scheduled for certain times of the day using platforms such as WhatsApp groups or local forums to disseminate working schedules.</li> <li>● Relevant traditional/community forums, Non-Governmental Organisations (NGOs) and/or the ward committee members should always be consulted prior to the construction or upgrading of the access road(s) or project-related infrastructure changes which could affect nearby/adjacent houses/structures</li> <li>● Incorporate project activities into the operation's existing Emergency Response Plan and inform all employees and stakeholders of the plan</li> <li>● Where practicable, stockpiles of soils and materials should be located as far as possible from sensitive receptors, considering prevailing wind directions and seasonal variations in the prevailing wind</li> <li>● Disclose relevant health and safety plans with all stakeholders regularly to provide feedback on procedures, report accidents, and improve mitigation measures</li> <li>● Always keep first aid supplies on-site</li> <li>● Undertake induction training as well as regular refresher training sessions on health and safety for employees</li> <li>● Include the respective contractors in health and safety training. Using these recommendations, update the mine's existing contractor agreements concerning health and safety standards.</li> </ul>
Increase in safety hazards and accidents from mining operations	<ul style="list-style-type: none"> <li>● Previously referred measures relate to stakeholder engagement and disclosure of impacts and operations, including those in the TIA. Measures under Impact 5.7 (Deteriorating health) are especially applicable.</li> </ul>
Improved land usage post-rehabilitation	<ul style="list-style-type: none"> <li>● Develop and implement a land rehabilitation plan through proper stakeholder engagement</li> </ul>
<b>Theme six: Artisanal and small-scale mining</b>	
The impact of illegal mining	<ul style="list-style-type: none"> <li>● Conduct a baseline study to determine the nature and scope of the illegal activities</li> <li>● Set up a research team focusing on ASM</li> <li>● Engage with communities to understand not only their social issues but also how artisanal mining is positioned within the community</li> <li>● Address unemployment and poverty issues in the broader community by fostering enterprise development opportunities</li> <li>● Relook BPM's retrenchment and reskilling policies</li> <li>● Provide portable skills training to the workforce throughout the life of mine</li> <li>● Foster sound livelihood strategies in communities</li> <li>● Develop a social closure plan that can be implemented when the time for mine closure comes</li> <li>● Prepare for sound mine closure and rehabilitation</li> <li>● Ensure that portable skills training is aligned with the needs and opportunities in the external social context of the surrounding communities</li> <li>● Partner with civil society and allow for technical support to upgrade artisanal miners to small-scale miners</li> <li>● Evaluate social and labour plans in terms of mine closure and downscaling</li> </ul>

## 7 Conclusion

The objective of this SEIA was to assess the anticipated socio-economic impacts resulting from the Expansion Project and to identify appropriate management measures to mitigate adverse impacts and enhance positive impacts. This report was aligned to the requirements of South African environmental legislation and good international industry practice standards and guidelines.

The SEIA identified five socio-economic themes as per the Social Change Processes Framework of Vanclay and Smyth (2017), in addition to one extra theme dedicated to artisanal mining activities. Under these themes, Table 7-1 provides a summary of the impacts after mitigation and/or project enhancement measures, which were discussed in detail in Section 5. As indicated, the most significant socio-economic impacts relate to physical and/or economic resettlement owing largely to land acquisition/disturbance. Illegal artisanal mining is also a significant impact which is discussed under its own theme. There are also several positive impacts, such as improved basic amenities, employment, and skills training. The mine's reinstatement is expected to provide much-needed employment and skills in an area which is highly deprived thereof, with a significant working-age population entering the job market. Some of the most important negative impacts correlate with management measures which can reduce the severity thereof. These include social conflict/unrest (which has been experienced around the mine), involuntary resettlement of households and graves, health and nuisance impacts from blasting or dust. As the mine has not been in operation since 2017, there is a possibility that some of these impacts may have been experienced in the past, only to resurface again if not properly managed.

The specialist does not believe the project is fatally flawed, and therefore supports the development. This opinion is largely based on the fact that the mine has been operational in the past and has altered the landscape beyond a point where it would be considered as highly cultural from a sense of place perspective. The mine is also an important contributor to the economy of the area.

**Table 7-1: Impacts after mitigation and/or project enhancement measures**

Social conflict/unrest	Low -
An increase in crime and social pathologies	Moderate -
Improved local economy	High +
Increased vulnerability related to restrictions on land usage	Moderate -
Pressure on existing social infrastructure and services	Low -
Improved access to basic amenities and social infrastructure	High +
Improved household incomes and livelihoods from employment and development	High +
Social conflict from employment and differential benefits	Moderate -
Upliftment of the local economy	Very High +
Loss of employment opportunities, LED and livelihood restoration support	High -
Skilled local labour force to take advantage of employment opportunities	Very High+
Loss/disturbance of land and natural resources	Moderate -
Changing place attachment	Low -
Cash compensation and housing provision as part of resettlement	Very High +
Improved land security as part of resettlement	Very High +
Increased housing maintenance and living expenses owing to physical resettlement	Low -
Disruption to graves and access to graves	Moderate -

Deteriorating health resulting from mining activities	Moderate -
Increase in safety hazards and accidents from mining activities	Low -
Improved land usage post-rehabilitation	Moderate +
Artisanal and small-scale mining	Medium -

**Prepared by**

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# Appendices

## **Appendix A: Impact rating methodology**

## Impact rating methodology

The impact assessment will be conducted in an integrated manner that links the socio-economic components with the biophysical components of the environment. The assessment is divided into issue identification, impact definition, and impact evaluation. Iteration of these parts occurs in each stage of an ESIA process to varying degrees.

The basic elements used in the evaluation of impact significance are described in Table A1 and the characteristics that are used to describe the consequence of an impact are outlined in Table A2.

**Table A1: Key elements in the evaluation of impact significance**

Element	Description	Questions applied to the test of significance
Consequence	<p>An impact or effect can be described as the change in an environmental parameter, which results from a particular project activity or intervention. Here, the term “consequence” refers to:</p> <ul style="list-style-type: none"> <li>(a) The sensitivity of the receiving environment, including its capacity to accommodate the kinds of changes the project may bring about.</li> <li>(b) The type of change and the key characteristics of the change (these are magnitude, extent and duration).</li> <li>(c) The importance of the change (the level of public concern/ value attached to environment by the stakeholders and the change effected by the project).</li> </ul> <p>The following should be considered in the determination of impact consequence:</p> <ul style="list-style-type: none"> <li>(a) Standards and guidelines (thresholds).</li> <li>(b) Scientific evidence and professional judgment.</li> <li>(c) Points of reference from comparable cases.</li> <li>(d) Levels of stakeholder concern.</li> </ul>	<p>Will there be a change in the biophysical and/or social environment?</p> <p>Is the change of consequence (of any importance)?</p>
Probability	Likelihood/chances of an impact occurring.	What is the likelihood of the change occurring?
Effectiveness of the management measures	<p>The significance of the impact needs to be determined both without management measures and with management measures.</p> <p>The significance of the unmanaged impact needs to be determined so there is an appreciation of what could occur in the absence of management measures and of the effectiveness of the proposed management measures.</p>	Will the management measures reduce impact to an acceptable level?
Effectiveness of the management measures	<p>The significance of the impact needs to be determined both without management measures and with management measures.</p> <p>The significance of the unmanaged impact needs to be determined so there is an appreciation of what could occur in the absence of management measures and of the effectiveness of the proposed management measures.</p>	Will the management measures reduce impact to an acceptable level?

Element	Description	Questions applied to the test of significance
Uncertainty/ Confidence	<p>Uncertainty in impact prediction and the effectiveness of the proposed management measures. Sources of uncertainty in impact prediction include:</p> <ul style="list-style-type: none"> <li>(a) Scientific uncertainty – limited understanding of an ecosystem (or affected stakeholders) and the processes that govern change.</li> <li>(b) Data uncertainty – restrictions introduced by incomplete, contradictory or incomparable information, or by insufficient measurement techniques.</li> <li>(c) Policy uncertainty – unclear or disputed objectives, standards, or guidelines.</li> </ul> <p>Several approaches can be used to address uncertainty in impact prediction, including:</p> <ul style="list-style-type: none"> <li>(a) 'Best' and 'worst-case prediction to illustrate the spread of uncertainty.</li> <li>(b) Attaching confidence limits impact predictions.</li> </ul> <p>Sensitivity analysis to determine the effect of small changes in impact magnitude.</p>	<p>What is the degree of confidence in the significance ascribed to the impact?</p>

**Table A2: Characteristics used to describe impacts and impact consequence**

Characteristics used to describe the consequence	Sub-components	Terms used to describe the characteristic
Type		Biophysical, social, or economic
Nature		Direct or indirect, cumulative etc.
Status		Positive (a benefit), negative (a cost) or neutral
Phase of project		During pre-construction (if applicable), construction, operation, decommissioning or post-closure
Timing		Immediate, delayed
Magnitude	Sensitivity of the receiving environment/ receptors	High, medium, or low sensitivity Low capacity to accommodate the change (impact)/ tolerant of the proposed change
	Severity/ intensity (degree of change measured against thresholds and/or professional judgment)	Gravity/ seriousness of the impact Intensity/ influence/ power/ strength
	Level of stakeholder concern	High, medium, or low levels of concern All or some stakeholders are concerned about the change
Spatial extent or population affected The area/population affected by the impact The boundaries at local and regional extents will be different for biophysical and social impacts.		Area/ volume covered, distribution, population Site/Local (social impacts should distinguish between site and local), regional, national or international
Duration (and reversibility)		Short term, long term

Characteristics used to describe the consequence	Sub-components	Terms used to describe the characteristic
Length of time over which an impact occurs and potential for recovery of the endpoint from the impact		Intermittent, continuous Reversible/ irreversibility Temporary, permanent
Confidence		High, Medium, Low

### Impact significance rating

Practicable management measures will be recommended that avoid, and if avoidance is not possible, then reduce, restore, compensate/offset negative impacts, enhance positive impacts and assist project design. The impact significance rating system is presented in Table A3 and involves four parts:

- Part A: Defines impact consequence using the three primary impact characteristics of magnitude, spatial scale and duration;
- Part B: Uses the matrix to determine a rating for impact consequence based on the definitions identified in Part A;
- Part C: Uses the matrix to determine the impact significance rating, which is a function of the impact consequence rating (from Part B) and the probability of occurrence; and
- Part D: Defines the Confidence level.

**Table A3: Method for rating the significance of impacts**

<b>PART A: DEFINING CONSEQUENCES IN TERMS OF MAGNITUDE, DURATION AND SPATIAL SCALE</b>					
<i>Use these definitions to define the consequence in Part B</i>					
<b>Impact characteristics</b>	<b>Definition</b>	<b>Criteria</b>			
<b>INTENSITY</b>	Major	Substantial deterioration or harm to receptors; receiving environment has an inherent value to stakeholders; receptors of impact are of conservation importance, or identified threshold often exceeded			
	Moderate	Moderate/measurable deterioration or harm to receptors; receiving environment moderately sensitive, or identified threshold occasionally exceeded			
	Minor	Minor deterioration (nuisance or minor deterioration) or harm to receptors; change to receiving environment not measurable; or identified threshold never exceeded			
	Minor+	Minor improvement; change not measurable, or threshold never exceeded			
	Moderate+	Moderate improvement; within or better than the threshold; or no observed reaction			
	Major+	Substantial improvement; within or better than the threshold; or favourable publicity			
<b>EXTENT</b>	Site or local	Site-specific or confined to the project area			
	Regional	May be defined in various ways, e.g., cadastral, catchment, topographic			
	National/International	Nationally or beyond			
<b>DURATION</b>	Short term	Less than 3 years			
	Medium-term	3 to 15 years			
	Long term	>15 years			
<b>PART B: DETERMINING CONSEQUENCE RATING</b>					
<i>Rate consequence based on the definition of magnitude, spatial extent and duration</i>					
		<b>EXTENT/ POPULATION</b>			
		<b>Site or Local</b>	<b>Regional</b>	<b>National</b>	
<b>INTENSITY</b>					
<b>Minor</b>	<b>DURATION</b>	<b>Long term</b>	Medium	Medium	High
		<b>Medium-term</b>	Low	Low	Medium
		<b>Short term</b>	Low	Low	Medium
<b>Moderate</b>	<b>DURATION</b>	<b>Long term</b>	Medium	High	High
		<b>Medium-term</b>	Medium	Medium	High
		<b>Short term</b>	Low	Medium	Medium
<b>Major</b>	<b>DURATION</b>	<b>Long term</b>	High	High	High
		<b>Medium-term</b>	Medium	Medium	High
		<b>Short term</b>	Medium	Medium	High
<b>PART C: DETERMINING SIGNIFICANCE RATING</b>					
<i>Rate significance based on consequence and probability</i>					

PART A: DEFINING CONSEQUENCES IN TERMS OF MAGNITUDE, DURATION AND SPATIAL SCALE				
<i>Use these definitions to define the consequence in Part B</i>				
Impact characteristics	Definition	Criteria		
<b>INTENSITY</b>	Major	Substantial deterioration or harm to receptors; receiving environment has an inherent value to stakeholders; receptors of impact are of conservation importance, or identified threshold often exceeded		
	Moderate	Moderate/measurable deterioration or harm to receptors; receiving environment moderately sensitive, or identified threshold occasionally exceeded		
	Minor	Minor deterioration (nuisance or minor deterioration) or harm to receptors; change to receiving environment not measurable; or identified threshold never exceeded		
	Minor+	Minor improvement; change not measurable, or threshold never exceeded		
	Moderate+	Moderate improvement; within or better than the threshold; or no observed reaction		
	Major+	Substantial improvement; within or better than the threshold; or favourable publicity		
<b>EXTENT</b>	Site or local	Site-specific or confined to the project area		
	Regional	May be defined in various ways, e.g., cadastral, catchment, topographic		
	National/ International	Nationally or beyond		
<b>DURATION</b>	Short term	Less than 3 years		
	Medium-term	3 to 15 years		
	Long term	>15 years		
		CONSEQUENCE		
		Low	Medium	High
<b>PROBABILITY (of exposure to impacts)</b>	<b>Definite</b>	Medium	Medium	High
	<b>Possible</b>	Low	Medium	High
	<b>Unlikely</b>	Low	Low	Medium
PART D: CONFIDENCE LEVEL				
High	Medium		Low	

Notes: + denotes a positive impact.

Using the matrix, the significance of each described impact is initially rated. This rating assumes the management measures inherent in the project design are in place.

### Management recommendations and post-management significance

Practicable **management measures** were then listed, using the IFC’s management hierarchy:

“Recommendations for management should focus on *avoidance*, and if avoidance is not possible, then to *reduce, restore, compensate/offset negative impacts*, enhance positive impacts and assist project design.”

The significance of impacts was then re-assessed **with** assumed management measures in place (“**after management**”). Specialists also recommended and described appropriate **monitoring** and review programs to track the efficacy of management measures. These are included in the Action Plans.

## **Appendix B: Relevant international frameworks and local legislation**

## Relevant local legislation and frameworks

Table B1 provides an overview of the relevant local legislation, as well as frameworks which are relevant to this study.

**Table B1: Relevant local legislation and frameworks**

Applicable legislation and guidelines used to compile the report	Applicability to the project
<b>Relevant national legislation</b>	
<p>Constitution of the Republic of South Africa, (No 108 of 1996)</p>	<p>Applicable sections:</p> <ul style="list-style-type: none"> <li>• Chapter 2 – Bill of Rights</li> <li>• Section 24 – Environmental rights</li> <li>• Section 25 – Property</li> </ul> <p>The Constitution of South Africa is the overarching framework legalisation driving the NEMA principles and therefore EIA process. The right to a safe environment and the right to information are addressed in the EIA process through stakeholder engagement, where available information pertaining to the environment and proposed activities are disclosed. The proposed activities shall be conducted in such a manner that significant environmental impacts are avoided, where significant impacts cannot all together avoided be minimised and mitigated to protect the environmental rights of South Africans.</p> <p>The Constitution further protects occupiers in two important areas: Section 25(6) states that a person or community whose tenure of land is legally insecure as a result of past racially discriminatory laws or practices, is entitled either to tenure which is legally secure or to comparable redress. Section 26 of the Bill of Rights states that everyone has a right to have access to adequate housing, that the State must take reasonable legislative and other measures within its resources to achieve this right and that no-one may be evicted from their home, or have their home demolished, without an order of court made after considering all the relevant circumstances.</p> <p>The Constitution further makes regulatory provisions for public participation in terms of section 33, which states that “Everyone has the right to administrative action that is lawful, reasonable and procedurally fair, and Everyone whose rights have been adversely affected by administrative action has the right to be given written reasons”.</p> <p>Chapter 10 (section 195) of the Constitution provides for the basic values and principles governing public administration, and states that public administration must be governed by the democratic values and principles enshrined in the Constitution.</p>
<ul style="list-style-type: none"> <li>• NEMA (Act No 107 of 1998)</li> <li>• MPRDA (Act No 28 of 2002)</li> <li>• NWA (Act No 36 of 1998)</li> </ul>	<p>NEMA specifically provides for and promotes co-operative governance - especially by decision-making powers - on matters related to the environment. In this way, it promotes co-operative governance by establishing procedures and principles for ordinary citizens to become involved in the management of the environment. A key aspect of NEMA is that it provides a set of environmental management principles that apply throughout the Republic to the actions of all organs of state that may significantly affect the environment. The Expansion Project has been assessed in terms of possible conflicts or compliance with these principles.</p> <p>Section 2 of NEMA contains principles relevant to the proposed project. Some of the most important principles applicable to this report include the fact that:</p> <ul style="list-style-type: none"> <li>• The social, economic, and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed, and evaluated, and decisions must be appropriate in light of such consideration and assessment</li> <li>• Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural, and social interests equitably</li> </ul>

<b>Applicable legislation and guidelines used to compile the report</b>	<b>Applicability to the project</b>
	<ul style="list-style-type: none"> <li>• Development must be socially, environmentally, and economically sustainable</li> <li>• The social, economic, and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed, and evaluated, and decisions must be appropriate in the light of such consideration and assessment</li> <li>• Any decisions must consider the interests, needs and values of all I&amp;APs, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge</li> </ul> <p>In addition to NEMA, the BA is also being undertaken to the MPRDA (Act No 28) and NWA (Act No 36), the latter specifically related to the mine's water use licenses.</p>
POPI Ac No 4 of 2013	POPI Act of 2013, which came into full government-enforcement effect in July 2021. The act is intended to provide safeguarding measures to each individual relating to his or her personal records and information. The act deals with the sharing of such personal information, whether this is for collection, receipt, recording, organising or retrieval. The most important aspect of the act is that an individual has to provide consent to sharing his or her personal information, which has in 2021 become a legal compliance matter in South Africa. Such consent is defined as giving your voluntary, specific, and informed expression of will.
NHRA No 25 of 1999	The NHRA is relevant as it deals with cultural heritage and the protection of graves in South Africa. A Health Impact Assessment (HIA) has been conducted as part of the BA process.
SPLUMA No 16 of 2013 and its regulations of 2013	<p>SPLUMA's main objective is to provide a reference point for municipalities in South Africa regarding spatial planning and land-use management. Hence, municipalities refer to SPLUMA in their internal planning and development priorities.</p> <p>These regulations provide a local municipality with the required guidelines in terms of inclusive and efficient spatial planning to address past spatial and regulatory imbalances. It provides measures for the facilitation and enforcement of land-use and development measures at municipal-level. This act guides the relevant bylaws of the municipality in terms of development and land-use schemes. The municipality's SDF is also regulated by this act.</p> <p>The most important objectives of SPLUMA are to:</p> <ul style="list-style-type: none"> <li>• "Ensure that the system of spatial planning and land-use management promotes social and economic inclusion;</li> <li>• Provide for development principles and norms and standards;</li> <li>• Provide for the sustainable and efficient use of land;</li> <li>• Provide for cooperative government and intergovernmental relations amongst the national, provincial, and local spheres of government; and</li> <li>• Redress the imbalances of the past and to ensure that there is equity in the application of spatial development planning and land-use management systems" (Government of South Africa, 2013 p.179).</li> </ul>
Broad-Based Socio-Economic Empowerment Charter for the Mining and Minerals Industry (2018)	As a mining right holder, ARM adheres to this charter, commonly known as the Mining Charter. The Mining Charter was first developed in 2002 and amended in 2010. It served as an instrument through which MPRDA of 2002 could fuel transformation in the mining industry. In 2018, the Department of Mineral Resources and Energy (DMRE) updated the previous versions of the Mining Charter to encourage transformation in mining further, and these were promulgated on 19 December 2018. The mine proactively enables its suppliers and contractors to achieve the 2018 Mining Charter targets.
<b>Relevant national development agendas</b>	
NGPF	The current economic development strategy of the government is referred to as the NGPF. The strategy largely builds upon initiatives to steer the economy on a more durable path by putting employment at the center of a long-term vision to create a more vibrant society [ILO, 2011]. The government identified five fixed priority areas. These include infrastructural development, agriculture,

Applicable legislation and guidelines used to compile the report	Applicability to the project
	<p>manufacturing, the 'green economy' and mining. Through these specific sectors, the path is largely premised on creating job opportunities and a favourable environment that can create work through more labour-absorbing activities (<i>ibid</i>). Through an effort to restructure the country to improve its own performance in terms of labour absorption, but also economic growth, specific job drivers have been identified by NGPF. These include:</p> <ul style="list-style-type: none"> <li>• Substantial public investment in infrastructure both to create employment directly, in construction, operation and maintenance as well as the production of inputs, and indirectly by improving efficiency across the economy</li> <li>• Targeting more labour-absorbing activities across the main economic sectors - the agricultural and mining value chains, manufacturing, and services</li> <li>• Taking advantage of new opportunities in the knowledge and green economies</li> <li>• Leveraging social capital in the social economy and the public services</li> <li>• Fostering rural development and regional integration.</li> </ul>
NDP, or Vision 2030	<p>In addition to the NGPF, South Africa's National Planning Commission formulated the NDP (or Vision 2030), released on 11 November 2011 (NDP, 2011). One of several aims of the NDP is to create 11 million employment opportunities and to grow the economy at a steady rate of around 5.4% per annum by 2030. The NDP identifies several 'key elements' that need to be realised to achieve this goal. These include, for example, creating an environment for sustainable employment and economic growth and promoting employment in labour-absorbing industries.</p>
AsgiSA	<p>The initiative was geared into action by AsgiSA, consisting of a task team to implement changes in the economy to sustain higher and shared growth. The initiative paves the way for effective partnerships between stakeholders, government, labour, and businesses in realising job creation. AsgiSA outlines particular constraints to be addressed to grow the economy and to provide employment within rural areas. Of these, the most important ones for consideration include backlogs in the country's infrastructure, shortages in suitable skilled labour and limited new investments and economic opportunities (especially for the youth).</p> <p>The following socio-economic development intervention areas continue to be stressed by the government:</p> <ul style="list-style-type: none"> <li>• Creating decent work and sustainable livelihoods;</li> <li>• Building economic and social infrastructure; and</li> <li>• Developing a comprehensive rural development strategy.</li> </ul>
NSDP (2006)	<p>This is a relatively old document which encompassed South Africa's first set of national spatial guidelines to understand national space economy (NSDP, 2006). The document remains very relevant today, however, as it put forward a set of principles to contribute to the country's broader growth and development policy. Some of this which bear relevance to the project include:</p> <ul style="list-style-type: none"> <li>• "Principle 2: Government has a constitutional obligation to provide basic services to all citizens (e.g., water, energy, health and educational facilities) wherever they reside; and</li> <li>• Principle 5: To overcome the spatial distortions of apartheid, future settlement and economic development opportunities should be channeled into activity corridors and nodes that are adjacent to or that link the main growth centers. Infrastructure investment should primarily support localities that will become major growth nodes in South Africa and the SADC region to create regional gateways to the global economy" (NSDP, 2006: pp.5-6).</li> </ul>

## Relevant district and local frameworks

Table B2 provides an overview of the relevant plans and frameworks at provincial, district and local municipality-level which are relevant to the study. The list of plans and/or frameworks is not exhaustive.

**Table B2: Relevant district and local frameworks**

Applicable legislation and guidelines used to compile the report	Applicability to the project
<b>Provincial-level</b>	
Limpopo Growth and Development Strategy (2004)	<p>The Limpopo Province adopted a Growth and Development Strategy at a stakeholder summit held in 2004. The strategy is a culmination of various discussions with stakeholders from all sectors. It aims to achieve the following:</p> <ul style="list-style-type: none"> <li>• Sustainable and integrated development</li> <li>• Economic growth</li> <li>• Improvement in the quality of life</li> <li>• Raising the institutional efficiency of the government</li> <li>• Attaining regional integration and enhancing innovation</li> </ul>
Limpopo Development Plan (2015-2019)	<p>The purpose of the plan is to:</p> <ul style="list-style-type: none"> <li>• Outline the role of the Limpopo Province in the NDP</li> <li>• Provide a framework for the strategic plans of provincial government departments and municipalities</li> <li>• Create a structure for the constructive participation of the private sector, business and organised labour</li> <li>• Encourage citizens to achieve provincial growth and development objectives</li> </ul> <p>A most important objective plan is to ensure synchronization with, and focus between, the decision-making and resource allocation processes of the state towards achieving a shared vision. Institutional and resource requirements, as well as a communication strategy and a monitoring and evaluation schedule, are provided in plan's Implementation Action Plan.</p>
Limpopo Green Economy Plan (2013)	<p>The plan centers on the local production and consumption, efficient use of energy and water, and care of natural and man-made resources by giving everyone the opportunity to participate in economic activities. It offers socially and environmentally conscious solutions to economic exclusion and resource degradation. It concludes that the green economy will be the mainstream economy of the future, as the world transitions into sustainable consumption and production patterns. The following initiatives have been identified for the Limpopo Province (all of which are relevant to SDM):</p> <ul style="list-style-type: none"> <li>• Sustainable production and consumption</li> <li>• Water management</li> <li>• Sustainable waste management practices</li> <li>• Clean energy and energy efficiency</li> <li>• Resource conservation and management</li> <li>• Agriculture, food production and forestry</li> <li>• Green buildings and the built environment</li> <li>• Sustainable transport and infrastructure</li> </ul>
Limpopo SDF (2007)	<p>The aim of the framework is to promote social, economic and environmental sustainability in the province and ensure that it has relevance to the development needs of all the dispersed urban and rural communities. It envisions a provincial spatial structure where the natural environment and valuable agricultural land in the rural areas are protected for future generations. It considers having a strong, diverse and growing economy focused on a range of nodal areas which offer its residents high-quality living environments and good job opportunities in a sustainable manner.</p>
<b>District-level</b>	
SDM Final IDP (2022-2023)	<p>Section 25 (1) of the Local Government Municipal Systems Act 32 of 2000 stipulates that each municipal council must adopt a single, inclusive and strategic plan for the development of the municipality.</p> <p>The SDM IDP identifies mining as the major economy of the municipality. However, it refers to several constraining forces that hinder the growth of the sector, such as</p>

Applicable legislation and guidelines used to compile the report	Applicability to the project
	labour unrest, foreign capital owners, exclusion of locals in the local supply chain and poor coordination and monitoring of implementation of social labour plans. The IDP also identifies a number of environmental issues in the area that are associated with mining. For example, mining has a large air contamination impact mainly due to the presence of smelter complexes within the municipality.
<b>Municipality-level</b>	
FTLM IDP (2022-2023)	Section 25 of the Local Government Municipal Systems Act (Act 32 of 2000) stipulates that each municipal council must, adopt a strategic plan known as an IDP. An IDP links, integrates, and coordinates plans and considers the development of a municipality. This is a five-year plan which is reviewed annually. FTLM has a major responsibility to ensure that the municipal planning and budgeting processes are driven from a bottom-up perspective through community-based planning. Chapter 4 of the Municipal Systems Act, Section 16, mandates the municipality to develop a culture of community participation and requires all communities to participate in all the affairs of the municipality.
FTLM SDF (2020)	Section 26 (e) of the Municipal Systems Act (Act 32 of 2000) stipulates that each municipality must formulate an SDF as part of its IDP. Such a framework is intended to indicate where certain types of land uses and associated development are permissible and where certain activities are likely to be restricted. Consequently, the SDF describes the desirable future pattern of land-use and development within the municipal area. In this way, it forms the basis of land-use management.

## **Appendix C: Information on traditional authorities**

The 1996 South African Constitution incorporated customary law into the South African legal system. In customary tenure, access to land is contingent upon tribal or community membership controlled by the chief. When the system of local government was entrenched in the 1996 Constitution and given the mandate, in 2000, to deliver major public services and drive development throughout South Africa, tensions and contestations between municipalities and traditional leaders began to emerge.

In part, the tensions arose due to local government being responsible for providing the major public services including areas where traditional leaders governed. That tension has endured since 1994. The Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013) (SPLUMA) covers wall to wall municipality areas including the rural areas under TAs.

The local authorities of cities and towns in South Africa are responsible for the management of land-use rights in their areas of control. They implement zoning schemes, which provide the rules and regulations for the permitted use and development of properties. However, TAs view the control of access to land in the context of social relations, which is markedly different to a law-based legal tenure system proposed in the SPLUMA.

Since traditional leaders derive their legitimacy from the founding fathers and are seen as a direct channel to communicate with the ancestors, they have certain powers regarding the land such as the power to allocate land, regulate the use of common resources and expropriate and/or confiscate land in certain circumstances. Such decisions are also not made collectively but concerning the common values in their societal pyramid.

Under the customary principle of primogeniture, the eldest male descendent of the deceased stands to inherit to the exclusion of all females (including the wife) and younger surviving males. The rule of primogeniture maintains the rights and authority of males and elders while emphasising the powerlessness and deference of women and juniors. Customary law also tends to dismiss women and view them as being on the periphery of the group, as opposed to being equal participants in that society. This implies that women and their children are vulnerable to losing their homes and lands under the TA's authority in the event of their husbands' death or without suitable social status e.g., women from other areas who have married into the clan may become dispossessed not only of land but also safe accommodation.