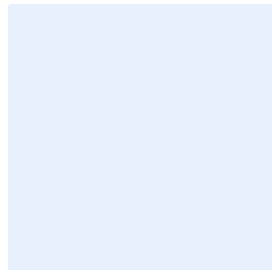


Social Impact Assessment for the proposed Rietvalei Mining Right Application, Pretoria, Gauteng

Prepared for

Bundu Minning (Pty) Ltd



Document Detail

Project Number:	AQU01	Authority Reference:	GP 10124 MR
Report Title:	Social Impact Assessment for the proposed Rietvalei Mining Right Application, Pretoria, Gauteng		
Project Name:	Bundu Mining, Rietvalei Mining Right Application		
Client Name:	Bundu Mining (Pty) Ltd		
EAP:	Aquastrat Solutions (Pty) Ltd		
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Document History

Revision	EAP/Author	Reviewed By	Date of Issue	Comments
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Declaration of Independence

I Vumile Ribeiro, as duly authorised representative of Niara Environmental Consultants (Pty) Ltd., hereby confirm my independence and declare that I:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of Section 24F of the Act.

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Specialist Checklist

In terms of the NEMA 2014 EIA Regulations contained in GN R982 of 04 December 2014 all specialist studies must comply with Appendix 6 of the NEMA 2014 EIA Regulations (GN R982 of 04 December 2014). The table below show the requirements as indicated in this Report.

EIA REGULATIONS 2017 GNR 327, 325 and 324 Appendix 6 CONTENT OF THE SPECIALIST REPORTS	In accordance with the EIA Regulations	Cross reference in this Report
(a) details of— the specialist who prepared the report; and the expertise of that specialist to compile a specialist report including a curriculum vitae;	✓	Section 1.4
(b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	✓	Page 3
(c) an indication of the scope of, and the purpose for which, the report was prepared	✓	Section 1.2
(cA) an indication of the quality and age of Base Data used for the specialist report	✓	Section 4
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and the levels of acceptable change	✓	Section 4
(d) the date and season of the site investigation and the relevance of the season to the outcome of the assessment;	✓	Section 4
(e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	✓	Section 5
(f) Details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives.	✓	Section 5
(g) an identification of any areas to be avoided, including buffers;	✓	N/A
(h) a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers	✓	N/A
(i) a description of any assumptions made and any uncertainties or gaps in knowledge;	✓	Section 5.1
(j) a description of the findings and potential implications of such findings on the impact of the proposed activity or activities	✓	Section 8
(k) any mitigation measures for inclusion in the EMPr	✓	Section 8
(l) any conditions for inclusion in the environmental authorisation;	✓	Section 8
(m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	✓	Section 8
(n) a reasoned opinion— i. whether the proposed activity, activities or portions thereof should be authorised; and (iA) regarding the acceptability of the proposed activity or activities; and ii. if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	✓	Section 12
(o) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	✓	Section 7.3
(p) any other information requested by the competent authority	✓	N/A

Executive Summary

Introduction

Bundu Mining (Pty) Ltd (Bundu) intends to restart operations at an old aggregate quarry located 11km east of Hartbeespoort in Gauteng Province. Bundu has therefore applied for a Mining Right to the Department of Mineral Resources and Energy in terms of Section 22 of the Mineral and Petroleum Resources Development Act (MPRDA), No. 28 of 2002 as amended. The application reference number is GP 30/5/1/2/2/10124 MR. The proposed activities also require applications in terms of the National Environmental Management Act (NEMA), No. 107 of 1998 as amended. The application process must follow the Scoping and Environmental Impact Assessment process as per the Environmental Impact Assessment Regulations, 2014 as amended. This document presents the Draft Environmental Impact Assessment Report and is submitted in fulfilment of the EIA phase.

Niara Environmental Consultants (Pty) Ltd was appointed by Aquastrat Solutions (Pty) Ltd to conduct a Social Impact Assessment (SIA) for the project. The SIA aims to evaluate the project's impacts on the surrounding communities' social and economic well-being, utilizing quantitative and qualitative measures. Key aspects considered in the SIA include livelihoods, community health and safety, economic impact, community disruption, infrastructure, social equity, environmental impact, social cohesion, economic diversification, and dependency.

Mitigation measures proposed in the SIA include comprehensive skills development and training programs, support for entrepreneurship and small business development, environmental rehabilitation efforts, infrastructure development, equitable distribution of benefits and burdens, social cohesion initiatives, economic diversification strategies, and establishment of a monitoring and reporting framework to track impacts over time.

Methodology

The definition of a SIA as defined by Vanclay (2002) gives an understanding of the backdrop against which this SIA was conducted. According to this definition, a social impact assessment is "the process of analysing (predicting, evaluating and reflecting) and managing the intended and unintended consequences on the human environment of planned interventions (policies, programmes, plans and projects) and any social change processes invoked by those interventions so as to bring about a more sustainable and equitable biophysical and human environment."

The study was designed to comply with the relevant national legislative requirements, such as those stipulated in the National Environmental Management Act (NEMA) and the Mineral and Petroleum Resources Development Act (MPRDA), as well as international best-practice standards (e.g., International Finance Corporation Performance Standards, IFC PS). The activities undertaken as part of the study included the definition of study areas and the collection of primary and secondary data.

Three study areas were defined: The primary study area, the secondary study area and the regional study area. The primary study area was defined as the properties that fall within the Mining Right boundary. The primary data collection entailed

brief interviews with members of affected communities. A socio-economic survey of affected households in the primary study area was not undertaken as part of the study.

The assessment of the socio-economic impacts identified for the Project is based on an impact rating process designed to provide a numerical rating of the significance of each impact. The significance rating process follows the established impact / risk assessment formula where significance is a function of the consequence of an event multiplied by the probability of its occurrence. The impacts are also categorised according to the various project stages, i.e., construction, and operation and closure. Mitigation measures have also been identified with the aim to reduce the potential negative impacts and to enhance the potential positive impacts.

Several potential socio-economic impacts were identified for each phase of the project and realistic measures were developed for mitigating, and if possible, avoiding the negative socio-economic impacts, and enhancing the benefits of positive socio-economic impacts.

The primary data used in the Report is limited and based on questions that the participants were willing to respond. Social related comments and issues raised by the community leadership have been reflected in the SIA and addressed accordingly where applicable.

Activities

- Determination of the scope of assessment, based on information received from;
- Review of literature and desktop studies, confirming the social setting and characteristics of the study area;
- Data, including census data, project maps and planning documents (2022 Census Survey and documents from Gauteng Province, City of Tshwane District Municipality, City of Tshwane Local Municipality, and Ward 55 of the City of Tshwane);
- Review of relevant planning and policy frameworks for the areas; and
- Review of information from similar projects;

It is the specialist's opinion that, under the current state of affairs, due process has been followed. Where impacts have been assumed to be potentially significant, various mitigation measures to manage and monitor the impacts of the Mine's development. Adequate mitigation measures have been provided and are expected to reduce the significance of almost all negative impacts although not always to acceptable levels, while positive impacts will on average be significantly enhanced to maximise benefits to surrounding communities. The recommended mitigation measures must be implemented to minimise the impacts and ensuring compliance with current legislative requirements.

Key Findings

While the project offers economic potential, with secondary employment and local economic growth probability, its location within a predominantly farming area presents a range of socio-economic implications that must be carefully considered. This section outlines the likely socio-economic impacts associated with the project, drawing on the broader context of similar mining operations in rural and peri-urban regions.

One of the anticipated positive impacts of the Bundu Mining project is the creation of a limited number of employment opportunities, with approximately six jobs expected to be generated. Jobs created by the quarry, both direct and indirect, will benefit residents, potentially improving household incomes and alleviating some of the economic pressures on the local community. This aligns with findings from studies that indicate how mining projects in rural areas can stimulate local economies, providing new opportunities for employment, skill development, and service provision (Twerefou, 2009). Additionally, the demand for services such as transport and equipment maintenance could benefit local businesses, further enhancing the economic ripple effects of the proposed operation.

However, there are significant challenges associated with restarting the quarry, particularly regarding its impact on the local farming community. Agricultural activities are sensitive to environmental disruptions such as dust, noise, and water consumption, all of which are common influences of mining operations. The vibrations caused by blasting and the movement of heavy machinery may negatively impact both crop production. This mirrors challenges seen in other mining regions where industrial activities coexist with agriculture, often leading to tensions between these land uses (Lockie et al., 2009). Without proper mitigation strategies, the project could result in reduced agricultural productivity, with knock-on effects for food security and the local economy.

Water resource competition is another critical issue that Bundu Mining will need to address. The quarry is likely to increase demand for water, both for dust suppression and other operational needs. In an area where agriculture relies heavily on water for irrigation, this additional strain on local water resources could exacerbate existing water shortages and lead to conflicts between the mine and local landowners. Research indicates that competition for water between agriculture and mining operations is a common source of tension, particularly in semi-arid regions (Limpitlaw, 2011). To mitigate this, Bundu Mining will need to implement responsible water management practices.

The project's impact on local infrastructure, particularly roads, is another key socio-economic consideration. The increased traffic from trucks transporting aggregate is likely to lead to the deterioration of local roads, which may have broader implications for both the mine's operations and the local farming community. Similar issues have been observed in other rural mining areas, where road infrastructure struggles to cope with the additional strain of heavy vehicles (Veiga et al., 2001). Bundu Mining will need to assess the current state of local roads and or maintenance to minimize these negative impacts.

Health nuisances are also likely to arise as a result of the project. Dust from mining operations can lead to respiratory problems for local residents and farmworkers, while noise pollution from blasting and heavy machinery may cause stress

and disturbance. Studies on the health impacts of mining have shown that prolonged exposure to dust and noise can have significant adverse effects on community health (Plumlee & Ziegler, 2003). Bundu Mining must prioritize environmental health by implementing dust suppression measures, noise control technologies, and regular monitoring of particulate matter to ensure compliance with health and safety regulations.

Given the potential for varied community expectations around employment, which will be minimal, it will be important for Bundu Mining to implement transparent hiring practices and maintain open communication with local residents. While equitable distribution of benefits has not been raised as a current concern, proactive engagement can help reinforce community trust and alignment on project goals. This approach will support positive community relations and ensure that stakeholders are well-informed and engaged throughout the project's development.

In conclusion, while the Bundu Mining project has the potential to bring economic benefits to the region alongside local revenue generation, its impacts on the local farming community, infrastructure, water resources, and health must be carefully managed. To mitigate the negative socio-economic consequences, Bundu Mining must implement appropriate environmental management plans. By doing so, the project can contribute to sustainable local development while minimizing its disruptions to the agricultural economy and local livelihoods.

Stakeholder Engagement

Telephonic consultative meeting was held with the affected identified stakeholders from the City of Tshwane within Ward 55. A few requests were made by community member and attendees. The purpose of the engagement was to inform the community about proposed Bundu Mining and to better assess the social impacts faced. The following points were highlighted:

Water Sources & Dependency:

- Heavy reliance on borehole water for both domestic and agricultural purposes. The community is concerned about potential water contamination or depletion due to mining activities, including the risk of sinkholes.

Noise, Dust, & Environmental Impacts:

- Major concerns include dust, noise, and vibrations from blasting and other mining activities, particularly affecting high-end areas
- Dust and air pollution could harm local livestock, while blasting might disrupt the physical stability of the land and water systems, posing risks of erosion and landslides.

Livelihood & Employment:

- Farming and brick-making are primary sources of livelihood in the area, with high unemployment being a persistent issue. While the community sees potential job creation from the mining project, they worry about job competition from non-local workers.

- People living nearby, particularly those in newly formed settlements, are eager for employment opportunities from the mine.

Health Concerns:

- Water pollution is a top health concern, especially since the community depends on boreholes. Healthcare access is limited, with the nearest facilities located 15-16 km away, contributing to community vulnerability.

Community Perceptions & Engagement:

- The community is aware of the mining project but feels inadequately informed, as many missed public meetings. While some are optimistic about employment opportunities, others are sceptical about the mine's potential to negatively impact their quality of life.

Social Services & Well-Being:

- The area has inadequate infrastructure, with poor roads and limited waste management services (from the municipality). Road damage caused by heavy trucks from brick-making operations is a recurring issue.
- The community has organized crime-fighting initiatives and desires more support from the mining company for local security.

Cultural and Social Cohesion:

- The project is not anticipated to disrupt the community's social cohesion or cultural traditions significantly. Community engagement to date has not identified any concerns related to social cohesion or cultural impacts, suggesting that these aspects are likely to remain stable throughout the project's lifecycle. Continued dialogue with community representatives will, however, ensure that any emerging concerns are promptly addressed.

Environmental Concerns:

- Concerns about water and air pollution, along with noise and vibrations from blasting. Waste management is another significant issue, as the municipality does not provide waste removal services, leading to challenges such as illegal burning waste on-site. It should, however, be asserted, that Bundu Mining does not burn any waste on site.

Participation & Decision-Making:

- The community feels excluded from decision-making processes.

Needs Analysis:

- There is only one school, and road infrastructure is poor, with minimal governmental support for transport and maintenance.

- The primary issues affecting the community include unemployment, poor roads, inadequate water supply, insufficient healthcare, high crime rates, housing problems, and alcohol abuse. These factors significantly impact the community's overall quality of life.

Conclusion

The socio-economic impacts of restarting the old aggregate quarry for the Bundu Mining Project will have both positive and negative consequences for the local community. The conclusion for the socio-economic impacts both positively and negatively are:

1. Positive

- **Employment Opportunities:** The reopening of the quarry will create direct and indirect jobs for local residents. This could provide much-needed employment in an area where economic activities are currently limited to farming and sand mining.
- **Skills Development:** The project could lead to skills transfer and training for local workers, especially in areas such as mining operations, logistics, and environmental management, which can enhance long-term employment prospects.
- **Increased Local Revenue:** The project will likely bring increased economic activity to the area, stimulating local businesses that may provide services to the mine (e.g., transport, and maintenance). This could boost the local economy and contribute to improved livelihoods.

2. Negative

- **Disruption to Farming Activities:** Given that the surrounding area is predominantly agricultural, the restarting of quarry operations could lead to disruptions. Dust, noise, and vibrations from the mining activities may negatively affect crop production, livestock health, and the overall agricultural productivity of nearby farms.
- **Competition for Water Resources:** Mining activities are likely to increase the demand for water, which could lead to competition with local farmers who depend on water for irrigation. This could exacerbate existing water stress in the region, potentially leading to conflicts over water allocation.
- **Mitigation Measures**
- **Stakeholder Engagement:** project related engagement with local farmers, residents, and other stakeholders will be key in addressing concerns, minimizing conflict, and ensuring that the community benefits from the project.
- **Environmental Management Plans (EMP):** The implementation of responsible environmental management plans, including dust suppression, noise control, and water management strategies, will help mitigate negative impacts on farming activities and community health.

- **Corporate Social Responsibility (CSR):** Corporate Social Responsibility (CSR): Bundu Mining may explore feasible opportunities to support local development initiatives, which could include small contributions to existing community projects in education, health, or agriculture. While not a requirement, such efforts could help foster positive community relations and provide additional social value linked to the project."

While the Bundu Mining project presents potential economic benefits such as employment and infrastructure development, careful management will be required to address potential conflicts with farming activities, resource competition, and social tensions.

Table 1-1: Summary of Impact Assessment

No.	Activity	Potential Impact	Without or With Mitigation	Nature (Negative or Positive Impact)	Significance	Management objective
Construction Phase						
1	Employment opportunities	- Developed local economy; and - The residual impacts associated with the creation of employment and business opportunities and training during the construction of additional infrastructure is that the workers can improve their skills by gaining more experience	Without	Positive	Low (36)	- Developed local economy; and - The residual impacts associated with the creation of employment and business opportunities and training during the construction of additional infrastructure is that the workers can improve their skills by gaining more experience
			With	Positive	Medium (40)	
2	Multiplier impacts on local economy	Development of local economy;	Without	Positive	Low (36)	- Development of a register of local SMMEs; - Linkages with skills development/ SMME development institutions and other mining operations; - SMME skills development as part of mine commitments - Create synergies with other mining/electricity enterprises LED/ Corporate Social Responsibility (CSR) projects - Preference should be given to capable subcontractors who based within the local municipal area; - Align skills development to build capacity of SMMEs; - Monitoring of sub-contractor's procurement; - Development of a register of local SMME; and - Local procurement targets should be formalised in the Mine's procurement policy.
			With	Positive	Medium (55)	

No.	Activity	Potential Impact	Without or With Mitigation	Nature (Negative or Positive Impact)	Significance	Management objective
3	Skills development and training	- Limited job opportunities for local residents. - Reduced capacity for local businesses to participate in the supply chain. - Skills gaps and deficiencies among the workforce. - Decreased economic growth and development in the region. - Social discontent and community unrest due to unmet expectations.	Without	Positive	Low (18)	- Implement targeted skills development and training programs for local residents to enhance employability. - Establish apprenticeship and internship opportunities to provide practical experience and on-the-job training. - Collaborate with local educational institutions to tailor training programs to the needs of the mining project. - Offer mentorship programs to facilitate knowledge transfer and skills development among local workers. - Provide support for the development of small and medium-sized enterprises (SMEs) to enhance their capacity to participate in the project's supply chain. - Engage in regular dialogue and consultation with community stakeholders to identify and address skill development needs and concerns. - Monitor and evaluate the effectiveness of skills development initiatives and adjust strategies as necessary to ensure positive outcomes. - Ensure compliance with regulatory requirements and industry standards for skills development and training.

No.	Activity	Potential Impact	Without or With Mitigation	Nature (Negative or Positive Impact)	Significance	Management objective
			With	Positive	Medium (48)	
Operational Phase						
1	Employment opportunities	- The residual impacts associated with the creation of employment and business opportunities and training during the operational phase is that it benefits the local economy; - Acquired transferable skills that could potentially be used with other businesses	Without	Positive	Low (32)	- If possible, a training and skills development programme for the local workers should be initiated prior to the operational phase; - Effective implementation of training and skills development initiatives; - Recruitment should be formalised and co-ordinated through the Department of Labour- avoid appointments at the gate of the mining operation; - Prevent nepotism/corruption in local recruitment structures; - Promote employment of women and youth; - Prioritise local labour in the recruitment process – this will also limit project-induced in- migration to some extent;
			With	Positive	High (70)	- Unskilled workers are recruited from the local villages and should be developed (up-skilled) during operations; - Medium skilled workers should where possible be recruited from the local communities and - Locals should also be allowed an opportunity to be included in a list of possible local suppliers and service providers for e.g., security services

No.	Activity	Potential Impact	Without or With Mitigation	Nature (Negative or Positive Impact)	Significance	Management objective
2	Multiplier Impacts on the Local Economy	Local suppliers will have gained experience and exposure to meeting standards of quality and scale that could be transferrable to business opportunities	Without	Positive	Low (32)	- Development of a register of local SMMEs; - Linkages with skills development/ Small, Medium and Micro Enterprises (SMME) development institutions and other mining operations; - SMME skills development as part of mine commitments; - Create synergies with other mining/electricity enterprises LED/CSR projects; - Preference should be given to capable subcontractors who based within the local municipal area; - Preference should be given to capable subcontractors who based within the local municipal area; and - Measures recommended to maximise benefits from local employment, skills and economic development.
			With	Positive	Medium (45)	

No.	Activity	Potential Impact	Without or With Mitigation	Nature (Negative or Positive Impact)	Significance	Management objective
3	Skills development and training	- Reduced productivity and efficiency due to workforce skill gaps. - Increased safety risks and accidents resulting from inadequate training. - Limited opportunities for career advancement and professional development for workers. - Decreased competitiveness and profitability of the mine. - Social tensions and community dissatisfaction due to unmet expectations for employment and economic development.	Without	Positive	Low (20)	- Implement comprehensive training programs to address skill deficiencies and enhance job-specific competencies. - Provide ongoing training and upskilling opportunities to ensure that workers remain competent and adaptable. - Establish a culture of safety through regular safety training and awareness programs. - Offer career development pathways and promotional opportunities for employees to encourage long-term commitment and retention. - Collaborate with industry associations, educational institutions, and government agencies to access specialized training resources and expertise. - Invest in technology and automation to supplement workforce capabilities and improve operational efficiency. - Engage with local communities to communicate the importance of skills development and training initiatives and solicit feedback on program effectiveness. - Monitor and evaluate the impact of skills development programs on workforce performance and adjust strategies as needed to achieve desired outcomes. - Foster a supportive work environment that values continuous learning and professional growth to enhance employee satisfaction and morale. - Align skills development efforts with broader community development goals to maximize positive social and economic impacts beyond the mine site.

No.	Activity	Potential Impact	Without or With Mitigation	Nature (Negative or Positive Impact)	Significance	Management objective
			With	Positive	High (60)	
Decommissioning and Closure Phase						
1	Multiplier Impacts on the Local Economy	Improved local service sector, growth in local business.	Without	Negative	Medium (40)	- The Project team/ developer to ensure there are retrenchment packages provided to all retrenched staff when operation decommissions - All structures and infrastructure associated with the proposed facility should be dismantled and transported off-site for decommissioning - Revenue generated from sale of scrap metal during decommissioning should be allocated to funding closure and rehabilitated of disturbed areas
			With	Negative	Medium (44)	

No.	Activity	Potential Impact	Without or With Mitigation	Nature (Negative or Positive Impact)	Significance	Management objective
2	Skills development and training	- Loss of employment opportunities for workers due to inadequate skills for alternative employment. - Reduced capacity for local businesses to transition and adapt to post-mining economic activities. - Environmental risks and hazards associated with incomplete or improper mine closure and rehabilitation. - Social and economic challenges for affected communities, including loss of income and livelihoods. - Increased strain on local infrastructure and services as the mine site transitions to closure.	Without	Negative	Low (32)	- Implement comprehensive retraining and reskilling programs for affected workers to facilitate their transition to new employment opportunities. - Provide support for entrepreneurship and small business development to diversify the local economy and create alternative sources of income. - Invest in environmental remediation and rehabilitation efforts to mitigate the long-term impacts of mining activities on land and water resources. - Engage with local stakeholders and communities to develop sustainable post-mining land use plans and economic development strategies. - Establish financial mechanisms, such as trust funds or community development funds, to support ongoing monitoring and maintenance of reclaimed mine sites. - Collaborate with government agencies, non-profit organizations, and other stakeholders to leverage resources and expertise for successful mine closure and rehabilitation.
			With	Positive	Low (36)	- Prioritize the health and safety of workers and communities during the decommissioning process through effective risk management and emergency preparedness measures. - Conduct regular monitoring and evaluation of decommissioning activities to ensure compliance with regulatory requirements and industry best practices. - Facilitate transparent communication and consultation with affected stakeholders throughout the decommissioning process to address concerns and build trust in the rehabilitation efforts.

No.	Activity	Potential Impact	Without or With Mitigation	Nature (Negative or Positive Impact)	Significance	Management objective
						Develop long-term sustainable development plans that promote resilience and prosperity for affected communities beyond the closure of the mine.

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List of Abbreviations and Acronyms

AIDS	Acquired Immunodeficiency Syndrome
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CRR	Comments and Response Report
CSR	Corporate Social Responsibility
CV	Curriculum Vitae
DBSA	Development Bank of Southern Africa
DFFE	Department Of Forestry, Fisheries and The Environment
DMRE	Department of Mineral Resources and Energy
DoH	Department Of Health
DPM	Diesel Particulate Matter
e.g	Example
EMPR	Environmental Management Programme
EMPR	Environmental Management Programme Report
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
ESTA	Extension of Security of Tenure Act
EPFI	Equator Principles Financial Institutions
GBD	Global Burden Of Disease
GDP	Gross Domestic Product
GWMF	General Waste Management Facility
GCL	Geosynthetic Clay Layer
GPN	Good Practice Note
GVA	Gross Value Added
IDP	Integrated Development Plan
IFC	International Finance Corporation
LM	Local Municipality
LED	Local Economic Development
CRR	Comments and Response Report
MPRDA	Mineral And Resources Development Act
MRA	Mining Right Area
MR	Mining Right
NDP	National Development Plan

NEMA	National Environmental Management Act
NEM: AQA	National Environmental Management: Air Quality Act
NEM:WA	National Environmental Management: Waste Act
NGO	Non-Governmental Organisation
PPP	Public Participation Process
SADC	Southern African Development Community
SEIA	Social Environmental Impact Assessment
SEP	Stakeholder Engagement Plan
SIA	Social Impact Assessment
SLP	Social Labour Plan
SMME	Small, Medium, and Micro Enterprise
TOR	Terms of Reference
WML	Waste Management Licence
WHO	World Health Organization
UN SDGs	United Nations Sustainable Development Goals
ZOI	Zone of Influence

1 Introduction

Bundu Mining (Pty) Ltd (Bundu Mining) intends to restart operations at an old aggregate quarry located 11km east of Hartbeespoort in Gauteng Province. Bundu has therefore applied for a Mining Right to the Department of Mineral Resources and Energy in terms of Section 22 of the Mineral and Petroleum Resources Development Act (MPRDA), No. 28 of 2002 as amended. The application reference number is GP 30/5/1/2/2/10124 MR. The proposed activities also require applications in terms of the National Environmental Management Act (NEMA), No. 107 of 1998 as amended. The application process must follow the Scoping and Environmental Impact Assessment process as per the Environmental Impact Assessment Regulations, 2014 as amended. This document presents the Draft Environmental Impact Assessment Report and is submitted in fulfilment of the EIA phase.

Aquastrat Solutions (Pty) Ltd was appointed by Bundu Mining as the Environmental Assessment Practitioner (EAP) to conduct the environmental authorisation applications for the proposed Project. Subsequently, Niara Environmental Consultants (Pty) Ltd was appointed by Aquastrat Solutions (Pty) Ltd to conduct a Social Impact Assessment (SIA) for the proposed Project.

A SIA focuses on evaluating the impacts a development has on a community's social and economic well-being. This analysis relies on both quantitative and qualitative measures of impacts. Development impacts are generally evaluated in terms of changes in community demographics, housing, employment and income, market effects, public services, and aesthetic qualities of the community. This report presents the socio-economic baseline and impact assessment for proposed Bundu mining Project. The Report details the positive and negative socio-economic impacts, which are predicted to arise from the Project. This assessment provides a comprehensive overview of the socio-economic conditions and opportunities associated with the project as well as proposed management and mitigation measures. This Report has drawn on existing information and fieldwork conducted.

A SIA involves evaluating the potential effects of the mining operation on the surrounding communities, including social, cultural, economic, and environmental aspects. Some of key facets taken into consideration during the compilation of the proposed Bundu Mining in support of their MRA are:

- **Livelihoods and Employment:** This SIA assesses the potential impacts on local livelihoods, especially on those communities that rely on agriculture or other activities (Municipalities of South Africa, 2024) that may be affected by the proposed mining operations. Niara also evaluated the potential for job creation and skill development within the potentially affected communities.
- **Community Health and Safety:** This SIA assesses the potential impacts on the physical and mental health of the local communities. This includes examining the risks associated with mining activities, such as air and water pollution, noise, and accidents, and the measures in place to mitigate these risks.

- **Economic Impact:** The author made an attempt at evaluating how the proposed Bundu Mining will affect the local and regional economy. This includes assessing the direct and indirect employment opportunities, income levels, and the potential for economic development. Assessing and predicting the direct and indirect employment opportunities, income levels, and the potential for economic development as part of a social impact assessment in the context of mining involves a comprehensive evaluation of various factors such as data analysis, stakeholder engagement, evaluating income levels from StatsSA data, assessing direct employment opportunities as per Mine Works Plan (MWP) and Social and Labour Plan (SLP). The Report also considers the long-term economic sustainability/dependency on the mine beyond the closure and decommissioning phases. There is a risk of the host communities becoming too dependent on the mining industry in general, which has the potential to lead to economic vulnerability.
- **Community Disruption:** This Report assesses how the proposed Bundu Mining Project might disrupt the existing social fabric of the communities within its zone of influence. This could include changes in population dynamics, migration, and impacts on local culture and social networks.
- **Infrastructure and Services:** Niara also considered the potential strain the expansion of the Bundu Mining might cause on existing local infrastructure, such as roads, utilities, and healthcare facilities to support the influx of people and increased demand for services due to mining activities, and how these impacts may be mitigated or managed by Bundu Mining (Pty) Ltd.
- **Social Equity:** Assess whether the benefits and burdens of the mine are distributed equitably among different segments of the population, including vulnerable or marginalised groups.
- **Environmental Impact:** While the primary focus of an SIA is on social aspects, it's important to acknowledge the interconnection between social and environmental impacts. This Report has also sought to gauge how the proposed Mine may affect the local environment and its subsequent impacts on the host communities.
- **Social Cohesion and Community Well-being:** Assess the potential effects on social cohesion and community well-being. Mining operations can sometimes lead to social disruptions, conflicts, or changes in community dynamics.
- **Mitigation and Management Measures:** Propose strategies to mitigate negative impacts and enhance positive effects.
- **Economic Diversification and Dependency:** Consider the potential for economic diversification in the region.
- **Monitoring and Reporting:** Establish a monitoring framework to track the actual impacts of the mining operation over time. Regular reporting to stakeholders, including the community, government, and environmental agencies, is essential.

1.1 Project Locality

The Project is strategically located within the City of Tshwane Metropolitan Municipality, situated in the Gauteng Province of South Africa. The project site is positioned approximately 11 kilometres east of Hartbeespoort Dam and about 15 kilometres west-northwest of Pretoria, making it accessible to key urban areas while remaining proximate to natural resources. This location places the project within a dynamic region that balances urban development with environmental considerations, providing a critical link between industrial activity and the broader metropolitan infrastructure.

Table 1-1: Project location details

Closest town:	Situated 11 km of Hartbeespoort Dam and 15 km west northwest of Pretoria town in City of Tshwane Metropolitan Municipality, Gauteng Province.
Farm Portions:	Portion 18: T0JR00000000031400018 Portion 91: T0JR00000000031400091 Portion 94: T0JR00000000031400094 Portion 95: T0JR00000000031400095
Local Municipality:	City of Tshwane Local Municipality
District Municipality:	City of Tshwane District Municipality

1.2 Scope of Work

The overall objective of the SIA is to identify and analyse the potential impacts of the proposed operation and to mitigate the negative impacts.

The purpose of the SIA is to:

- Review stakeholder's engagement records;
- Undertake a baseline assessment to determine the socio-economic baseline, property value or infrastructure assets, to determine current commercial and economic contributions of potentially directly affected persons;
- Determine the impact on socio-economic conditions of directly affected persons by determining the potential impact of the loss in property value or infrastructure assets and determining the economic loss, in terms of net present value, of commercial, economic or as a result of the proposed mining activity; and
- Undertake a comparative assessment of the identified land use and development alternatives and their potential on the environment, social and cultural impacts given generally accepted sustainable development principles which consider the costs and benefits of social, environmental and economic factors.
- Provide an assessment based on collected baseline data to identify positive and negative socioeconomic impacts at both the local and national level and propose mitigation and management methods.

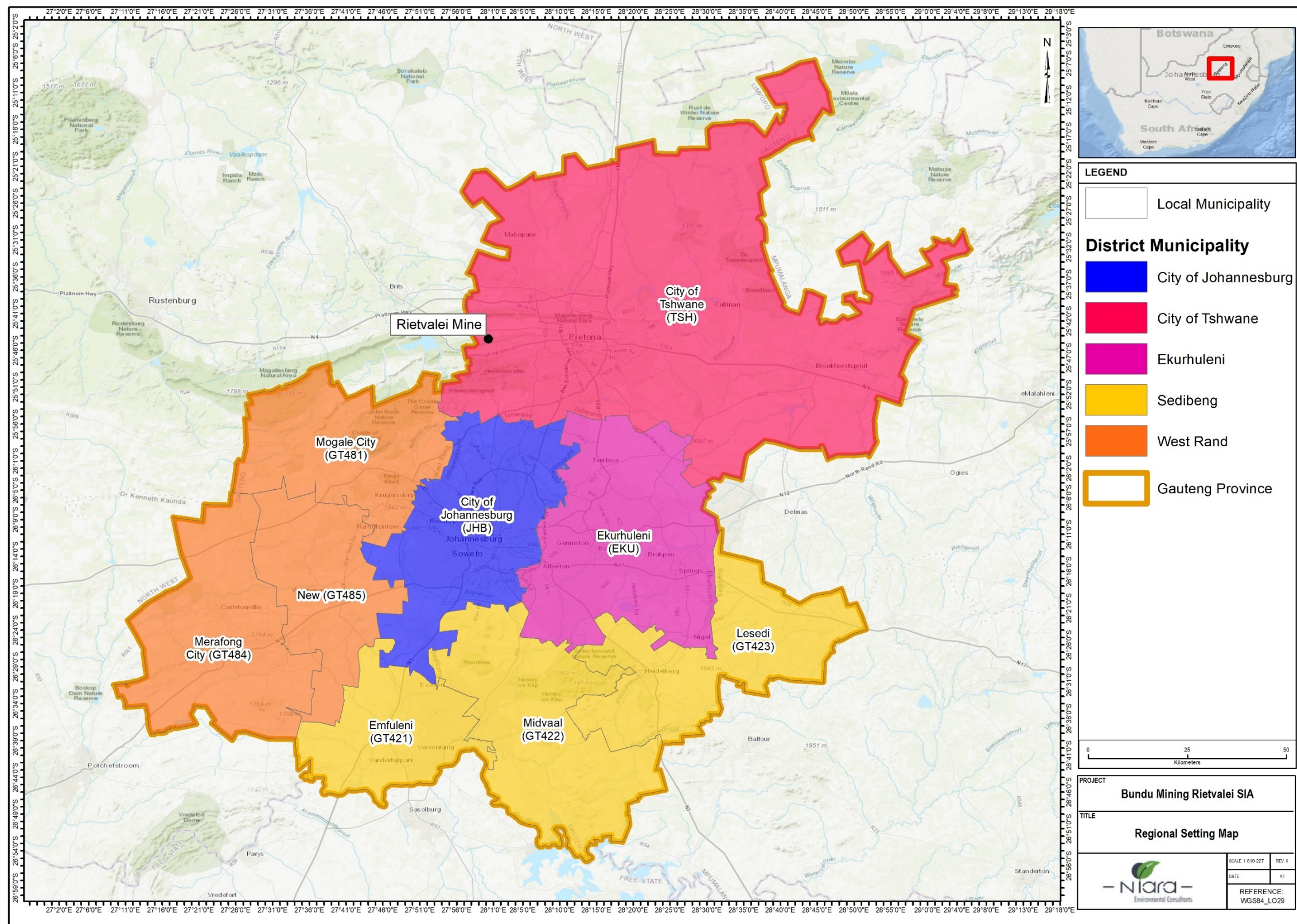


Figure 1-1: Regional Setting

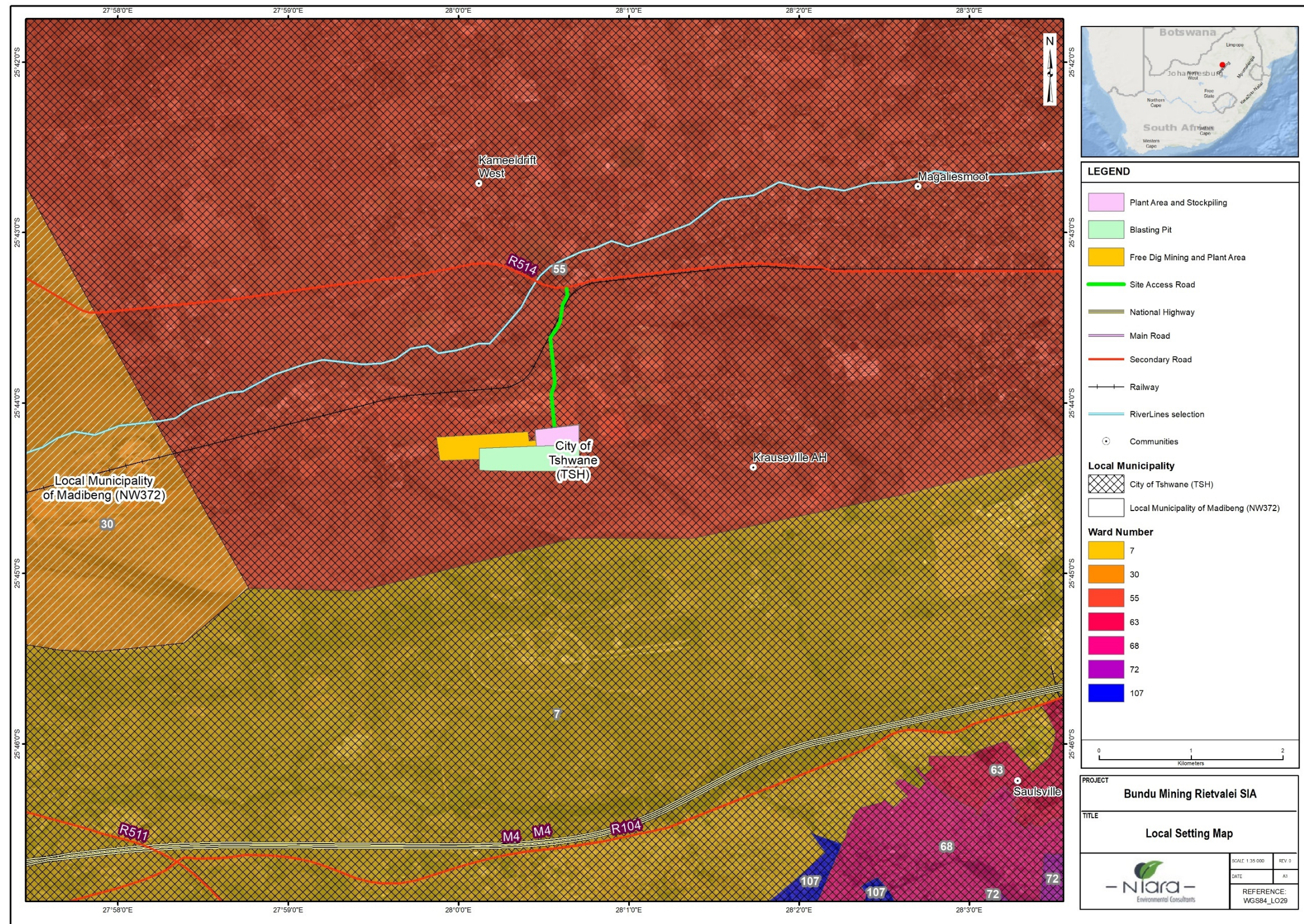


Figure 1-2: Local Setting

1.3 Terms of Reference

The terms of reference (TOR) in an SIA according to Barbour (2007:28) should indicate how and to what extent the SIA specialist should be involved for the purpose and scale of the proposed intervention. The issues raised in the scoping phase of an EIA, which cannot be effectively addressed with the currently available information, form the basis for the terms of reference of specialist studies (DEAT, 2002).

The ToR for the SIA are to:

- To develop the baseline questionnaire to conduct interviews as a way to understand the socio-economic and background of the communities and/or local residents;
- Describe the socio-economic baseline information for the Project area and surrounding areas;
- Identify, describe, and assess the anticipated significance of potential socio-economic impacts that may arise due to the implementation of the Project.
- Recommend suitable mitigation measures and management actions to evade or minimise potential negative impacts, and to enhance the positive impacts associated with the Project.

The SIA provides a baseline description of the project area, specifically focussing on the communities living and working in close proximity to the area. The potential impacts of the proposed project on the social environment will be identified and assessed in terms of an assessment methodology. Mitigation measures will be proposed to enhance the positive impacts and reduce the significance of the negative impacts.

The process included the following:

- Confirmation of study area;
- Review of available secondary data;
- Social and economic baseline description of the potentially impacted areas;
- Identifying and assessing potential direct, indirect and cumulative impacts, both positive and negative;
- Reviewing other specialist studies, as impacts that are not classified as social impacts can result in social impacts;
- Identifying measures to enhance positive social impacts and mitigate negative social impacts; and
- Making a recommendation on whether the proposed Project should proceed from a social perspective.

Categories of impacts to be considered (Vanclay 2003: 84-89) include:

- Health and social wellbeing

- Death; Nutrition; Actual health and fertility; Perceived health; Mental health; Aspirations for future; Autonomy; Stigmatization; Feelings in relation to the project.
- Quality of the living environment
 - Physical quality – exposure to noise, dust, risk, odour etc.; Leisure and recreation opportunities; Aesthetic quality; Availability of housing; Quality of housing; Physical & social infrastructure; Personal safety & hazard exposure; Crime & violence.
- Economic impacts & material wellbeing
 - Workload; Standard of living; Economic prosperity and resilience; Income; Property values; Employment; Replacement cost of environmental functions; Economic dependency.
- Cultural impacts
 - Change in cultural values; Violation of culture; Experience of being culturally marginalized; Commercial exploitation of culture; Loss of local language; Loss of natural and cultural heritage.
- Family and community impacts
 - Alterations in family structure; Obligations to family/ancestors; Family violence; Social networks – interaction with others in community; Community connection –sense of belonging; Community cohesion; Social differentiation and inequity; Social tension and violence.
- Institutional, legal, political and equity impacts
 - Capacity of government agency to handle workload generated by project; Integrity of government agencies – absence of corruption and competence of agency; Legal rights; Human rights; Participation in decision making; Access to legal advice; Fairness of distribution of impacts across community.
- Gender relations
 - Woman's physical integrity – decide about own body; Personal autonomy of woman – independence in all aspects; Gendered division of labour – income, household, childbearing and rearing of children.; Access to resources & facilities; Political emancipation of woman.

This SIA Report will form an appendix to the main EIA Report.

1.4 Details and Expertise of Specialist

Founded by Vumile Ribeiro, Niara Environmental Consultants (Pty) Ltd is a 100% black female owned organisation. Our focus is environmental management services, integrated water resources management, biophysical studies as well as social issues and processes. Our key management personnel have accumulated vast experience in environmental management,

integrated water resources management, mine closure and rehabilitation, and related fields. We assist our clients and communities they operate within in recognising that a healthy natural resource base is essential for economic self-sufficiency and that it provides opportunities for future livelihood options. Integral to this approach, is the need to educate our clients about the impact of their activities on their environment.

Vumile Ribeiro has 17 years of professional and international experience in Environmental Assessment and Management primarily in the minerals resources and energy sector. She has extensive experience in compiling Environmental Impact Assessments and Water Use Licence Applications for mining, electricity supply (generation, transmission and distribution), road infrastructure, as well as water management projects. Her roles include the operational management responsibilities of Niara Environmental Consultants, project management, report writing, client liaison, as well as business development.

Having worked for a multi-disciplinary advisory firms and environmental consultancies, she has a competent understanding of the work effort and cross collaboration required for a successful multidisciplinary organisation. Vumile has been involved in a number of EIAs and has a particular interest in health impacts assessments, water resource management, mining, energy and stakeholder engagement. Vumile has considerable experience across a range of developmental and environmental sciences and has worked in South Africa, Mozambique, the DRC, Sierra Leone and Liberia and is familiar with Regulatory Environmental Legislation in other parts of Africa. Vumile is very well versed in the IFC Environmental and Social Performance Standards and the associated Equator Principles, which have informed the approach and standard for a number of ESIA processes that she has been involved in.

Orlinda Mafika is a dynamic professional with a wealth of expertise in environmental management and regulatory compliance. With a strong focus on driving business growth and operational efficiency, Orlinda excels in monitoring key performance indicators (KPIs) and implementing targeted improvement initiatives to consistently meet or exceed targets. A strategic thinker, Orlinda is adept at developing and implementing comprehensive strategic plans that propel business growth and optimize operational processes. Her collaborative approach allows her to effectively work with cross-functional teams, streamlining processes, optimizing resources, and enhancing overall productivity.

Orlinda's proactive nature enables her to identify and resolve issues and conflicts, fostering a positive and collaborative work environment. She conducts regular site inspections and compiles compliance audit reports, ensuring adherence to environmental regulations and standards. With expertise in executing and finalizing Water Use License Applications (WULAs), General Authorisations (GAs), and Atmospheric License Applications (AELs), Orlinda plays a crucial role in facilitating major new developments such as industrial plants, mines, feedlots, and farms.

She collaborates with public authorities to improve energy efficiency and introduce recycling schemes, further demonstrating her commitment to sustainability. Orlinda is also skilled in data analysis, conducting analytical modelling to determine environmental compliance for atmospheric conditions and analysing inspection data to assess pollution and contamination levels. Her proficiency extends to the creation of regulatory documents, site layouts, and various types of environmental impact assessments and reports.

With a passion for research and innovation, Orinda plans, modifies, and executes research techniques and tests, gathering and analysing data to produce insightful reports and presentations. She is dedicated to continuous learning and improvement, staying abreast of industry developments and best practices to deliver exceptional results.

2 Project Description

Bundu Mining (Pty) Ltd (Bundu) intends to restart operations at an old aggregate quarry located 11km east of Hartbeespoort in Gauteng Province. The application area is located on the Farm Uitzicht Alias Rietvalei 314 JR, portions 18 and 94 and the remaining extents of portions 91 and 95, located 11km east of Hartbeespoort along the R514. The proposed operation will restart mining at an old existing quarry and expand the pit through opencast methods of loosening weathered quartzite up to 20m deep to be delivered to an adjacent processing plant. Loosening will be by mechanical methods with occasional drilling and blasting required where harder rock is encountered. Expected extraction rate will be 240 000 tons per year requiring the full-time use of a single excavator and dumper truck.

Only the activities of extracting the mineral from the mining right area (mining) trigger NEMA listed activities that require authorisation. Activities associated with processing and supporting services do not trigger any listed activities in terms of the NEMA Listing Notices. The only authorisation required for these activities is a Water Use License which falls under a separate process, but is included in consultation during the EIA phase. The processing plant and supporting services will be operated by Gomes Sand (Pty) Ltd, and the necessary Water Use License has been applied for. Even though these activities do not need to be included in this authorisation, for the purpose of best environmental management, it is proposed that these activities are assessed and included in the environmental management programme. Processing will include crushing and screening of the extracted material at a fixed plant to make aggregate and sand products, as well as washing of certain products.

The daily abstraction of water from the existing borehole is 183m³, as recommended by the Geohydrology assessment, for process water required for washing, and the daily return flow from the settlement dams is approximately 50%. The predicted initial dewatering volume for the proposed mining works (up to an assumed maximum depth of 10m for the shallow operations and 50m for the deeper operations) is 496.53 m³/day. Proposed operational hours are from 06h00 to 18h00 during the week (Monday to Friday), 06h00 to 12h00 on a Saturday with only maintenance activities on a Sunday and public holidays. Blasting is anticipated to be twice a month and would only be undertaken between 12h00 and 16h00 during the week.

Due to the extent and nature of the activities associated with the proposed mining, particularly the potential impacts on water resources and waste management, it was identified that the following regulatory processes are required:

- Environmental Authorisation (EA) in terms of:
- The National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998), as amended
- The Environmental Impact Assessment (EIA) Regulations, 2014 (as amended)

- The National Environmental Management: Waste Act (NEM:WA), 2008 (Act No. 59 of 2008), as amended
- The requirements of the Mineral and Petroleum Resources Development Act (MPRDA), 2002 (Act No. 28 of 2002)

3 Legislative and Policy Framework

This section is dedicated to the institutional and legislative framework relevant to the assessment and management of socio-economic impacts related to the Project. It commences with a discussion of international best practice regarding social sustainability. This is followed by an overview of national legislation and policies that has bearing on the assessment and management of socio-economic impacts that are usually associated with mining projects.

In South Africa, socio-economic legislation is encapsulated under the National Management Act, 1998 (NEMA) (Act No. 107 of 1998) detailing the type, extent and timeframes for public participation or stakeholder engagement during the EIA phase of a project. Similarly, NEMA states that social aspects of projects must be considered at the EIA phase (outlined below). There is also a number of other important South African legislation which informs the social content in which SIA's are compiled and which are outlined below.

The Social Impact Assessment has been completed in terms of NEMA Environmental Impact Assessment (EIA) Regulations, 2014 (as amended) Appendix 6: Specialist Reports. Where applicable, the Report uses references from the International Finance Corporation's (IFC) Performance Standards.

3.1 The South African Constitution

The Constitution mostly speaks of human rights with the intention of establishing "a society based on democratic values, social justice and fundamental human rights", which is achieved through the promotion of human dignity, equality and the advancement of human rights and freedoms. Some of the human rights that are explicitly stated in the Constitution are a person's right to equality, freedom of expression and association, political and property rights, housing, healthcare, education, access to information, and access to courts.

Section 24 of the Constitution stipulates that everyone has the right to an environment that is not harmful to their health or wellbeing. It also stipulates measures to be implemented to ensure that the environment is protected for both current and future generations.

Other relevant sections of the Constitution include Section 25 that refers to expropriation of property is permissible to effect land redistribution, or in order to achieve some other public purpose or for the public interest. However, Section 25 prohibits arbitrary deprivation of property as well as the expropriation of property without payment of just and equitable compensation, which has either been agreed upon or which has been decided by a court of law.

3.2 National Environmental Management Act, 1998 (NEMA)

This Act provides that sustainable development requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions so as to ensure that development serves present and future generations. The Act further sets out the process for public participation.

3.3 Mineral and Petroleum Resources Development Act, 2002 (MPRDA)

One of the aims expressed in section 2(H) of the Mineral and Petroleum Resources Development Act (Act 28 of 2002) (MPRDA) is to promote social and economic development.

The mineral wealth of the country belongs to the people of South Africa and the State is the custodian thereof. As a consequence of this custodianship, the Minister has the duty to administer the mineral dispensation with a social conscience. She is expressly tasked by section 3(3) of the MPRDA to ensure that there is sustainable development of the country's mineral resources while promoting economic and social development (Werksmans Attorneys, 2011).

"In line with this aim, section 100 of the MPRDA provides that the Minister must ensure that a broad-based socio-economic empowerment charter is developed which will set the framework for entry of historically disadvantaged South Africans into the mining industry as well as to give effect to the Government's objectives of redressing social inequalities. It is expressly provided that the Charter must set out how the objectives expressed in section 2 of the MPRDA will be achieved... Two of the most prominent social aims of the Charter are mine community development and housing and living conditions of mine workers" (Werksmans Attorneys, 2011).

Upon the acceptance of an application for a mining right, the applicant is required to prepare an EMP in accordance with requirements of the MPRDA, to mitigate both bio-physical and social impacts of the Project. The MPRDA states that "any mining operation must be conducted in accordance with generally accepted principles of sustainable development by integrating social, economic and environmental factors into planning and implementation". The MPRDA also identifies the timeframes and manner, in which the public should be consulted (refer to the PPP report, 2009). The MPRDA states that mining or prospecting must be conducted in accordance with general accepted principles of sustainable development by integrating social, economic and environmental factors into the planning and implementation of prospecting and mining projects.

The MPRDA furthermore requires that mining companies assess the social impacts of their activities from start to closure and beyond. Companies must also develop and implement a comprehensive Social and Labour Plan (SLP) to promote socio-economic development in their host communities and to prevent or lessen negative social impacts.

3.4 South African Mining Charter

The Act focuses on sustainable transformation of the mining industry. The Mining Charter seeks to achieve the following objectives:

- (a) To promote equitable access to the nation's mineral resources to all the people of South Africa;
- (b) To substantially and meaningfully expand opportunities for HDSA to enter the mining and minerals industry and to benefit from the exploitation of the nation's mineral resources;
- (c) To utilise and expand the existing skills base for the empowerment of HDSA and to serve the community;
- (d) To promote employment and advance the social and economic welfare of mine communities and major labour sending areas;
- (e) To promote beneficiation of South Africa's mineral commodities; and
- (f) Promote sustainable development and growth of the mining industry.

Social management and mitigation measures, to be developed as part of the SIA, will be aligned to the Mining Charter.

3.5 Comprehensive Rural Development Programme ("CRDP"), 2009

The CRDP aims at being an effective response to poverty alleviation and food security by maximising the use and management of natural resources to create "vibrant, equitable and sustainable rural communities". The vision of the CRDP is to be achieved through a three-prolonged strategy. The second strategy, Rural Development, pertains to this project in that it aims to:

- Promote access to community and social infrastructure;
- Focuses on the development of new and the rehabilitation of existing infrastructure;
- Improves and develop infrastructure conducive to economic development – e.g., distribution and transportation infrastructure, water and electricity infrastructure, and telecommunications infrastructure; and
- Improves and develop infrastructure conducive to social development – e.g., sanitation infrastructure, health infrastructure, sports and recreation infrastructure, and educational infrastructure (especially ABET).

The CRDP objectives are a critical yardstick against through which the interventions in the rural areas must be measured.

3.6 National Strategy for Sustainable Development and Action Plan (2011)

The National Strategy for Sustainable Development and Action Plan ("NSSD", 2011) is a proactive strategy that regards sustainable development as a long-term commitment, which combines environmental protection, social equity and economic efficiency with the vision and values of the country. It is a milestone in an ongoing process of developing support, and initiating and up-scaling actions to achieve sustainable development in South Africa (DEA, 2011) and has outlined the following strategic objectives:

- Enhance systems for integrated planning and implementation;

- Sustain ecosystems and use natural resources efficiently;
- Move towards a green economy;
- Build sustainable communities; and
- Respond effectively to climate change.

3.7 White Paper on Local Government (1998)

This White Paper sets the framework for a developmental local government system that is committed to working with citizens, groups and communities to create sustainable human settlements, which provide for a decent quality of life and meet the social, economic and material needs of communities in a holistic fashion.

3.8 Municipal Systems Act (Act No. 32 of 2000)

The Municipal Systems Act provides for the principles, mechanisms and processes that are necessary to enable municipalities to move progressively towards the social and economic upliftment of local communities, and to ensure universal access to essential services that are affordable to all.

3.9 Extension of Security of Tenure Act (ESTA) (Act No. 62 of 1997)

This Act confers certain rights to non-landowning residents of a property, where such rights are linked to the period of time in which persons have been resident on the land. The Act applies to all rural areas in South Africa, regardless of whether the land is used for farming or mining purposes. No occupier can be evicted unless the provisions of ESTA have been strictly followed and a Court Order has been obtained.

3.10 Interim Protection of Informal Land Rights Act 31 Of 1996

This Act aims to provide for the temporary protection of certain rights to and interests in land which are not otherwise adequately protected by law; and to provide for matters connected therewith.

Although mining is one of the major contributors to the South African economy, it goes without saying that the granting and execution of a mining right represents an invasion of a landowner's right of use and enjoyment of the surface. The provisions of s5(3) of the Mineral and Petroleum Resources Development Act (MPRDA) echo two fundamental common law principles that foster the co-existence of the mining right holder to access the land to which the mining right relates and the right holder's obligation to cause the least possible inconvenience to the landowner. Although South African law tries to reconcile, as far as possible, these competing rights, a situation may arise where the conflict of the rights is insoluble. For instance, when the landowner and the mining right holder are unable to enjoy their respective rights without clashing interests, there is no room for the simultaneous exercise of the rights of both parties. In short, Interim Protection of Informal Land Rights Act (IPILRA) makes it clear that customary communities like the Applicants have a right to decide whether or not

development occurs on their land. The MPRDA requires that the community is consulted before the Minister awards a mining right. But it does not expressly require that they consent.

The two statutes must be read to work together, not to conflict. The only way to do that is to hold that both IPILRA and the MPRDA apply. The community must be consulted under the MPRDA, and must consent in terms of IPILRA. This is not only the best way to interpret the statutes in light of their purpose, it is the only interpretation that is consistent with international law and that promotes constitutional rights.

3.11 The Department of Mineral Resources Consultation Guidelines

The above Guidelines were compiled for use by applicants for prospecting and mining rights. It provides that Interested and Affected Parties include, amongst others, host (or receiving) communities, landowners, traditional authorities, land claimants; lawful occupiers, any other person whose socio-economic conditions may be directly affected by proposed prospecting or mining activities.

The required authorization processes for the Project Environmental Authorization Application include compliance with the National Environmental Management Act (NEMA) EIA Regulations, updated to the 2014 regulations. The activities requiring authorization, as triggered by the Project, are described in Listing Notice 1 (GN R983) and Listing Notice 2 (GN R984), published on 4 December 2014.

3.12 Overarching International Standards and Policies

3.12.1 Basic Human Rights

Basic human rights can be defined as universal moral principles or norms that describe certain standards of human behaviour. Each human being is entitled to these fundamental rights, simply because he or she is a human being, regardless of nationality, language, religion, locality, ethnic origin or any other status.

A foundational principle of basic human rights is that States must protect against human rights abuse within their territory and/or jurisdiction, including abuses caused by business enterprises. States should thus exercise adequate oversight in order to meet their international human rights obligations when they contract with, or legislate for, business enterprises to provide services that may negatively impact upon human rights.

In 2011 the UN's Human Rights Council endorsed the "Guiding Principles on Business & Human Rights" and stated the following: "As the basis for embedding their responsibility to respect human rights, business enterprises should express their commitment to meet this responsibility through a statement of policy". The operational principles of corporate responsibility to respect human rights are briefly summarized below. Enterprises should:

- Comply with all applicable laws and respect internationally recognized human rights, wherever they operate;
- Formulate and implement policies to meet their responsibility to respect human rights;

- Carry out human rights due diligence to identify, prevent, mitigate and account for how they address their impacts on human rights. Due diligence should be ongoing, recognizing that the human rights risks may change over time as the business enterprise's operations and operating context evolve;
- Identify and assess actual or potential adverse human rights impacts as a result of their own activities or due to their business relationships;
- Involve meaningful consultation with potentially affected groups and other relevant stakeholders;
- Take appropriate action within the organisation through internal decision-making, budget allocations and oversight processes;
- Track the effectiveness of responses to verify whether adverse human rights impacts are being addressed, based on qualitative and quantitative indicators, and feedback from internal and external sources and stakeholders; and
- Provide for or co-operate in their remediation through legitimate processes, where business enterprises identify that they have caused or contributed to adverse impacts.

3.12.2 DBSA Environmental and Social Safeguards Standards

The DBSA is a development finance institution involved in delivering developmental infrastructure in Southern Africa and the Southern African Development Community (SADC). It aims to advance development that improves the quality of life of people and support economic growth and regional integration. The DBSA has developed the Environmental and Social Safeguards Standards as an extension of its Environmental Appraisal Framework and the Social and Institutional Appraisal Guidelines. It has developed these to synchronise with the environmental and social standards of other Development Finance Institutions such as the Global Environmental Fund (GEF) Minimum Environmental and Social Safeguards Standards, the World Bank Group EHS Guidelines, the IFC Performance Standards and the African Development Bank AfDB Safeguards (DBSA, 2015).

3.12.3 Global Environmental Fund (GEF) Minimum Standards

The GEF unites 183 countries in partnership with international institutions, civil society organisations and the private sector to address global environmental issues while supporting national sustainable development initiatives (DBSA, 2015). It is the largest public funder of projects providing grants for projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants.

3.12.4 Equator Principles

The Equator Principles are a set of principles for determining, assessing and managing social and environmental risk in project financing. The Equator Principles were developed by private-sector banks and were launched in June 2003. Equator Principles Financial Institutions (EPFI) can voluntarily agree to adhere to Equator Principles, and by doing so, agree to apply them to all new project financings. The aim is that EPFIs only finance projects which are developed in an environmentally

and socially sound manner. The Equator Principles incorporate, by reference, the IFC Performance Standards and the World Bank Group EHS Guidelines. The importance of climate change, biodiversity and human rights are recognised in these principles and negative impacts on project-affected ecosystems, communities and the climate should be avoided where possible.

3.12.5 IFC Policy on Environmental and Social Sustainability

The IFC is an international financial institution that offers investment, advisory, and asset management services to encourage private sector development in developing countries. The IFC's Performance Standards offer a framework for understanding and managing environmental and social risks for high profile, complex, international or potentially high impact projects. They define clients' responsibilities for managing their environmental and social risks and are regarded as an international benchmark which have been adopted by many organisations as a key component of their environmental and social risk management (IFC, 2012). The Performance Standards provide guidance on how to identify risks and impacts and are designed to help avoid, mitigate, and manage risks and impacts as a way of doing business in a sustainable manner, including stakeholder engagement and disclosure obligations of the client in relation to project-level activities.

3.12.6 Environmental, Health, and Safety (EHS) Guidelines

The World Bank Group EHS Guidelines are referred to in Performance Standards 1 as the technical reference documents with general and industry-specific examples of good international industry practice, to be used as a technical source of information during project appraisal. The EHS Guidelines contain the performance levels and measures that are normally acceptable to the World Bank, the IFC and the DBSA, and that are generally considered to be achievable in new facilities at reasonable cost using existing technology. For the above, the EHS Guidelines establish performance indicators that should be achieved as a minimum. The EHS Guidelines provide performance levels and measures to be achieved in new facilities by existing technology at reasonable costs. The EHS Guidelines should be tailored to each project based on the outcomes of an environmental assessment. The requirements of these guidelines have to be accomplished during the different implementation phases of the project. If the host country has more stringent performance indicators, then these must be guaranteed.

3.13 Provincial and Local Level Policy and Planning

3.13.1 City of Tshwane IDP 2021 - 2026

In terms of Section the Municipal systems Act, 32 of 2000 each municipality in the country "has to have regard to its IDP of which the Municipal Spatial Development Framework (MSDF) is a component off.". The Municipality should: "(...) adopt a single, inclusive and strategic plan for the development of the municipality which (a) links, integrates and coordinates plans and takes into account proposals for the development of the municipality (b) aligns the resources and capacity of the municipality with the implementation of the plan and (c) forms the policy framework and general basis on which annual budgets must be based.

In line with the Municipal Systems Act (MSA) and the Municipal Finance Management Act, 2003 (Act 56 of 2003), the City of Tshwane has developed its five-year IDP for 2021-2026. On the 20th August 2020, the Council adopted the 2021-26 Integrated Development Plan Process Plan. The IDP Process plan has set the strategic pillars and deliverables to guide the City of Tshwane on a new development trajectory which aims to create:

- a city of opportunity;
- a sustainable city;
- a caring and inclusive city;
- a safe and clean city; and
- an open and honest city.

The above, much as they are outcomes, also form part of the development pillars which guide the long-term planning of the City of Tshwane. These pillars are anchored around the priority areas which are the focus for this term of office. The Roadmap towards Tshwane 2030 as set out in the IDP focuses on spatial transformation, economic transformation and ecological transformation as investigated in the Roadmap towards Tshwane 2030.

4 Approach and Methodology

Social impacts are those impacts that affect the level of social and socio-economic activities in a region either positively or negatively. For instance, they directly affect the socio-economic well-being of residents in an area by changing employment levels, education and skills levels, household size and income levels. A socio-economic impact assessment traces demographic and livelihood developments in the local economy. It then measures the cumulative effects of those developments and patterns. The impact region is determined by the nature of the proposal and can include the entire country, province, an individual municipality or a combination of municipalities. In this case, the impact will mostly be projected for City of Tshwane and the Gauteng province.

The SIA evaluates the human behaviour within a particular social context and how these are likely to impact on the Project. The South African society is shaped by a variety of cultures, traditions, political and religious beliefs which creates a rather complicated context within which the economy must operate. The specific historical context of South Africa also develops the perceptions of people which are often formed based on preconceived ideas rather than accurate information. Estimating the socio-economic impact of a project or development is very helpful in understanding the potential benefits of various forms of growth and changes made in the built environment.

4.1 Definition

In order to define Socio-economic Impact Assessment, it is important to understand the difference between Social Impact Assessment and Socio-economic Impact Assessment. Internationally, Social Impact Assessment (SIA) is seen as an overarching framework that embodies the evaluation of all impacts on humans and on all the ways in which people and their

communities interact with their socio-cultural, economic and bio-physical environment. SIA has strong links with a wide range of specialist sub-fields involved in the assessment of areas such as: aesthetic impacts, archaeological and heritage impacts, community impacts, cultural impacts, demographic impacts, development impacts, economic and fiscal impacts, gender assessment, health impacts, indigenous rights, infrastructural impacts, institutional impacts, political impacts, poverty assessment, psychological impacts, resource issues, tourism impacts and other impacts on societies (Vanclay, 2003: 7). Social Impact Assessment variables include the economic environment (compare Vanclay, 2003: 85-89; Burdige, 2004:101; Taylor, Bryan & Goodrich, 2004: 75). Social Impact Assessments and Economic Impact Assessments are often undertaken separately, but they are complementary and sometimes overlap. The social and economic environment cannot be separated, as these environments are closely entwined.

The current practice in South Africa is similar to the international practice as described in the previous paragraph, and Social Impact Assessments generally include social as well as economic impacts. The terms Social Impact Assessment and Socio-economic Impact Assessment are often confused and refer to the same assessment in many instances. The University of Wisconsin defines Socio-economic Impact Assessment as an examination of how a proposed development will change the lives of current and future residents of a community. The Australian Government Department of the Environment and Heritage (2005:5) states that Socio-economic Impact Assessment is a useful tool to help understand the potential range of impacts of a proposed change, and the likely responses of those impacted on if the change occurs. The International Association for Impact Assessment (2003) defines Social Impact Assessment as including the process of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programmes, plans, projects) and any social change processes invoked by these interventions. The primary purpose of SIA is to bring about a more sustainable and equitable biophysical and human environment.

From an international perspective, Socio-economic Impact Assessment falls under the umbrella of Social Impact Assessment. A Social Impact Assessment will look at the social environment in more depth than a Socio-economic Impact Assessment. For South African purposes, the two terms are generally used as one and the same. Social and economic impacts should be integrated in order to provide a comprehensive and cost-effective outcome and avoid duplication. For the purpose of this Report the term Socio-economic Impact Assessment will be used.

4.2 Purpose of the SIA Report

The primary purpose of a SIA is to determine and analyse the likely impacts of a proposed development or event on a specific group of people or a community's way of life, character and social cohesion. This is done by assessing and analysing the probable socio-economic impacts before the development takes place. The aim is for the developer or proponent to realize and optimize the project's benefits and implement mitigation measures that would minimize the possible negative socio-economic impacts of the proposed development.

The purpose of the SIA study is to

- Assess the social impacts of the Project including any impacts on local infrastructure and services;

- Recommend mitigation measures to minimise adverse impacts and maximise benefits of the Project; and
- Facilitate the consideration of alternatives.

4.3 Benefits of SIA

Considering potential social impacts of proposed developments have numerous benefits. The benefits of assessing social impacts are (Bezuidenhout, 2013):

- It enriches the decision-making process by potentially resulting in a different, better-informed decision than the one that would otherwise have been made.
- Decision-making criteria are applied consistently.
- A more holistic view of developments and their impacts are obtained.
- Provision of mitigation measures for negative social impacts, which are included as conditions for issuing an authorisation, and thereby ultimately enforced.
- Enhancement of positive social impacts that a development may have.
- Promotion of transparency and accountability in all applications for new developments.
- Social learning by developers, planners, decision-makers and the community, resulting in successful implementation of projects.
- Contributing to sustainability because development is more successful and sustainable if it has the “buy-in” of the communities that are affected by it –a “social licence to operate”.

4.4 Approach

Socio-economic Impact Assessments are directly related to decision-making (Branch et al., 1984:6). Probable undesirable social and economic effects of development need to be identified before they occur in order to make recommendations for mitigation (Interorganizational committee, 2004: 94). According to Henry (1990:93) Social Environmental Impact Assessment (SEIA) intends to minimise negative impacts due to mismatches between people and projects by indicating the social and economic impact of projects prior to implementation, by facilitating project modification and mitigation through public input or by incorporating social values and priorities such as social equity. SEIA that involves the community minimizes local resistance to projects and therefore reduce disruption; they increase project success, and they prevent major planning disasters and associated costs (Burdge, 2004:248).

4.5 Methodology

The SIA used both quantitative and qualitative data collection techniques. In terms of the quantitative data, data from Statistics SA was used to understand the local social circumstances of the area. In terms of the qualitative method interviews were conducted to understand the affected communities' perceptions, how they view themselves and the environment around them.

4.5.1 Definition of the Study Area

According to the IFC (2003), the study area for an impact assessment can be defined as the area that is likely to experience impacts arising from or exert influence on, the project or activity being assessed. Defining the study area is used to determine a project's area of influence and responsibilities. It also provides guidance on the area to be monitored, and managed, and assists with defining stakeholders, and the tools needed to gather data for identifying project impacts.

Socio-economic impacts can usually be divided into three broad categories, namely:

- Physical intrusion, which refers to Project infrastructure and Project-related activities' material presence in an area. These could lead to changes in, for example, land ownership, noise, dust, and changes in the visual landscape. Such changes typically extend to land uses within a few kilometres from the Project site;
- Economic pull occurs when a Project exerts changes and impacts on job creation, in-migration of workers and job-seekers, multiplier effects in the local and regional economy – all of which can lead to an increased risk of social pathologies and community conflict. These impacts can typically be expected in settlements and towns closest to the Project; and
- Indirect or induced impacts that are by-products or ripple-effects of the impacts in the foregoing two categories. These include increased pressure on local services and resources (as a result of population influx), multiplier effects in the local and regional economy (as a result of the creation of new jobs, and Project-related expenditure), macro-economic benefits of the Project as well as benefits derived from corporate social investment by the Project proponent.

Accordingly, three concentric study areas were defined for the purposes of this study, which correspond to the three categories of impacts listed above. The definition of the zones of influence was also, to some extent, influenced by what socio-economic data is available – these being at national, provincial, district, local municipal and ward level.

The three zones of influence are as follows:

- Primary Zone of Influence (also referred to as the site-specific study area): The area likely to experience social impacts associated with the physical intrusion by Project infrastructure and Project-related activities. This study area is defined as the extent of the farm portions on which the Project footprint is located, the immediately adjacent farm portions and the communities adjacent to the current project area;

- The Secondary Zone of Influence (also referred to as local study area): The area likely to experience impacts related to the “economic pull” exerted by the Project. The secondary study area was defined as proposed Bundu Mining which encompasses the primary study area. This area is defined as the affected local municipality in which the Project is located.
- The Tertiary Zone of Influence (also referred to as the regional study area): The area likely to experience indirect or induced impacts of the Project. The tertiary zone area was defined as the Gauteng Province and parts of the North West Province as well as the City of Tshwane Municipality, which encompass both the primary and secondary study areas.

Three study areas were defined: The primary study area, the secondary study area and the regional study area. The primary study area was defined as the properties that fall within the Mining Right boundary.

The methodology followed in undertaking the study included the following:

4.5.2 Approach and Data Collection Methods

Two research approaches can be distinguished, namely a quantitative approach and a qualitative approach. A combination of these two methods can also be followed. DEAT (2006) uses the example of having to obtain information on the number and availability of community facilities.

The use of statistical data to obtain insight about the number and availability of community facilities was used (quantitative approach). It was explored further by obtaining the views and perceptions of the people on the effectiveness and accessibility of these facilities (qualitative approach). “By using both qualitative and quantitative methodology more comprehensive data will be obtained, and a more holistic product would result, without excluding important areas of assessment” (DEAT, 2006).

The approach taken to data collection – and to the SIA in general – was to capitalise as much as possible on collaboration with other members of the client team, as well as other specialists involved in the EIA. Particular instances of such collaboration included the following:

- Investigative site visit was undertaken in October 2024
- Statistics South Africa 2022 data;
- A literature review of the Integrated Development Plan, Spatial Development Framework;
- Scan and analysis of the proposed Project Draft Scoping Report, Comments and Responses Report and various specialist studies; and
- The findings of other relevant specialist studies were reviewed to identify cross-disciplinary linkages, i.e., impacts assessed by one specialist discipline that could give rise to indirect or induced impacts relevant to another discipline. As an example, Project induced changes in groundwater quality and quantity could cause social impacts by altering the availability and/or quality of water for domestic consumption. Specific data collection activities undertaken during this study are outlined below.

4.5.3 Quantitative Technique: Desktop Review

Quantitative research can be described as an inquiry into a social or human problem, based on a theory composed of variables, measured with numbers, and analysed with statistical procedures, in order to determine whether the predictive generalisations of the theory hold true (Sogunro, 2001).

The most common source of quantitative data in SIA is census data, which is used to produce historic and demographic profiles. It can also be used to provide extensive baseline information. Other official statistics, like crime statistics, are also useful and credible (Taylor et al, 2004).

A desktop review of available documents to obtain relevant socio-economic baseline information on the defined study areas was conducted. The desktop study consisted of a review of the relevant local and district municipal documentation, which was incorporated into the baseline profile where relevant. This included the Integrated Development Plans (IDPs) for the City of Tshwane DM, and City of Tshwane LM.

Documents reviewed include:

- Provincial reports, district and local municipal IDPs and Local Economic Development (LED) Plans;
- Secondary data from Census 2022 and Community Survey 2016 was obtained from Wazimap (www.wazimap.co.za), an online open-source census data management database that manipulated census data to conform to the new municipal ward boundaries established in 2016. Data obtained from Wazimap was processed in MS Excel and compared on various levels to determine socio-economic trends in the area. This data, together with the information obtained from the IDPs, were used to compile the baseline socio-economic profile;

- Other specialist studies and reports concerning the Project, specifically the Environmental and Socio-Economic Scoping report compiled for the proposed Bundu mining Project;
- Available maps and satellite imagery.

Available public documents were reviewed to obtain relevant information on current and planned Project activities, on baseline socio-economic conditions. In order to determine the social impacts, a base profile of the study area was compiled by utilising relevant secondary data sources. Information was largely accessed from interrogation of maps, aerial photographs, technical discussions, existing secondary documents, and a site visit. Appropriate information was extracted from the relevant data sets to present information in terms of the social profile of the area.

In addition to governmental literature, project and development-based literature was reviewed, such as:

- Previous social and environmental assessment reports for mining-related projects;
- National and regional research reports, South African Mining Policy Gap report on community engagement, concerns and impacts, and literature on socio-economic challenges in Mpumalanga; and
- Web-based publications and journal articles based on the effects of mining on the social environment

4.5.4 Primary

This impact assessment was informed by the primary data collected by Niara during site visits for the following:

- Community members;
- Tribal Authorities; and
- Ward Councillor from Ward 55 of the City of Tshwane

This Report considers stakeholder comments received during the Scoping Phase, and will be updated in the EIA Phase (Public Participation Process (PPP). Information obtained from directly and indirectly affected landowners as part of the EIA for the Project will be considered and reviewed to identify potential bio-physical impacts that might have significant, although indirect, socio-economic implications.

4.5.5 Qualitative Techniques

Qualitative research can be described as an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants and conducted in a natural setting (Sogunro, 2001).

Qualitative techniques used during this SIA include:

- Interviews with selected key informants and participants.

- One or more public meetings (facilitated by the EAP) to which people are invited to express their opinions about the proposed Bundu mining.

4.5.6 Literature Review, Baseline Data Review and Analysis

A literature search was undertaken to obtain secondary data for the baseline description of the socio-economic environment. The information in this report was acquired via statistical data obtained from Statistics South Africa, SIA literature (see References), previous SIA studies conducted in the area and information from reputable sources on the. Additional documents such as planning documents, which substantiate the baseline profile or provide context to the project have been referred to where relevant. This provided a conceptual framework for designing the empirical data collection and interpretation.

The review of existing data assisted the consultant in confirming the social setting and characteristics of the study area, as well as the key economic activities. Data studied included information from the Provincial, District and Local Municipalities Strategic Planning Documents such as their Provincial Growth and Development Strategy, Integrated Development Plans (IDPs) for City of Tshwane DM, City of Tshwane LM as the tertiary zones of influence of the Bundu mining Project. Articles pertaining to mining and tourism within the South African context were also considered.

The secondary data was derived from a number of sources. Socio-economic indicators for the households and populations within the primary and secondary study areas, located within Ward 55 of City of Tshwane within the City of Tshwane DM of the Gauteng Province, were derived from official Statistics South Africa (StatsSA) data sources. These sources included the Census 2022 and Community Survey 2016 statistics, accessed through StatsSA and Wazimap¹. It is acknowledged that the official statistics cited in the report may not reflect the current socio-economic status of households and populations within the above-mentioned wards.

4.5.7 Compilation of a Socio-Economic Baseline Profile

Information from the public consultation process, including minutes of meetings and the Comments and response Report, received during the EIA phase will also be reviewed and the Report will be updated accordingly. This should provide the social specialist with important information regarding the prevalent concerns, attitudes and perceptions relating to the proposed Project.

On the basis of the information collected through the desktop review, engagement with and information from other specialist studies, a socio-economic baseline profile was compiled for the respective study areas defined in Section 10.

¹ Wazimap data is supported by the South African government, specifically through the Department of Public Service and Administration's (DPSA's) initiative to develop www.data.gov.za as a central point for accessing public government data. Wazimap is a featured app on the website (South Africa National Data Portal, 2019) and provides Census 2022 and Community Survey 2016 socio-economic data adjusted to 2016 ward boundaries. <https://wazimap.co.za/>, Retrieved in August 2021.

Topics considered as part of this profile include (but are not limited to) the following:

- Demographics, including population size and density as well as population distribution in terms of age and gender;
- Education levels;
- Employment status and income profiles;
- Economic sectors;
- Infrastructure and services (housing, energy, water and sanitation); and
- Community needs and development.

Based on information gathered through the desktop review and limited primary data a baseline profile was compiled and has been categorised as follows:

- Baseline conditions within the regional and secondary study areas
- Economic and livelihood activities
- Labour force and employment
- Household characteristics
- Household access to public services and infrastructure

4.5.8 Social Sensitivity Map

Satellite imagery from Google Earth were used to identify preliminary social sensitive areas, the sensitivity is assessed within 10km radius. These areas were then marked according to their sensitivity, i.e., low, medium or high. It is generally accepted that the social sensitivity of certain activities will decrease the further away these activities are located from the Project site.

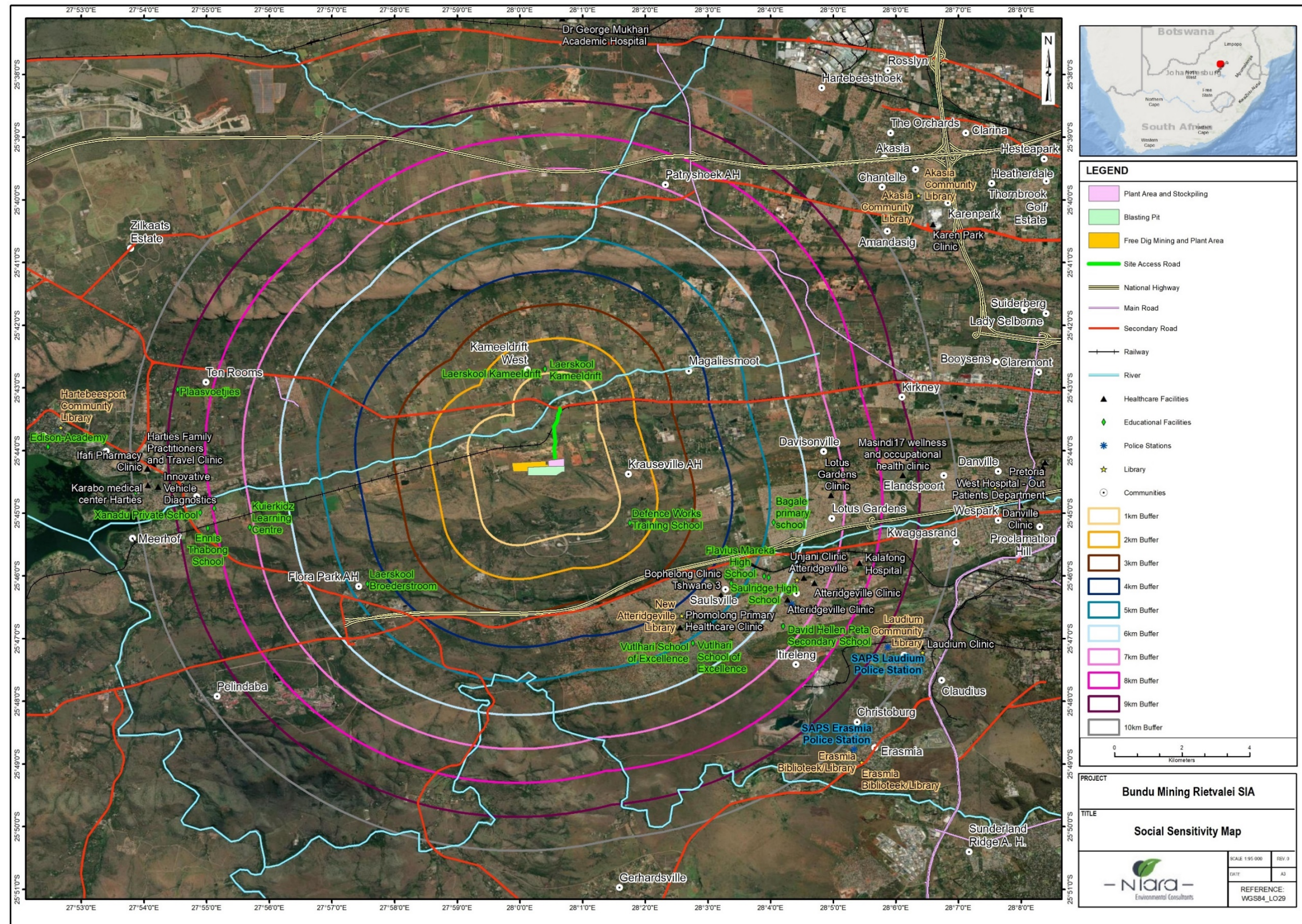


Figure 4-1: Social Sensitivity – 10km Buffer

4.5.9 Zone of Influence

The Zone of Influence (ZOI) in a SIA refers to the geographical area or community population directly affected by a proposed project, development, or activity. When conducting a social impact assessment, it is essential to delineate the ZOI to understand the scope and magnitude of potential social impacts and ensure that affected communities are adequately identified and engaged.

The ZOI is defined based on the geographic footprint of the project and the extent of its potential social impacts. This may include areas where physical changes occur, such as construction sites, operational facilities, transportation routes, and associated infrastructure. Within the ZOI, stakeholders who may be directly or indirectly affected by the project are identified. These stakeholders can include local communities, indigenous peoples, workers, businesses, NGOs, government agencies, and other relevant groups.

Data collection within the ZOI is conducted to establish baseline conditions and assess existing social, economic, cultural, and environmental characteristics. This includes demographic profiles, livelihoods, land use patterns, infrastructure, access to services, cultural heritage, and community cohesion. Stakeholders within the ZOI were actively engaged throughout the SIA process to ensure their perspectives, concerns, and preferences are incorporated into the assessment. This involved community meetings, interviews and consultations. Based on the assessment findings, mitigation measures and enhancement opportunities are developed to address identified social impacts and enhance positive outcomes within the ZOI. This includes measures to minimize negative impacts, such as resettlement and compensation, as well as initiatives to enhance community development, capacity-building, and livelihood diversification.

The following criteria was applied to determine preliminary (desktop based) social sensitive receptors:

Table 4-1: Sensitivity Description

Sensitivity	Description
High	Any of the following socio-economic activities within a 2 km radius from the Project site: - Any form of human settlement, such as formal housing, informal housing, scattered houses, small villages, grouped houses, etc.; - Heavy industrial and/or commercial with high economic value in terms of employment; and - Areas with high agricultural potential. It is expected that there would be a marginal to no buffer between these activities and the Project.
Medium	Any of the following socio-economic activities within a 5 km radius from the Project site: - Any form of human settlement, such as formal housing, informal housing, scattered houses, small villages, grouped houses, etc.; - Heavy industrial and/or commercial with high economic value in terms of employment; and - Areas with high agricultural potential. It is expected that most activities within the 5 km radius would be buffered somewhat by activities taking place within the 2 km radius.

Sensitivity	Description
Low	Any of the following socio-economic activities within a 10 km radius from the Project site: • “Greenfields” areas (areas not currently occupied by any infrastructure); • Any form of human settlement, such as formal housing, informal housing, scattered houses, small villages, grouped houses, etc.; • Heavy industrial and/or commercial with high economic value in terms of employment; and • Areas with low agricultural potential. It is expected that these activities would be buffered by activities taking place in both the 5 km and 2 km radius.

4.5.10 Ethics

Human beings are the objects of study in the social sciences brings unique ethical problems to the fore. Every individual has the right to privacy which is their individual right to decide when, where, to whom, and to what extent his or her attitudes, beliefs and behaviour will be revealed (Strydom, 2002). Every person interviewed for the purposes of this study/ Report has been assured that although the information disclosed will be used to inform the study, their names and credentials will not be disclosed without their permission. Therefore, to protect those consulted and to maintain confidentiality, the people interviewed for this report will not be named in the report. Records of the interviews have been kept. This is in line with international as well as national research practices such as the ESOMAR and SAMRA codes of conduct.

4.5.11 Information from the Public Consultation Process

Stakeholder consultation was undertaken for obtain comments, questions and concerns related to the social aspects of the Project. In addition, comments received from Interested and Affected Parties (I&APs) during the public participation process that were pertinent to the SIA appear in the EIA Comments and Responses Report. Stakeholder comments have been considered in the assessment of impacts and the development of mitigation measures. The relevance of this data lies in the fact that the public participation process serves as a stage where stakeholders air their concerns and perceptions about the Project. This allows for the early identification and confirmation and assessment of social impacts. The Comment and Response Report (CRR) compiled as part of the public consultation process will be reviewed as part of the data collection process. Since public consultation is an on-going process, this Report will be updated after Draft EIA phase, to include and capture any social related concerns.

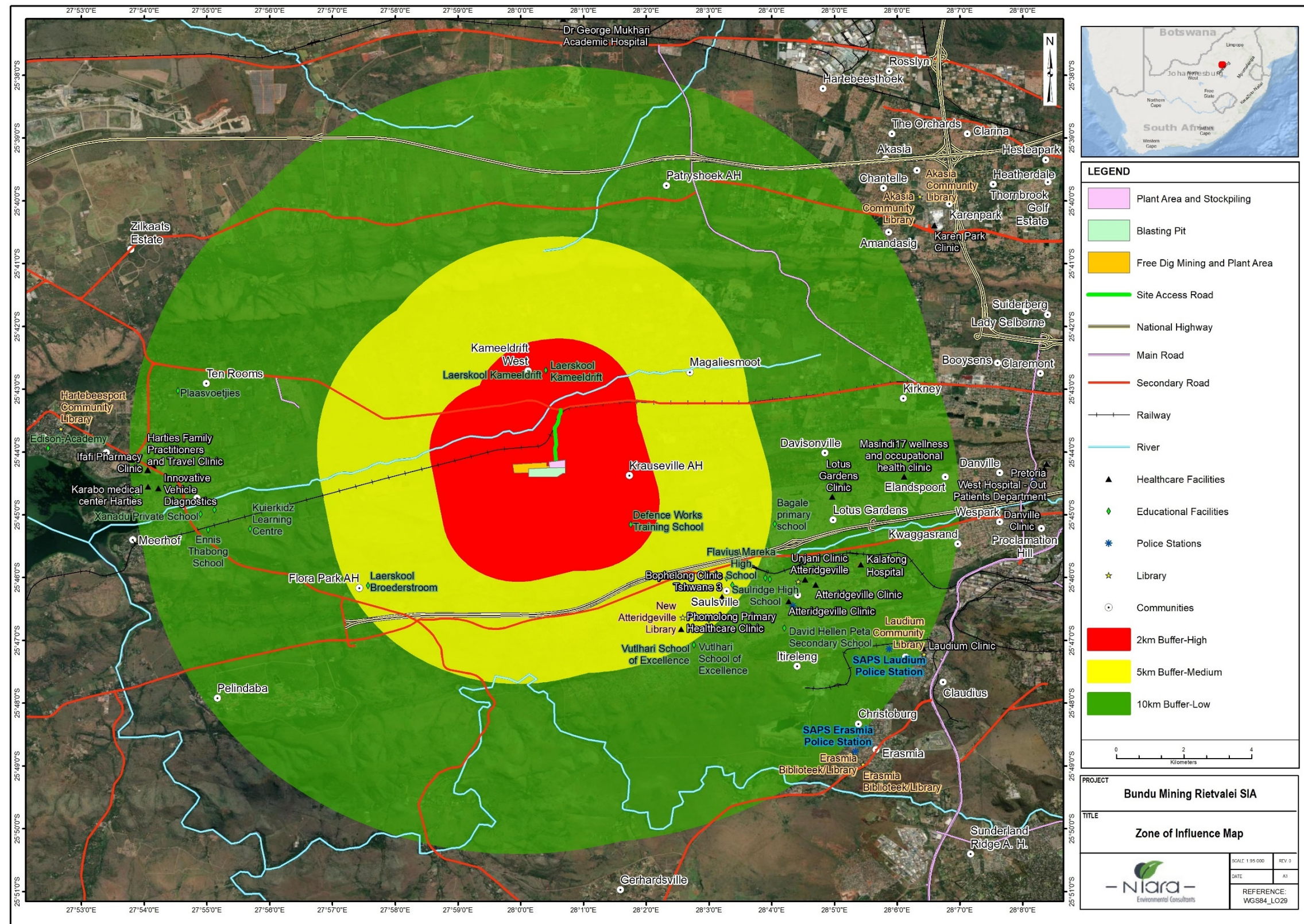


Figure 4-2: Zones of Influence

5 Impact Assessment Methodology

The impact significance rating process serves two purposes: firstly, it helps to highlight the critical impacts requiring consideration in the management and approval process; secondly, it shows the primary impact characteristics, as defined above, used to evaluate impact significance.

Description of rating

- **Without Mitigation (Lower Score):** This indicates the anticipated baseline positive impact of the project if no additional measures (mitigations) are taken. Even without mitigation, some projects yield positive effects, such as job creation, infrastructure development, or economic upliftment in the community. However, the score reflects that these impacts, while beneficial, might not reach their full potential or could be constrained by other limiting factors (e.g., environmental or social challenges).
- **With Mitigation (Higher Score):** Mitigation measures are designed to enhance or maximize the positive impacts, often ensuring that the benefits are more widely distributed or sustainable over the long term. For example, mitigation could involve:
 - Strengthening community engagement to boost local participation.
 - Implementing environmental protection measures that enhance long-term sustainability.
 - Offering skills training that improves employability and economic opportunities in the community.

By implementing these measures, the project not only mitigates potential negative impacts but also enhances the overall positive impact. Hence, the “with mitigation” score would be higher, reflecting the improved outcomes. Table 5-1 provides the impact assessment rating used for the assessment of impacts for this impact assessment.

Table 5-1: Impact Assessment Rating

Magnitude		Quantitative Score
The intensity of the impact is considered by examining whether the impact is destructive or benign, whether it has a significant, moderate or insignificant		
(VL) Very Low	The impact alters the affected environment in such a way that the natural processes or functions are not affected.	1
(L) Low	The impact alters the affected environment in such a way that the natural processes or functions are not affected significantly.	2
(M) Medium	The affected environment is altered, but functions and processes continue, albeit in a modified way.	3
(H) High	Function or process of the affected environment is disturbed to the extent where it temporarily ceases.	4

Magnitude		Quantitative Score
(VH) Very High	Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.	5
Extent		
Classification of the physical and spatial aspect of the impact		
(F) Footprint	The impacted area extends only as far as the activity, such as footprint occurring within the total site area.	1
(S) Site	The impact could affect the whole, or a significant portion of the site.	2
(R) Regional	The impact could affect the area including the neighbouring Farms, the transport routes and the adjoining towns.	3
(N) National	The impact could have an effect that expands throughout the country (South Africa).	4
(I) International	Where the impact has international ramifications that extend beyond the boundaries of South Africa.	5
Reversibility		
This describes the degree to which the impact can be managed following mitigation. The classes are rated as follows:		
Reversible	Can be avoided, managed or mitigated in such a way that natural processes are not affected and returned to natural state	1
Recoverable	Can be avoided, managed or mitigated to the degree that functions and processes continue in a modified way)	3
Irreversible	Irreversible impact (may cause irreplaceable loss of resources). Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.	5
Duration		
The lifetime of the impact, that is measure in relation to the lifetime of the proposed development.		
(S) Short Term	The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than that of the construction phase.	1
(SM) Short - Medium Term	The impact will be relevant through to the end of a construction phase.	2
(M) Medium	The impact will last up to the end of the development phases, where after it will be entirely negated.	3
(L) Long Term	The impact will continue or last for the entire operational lifetime (i.e. exceed 20years) of the development, but will be mitigated by direct human action or by natural processes thereafter.	4
(P) Permanent	This is the only class of impact, which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact is transient.	5
Probability		
This describes the likelihood of the impact actually occurring. The impact may occur for any length of time during the life cycle of the activity. The classes are rated as follows:		

Magnitude		Quantitative Score
(I) Improbable	The possibility of the Impact occurring is none, due to the circumstances or design. The chance of this Impact occurring is zero (0%)	1
(P) Possible	The possibility of the Impact occurring is very low, due either to the circumstances or design. The chance of this Impact occurring is defined as 25% or less	2
(L) Likely	There is a possibility that the impact will occur to the extent that provisions must therefore be made. The chances of Impact occurring is defined as 50%	3
(H) Highly Likely	It is most likely that the Impacts will occur at some stage of the development. Plans must be drawn up before carrying out the activity. The chances of this impact occurring is defined as 75 %.	4
(D) Definite	The impact will take place regardless of any prevention plans, and only mitigation actions or contingency plans to contain the effect can be relied on. The chance of this impact occurring is defined as 100 %.	5
Weighting Factor		
Subjective score assigned by Impact Assessor to give the relative importance of a particular environmental component based on project knowledge and previous experience. Simply, such a weighting factor is indicative of the importance of the impact in terms of the potential effect that it could have on the surrounding environment. Therefore, the aspects considered to have a relatively high value will score a relatively higher weighting than that which is of lower importance		
(L) Low		1
(LM) Low - Medium		2
(M) Medium		3
(MH) Medium - High		4
(H) High		5
Mitigation Measures and Mitigation Efficiency		
Determination of significance refers to the foreseeable significance of the impact after the successful implementation of the necessary mitigation measures		
Mitigation measures were recommended to enhance benefits and minimise negative impacts and address the following:		
<u>Mitigation objectives:</u> what level of mitigation must be aimed at: For each identified impact, the specialist must provide mitigation objectives (tolerance limits) which would result in measurable reduction in impact. Where limited knowledge or expertise exists on such tolerance limits, the specialist must make "educated guesses" based on professional experience;		
<u>Recommended mitigation measures:</u> For each impact the specialist must recommend practicable mitigation actions that can measurably affect the significance rating. The specialist must also identify management actions, which could enhance the condition of the environment. Where no mitigation is considered feasible, this must be stated and reasons provided;		
<u>Effectiveness of mitigation measures:</u> The specialist must provide quantifiable standards (performance criteria) for reviewing or tracking the effectiveness of the proposed mitigation actions, where possible; and		

Magnitude		Quantitative Score
<u>Recommended monitoring and evaluation programme:</u> The specialist is required to recommend an appropriate monitoring and review programme, which can track the efficacy of the mitigation objectives. Each environmental impact is to be assessed before and after mitigation measures have been implemented. The management objectives, design standards, etc., which, if achieved, can eliminate, minimise or enhance potential impacts or benefits. National standards or criteria are examples, which can be stated as mitigation objectives.		
Negligible	The impact will be mitigated to the point where it is of limited importance	<=20
Low	The impact is of importance, however, through the implementation of the correct mitigation measures such potential impacts can be reduced to acceptable levels	<=40
Moderate	Notwithstanding the successful implementation of the mitigation measures, to reduce the negative impacts to acceptable levels, the negative impact will remain of significance. However, taken within the overall context of the project, the persistent impact does not constitute a fatal flaw	<=60
High	The impact is of major importance. Mitigation of the impact is not possible on a cost-effective basis. The impact is regarded as high importance and taken within the overall context of the project, is regarded as a fatal flaw. An impact regarded as high significance, after mitigation could render the entire development option or entire project proposal unacceptable.	>60

Table 5-2: Recapitulation of Impact Rating Matrix

Magnitude	Weight
Very Low	1
Low	2
Medium	3
High	4
Very High	5

Extent	Weight
Footprint	1
Site	2
Regional	3
National	4
International	5

Reversibility	Weight
Reversible	1
Recoverable	3
Irreversible	5

Duration	Weight
Short term	1
Short-Medium term	2
Medium term	3
Long term	4
Permanent	5

Probability	Weight
Improbable	1
Possible	2
Likely	3
Highly Likely	4
Definite	5

Significance	Weight
Negligible	<=20
Low	<=40
Moderate	<=60
High	>60

5.1 Limitations and Assumptions

When conducting a social impact assessment (SIA), it is critical to recognize both the assumptions made and the limitations of the assessment.

Listed below is a breakdown of generalised SIA related assumptions and limitations:

5.1.1 Assumptions

The assumptions made for this SIA include:

- **Causality:** SIAs often assume a causal relationship between the proposed project or intervention and its potential social impacts. This assumption implies that changes observed in social conditions are directly attributable to the project and not solely influenced by other factors.
- **Stakeholder Engagement:** SIAs typically assume active stakeholder engagement throughout the assessment process. This includes assumptions about the willingness of stakeholders to participate, their ability to provide accurate information, and the effectiveness of engagement methods in capturing diverse perspectives.

- **Data Availability:** SIAs rely on the availability of relevant and reliable data to assess social conditions, identify potential impacts, and develop mitigation measures. Assumptions are made about the adequacy and accuracy of existing data sources, including census data, surveys, interviews, and secondary sources.
- **Mitigation Effectiveness:** SIAs may assume that proposed mitigation measures will effectively address identified social impacts and prevent negative consequences. This assumption requires careful consideration of the feasibility, implementation, and monitoring of mitigation strategies.

5.1.2 Limitations

Limitations associated with an SIA include:

- **Data Gaps:** SIAs may encounter limitations due to data gaps, inconsistencies, or inaccuracies in available information. This can affect the reliability and comprehensiveness of the assessment, particularly in areas with limited data availability or poor data quality.
- **Complexity of Social Systems:** Social systems are complex and dynamic, making it challenging to predict and quantify all potential social impacts accurately. SIAs may struggle to capture the full range of interactions, feedback loops, and unintended consequences within social systems.
- **Subjectivity:** SIAs involve subjective judgments and interpretations of social conditions, priorities, and values. Different stakeholders may have conflicting perspectives on the significance of certain impacts or the appropriateness of mitigation measures, leading to uncertainty and disagreement.
- **Temporal Dynamics:** Social impacts may unfold over extended time frames, with effects manifesting differently across various stages of project development and operation. SIAs may overlook long-term or delayed impacts and fail to adequately account for temporal dynamics in social change.
- **Context Sensitivity:** SIAs must be sensitive to the contextual factors that shape social conditions, including cultural norms, historical legacies, institutional frameworks, and power dynamics. Failure to consider these contextual factors can result in incomplete or biased assessments of social impacts.
- **Interdisciplinary Challenges:** SIAs require collaboration across diverse disciplines, including sociology, anthropology, economics, and environmental studies. Interdisciplinary challenges, such as differences in terminology, methodologies, and epistemological frameworks, can complicate the integration of social and environmental considerations.
- **Uncertainty and Risk:** SIAs inherently involve uncertainty and risk, particularly regarding the prediction of future social impacts and the effectiveness of mitigation measures. It's essential to acknowledge and communicate these uncertainties transparently to decision-makers and stakeholders.

Recognising these assumptions and limitations is critical for conducting robust and rigorous social impact assessments that inform decision-making, promote social justice, and mitigate adverse effects on affected communities. Transparency, stakeholder engagement, and ongoing reflection are key to addressing these challenges and improving the quality and effectiveness of SIAs over time.

6 Assessment of Alternatives

In accordance with the requirements outlined in Appendix 2 of the EIA Regulations 2014, as amended, a consideration of reasonable and feasible alternatives, including site and technology alternatives and the “do-nothing” alternative must be undertaken. Each alternative is to be accompanied by a description and comparative assessment of the advantages and disadvantages that such development and activities will pose on the environment and socio-economy. When no feasible and/or reasonable alternatives can be identified and investigated in terms of a comparative assessment during the Scoping Phase, the EIA Report will then not contain a section with alternatives.

The EIA Regulations 2014, as amended, define alternatives as the different means of meeting the general purpose and requirements of the activity, which may include alternatives to:

- The property on which or location where it is proposed to undertake the activity;
- The type of activity to be undertaken;
- The design or layout of the activity;
- The technology to be used in the activity;
- The operational aspects of the activity; and
- The option of not implementing the activity.

Limited alternatives may exist for the project may exist for the Proposed Project.

The Department of Environmental Affairs (DEA) EIA guidelines necessitate the consideration of various development alternatives as part of the EIA process. The consideration of project alternatives is a key requirement of an EIA as it provides a basis for choice for the competent authority and I&APs. In the NEMA EIA Regulations, alternatives in relation to a proposed activity are defined as “different means of meeting the general purpose and requirements of the activity, which may include alternatives to the –

property on which or location where it is proposed to undertake the activity;

- type of activity to be undertaken;
- design or layout of the activity;
- technology to be used in the activity; and

- operational aspects of the activity.

Alternatives that are considered must be reasonable and feasible and should have the potential to reduce negative impacts that may occur due to the proposed Project. Alternatives are considered as a means of reaching the same need and purpose as the proposed Project in a way that minimises the impacts and maximises the benefits. The anticipated environmental impacts which these alternatives may pose have been discussed below.

6.1 Alternative Property and Land Use Options

Site alternatives have not been explored as the proposed activities are tailored to the applicant's owned area and current operations within that vicinity.

6.2 Technology Alternative

Technological alternatives considered have been centred on blasting. Various scenarios for blasting have been investigated with respect to ground vibration, air blast and fly rock

This includes modelling for min and max charge mass per delay and stemming control. Electronic initiation is the preferred blast initiation alternative to facilitate single hole firing.

6.3 The No-Go Option

The "No-go" alternative entails not proceeding with the project, thereby maintaining the current state of mineral processing operations. Opting for the "no-go" alternative means forgoing the opportunity to increase production capacity, resulting in no economic stimulation for the region, which could have contributed to the industrial sector

7 Socio-Economic Baseline

7.1 Gauteng Province

The Project area is located in the Gauteng is the smallest of South Africa's provinces, covering an area of 18 178km² or approximately 1.4% of the total surface area of South Africa. It is bordered by the Free State, North West, Limpopo and Mpumalanga provinces. While being the smallest province, it is also the most populous, being home to 13 399 725 people – 24.1% of the national population. Gauteng lies on the highest part of the interior plateau on the rolling plains of South Africa's Highveld. Its capital is Johannesburg and it also contains the city of Pretoria, as well as the East Rand, West Rand and Vaal areas.

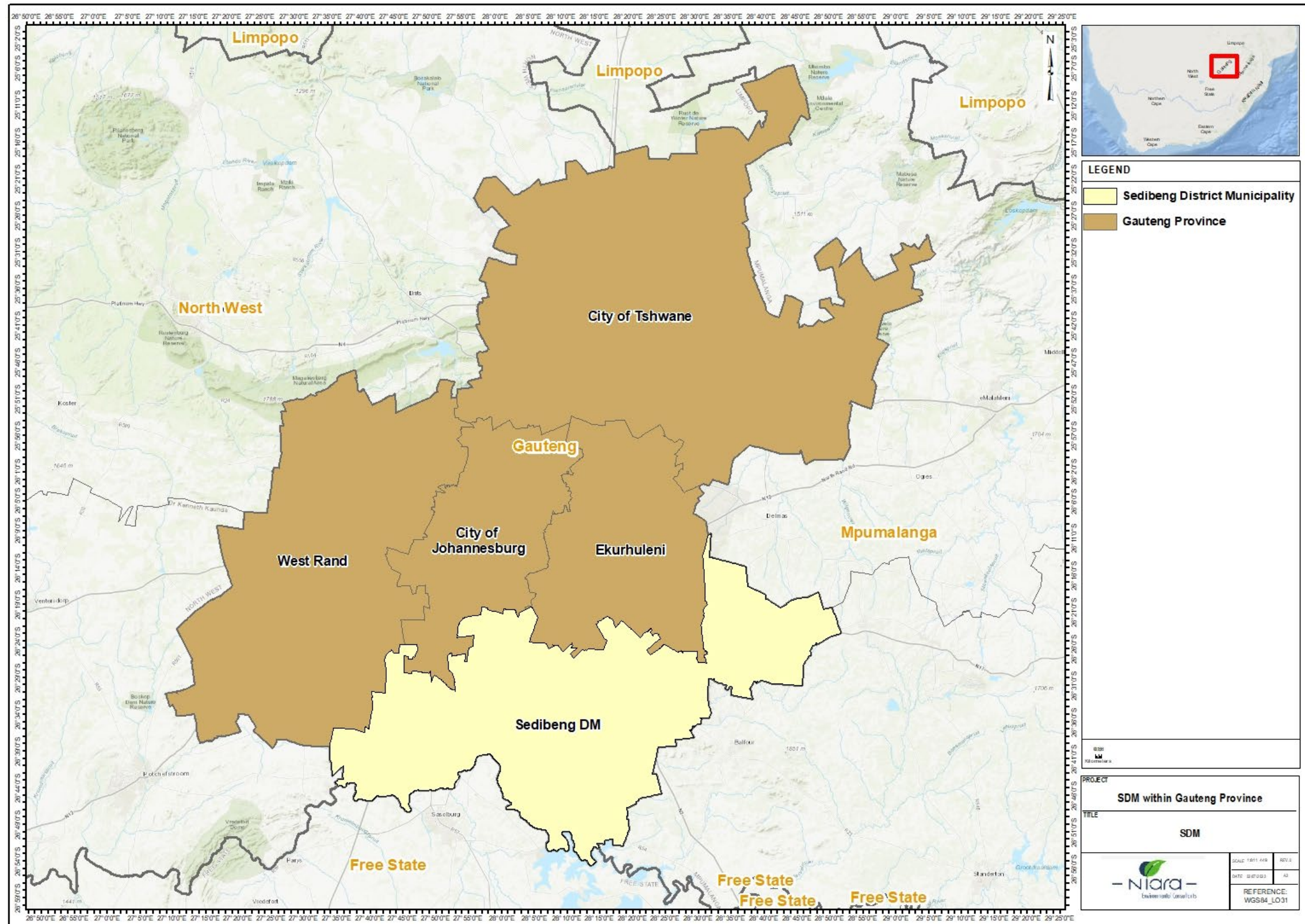


Figure 7-1: Map of Gauteng, showing its DMs and LMs

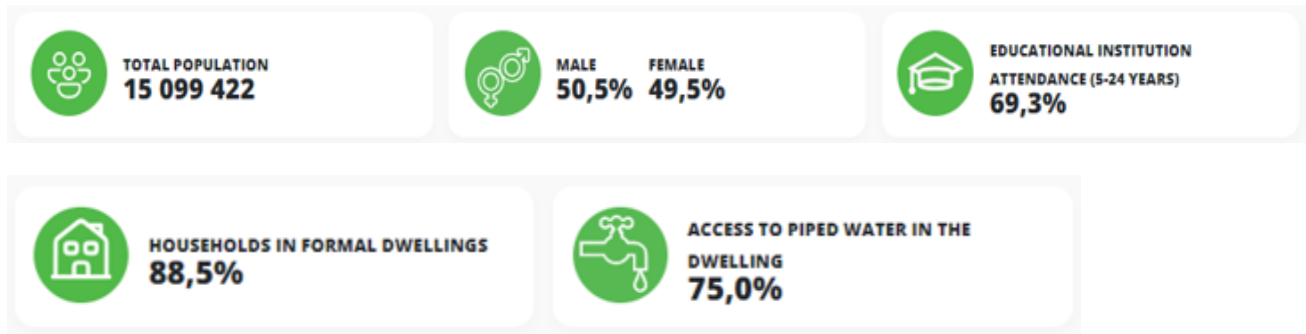
Gauteng is the smallest province in the country by land area size, yet the largest by population size. Johannesburg, which is among the largest cities in the world, is considered an economic hub not only for the country, but for the entire continent. Financial services, government services and manufacturing are the three most dominant economic activities in the province. This province contributes 2,2 trillion rand (33,1%) into South Africa's GDP. Pretoria, the administrative capital city of the country, is located in this province and is home to a large number of embassies representing foreign missions in the country.

Gauteng continues to serve as the economic engine room of the country and the subcontinent, responsible for over 34.8% of the country's GDP. Gauteng is the powerhouse of South Africa and the heart of its commercial business and industrial sectors. The most important sectors contributing to GDP are finance, real estate and business services; manufacturing; and general government services. Gauteng is also the financial services capital of Africa. More than 70 foreign banks have their head offices here, as do at least the same number of South African banks, stockbrokers and insurance giants.

The major gold and diamond mining houses all have their headquarters in Johannesburg, the biggest being Anglo American and De Beers. Gold mining constitutes 80% of Gauteng's mineral production output.

Table 7-1: Gauteng Province Key Statistics

Gauteng Province Key Statistics		
Name	2022	2011
Total population	15,099,422	12,272,263
Young children (0-14 years)	22.50%	23.70%
Working age population (15-64 years)	72.00%	72.00%
Elderly (65+ years)	5.40%	4.30%
Dependency ratio	38.9	39
Sex ratio	101.8	101.8
No schooling (20+ years)	3.90%	3.60%
Higher education (20+ years)	16.20%	17.60%
Number of households	5,318,665	3,908,826
Average household size	2.8	3.1
Formal dwellings	88.50%	79.80%
Flush toilets connected to sewerage	89.70%	85.40%
Weekly refuse disposal service	85.00%	88.30%
Access to piped water in the dwelling	75.00%	62.10%
Electricity for lighting	93.20%	87.40%



7.1.1 Demographic Profile

Gauteng Province has a total population of approximately 15.2 million, making it the most populous province in South Africa (Census, 2022). The demographic makeup is diverse, with the majority being Black African (80.4%). Females constitute slightly more than half of the population at 51.5%. According to Census 2022, 92.1% of residents are South African nationals, and around 63% are natives of Gauteng. The most widely spoken languages are isiZulu (24.8%), Afrikaans (12.5%), and English (11.7%).

Gauteng is the economic powerhouse of South Africa, with key sectors including finance, manufacturing, trade, and services. The province is also focusing on enhancing sectors such as technology and renewable energy as part of its growth strategy. The Gauteng Provincial Government is committed to the goals outlined in the National Development Plan (NDP) and has developed the Gauteng Vision 2030 to align provincial priorities with national objectives. This vision guides decision-making, sets ambitious provincial targets, and informs planning processes to drive sustainable development and economic growth in the region.



Figure 7-2: Administrative boundaries within Gauteng Province



Figure 7-3: GGT2030 Seven Priorities and District Development Model Objectives

At the heart of the DDM lies the development of a “One Plan” for each of the IGR Impact Zones. The One Plan is an intergovernmental plan and long-term strategic framework to guide joint investment and delivery in a particular district in accordance with short, medium and long-term objectives and outcomes, and will focus on:

- Managing urbanisation, growth and development.
- Determining and/or supporting local economic drivers.
- Determining and managing spatial form, land release and land development.
- Determining infrastructure investment requirements and ensuring long-term infrastructure adequacy to support integrated human settlements, economic activity and provision of basic services, community and social services.
- Institutionalising long term planning whilst addressing ‘burning’ short term issues.

The One Plan expresses the outcomes of joint planning and takes the form of an Intergovernmental and Social Compact outlining:

- A shared understanding of the district/metro space.
- A common vision and measurable outcomes.
- Agreement on priorities, joint resourcing and implementation.
- Targets and commitments.

The One Plan will (i) take the form of prioritised spatial expressions over the long term that (ii) will be divided into 5- and 10-year implementation plans, and (iii) will be supported by annual operation plans based on commonly agreed diagnostics, strategies and actions.



Figure 7-4: Components of the One Plan

7.1.2 Economic Profile

Gauteng is the most populous province in South Africa, with a rapidly growing population due to a large influx of internal migrants. It is also the largest economy in the country, although its growth performance has been in decline since 2005, with steeper declines during global shocks such as the 2008/9 global financial crisis and the COVID-19 pandemic. The real economy in Gauteng is dominated by the manufacturing sector, which accounts for 15% of the province's output, followed by construction, mining, and agriculture. However, the share of the real economy in the province has declined from 24.4% in 2010 to 20% in 2020. Employment in the real economy has declined in the past two years, although manufacturing remains the largest employer in the sector. Overall, Gauteng enjoys higher income, employment, education and infrastructure than other provinces.

Gauteng has the largest population in the country. With 15.6 million residents in 2020, Gauteng accounted for 26% of South Africa's total population. In addition, the province has the fastest growing population in the country, growing at an annual average of 2.6%, compared to the national average of 1.4%. The rapid population growth rate is attributable to a large inflow of migrants to the province. Between 2016 and 2021, net migration in the province was 980 000, accounting for 6.3% of the provincial population. Gauteng is also the largest economy in the country, accounting for 34.3% of the national GDP in 2021.

Notably, due to pandemic effects, the province's share of the national GDP has declined from its peak in the past decade of 34.9% in 2019 to 34.4% in 2021 (see Graph 1).

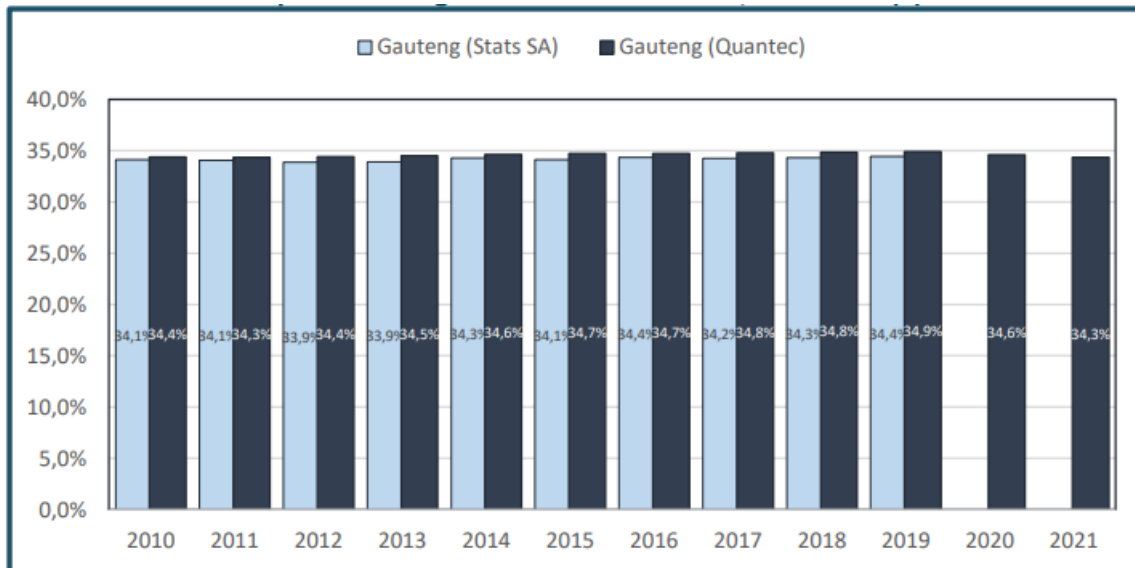


Figure 7-5: Gauteng's share of national GDP, 2010-2021 (a) (Statistics South Africa and Quantec. Note (a): % of national GDP is calculated)

Although Gauteng remains the biggest economy, its growth performance has been on a terminal decline since 2005, with steeper declines from global shocks such as the 2008/9 global financial crisis as well the COVID-19 pandemic. In 2020, Gauteng's growth rate contracted by 4.9% due to the pandemic, becoming the second hardest-hit province after Western Cape. In the following year, Gauteng recovered from the pandemic and experienced a growth rate of 5.8%.

As of 2021, the real economy – that is, agriculture, mining, manufacturing and construction – in Gauteng accounted for 20% of the provincial GDP compared to 27% at the national level (see Graph 3). However, the share of the real economy in the province has declined from 24.4% in 2010 to 20% in 2020, suggesting a broader trend of deindustrialisation. Manufacturing is the largest real economic sector in Gauteng, accounting for 15% in 2021, down from 17% in 2010. At the subsector level, petroleum (23%), metals(22%), as well as food and beverages (19%) account for the largest share of manufacturing output in Gauteng. As shown in Graph below, the food and beverage industry has been the fastest-growing manufacturing subsector in Gauteng, with its share of total manufacturing output increasing from 11% in 2005 to 19% in 2021.

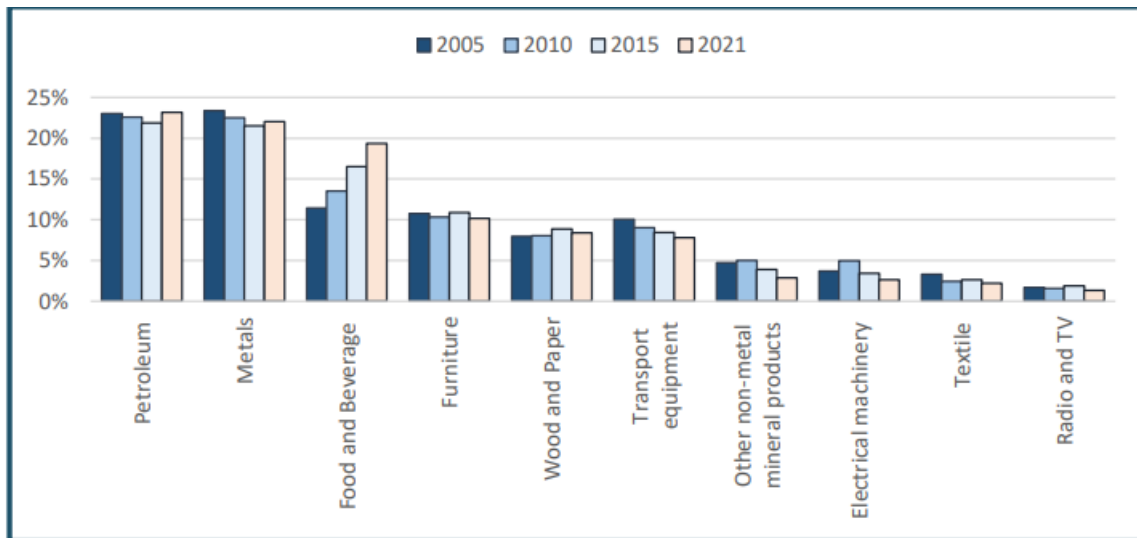


Figure 7-6: Manufacturing subsectors as a percentage share of total manufacturing GVA in Gauteng, 2005 to 2021 (a) (Calculated using Quantec estimates. Note (a): Calculation based on GVA at basic prices in constant 2021 prices)

The growth of the real economy in Gauteng was sluggish between 2014 and 2019. Between 2010 and 2014, construction was the fastest-growing real economic sector in Gauteng, with an average growth rate of 1%, while manufacturing growth was mute. However, between 2015 and 2019, the manufacturing sector experienced an annual growth rate of 1%, while agriculture grew by 2%. Much like elsewhere, COVID-19 sent Gauteng's real economy into a tailspin, with construction experiencing a contraction of 25%, followed by the manufacturing sector with 9%. In contrast, agriculture and mining experienced 14% and 2% growth rates, respectively. All real economic sectors recovered except construction, which is still lagging behind. Notably, mining recorded a sharp increase of 51% in 2021, which can be attributed to commodity price surges.

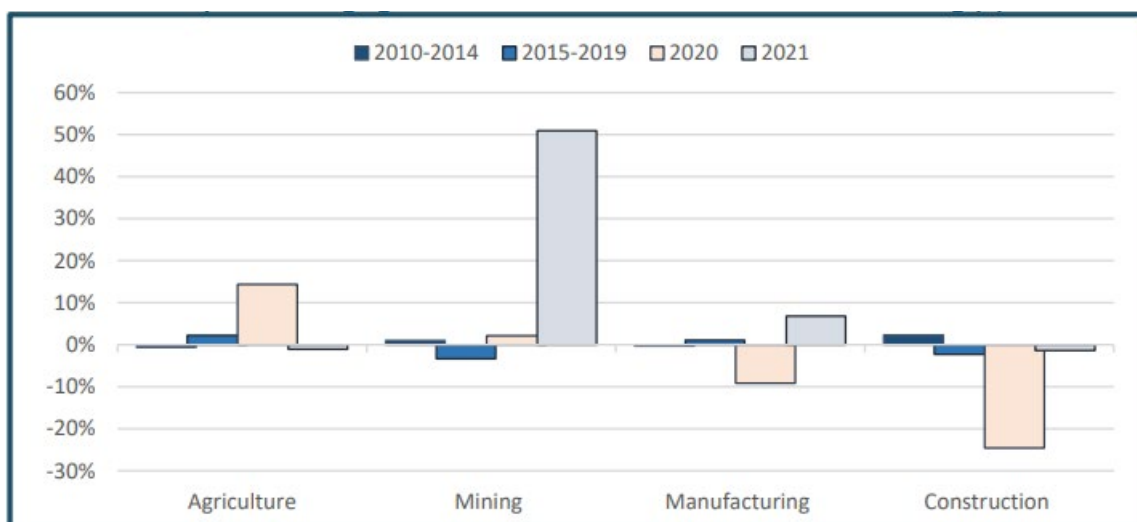


Figure 7-7: Average growth rate in real economic sectors of Gauteng (a) (Calculated using Quantec data. Note (a): Calculation based on GVA at basic prices in constant 2021 prices)

7.1.3 Economic Growth

The aim of the Gauteng Department of Economic Development is to lead, facilitate and manage sustainable job creation and inclusive economic growth and development in the Gauteng city region.

The Department's mission is to be an activist, interventionist and developmentally-focused department contributing to an inclusive and growing economy in Gauteng by providing thought leadership to inform the economic development agenda; mobilising stakeholders to partner with for economic growth and development; creating an enabling regulatory environment and stimulating business practices that promote inclusive economic growth; enhancing the competitive advantage of key sectors of the economy; promoting and attracting trade and investment to the economy; directing investment into strategic economic infrastructure; and proactively linking communities to economic opportunities.

The Department's strategic goals are to provide integrated economic and development planning; facilitate the implementation of strategic programmes that will stimulate the brand, competitiveness and social transformation of Gauteng, enhance trade and export promotion, and attract investment; promote an efficient, equitable and socially responsible business environment; act as an economic intelligence nerve centre to inform strategic decision-making and targeted sector development strategies; and promote public accountability and achieve high standards of corporate governance and efficient resource utilisation.

Gauteng recorded the highest provincial economic growth rate in 2019. The 0,6% rise in economic activity was mainly driven by finance, real estate and business services, which are the dominant industries in the province. Agriculture is the smallest industry in Gauteng, so its poor performance affected Gauteng far less compared to other provinces. The top four largest sectors in the province in 2019 was finance, government, manufacturing and trade.



Figure 7-8: % Change in GDP (Constant 2010 prices) (Economic growth trends)

Gauteng is recognised as the “international migrant gateway to South Africa”, with international migrants making up an estimated 13% of the population.¹⁴ Gauteng comprises three metropolitan municipalities (i.e. City of Tshwane, City of Johannesburg and Ekurhuleni Metropolitan Municipality) and two districts (i.e. Sedibeng and West Rand). Gauteng includes the cities of Johannesburg, once the world’s most important centre of gold production and today South Africa’s financial capital, and Pretoria, the country’s administrative capital. It also includes business, industrial and mining centres such as Kempton Park, Germiston, Springs, Alberton, Boksburg, Benoni, Vereeniging, Vanderbijlpark, Krugersdorp, Randfontein and Westonaria.

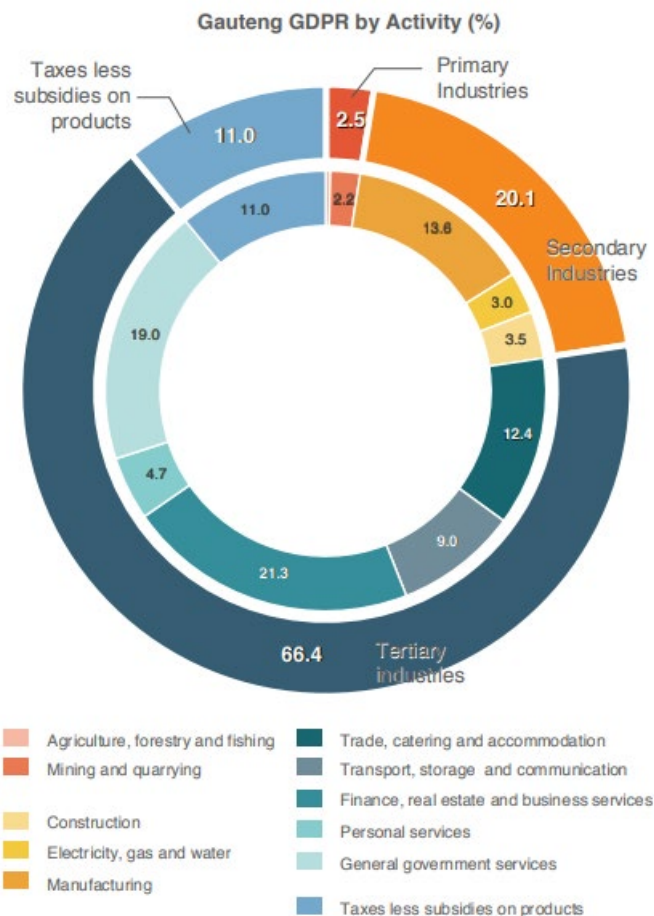


Figure 7-9: Gauteng GDPR by activity

In contrast to the strong economic position of the province, Gauteng also faces a number of challenges. Rapid urban growth may create opportunities, but also a number of challenges in terms of meeting people’s expectations for employment, infrastructure, housing and services. Employment creation remains a key priority for the Gauteng provincial government. Notwithstanding the strong economic position of the province, the labour market is not yet dynamic enough to accommodate the aspirations of all prospective workers and unemployment is high. In 2015, the City of Tshwane, Ekurhuleni MM and City of Johannesburg had unemployment rates of 27.4%, 29.4% and 26.2% respectively (i.e. a quarter of the working age

population).¹⁷ Given that Gauteng exerts a strong attraction for migrant populations both local and foreign, employment creation assumes an even greater urgency.

Gauteng is particularly vulnerable to the twin challenges of climate change and fuel shortage, given its very high fossil fuel dependency and its inefficient urban structure. Gauteng will also experience an increasingly acute water deficit in future. South Africa, including Gauteng, has been warming significantly over the period 1913–2015 with a warming rate of 2°C per century, which is in the order of twice the global rate of temperature increase. Over the period 1921–2015 there is strong evidence that extreme daily rainfall events have increased over large parts of the country, including Gauteng.

Gauteng has not been spared the impact of the COVID-19 outbreak, from a population, economic and socio-economic perspective. The residual challenges that were created by the pandemic will still be felt for many years to come. Urban areas are at the epicentre of the global COVID-19 pandemic, accounting for an estimated 90% of cases. However, urban density does not necessarily correlate with higher virus transmission. Rather, overcrowding and urban areas with poor infrastructure and housing or weak local governance does. As the pandemic hit low- and middle-income countries, it highlighted underlying inequalities that in particular put women at even greater risk. Early research on the impacts of COVID-19 on cities highlights four major themes, namely, (i) environmental quality, (ii) socio-economic impacts, (iii) management and governance, and (iv) transportation and urban design.

7.1.4 Mining and Energy

Gauteng, located in the northern interior of South Africa, is the country's smallest province, comprising only 1.5% of the total land area. Despite its seemingly modest size and landlocked position—far from the major coastal ports—Gauteng stands as South Africa's and Africa's economic engine. In 2019, it contributed a remarkable 34.5% to the national GDP, more than double the contributions from KwaZulu-Natal and the Western Cape. The province is responsible for approximately 64.1% of South Africa's exports, with significant value flowing to markets in Europe, Africa, Asia, and the Americas.

While Gauteng is known for its financial and industrial prowess, it also has a rich mining heritage, particularly in diamond mining. The province is home to some of the world's most famous diamond mines, such as those found in Cullinan and Kimberley. These mines have played a crucial role in the global diamond industry, with Cullinan being renowned for producing the largest diamond ever found, the Cullinan Diamond. The significance of this sector extends beyond the mines themselves, as Gauteng serves as the hub for the processing and trading of diamonds, housing numerous jewellers and diamond dealers.

In addition to diamonds, Gauteng hosts several other mining activities, including the extraction of gold, which has historically been a cornerstone of the province's economy. The major gold mining houses have their headquarters in Gauteng, further cementing the province's role as a critical player in the mining sector. The mining industry not only contributes to Gauteng's GDP but also provides employment opportunities, with thousands working in various capacities within the sector.

As a key player in both the financial and mining sectors, Gauteng is also recognized as the largest urban economy in Africa. The province is home to around 70 foreign banks, a majority of South African banks, stockbrokers, and insurance companies,

all of which facilitate investment in mining and related industries. This integration of mining and finance underscores Gauteng's importance as a dynamic economic region, where mining continues to be a vital contributor to both local and national growth.

7.1.5 Labour Force Profile

The labour market in South Africa and consequently, Gauteng has felt the full brunt of COVID-19 pandemic and lockdown measures. On the 21 February 2022, the premier of Gauteng hosted the SOPA and he indicated that even though the province has lost many lives and livelihoods, the Gauteng province shall be rebuilding by tackling the crisis of unemployment, rebuild and protect the ills from the last financial year. The premier's office committed to construct and rehabilitate 18 arterial roads to integrate and improve the movement of goods and services. Work has been done not just in terms of rehabilitation but also, the reconstruction of road networks. The EPWP has also been a key driver for employment opportunities in the City of Tshwane. As of February 2022, the city created 11 725 work opportunities. From a database of over 150 000 registered jobseekers. The system was also used to facilitate the recruitment of 9 000 beneficiaries for the Public Employment Programme. The province has also embarked on supplier development training for 3 198 township suppliers where 2 881 suppliers were trained on how to tender/access government business opportunities. The GGT2030, the current provincial plan of action, was introduced to cement the position nationally and in the continent by doubling the size of the Gauteng economy and the number of people employed. The initiative seeks to increase exports to the continent, to drastically reduce poverty and promote economic empowerment of those who continue to be excluded from the mainstream of the economy. The GGT2030 prioritises the transformation, modernisation and re-industrialisation of the 10 high-growth sectors, which are linked to the rollout of the SEZ's in the five corridors and the township economic revitalisation.

Programme	Jobs created
GPG Youth accelerator programme	48 177
Infrastructure sector	30 192
National Youth Service	19 771
The Innovation Hub Management	114
Tshwane Automotive SEZ	3 339
GPG Gauteng traffic officers	264
Expanded Public Works Programme (EPWP)	93 314
Youth Brigades supported by Gauteng Department of Education and the Gauteng City-Region Academy.	9 376

Figure 7-10: Gauteng implemented programmes for job creation, 2021

Future employment opportunities in Gauteng include:

- Rehabilitation of roads P241/1 (R554) and D405 (R554), in Lenasia.
- P39/1 heavy rehabilitation from Diepsloot to Muldersdrift.

- P156/3(R42) from P155/1 to D2563 in Vanderbijlpark.
- Rehabilitation of road D483 between P6/1 (Bapsfontein) and D713.
- Rehabilitation of P122/1 from P36/1 (R10) Solomon Mahlangu Drive Olifantsfontein.
- Rehabilitation of road P73/1 (R553) Golden Highway between Ennerdale (41.0 km) and Eldorado Park (62.24 km).

7.1.6 Employment/ Unemployment

Unemployment is a significant economic challenge in South Africa, affecting millions of people and contributing to socio-economic issues such as poverty, inequality and social unrest. There are two main definitions of unemployment: official and expanded definitions. The official definition of unemployment includes individuals of the working age population (15 to 64 years) who are jobless, willing and able to work, and actively looking for employment ([StatsSA, 2024](#)). By this measure, South Africa and Gauteng's unemployment rates stand at 32,9% and 34,2%, respectively, in the first Quarter of 2024 ([Libera, 2024](#); [SANews, 2024](#); [StatsSA, 2024](#)). The expanded definition of unemployment encompasses individuals who are unemployed and actively looking for work and those who are discouraged from looking for work. Discouraged workers are often overlooked in policy dialogues even though they affect the unemployment rate (Ranchhod and Dinkelman, 2007; Sauls, 2023). According to this definition, the South African and Gauteng unemployment rates are 41,9% and 38,9%, respectively, in the first Quarter of 2024 ([StatsSA, 2024](#)).

The Gauteng City-Region Observatory's (GCRO) Quality of Life (QoL) 6 (2020/21) Survey provides valuable insights into the dynamics of the working age population (15 to 64 years) and unemployed workers in Gauteng. By utilising the data from this survey, we uncover the socio-economic dynamics of the working age population and spatial patterns of unemployment in the province. The analysis reveals that unemployment levels are disproportionately higher among individuals aged 18 to 34 years, those who have not completed high school, Black Africans, females and members of low-income households. The study also found that unemployment is unevenly distributed across the province. Wards in Gauteng's core and economic nodes have lower unemployment levels while townships and informal settlements are characterised by higher concentrations of unemployment.

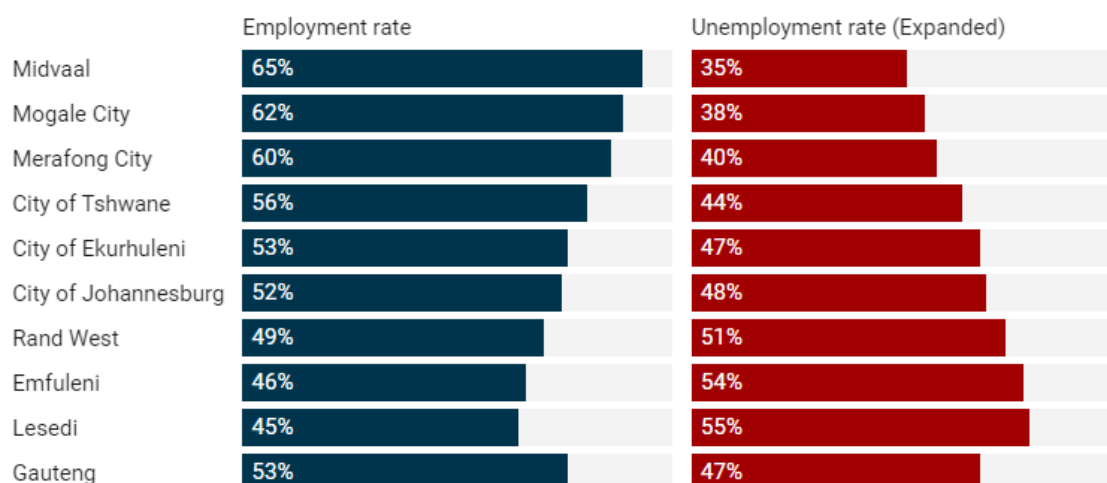


Figure 7-11: Gauteng City-Region Observatory's (GCRO) Quality of Life Survey 6 (2020/21)

The GCRO's QoL 6 survey (2020/21) explores the employment status of the working age population in Gauteng (Figure 7 12). The survey asked respondents, "In the past 7 days, did you do any type of work, business, or activity for which you got paid or expected to be paid?". Of the total respondents of the working age population, 45% indicated that they are employed. The survey also asked, "Are you unemployed and looking for work?", and 37% of respondents reported that they are unemployed and searching for work. In comparison, 3% of respondents reported that they have given up looking for work, and 15% are not economically active (NEA). NEA refers to the working age population that is neither employed or unemployed, including full-time students, retired people, homemakers, persons with disabilities, those caring for family members and those who do not need or want to work (Leaker, 2009). QoL 6 (2020/21) survey was conducted amid the COVID-19 pandemic and associated lock downs, which had a major impact on employment in the province. While some of the results show long standing patterns, others might be moment specific.

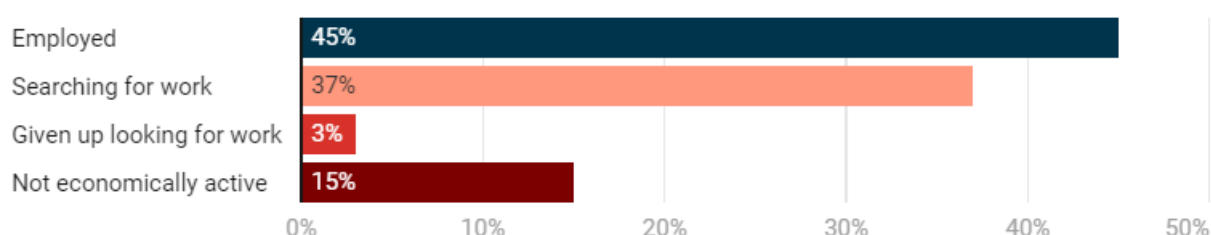


Figure 7-12: Gauteng City-Region Observatory's (GCRO) Quality of Life Survey 6 (2020/21)

7.1.7 Socio-Economic Challenges

Gauteng faces several socio-economic challenges common to many regions in the country, as well as some specific to its own context:

- **Unemployment:** High levels of unemployment are a significant challenge in Gauteng, particularly among the youth. Limited job opportunities, especially in certain areas, contribute to this issue. Despite its importance, the Gauteng

City-Region faces many challenges, including high levels of poverty, unemployment, and social exclusion. South Africa is one of the most unequal societies in the world, and this stark reality is particularly evident in Gauteng cities and towns.

- **Poverty:** Poverty remains a pressing concern in Gauteng, with many households struggling to meet basic needs. While the province is economically vibrant, disparities exist, particularly in under-resourced communities. There are spatial concentrations of huge wealth alongside large informal settlements.
- **Inequality:** Disparities in income, access to services, and opportunities contribute to social inequality within Gauteng. This can manifest in unequal access to education, healthcare, and essential services. Although there is gradual integration, the concentration of different population groups in specific areas, previously designated for them by apartheid, remains to this day.
- **Healthcare:** Access to quality healthcare services can be limited in specific areas of Gauteng, particularly in informal settlements. This lack of access can exacerbate health inequalities and lead to poorer health outcomes.
- **Education:** Despite efforts to improve access to education, challenges such as overcrowded classrooms, teacher shortages, and varying educational attainment levels persist in Gauteng. These issues can hinder socio-economic development and perpetuate cycles of poverty.
- **Infrastructure:** Inadequate infrastructure, including transportation, water supply, and electricity, can impede economic growth and development in Gauteng. Poor infrastructure affects access to services and limits opportunities for residents.
- **Environmental Degradation:** Gauteng's economy relies heavily on industry and mining, which can contribute to environmental degradation. This impacts local communities and their livelihoods, necessitating sustainable practices.
- **HIV/AIDS:** Gauteng faces challenges related to HIV/AIDS, including high prevalence rates and associated social stigma. These factors can have significant socio-economic implications, affecting healthcare systems and household incomes.

While the Gauteng City-Region has a diverse and fast-growing economy, the labour market is not yet dynamic enough to accommodate the aspirations of all prospective workers. Economic activity is still patterned by assumptions and interactions inherited from the apartheid era that often limit opportunities for new market entrants, especially young job seekers. The result is a quality of life for some that matches, and often exceeds, that enjoyed by residents of developed world cities, but high levels of frustration and marginalization for many others. This dynamism and cosmopolitanism can lead to simmering resentment towards those who have succeeded and antipathy towards newcomers, especially foreign migrants.

Addressing these challenges requires coordinated efforts from government, civil society, and the private sector. Key to building on its potential and meeting its challenges is how the Gauteng City-Region is governed. The local urban region within Gauteng is governed by three metropolitan municipalities, along with two-tier local government structures comprising

both district and local municipalities. The local sphere carries some functional areas of responsibility, while the Gauteng Provincial Government oversees others. Improved intergovernmental cooperation and greater collaboration between government, business, and civil society are essential to ensure that the cities and towns across and beyond the boundaries of Gauteng work better as a more integrated, productive, and sustainable whole.

7.1.8 Health Profile

The Gauteng Department of Health's core mandate of the Department is to improve the health status of the population, improve health services, secure better value for money, ensure effective organisation, and provide integrated services and programmes that promote and protect healthy, quality and sustainable livelihoods for poor, vulnerable and marginalised groups in society.

The Department's strategic goals are improved health and well-being, with an emphasis on vulnerable groups; reduction in the rate of new HIV infections by 50% in youth, adults and babies, and reduction in the number of deaths from TB and AIDS by 20%; increased efficiency of service implementation; human capital management and development for better health outcomes; and organisational excellence.

The Department is serving the province through seven (7) Health Sub- Districts which is aligned to the administrative demarcation of the Metro. The Department of health services an estimated population of 16.1 million citizens for the province of Gauteng, of which 83 per cent (13.3 million) of the population is dependent on public health services, while 16 per cent (2.5 million) are medically insured.

The demand for healthcare services has continued to grow and this is unlikely to change in the short to medium term, given the trends in the social determinants of health and the economic challenges the Country is facing. More and more people are becoming dependent on the public health system as medical aid becomes increasingly unaffordable. The quadruple burden of disease, compounded by population growth, places enormous strain on the health system (DoH, 2021).

The quadruple burden of disease refers to the combined burden of maternal, newborn and child health; HIV/AIDS and TB; non-communicable diseases; and violence and injury. Adding to the complexity is the fact that people now commonly present with multiple, interacting and compounding health problems. HIV prevalence is approximately 25.8% among antenatal women in the Province, due to the success of the ART programme, this is not coming down as HIV positive clients live for longer (NICD, 2017). However, the fifth South African national HIV prevalence, incidence, behaviour and communication survey (HSRC 2017), estimates the HIV prevalence in the province is 13.05%, which is the fifth highest in the country after KwaZulu Natal (18.23%), Mpumalanga (15.41%), Free State (14.62% and North West (13.59%). Tuberculosis (TB) cases have decreased significantly over the past decade. However, of concern is the fact that of those who have TB, most of them are also HIV positive.

The burden of non-communicable diseases (NCD) remains significant due to the prevalence of risk factors such as smoking, obesity and lack of exercise. Furthermore, these patients form part of the work force, as the Department's data show that 24 075 of diabetics are 40-65 years old.

7.1.8.1 Primary Care

Primary Care is ambulatory in nature and includes child and adult curative care, preventive services, antenatal care, postnatal care, family planning, mental health, TB, HIV and AIDS, and chronic disease management. It is driven by Clinical Nurse Practitioners based at fixed and non-fixed facilities throughout the Province. There are PHC facilities, 333 fixed clinics, 36 Community Health Centres (CHCs). It has been reported (Gauteng DoH, 2023) that the ratio of people to doctor in the public health sector of Gauteng is 4024 to 1 and 1042 to 1 for nurses.

7.1.8.2 District Hospitals

There are 12 district hospitals in the province which are the first level of care above clinics. District Hospitals are part of District Health Services whose main responsibility is to provide primary healthcare services. district hospitals play a crucial role in providing primary and secondary healthcare services to communities within their designated districts. These hospitals serve as important healthcare hubs, offering a range of medical services and facilities to meet the needs of the population they serve.

They provide the following services:

- 24-hour services for accident and emergency healthcare
- Out-Patient Clinics
- Clinic Support
- Family Medicine (Gauteng DoH, 2023)

Below listed are some key features and functions of district hospitals:

- Primary Healthcare Services
- Secondary Healthcare Services
- Referral Services
- Community Outreach and Health Promotion
- Training and Education
- Management of Epidemics and Public Health Emergencies

Overall, district hospitals in South Africa are essential components of the healthcare system, providing accessible, comprehensive, and quality healthcare services to communities at the district level. They play a critical role in improving health outcomes, reducing health disparities, and promoting the well-being of populations across the country.



Figure 7-13: Gauteng District Hospitals



Figure 7-14: Functions/ Services provided by District Hospitals in Gauteng

7.2 City of Tshwane Metropolitan Municipality

The City of Tshwane Metropolitan Municipality is a Category A municipality located in Gauteng Province. It was formed through the merger with the Metsweding District as part of the Gauteng Global City Region Strategy, aimed at reducing the number of municipalities in Gauteng to at least four by 2016. As the single-largest metropolitan municipality in South Africa, Tshwane encompasses seven regions, 105 wards, and 210 councillors.

The City of Tshwane's rich and colorful heritage is showcased through its numerous museums, monuments, and historical buildings, complemented by contemporary arts and crafts markets. Attractions like the Science and Technology Museum offer interactive experiences, while the South African Mint operates a historic minting press dating back to 1892. Visitors can also enjoy unique township sleepovers and cultural experiences. Church Square and the State Theatre host a range of international and national performances, and the city features two nature reserves where wildlife, such as buffalo, antelope, cheetah, jackal, giraffe, and sable, can be observed.

Covering an area of 6,298 km², the City of Tshwane includes various towns and areas, such as Akasia, Atteridgeville, Bronkhorstspuit, Centurion, Cullinan, Ekangala, Ga-Rankuwa, Garsfontein, Hammanskraal, Irene, Kudube, Mabopane, Mamelodi, Pretoria, Pretoria North, Rayton, Refilwe, Roodeplaat, Soshanguve, Temba, and Winterveldt. The main economic sectors within Tshwane include general government (28.1%), finance, insurance, real estate, and business services (24.7%), manufacturing (13.0%), wholesale and retail trade, catering and accommodation (11.9%), transport, storage, and communication (10.3%), community, social, and personal services (5.2%), construction (3.5%), electricity, gas, and water (1.9%), mining and quarrying (0.7%), and agriculture, forestry, and fishing (0.5%).

Tshwane's economic landscape, characterized by a diverse array of sectors, plays a crucial role in its development, while the challenges of social inequality and unemployment require ongoing attention and coordinated efforts among government, businesses, and civil society to foster a more integrated and sustainable future.

7.2.1 Demographics

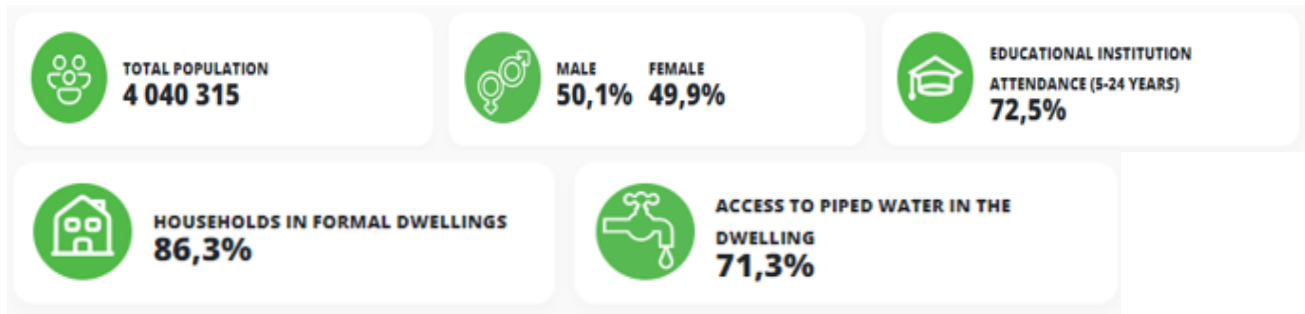
Demographic data helps identify vulnerable or marginalized groups within the population, such as children, elderly individuals, persons with disabilities, and ethnic minorities. Assessing how different demographic groups may be disproportionately affected by any project is essential for designing targeted mitigation measures and ensuring social equity. Demographic data allows for the analysis of how social impacts may vary across different population groups. Factors such as age, gender, income level, education, and employment status can influence individuals' susceptibility to certain social impacts and their ability to cope with or adapt to changes brought about by the proposed Project.

Demographic data serves as the foundation for establishing baseline conditions against which to measure changes over time. By documenting key demographic indicators such as population size, age distribution, household composition, and socioeconomic status, this SIA was able to assess how the proposed Project may impact the demographic profile of the area and identify potential demographic-related impacts.

The table below highlights the key statistics for the metropolitan municipality.

Table 7-2: City of Tshwane Metropolitan Municipality Key Statistics

City of Tshwane Metropolitan Municipality Key Statistics			
Name	2022	2016	2011
Population	4,040,315	3,275,152	2,921,488
Age Structure			
Population under 15	23.0%	25.7%	23.2%
Population 15 to 64	70.9%	69.0%	71.9%
Population over 65	6.1%	5.4%	4.9%
Dependency Ratio			
Per 100 (15-64)	41.0	45.0	39.0
Sex Ratio			
Males per 100 females	100.5	98.5	99.0
Population Growth			
Per annum	3.15%	2.60%	n/a
Labour Market			
Unemployment rate (official)	n/a	n/a	24.2%
Youth unemployment rate (official) 15-34	n/a	n/a	32.6%
Education (aged 20 +)			
No schooling	3.9%	4.5%	4.2%
Matric	n/a	38.5%	34.0%
Higher education	22.2%	19.8%	23.0%
Household Dynamics			
Households	1,322,252	1,136,877	911,498
Average household size	3.1	2.9	3.2
Female headed households	n/a	37.5%	35.8%
Formal dwellings	86.3%	82.6%	80.7%
Housing owned	n/a	62.2%	52.0%
Household Services			
Flush toilet connected to sewerage	81.5%	77.2%	78.7%
Weekly refuse removal	81.0%	79.4%	80.7%
Piped water inside dwelling	71.3%	62.1%	64.2%
Electricity for lighting	91.8%	91.8%	88.6%



The City of Tshwane Metropolitan Municipality is a Category A municipality situated in the Gauteng Province. It merged with the Metsweding District, which was a consequence of the Gauteng Global City Region Strategy to reduce the number of municipalities in Gauteng to at least four by 2016. The City of Tshwane is the single-largest metropolitan municipality in the country, comprising seven regions, 105 wards and 210 councillors. Pretoria is the capital of South Africa. It has the second-largest number of embassies in the world after Washington DC. Many embassies thus call this city their home. The Union Buildings house the administrative hub of the country and have also been the setting for the presidential inaugurations of Nelson Mandela, Thabo Mbeki and the incumbent South African president, Jacob Zuma. These sandstone buildings offer beautiful views over the City.

Its rich and colourful heritage is reflected in the City's myriad of museums, monuments and historical buildings, and is punctuated by contemporary arts and crafts markets, bringing the City alive with a unique blend of new and old. The Science and Technology Museum offers a tactile experience of science at work. The South African mint has a minting press dating back to 1892 that is still in operation. The City also offers township sleepovers with a five-star stay. Church Square and the State Theatre often host international and national performances. There are also two nature reserves where visitors can view wildlife such as buffalo, antelope, cheetah, jackal, giraffe and sable.



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Figure 7-15: Local Towns in City of Tshwane Metropolitan Municipality

7.2.2 Economic Profile

The City of Tshwane is the capital of South Africa and is the largest municipality, as measured by land mass. Tshwane is amongst the six largest metropolitan municipalities in South Africa and the second largest in Gauteng, as measured by Gross Domestic Product (GDP). The Tshwane region covers 6 368km² of Gauteng's 19 055km² and houses approximately 2,9million residents. Tshwane consists of seven regions with 105 ward's and 210 councillors.

The City has a vibrant and diverse economy, which enables it to contribute at least 26,8% of the Gauteng Province's GDP and 9,4% of the GDP of the national economy. Tshwane is the administrative capital of South Africa and is home to the Union Buildings with government-related business playing an important role in the local economy. As a result, the city is taking active measures to firmly position itself as Africa's leading capital city of excellence. The municipality's main economic sectors are community services and government, followed by finance and manufacturing. Metal products,

machinery and household products are the largest sub-sectors within manufacturing. The City has a well-established manufacturing sector, with the automotive industry representing the most significant component.

The economic state of City of Tshwane Metropolitan Municipality is put in perspective by comparing it on a spatial level with its neighbouring metropolitan municipalities, Gauteng Province, and South Africa. The section will also allude to the economic composition and contribution of the regions within City of Tshwane Metropolitan Municipality. The City of Tshwane Metropolitan Municipality does not function in isolation from Gauteng, South Africa, and the world and now, more than ever, it is crucial to have reliable information on its economy for effective planning. Information is needed that will empower the municipality to plan and implement policies that will encourage the social development and economic growth of the people and industries in the municipality respectively.

Table 7-3: Average Annual Growth for City of Tshwane

	City of Tshwane	Gauteng	National Total
2011	5.5%	3.4%	3.2%
2012	3.5%	2.6%	2.4%
2013	3.1%	2.8%	2.5%
2014	2.3%	1.7%	1.4%
2015	1.7%	1.2%	1.3%
2016	1.6%	1.1%	0.7%
2017	0.9%	1.1%	1.2%
2018	1.8%	1.9%	1.5%
2019	0.9%	0.7%	0.3%
2020	-6.0%	-5.9%	-6.3%
2021	4.3%	4.5%	4.9%
Average Annual growth 2011-2021	1.37%	1.12%	0.95%

Source: IHS Markit Regional eXplorer version 2320

In 2021, the City of Tshwane Metropolitan Municipality achieved an annual growth rate of 4.29% which is a slightly lower GDP growth than the Gauteng Province's 4.50%, and is lower than that of South Africa, where the 2021 GDP growth rate was 4.91%. Contrary to the short-term growth rate of 2021, the longer-term average growth rate for City of Tshwane (1.37%) is slightly higher than that of South Africa (0.95%). The economic growth in City of Tshwane peaked in 2011 at 5.48%. The City of Tshwane Metropolitan Municipality had a total GDP of R 614 billion and in terms of total contribution towards Gauteng Province the City of Tshwane Metropolitan Municipality ranked second relative to all the regional economies to total Gauteng Province GDP. This 35 18 ranking in terms of size compared to other regions of City of Tshwane remained the same since 2011. In terms of its share, it was in 2021 (28.3%) slightly larger compared to what it was in 2011 (27.8%). For the period 2011 to 2021, the average annual growth rate of 1.4% of City of Tshwane was the highest relative to its peers in terms of growth in constant 2010 prices.

7.2.3 Economic Growth Forecast

It is expected that City of Tshwane Metropolitan Municipality will grow at an average annual rate of 1.67% from 2021 to 2026. The average annual growth rate of Gauteng Province and South Africa is expected to grow at 2.00% and 1.81% respectively.

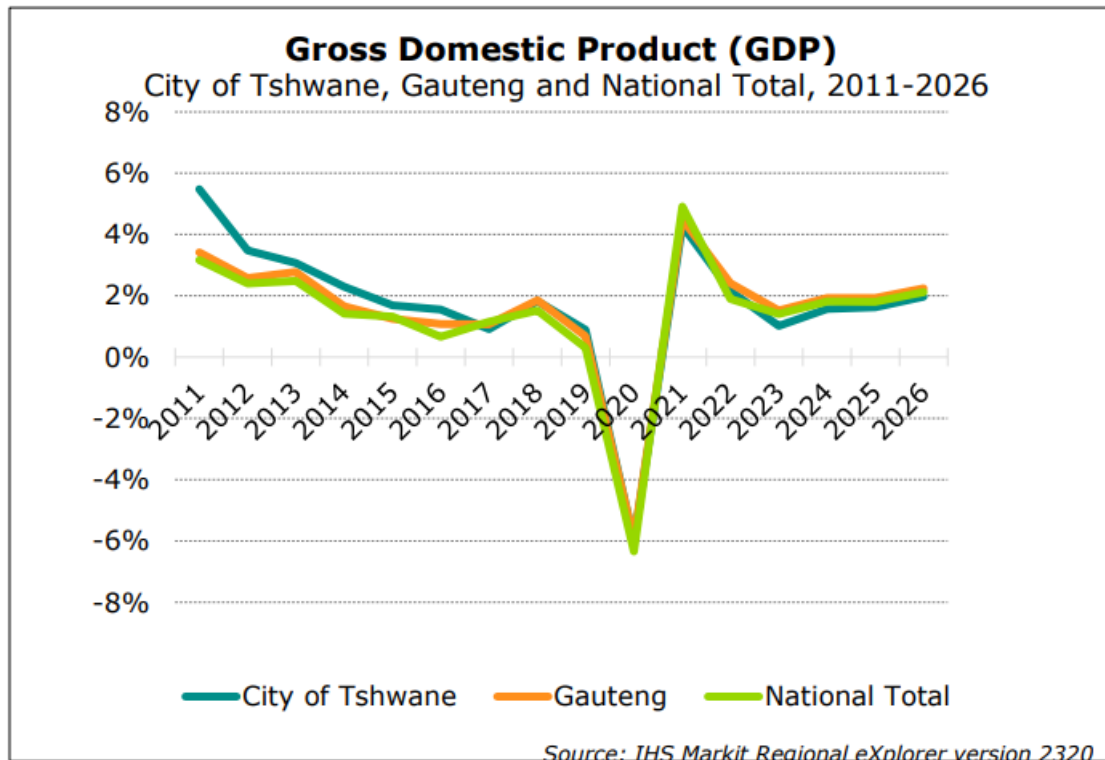


Figure 7-16: Gross Domestic Product (GDP) - City of Tshwane, Gauteng, and National Total, 2011-2026 [Average Annual Growth Rate, Constant 2010 Prices]

In 2026, City of Tshwane's forecasted GDP will be an estimated R 503 billion (constant 2010 prices) or 27.9% of the total GDP of Gauteng Province. The ranking in terms of size of the City of Tshwane Metropolitan Municipality will remain the same between 2021 and 2026, with a contribution to the Gauteng Province GDP of 27.9% in 2026 compared to the 28.4% in 2021. At a 1.67% average annual GDP growth rate between 2021 and 2026, City of Tshwane ranked the fourth compared to the other regional economies.

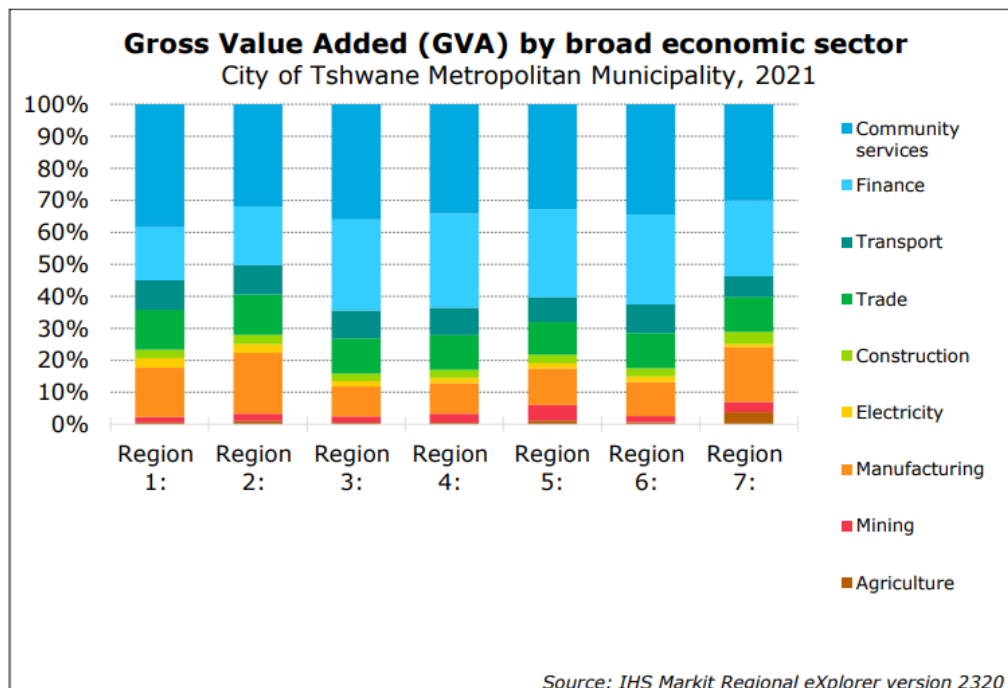


Figure 7-17: Gross Value Added (GVA) by Broad Economic Sector - Sub-Metro Regions of City of Tshwane Metropolitan Municipality, 2021 [Percentage Composition]

The community sector, which includes the government services, is generally a large contributor towards GVA in smaller and more rural local municipalities. When looking at the regions within the metropolitan municipality, the Region 3 made the largest contribution to the community services sector at 31.09% of the metropolitan municipality. The Region 3 contributed R 170 billion or 30.41% to the GVA of the City of Tshwane Metropolitan Municipality, making it the largest contributor to the overall GVA of the City of Tshwane Metropolitan Municipality.

7.2.4 Labour Force Profile

The labour force of a country consists of everyone of working age (above a certain age and below retirement) that are participating as workers, i.e., people who are actively employed or seeking employment. This is also called the economically active population (EAP). People not included are students, retired people, stay-at-home parents, people in prisons or similar institutions, people employed in jobs or professions with unreported income, as well as discouraged workers who cannot find work. The labour force participation rate (LFPR) is the Economically Active Population (EAP) expressed as a percentage of the total working age population. The following is the labour participation rate of the City of Tshwane, Gauteng, and National Total as a whole.

The City of Tshwane Metropolitan Municipality's labour force participation rate decreased from 67.48% to 64.38% which is a decrease of -3.1 percentage points. The Gauteng Province decreased from 68.91% to 66.37%, South Africa increased from 53.90% to 56.50% from 2011 to 2021. The City of Tshwane Metropolitan Municipality labour force participation rate exhibited a lower percentage point change compared to the Gauteng Province from 2011 to 2021. The City of Tshwane Metropolitan Municipality had a higher labour force participation rate when compared to South Africa in 2021. In 2021 the

labour force participation rate for City of Tshwane was at 64.4% which is slightly lower when compared to the 67.5% in 2011. The unemployment rate is an efficient indicator that measures the success rate of the labour force relative to employment. In 2011, the unemployment rate for City of Tshwane was 23.4% and increased overtime to 30.5% in 2021. The gap between the labour force participation rate and the unemployment rate decreased which indicates a negative outlook for the employment within City of Tshwane Metropolitan Municipality.

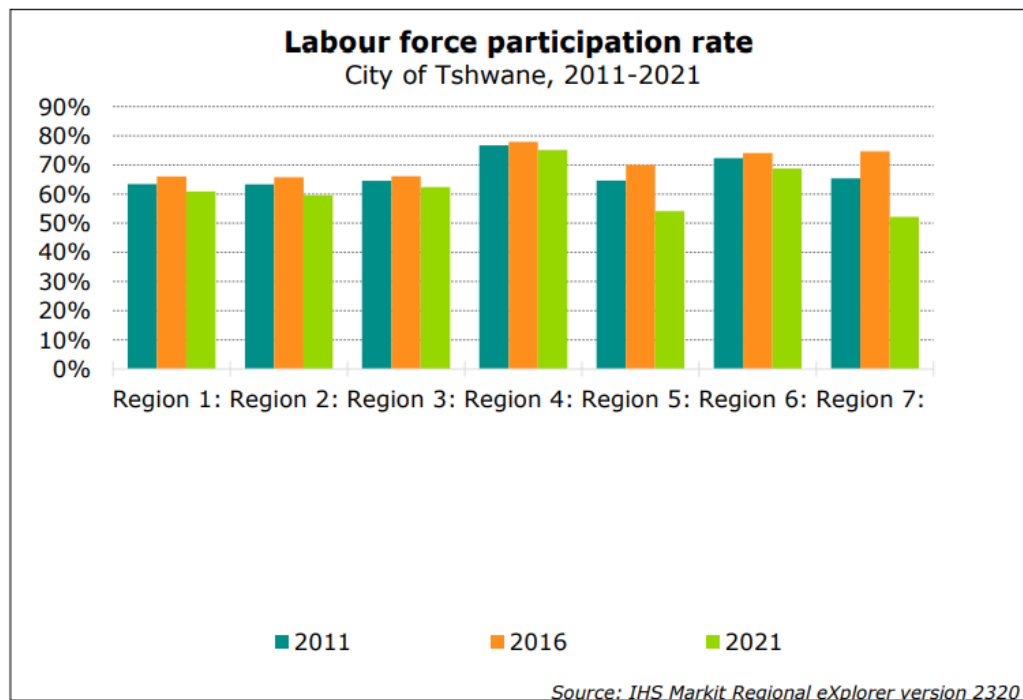


Figure 7-18: The Labour Force Participation Rate - Sub-Metro Regions and the rest Of City of Tshwane Metropolitan Municipality, 2016 And 2021

Region 4 had the highest labour force participation rate with 75.1% in 2021 decreasing from 76.7% in 2011. Region 7 had the lowest labour force participation rate of 52.2% in 2021, this decreased from 65.4% in 2011.

7.2.5 Health Profile

South Africa's constitution guarantees that everyone has access to healthcare services. The City of Tshwane prioritises the provision of access to public healthcare through implementing several programmes. This comes from the recognition that developmental local government efforts can achieve the required outcomes when the residents' health and social wellbeing is taken good care of. In this regard, city commits itself to the provision of comprehensive basic health services. The focus is on the provision of municipal health services (environmental health), primary health care services, HIV/AIDS/TB and STI services. In addition, the city provides drugs and substance abuse response services which are categorised as one of the specialised services to vulnerable community members. The city provides health services on an agency agreement basis with the Gauteng Provincial Health Department.

Table 7-4:Service data for clinics

Service data for clinics					
	Details	2020/21	2021/22		2022/23
		Actual number	Estimate number	Actual number	Estimate number
1	Number of patient visits on an average day	1 249 806	1 249 806	1 295 068	1 295 068
2	Total medical staff available on an average day	1 (One)	1 (One)		
3	Average patient waiting time	131 minutes	131 minutes		
4	Number of HIV/AIDS tests undertaken in the year	138 310	138 310	189 881	189 881
5	Number of tests in 4 above that proved positive	10303 (7.4%)	10303 7.4%		
6	Number of children younger than 1 year that are immunised	11 837	11 837	13 932	13 932
7	Child immunisations above compared with the population of children younger than 1 year	67375 - Population) 47.3%	47.3%		
					T 3.17.2

In the financial year under review, the city continued to promote and broaden access to healthcare. In line with this, through its clinics, the city implements critical health programmes such as the antenatal care and Prevention of Mother to Child Transmission (PMTCT); tuberculosis (TBT) treatment and antiretroviral treatment; women's healthcare; dental care etc. In this regard, the city recorded an average of more than 1.2 million patients visits in its 24 municipal fixed clinics, one satellite clinic and four mobile clinics with extended services rendered at 14 clinics on Saturdays from 08:00 to 13:00.

7.2.5.1 Provision of essential drugs

The city's Primary Health Care (PHC) facilities receives medicines and surgical items from the district Regional Pharmacy and surgical stores. The city strives to utilise these medicines appropriately to meet the healthcare needs of the residents. This is achieved through adhering to the Standard Treatment Guidelines (STGs), which are standards designed to guide health practitioners and patients in making appropriate health care decisions for specific clinical issues. The city recorded 95% medicine availability in the financial year under review. This is above the set target of 90% and increase of 1% compared to the 2020/21 financial year. The availability of medicine has an impact on the appropriate use of medicines and adherence to the STGs. Despite the non-award of national tenders of medicines and worldwide shortage of active pharmaceutical ingredients to make medicines, medicine availability at PHC facilities was maintained above the 90% target throughout the financial year. This was achieved through the vigilance in the PHC facilities where shortages and low stock items are reported on a weekly basis and emergency orders placed in addition to the scheduled monthly orders. The facilities also report on stock availability of the stock visibility system (SVS) that feeds information to the National Department of Health dashboard. SVS reporting from PHC facilities has been at an average of 95,38 which is above the 90% target. The figure below presents the percentage of medicine availability in Tshwane's PHC facilities for the 2021//22 financial year:

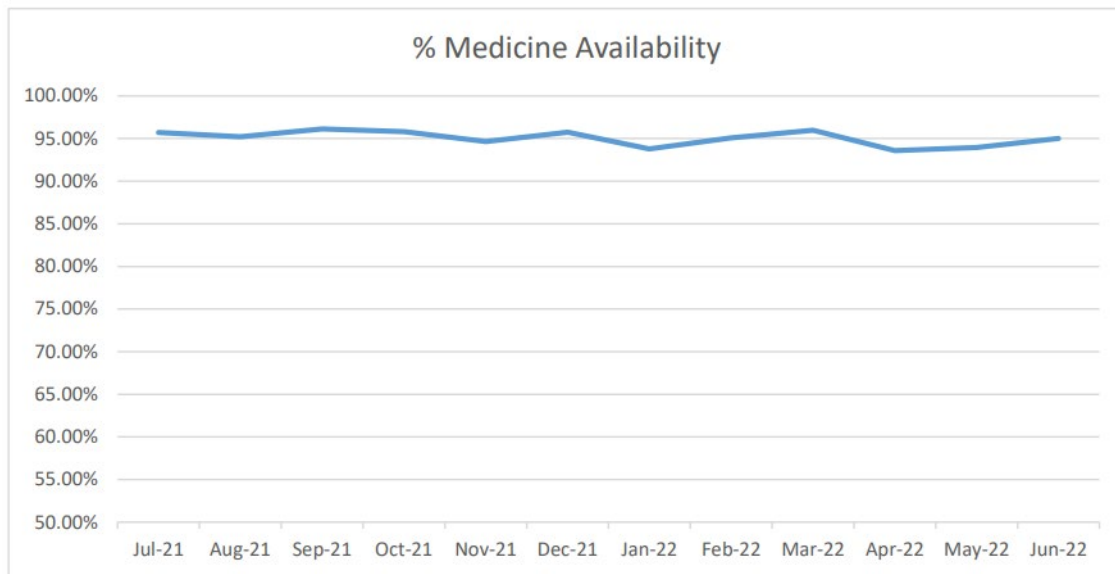


Figure 7-19: Percentage of medicine availability at City's Primary healthcare facilities

7.2.5.2 Cervical Cancer

Cancer of the cervix is the most common gynaecological cancer in South Africa and the fourth most common cancer to affect women worldwide. Cervical cancer screening contributes significantly to the reduction of the incidences of cervical cancer. Over the financial year under review, the city's Primary Health Care facilities recorded a total of 18 721 cervical smears as compared to 14 266 smear cases taken during the 2020/21 financial year. The national target for cervical cancer screening coverage was set at 60% and the re-focus on routine services after the lifting of the state of disaster and specific actions put in place by PHC clinicians to improve the reach, paid off and the target set of 60% was achieved and surpassed in June 2022.

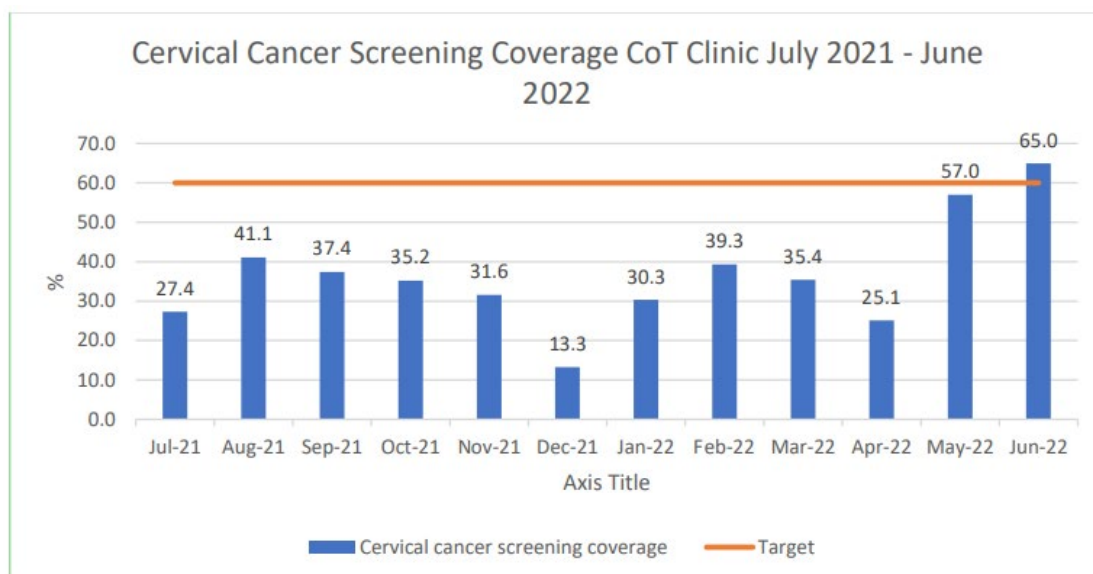


Figure 7-20: Cervical cancer smears performed by PHC Facilities in Tshwane District

7.2.5.3 HIV and AIDS

HIV Counselling and Testing

Early detection of HIV status through free voluntary HIV testing and counselling is available to the public at any clinic in Tshwane. Strategies are implemented to target hard to reach populations and to increase HIV testing for men. Innovative strategies to improve testing index patients are implemented. HIV self-testing has been introduced to test partners of those who tested HIV positive.

Prevention of Mother-to-Child-Transmission (PMCTC)

The Tshwane Health District continues to implement the Prevention of mother-to-child transmission of HIV programme with efforts to reduce the vertical transmission of HIV from a Mother to an unborn child. In line with the international standards for a comprehensive strategy, the Prevention of Mother-to-child Transmission (PMTCT) programme recognises the following key objectives:

- Primary prevention of HIV, especially among women of childbearing age.
- Prevention of unintended pregnancies among women living with HIV.
- Prevention of HIV transmission from a woman living with HIV to her infant.
- Provision of appropriate treatment, care and support to women living with HIV and their children and families.
- Integration of PMTCT interventions with basic antenatal care, sexual and reproductive health, child and adolescent health, comprehensive care, management and treatment, and tuberculosis services.
- Reduction of maternal mortality, in line with the Sustainable Development Goals (SDGs).

In the financial year under review, the City recorded 90.3% of HIV tests conducted against the National Target of 90%.

7.2.6 Poverty Dimensions

7.2.6.1 Distribution

The City of Tshwane Metropolitan Municipality is located in Gauteng province, South Africa. Like many urban areas in the country, poverty remains a significant challenge in certain parts of Tshwane. Contributing factors include high unemployment rates, limited access to quality education and healthcare, inadequate infrastructure, and economic disparities.

To obtain current and accurate information on poverty distribution in Tshwane, it is essential to refer to recent reports or studies from government agencies, research institutions, or non-governmental organizations active in the municipality. These reports typically analyse poverty levels based on income, access to basic services, housing conditions, and other socio-economic indicators.

7.2.6.2 Employed /Unemployed

The choice of definition for what constitutes being unemployed has a large impact on the final estimates for all measured labour force variables. The following definition was adopted by the Thirteenth International Conference of Labour Statisticians (Geneva, 1982): The "unemployed" comprise all persons above a specified age who during the reference period were:

- "Without work", i.e., not in paid employment or self-employment.
- "Currently available for work", i.e., were available for paid employment or selfemployment during the reference period.
- "Seeking work", i.e., had taken specific steps in a specified reference period to seek paid employment or self-employment. The specific steps may include registration at a public or private employment exchange; application to employers; checking at worksites, farms, factory gates, market, or other assembly places; placing or answering newspaper advertisements; seeking assistance of friends or relatives; looking for land.

	City of Tshwane	Gauteng	National Total
2011	23.4%	26.2%	25.1%
2012	22.9%	25.7%	25.1%
2013	22.7%	25.3%	25.2%
2014	23.2%	25.8%	25.2%
2015	24.2%	27.1%	25.5%
2016	25.3%	28.6%	26.4%
2017	26.0%	29.5%	27.2%
2018	26.0%	29.4%	27.4%
2019	26.7%	30.3%	28.4%
2020	28.0%	32.1%	30.3%
2021	30.5%	35.2%	33.6%

Source: IHS Markit Regional eXplorer version 2320

Figure 7-21: Unemployment Rate (Official Definition) - City of Tshwane, Gauteng, and National Total, 2011-2021

In 2021, the unemployment rate in City of Tshwane Metropolitan Municipality (based on the official definition of unemployment) was 30.51%, which is an increase of 7.14 percentage points. The unemployment rate in City of Tshwane Metropolitan Municipality is lower than that of Gauteng. The unemployment rate for South Africa was 33.58% in 2021, which is an increase of -8.51 percentage points from 25.08% in 2011.

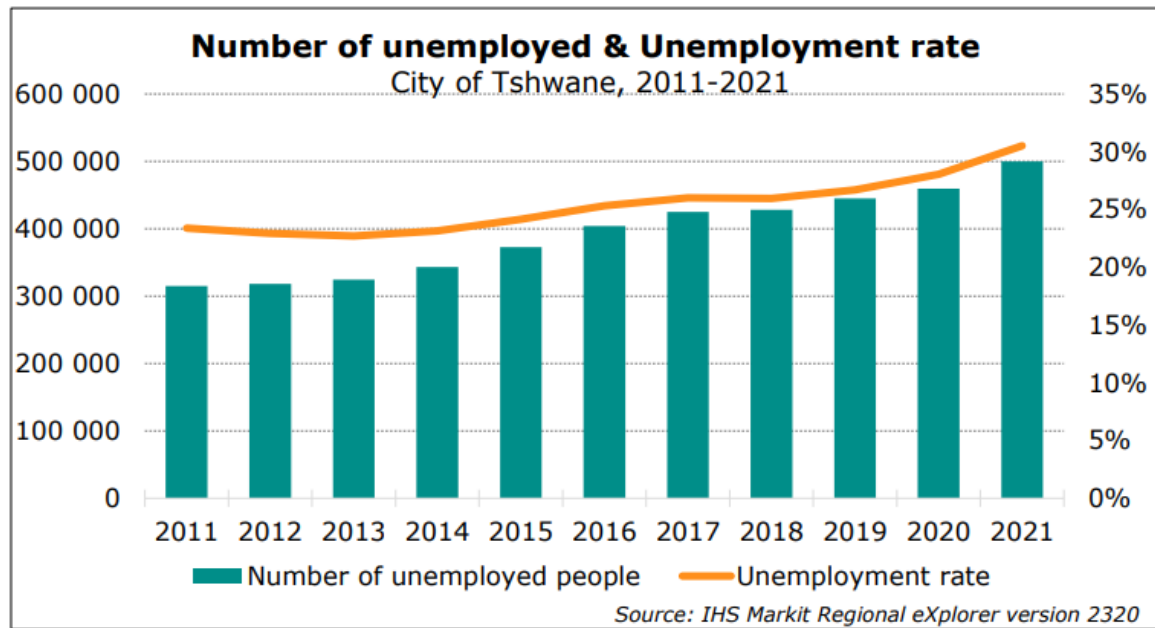
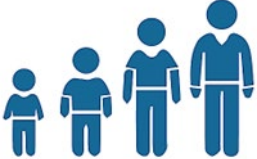
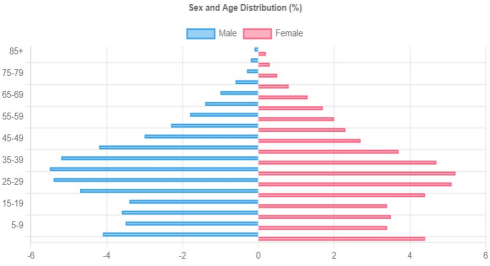
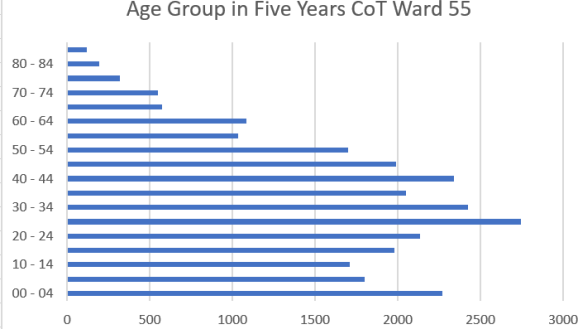
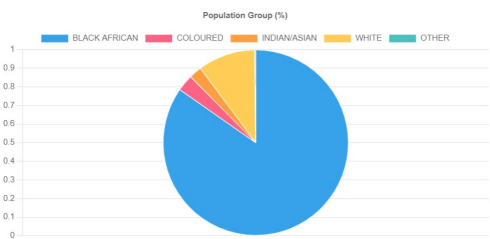
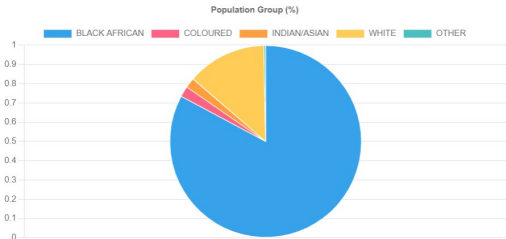
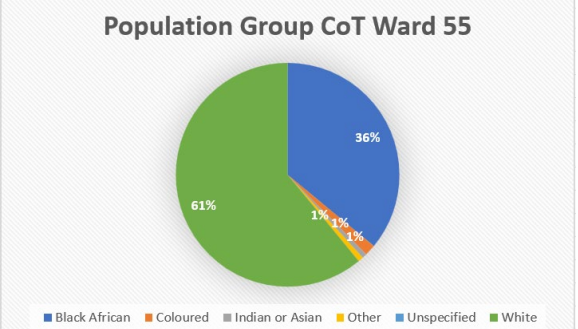
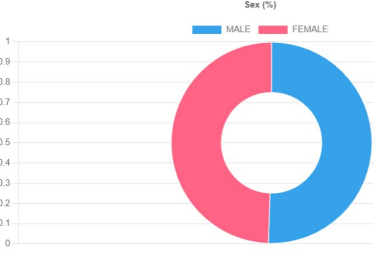
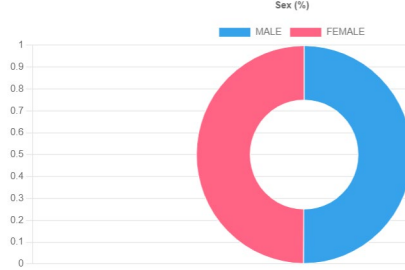
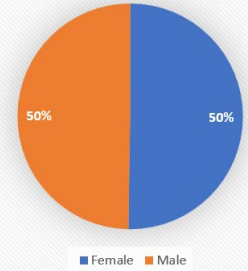
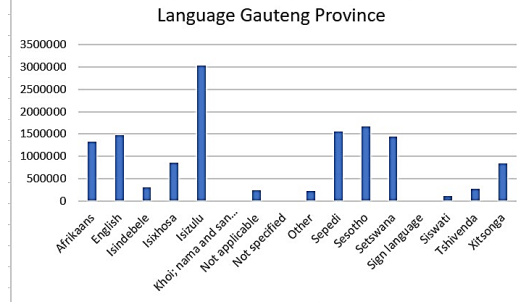
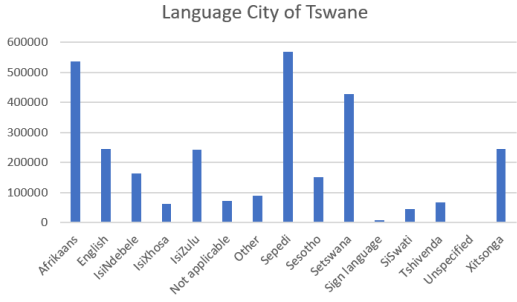
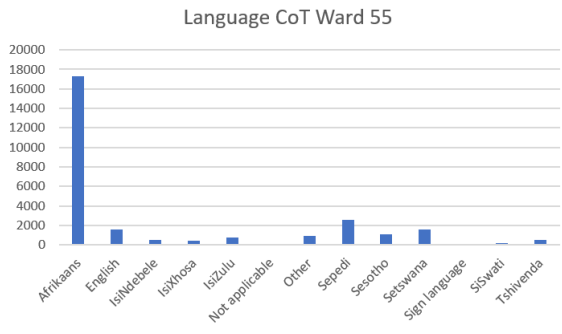


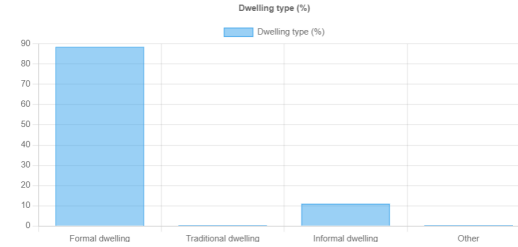
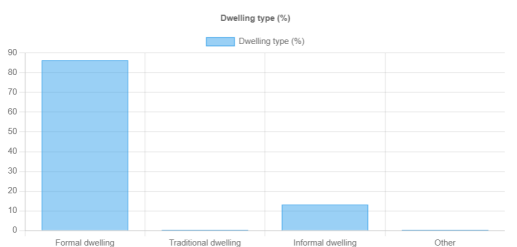
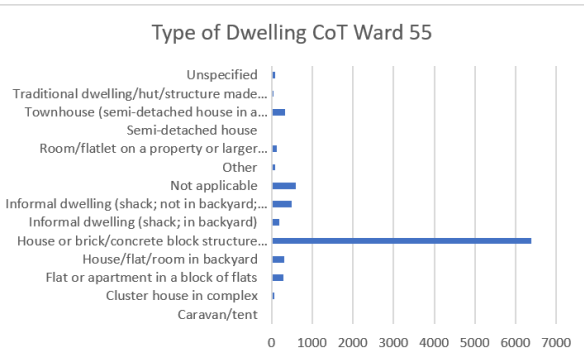
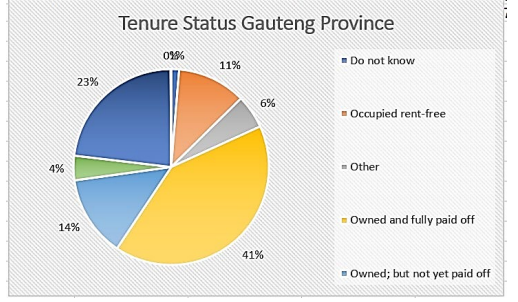
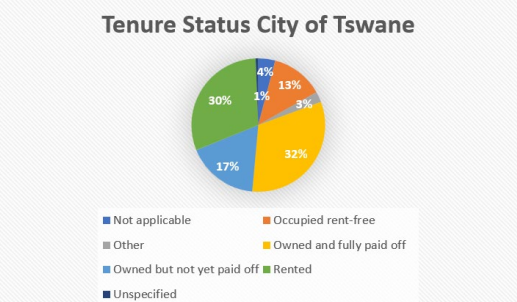
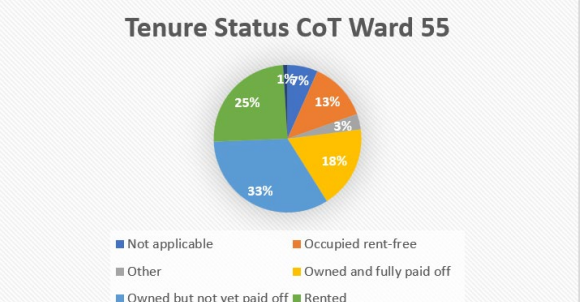
Figure 7-22: Unemployment and Unemployment Rate (Official Definition) - City of Tshwane Metropolitan Municipality, 2011-2021

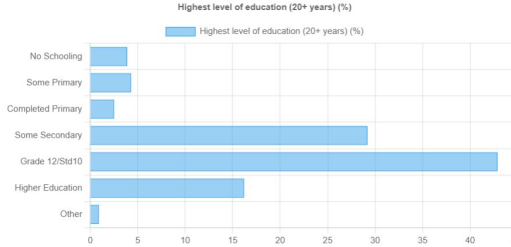
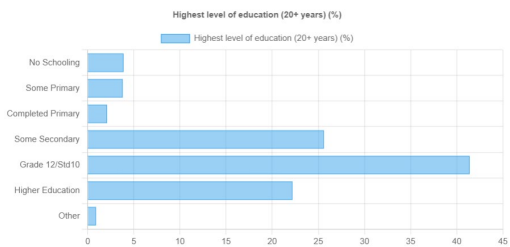
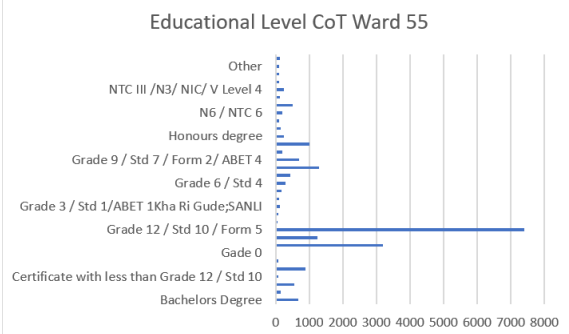
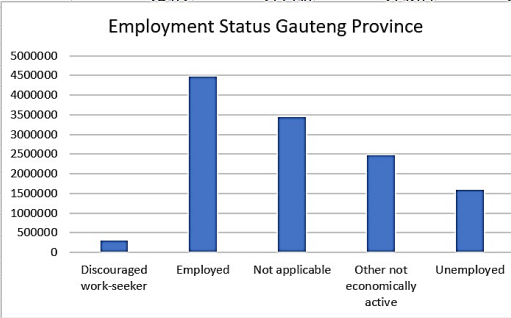
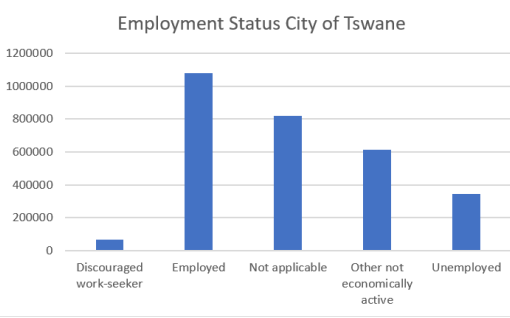
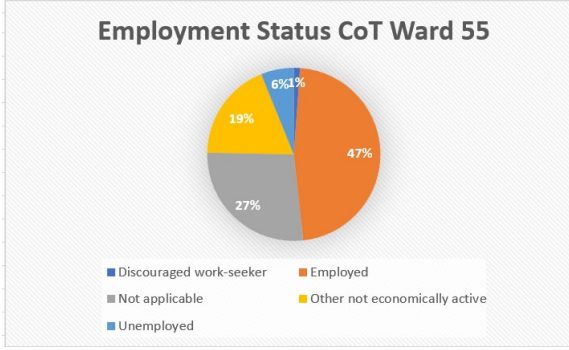
7.2.7 Summary of Key Statistics

Table 7-5: Summary of Key Statistics for the Province, DM and LM

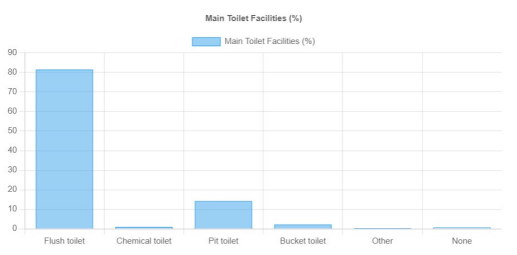
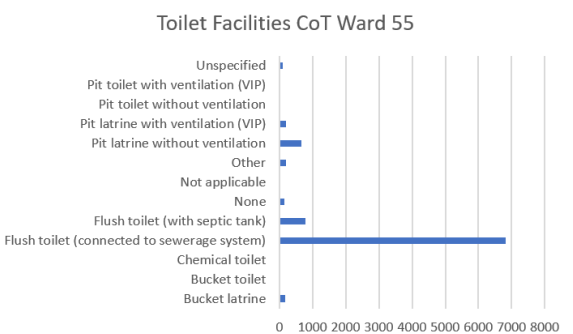
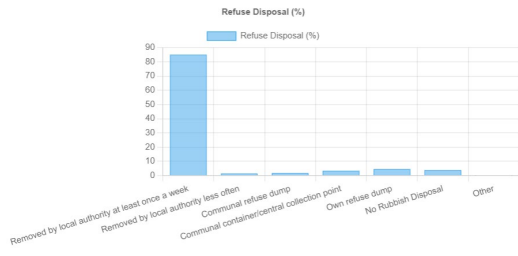
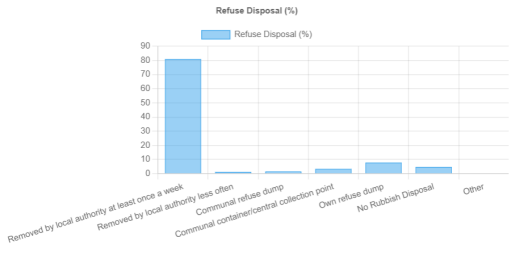
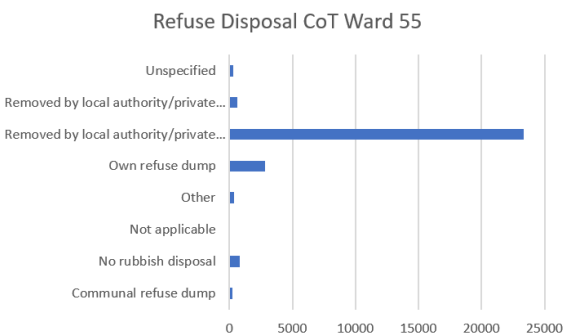
Demographic Aspect	Gauteng Province	City of Tshwane Metropolitan Municipality	Ward 55
Age 	 The populous age group in the province is between ages 30 to 34. Followed Ages between 25 to 29.	 The populous age group in the district is between ages 30 to 34. Followed Ages between 25 to 29.	 The populous age group is between ages 25 to 29 followed Ages between 30 to 34.
Population 	 The majority of the population consists of Black African followed by Whites.	 The majority of the population consists of Black African followed by Whites.	 The majority of the population are White (61%) followed by Black African (36%).

Demographic Aspect	Gauteng Province	City of Tshwane Metropolitan Municipality	Ward 55
Gender 	 There are slightly more males (50.5%) than females (49.5%).	 There are slightly more males (50.1%) than females (49.9%).	Gender CoT Ward 55  The gender distribution is equal with 50% males and 50% females.
Language 	Language Gauteng Province  The majority of the population in the province speak SiSwati (above 1 000 000), followed by isiZulu (Below 1 000 000), then Xitsonga (above 400 000).	Language City of Tshwane  The majority of the population speak Sepedi (below 600 000), followed by Afrikaans (above 500 000), then Setswana (above 400 000).	Language CoT Ward 55  The majority of the population speak Afrikaans.

Demographic Aspect	Gauteng Province	City of Tshwane Metropolitan Municipality	Ward 55
Households 	 Majority of the population in the province live in house or flat household.	 Majority of the population in the district live in formal dwelling (above 80%).	 Majority of the population live in house or flat household.
Household Ownership 	 51% of the total population of the province have owned and fully paid off tenure status. While 20% have a rented status.	 32% of the population have owned and fully paid off tenure status. While 30% have a rented status.	 Majority of the population have owned but not yet paid off (33%) then followed by a rented tenure status at 25%, followed by owned and fully paid off at 18%.

Demographic Aspect	Gauteng Province	City of Tshwane Metropolitan Municipality	Ward 55
Education Level 	Highest level of education (20+ years) (%)  The population in the province have the highest education level at Grade 12. Followed by N6/NTC 6.	Highest level of education (20+ years) (%)  The population in the district have the highest education level at Grade 12.	Educational Level CoT Ward 55  The population have the highest education level at Grade 12.
Employment 	Employment Status Gauteng Province  Most of the workforce in the province are employed in the formal sector (above 500 000).	Employment Status City of Tswane  Most of the workforce in the district are employed (above 1 000 000) followed by other not economically active (600 000).	Employment Status CoT Ward 55  47% of the population are employed. 6% are not employed, while 19% are not economically active.

Demographic Aspect	Gauteng Province	City of Tshwane Metropolitan Municipality	Ward 55
Type of Sector	Type of Sector Gauteng Province The majority of the people work in the formal sector.	Type of Sector City of Tswane The majority of the people work in the formal sector.	Type of Sector CoT Ward 55 Most of the workforce are employed in the formal sector.
Water	Access to piped water (%) Regional/local water scheme are the main source of water supply in the province followed by boreholes.	Access to piped water (%) Regional/local water scheme are the main source of water supply in the district followed by boreholes.	Source of Water CoT Ward 55 Regional/local water scheme are the main source of water supply followed by boreholes.

Demographic Aspect	Gauteng Province	City of Tshwane Metropolitan Municipality	Ward 55
Toilet Facilities 	Main Toilet Facilities (%)  Out of all the residents of the province, the majority of them have flush toilets that are connected to the sewerage system (below 500 000). Less than 400 000 have pit latrines without ventilation.	Main Toilet Facilities (%)  Out of all the residents of the district, the majority of them have flush toilets that are connected to the sewerage system (below 200 000). Above 100 000 have pit latrines without ventilation.	Toilet Facilities CoT Ward 55  Majority of the households have flush toilets with connected to the sewerage system.
Refuse Disposal/ Removal 	Refuse Disposal (%)  Less than 2 million households remove their own dump followed by refuse which is collected by the local authority at least once a week.	Refuse Disposal (%)  Above 600 000 households have their waste collected by the local authority at least once a week followed by people which dispose of their own dump.	Refuse Disposal CoT Ward 55  The majority of people depend on the local authority for refuse disposal.

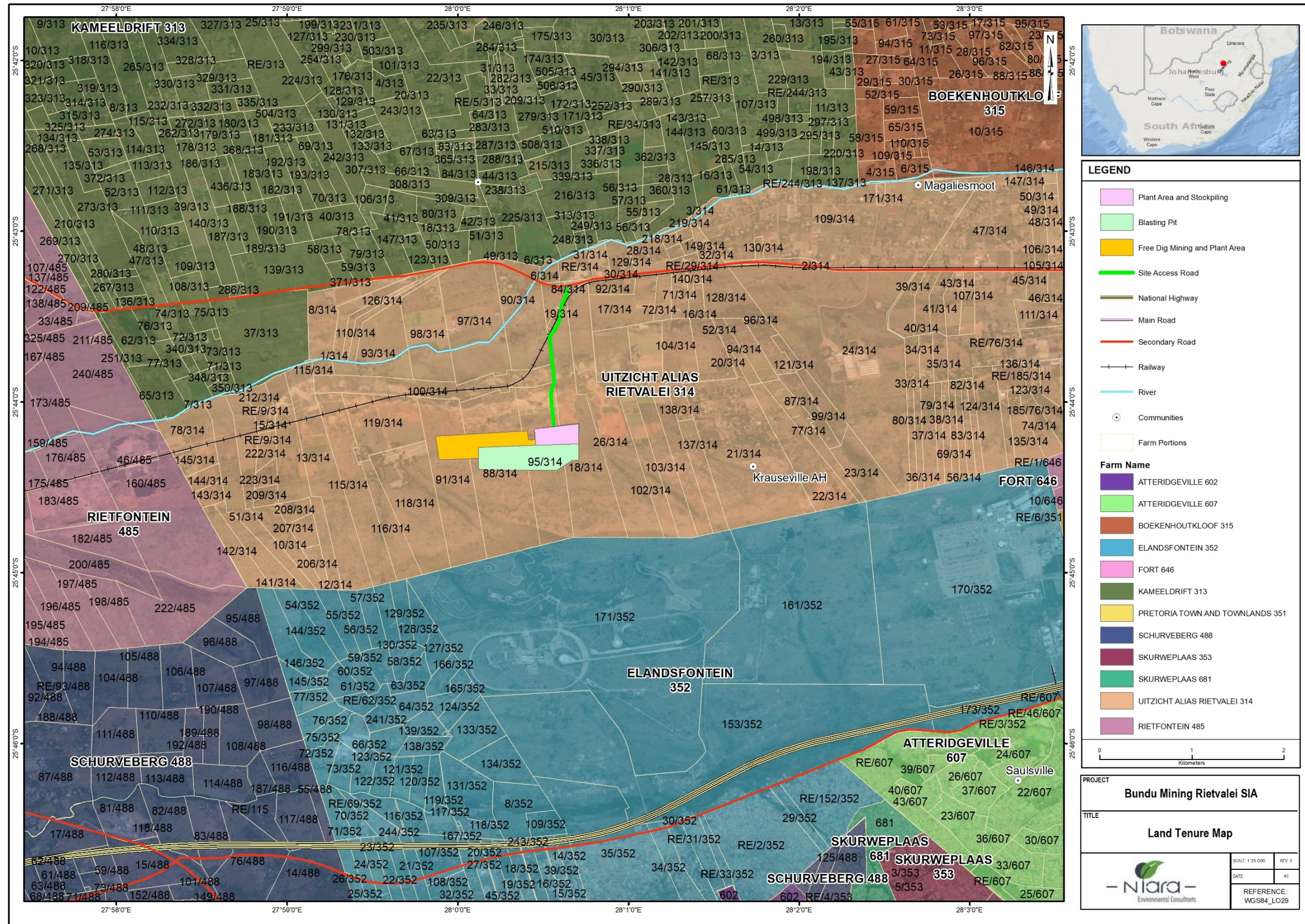


Figure 7-23: Land Tenure Plan

7.3 Ward 55

7.3.1 Primary Zone(s)

The Primary Zone refers to the immediate vicinity or directly affected areas surrounding the proposed project site. It is described as the area likely to experience social impacts associated with the physical intrusion by Project infrastructure and Project-related activities.

7.3.2 Schooling

The presence of primary schools has significant social impacts on a community, contributing to various aspects of social development and well-being. Primary schools can positively influence the social fabric of a community in various ways, namely:

- **Education Access and Equity:** Primary schools provide access to education for children within the community, regardless of socioeconomic background, promoting equity and reducing disparities in educational opportunities.
- **Empowerment and Social Mobility:** Education is a key driver of social mobility and empowerment, empowering individuals to improve their socio-economic status and pursue aspirations by providing knowledge, skills, and personal development opportunities.
- **Community Cohesion and Integration:** Primary schools serve as focal points for the community, fostering a sense of belonging and shared identity among residents by bringing together families, educators, and local stakeholders.
- **Cultural and Social Diversity:** Reflecting the cultural and social diversity of their communities, primary schools provide opportunities for interaction, learning, and mutual respect among children from different backgrounds.
- **Community Pride and Identity:** Well-functioning primary schools instil a sense of pride and identity in the community, with achievements contributing to a positive community image and collective pride.
- **Local Economic Development:** Primary schools create employment opportunities for teachers, support staff, and professionals, indirectly benefiting the community economically by potentially attracting businesses and investment.
- **Community Safety and Crime Prevention:** Providing a structured environment during school hours, primary schools reduce children's exposure to risks and vulnerabilities, while promoting positive social behaviours and values contributing to community safety and crime prevention.

Overall, primary schools are vital institutions within communities, acting as centres of learning and agents of social change and development, enhancing resilience, cohesion, and prosperity. Education serves as the cornerstone for societal progress, empowering students to understand, engage with, and transform their communities. As the incubators of future leaders, schools play a pivotal role in fostering growth and development within society. The active involvement of educational institutions holds the potential to catalyse positive change across multiple fronts (Teach mint, 2024).



Figure 7-24: Laerskool Kameeldrift Primary School

Laerskool Kameeldrift represents a significant achievement for the community, providing essential educational opportunities that foster literacy and skills development. This access empowers local children and supports the region's socioeconomic growth by preparing a skilled future workforce. However, the potential opening of a mine nearby could have mixed impacts on the school. On one hand, the mine may stimulate local economic growth, leading to increased resources and funding for education. It could also create job opportunities for parents, contributing to improved family income and student support.

On the other hand, the mine's operations could pose challenges, including environmental degradation and increased traffic, which may affect the safety and well-being of students. Dust and noise pollution could also disrupt the learning environment, making it harder for students to focus and achieve their academic potential. Moreover, the school's infrastructure requires improvement to enhance the learning environment and ensure a safer space for students and teachers. Despite these challenges, Laerskool Kameeldrift remains a valuable community asset, promoting social cohesion and serving as a vital hub for local development. Addressing these potential impacts proactively is essential to maintaining the school's role in the community.

7.3.3 Agriculture

Agriculture offers an alternative livelihood to community members, diversifying income sources beyond mining. This can enhance economic resilience in the face of fluctuations in the mining sector. Mining activities may introduce pollutants into the air and water, potentially affecting the health of residents and the safety of crops. Contaminants such as heavy metals

and pesticides could pose risks to both human health and agricultural productivity. In addition, mining activities may introduce pollutants into the air and water, potentially affecting the health of residents and the safety of crops. Contaminants such as heavy metals could pose risks to both human health and agricultural productivity.

To mitigate negative social impacts and enhance positive outcomes, it is crucial for mining companies, local authorities, and community stakeholders to engage in collaborative planning, sustainable resource management, and effective community development initiatives. It is crucial to strike a balance between mining activities and agriculture in a way that benefits the community in its entirety.



Figure 7-25: Longside Piggery

The Longside Piggery serves as a vital hub in the local agricultural community, fostering collaboration and knowledge sharing among residents. It provides resources and expertise in pig farming, helping local farmers enhance productivity and adapt to market trends, thereby supporting economic stability. The piggery also impacts the community by creating job opportunities and contributing to local food security through the supply of pork products. Its operations encourage sustainable farming practices, promoting responsible animal husbandry and environmental stewardship.

Conversely, the community influences the piggery by providing a labour force and local demand for its products. Engaging with residents fosters relationships that enhance both agricultural practices and community well-being. In summary, the Longside Piggery plays a crucial role in creating a resilient agricultural community while supporting economic growth and sustainable practices.



Figure 7-26: Longside Farm on Duiker Rd

Owning a farm in a community has significant impacts and benefits for both the owner and the community. For the owner, a farm provides economic stability and a livelihood, enabling the use of modern and sustainable farming practices that enhance productivity. It also offers opportunities for personal growth and skill development. For the community, the farm serves as a hub for agricultural activity, creating jobs and supporting local supply chains. Community events like harvest festivals promote social interaction and strengthen communal ties while encouraging knowledge sharing among residents.

Farms also engage youth through educational programs, ensuring the development of future agricultural leaders and maintaining connections to the community. However, farm ownership comes with challenges, including long hours, financial risks, environmental factors affecting productivity, and the isolation that may limit social interactions. Despite these challenges, the benefits—such as economic stability, community engagement, and youth development—are substantial, making farms essential for a vibrant and resilient agricultural community.



Figure 7-27: Farm along R514

7.3.4 Place of Cultural Significance

Having a cemetery within a community offers several socio-economic benefits that extend beyond merely providing a place for burial. These benefits include cultural, social, economic, and environmental advantages that contribute to the overall well-being and development of the community. Cemeteries often serve as historical sites that preserve the cultural heritage and history of a community, providing a link to the past. They allow communities to maintain and practice their cultural and religious rituals related to death and remembrance. Cemeteries provide a place for families and community members to come together, share memories, and support each other during times of loss. They offer a sense of place and continuity, helping residents feel connected to their community and its history.

In consultations with stakeholders from the area it does not appear that there are cultural significant areas within the study area under the Ward 55. The cultural heritage impact study identified recent historical sites and features in the study and application area, including a recent historical cemetery and mining-related infrastructure.

7.3.5 Substance Use and Abuse

The opening of a local pub in the area has significant implications for the community, primarily affecting safety and social dynamics. With its protective features, including burglar bars on windows and doors, an enclosing wall fence, and a secure gate, the pub ensures a safer environment for its patrons, reducing the risk of theft and vandalism. Access to electricity and water further enhances its functionality, making it a reliable space for social gatherings and relaxation.

above shows one of many liquor stores within the Potentially Affected Communities. The presence of a liquor store in a community may have various social impacts, both positive and negative. The effects can be influenced by factors such as the store's location, local regulations, community dynamics, and the responsible management of the respective establishment.

Some of the positive social impacts of having liquor stores within the communities include:

- Convenience and Access
- Employment Opportunities
- Tax Revenue
- Conversely, the negative social impacts:
- Alcohol-related Health Issues
- Public Safety Concerns
- Community Health and Well-being (from excessive alcohol consumption)
- Underage Drinking
- Crime and Disorder
- Dependency Issues (communities with a high concentration of liquor stores may face issues related to alcohol dependency, potentially leading to social and economic challenges).
- Impact on Family Life (excessive alcohol consumption, stemming from easy access to liquor stores, can contribute to problems within families, affecting relationships and overall family dynamics).



Figure 7-28: Local Liquor store on R514

Additionally, the availability of a parking area facilitates simple access for visitors. The pub's presence contributes to community cohesion by providing a local gathering place where residents can socialize, fostering a sense of belonging and community spirit. It's crucial to consider the potential downsides, such as increased noise and the risk of alcohol-related

incidents. Despite these concerns, the pub's security measures and amenities generally support its role in enhancing social interaction and providing a valuable communal space in the area.

7.3.6 Economic activity



Figure 7-29: Local Spaza on 83 Van Der Hoff Rd, Pretoria Gardens

A "spaza shop" is a type of informal convenience store or small retail outlet commonly found in South Africa and other parts of Southern Africa. The term "spaza" originates from isiZulu, and loosely translates to "hidden" or "informal." The presence of spaza shops in the Primary Zone Overall plays an essential role as these 'shops' form an integral part of the retail landscape in not only the PACs, but the country as a whole. They provide essential goods and services, generating employment opportunities, and contributing to the socio-economic fabric of local communities.

Spaza shops offer convenience, they serve as convenient retail outlets for communities, offering a range of essential goods and household items such as groceries, snacks, beverages, toiletries, and basic household supplies. They also play a crucial role in providing access to goods, especially in areas where formal retail infrastructure is limited or non-existent. They are often located within walking distance of residential areas, offering convenience to customers. Spaza shops promote entrepreneurship within their host communities as they are typically family-owned or operated by individual entrepreneurs, often women, who run the business as a means of generating income and supporting their families. They contribute to local economic activity and livelihoods of their communities. These informal retail spots often double up as community hubs where residents gather to socialize, exchange news, and catch up with neighbours. They play a role in fostering social connections and a sense of belonging within the community. Although spaza shops face various challenges, including limited access to capital, competition from larger retailers, security concerns, and regulatory issues, they remain resilient and continue to play a vital role in meeting the needs of underserved communities.



Figure 7-30: Local General Store in Kameeldrift West

A general dealership store in the area provides a range of essential goods and services that significantly impact the local community. It offers convenient access to various products, including groceries, household items, and automotive supplies, catering to the everyday needs of residents. The store serves as a central hub for shopping, reducing the need for residents to travel long distances for basic necessities. Additionally, it supports local economic activity by creating jobs and stimulating local spending. While it enhances convenience and economic activity, challenges such as inventory management and competition with larger retailers can affect its operations. Overall, the dealership store plays a vital role in meeting community needs and contributing to local economic stability.



Figure 7-31: An in-order market

The above image shows another local business, an indoor market in the area offers a range of exclusive flower pots, significantly impacting the local community. Its focus on unique, high-quality flower pots attracts customers seeking distinctive options for their gardening and home decor, thereby enhancing the aesthetics of their living spaces and supporting the local love for gardening. The market plays a crucial role in stimulating local economic activity by creating jobs and encouraging spending within the community. By employing local residents and potentially sourcing materials from nearby suppliers, it fosters a cycle of economic growth that benefits various stakeholders. This investment in the local economy helps sustain and strengthen the community's overall financial health.

Convenience is another key benefit of the market, as it provides exclusive flower pots without requiring residents to travel to larger retailers or specialty stores. This easy access not only saves time for busy individuals but also enhances the overall shopping experience, making it more enjoyable and efficient for those looking to beautify their homes and gardens. Moreover, the market emphasizes cultural significance by showcasing locally crafted flower pots, which helps cultivate a sense of community identity and pride. By promoting the artistry and craftsmanship of local artisans, the market encourages residents to appreciate and support homegrown talent, fostering a deeper connection to their community.

However, the market does face challenges, such as inventory management and competition from larger retailers that may offer similar products at lower prices. These factors can affect its operations and profitability, necessitating strategic planning and adaptability to succeed in a competitive landscape. Overall, the in-order market plays a vital role in meeting community needs, enhancing local economic stability, and promoting unique cultural products. Its presence enriches the community by providing both a convenient shopping option and a platform for local artisans, contributing to a vibrant and engaged community.



Figure 7-32: Local business (Braai shop)



Figure 7-33: A beauty spa on 263 Charl Ave, Pretoria

Small businesses can have a profound and positive social impact on a community in various ways for example:

- Job Creation
- Community Identity and Character
- Support for Local Causes: Small businesses are more likely to engage in community involvement and support local causes.
- Economic Stability: A thriving ecosystem of small businesses can contribute to the economic stability of a community. It diversifies the local economy and reduces dependence on a few large employers, making the community more resilient to economic fluctuations.
- Entrepreneurship and Innovation: small businesses foster entrepreneurship and innovation, contributing to a culture of creativity and adaptability within the community.
- Social Interaction and Community Spaces: local businesses, such as cafes, restaurants, and shops, often serve as community gathering spaces -they provide venues for social interaction, networking, and community engagement, enhancing social cohesion.
- Education and Skill Development: small businesses may offer opportunities for skill development and on-the-job training. Employees in small businesses often wear multiple hats, providing a chance to acquire a diverse set of skills.
- Sense of Community Ownership: small businesses are often owned and operated by community members. This sense of ownership can foster a strong connection between business owners and the community, leading to a greater commitment to local well-being.

The social impact of small businesses goes beyond economic contributions, influencing the community's social dynamics, resilience, and overall quality of life. Supporting and nurturing small businesses can play a vital role in building stronger, more vibrant communities.



Figure 7-34: Local business in Van Der Hoff

The image above is a local business specializing in various types of soil, including river sand, plaster sand, builders mix, and building sand, plays a crucial role in the community's construction and landscaping projects. By providing high-quality materials necessary for both residential and commercial developments, this business meets the essential needs of contractors, landscapers, and DIY enthusiasts alike. Its diverse inventory ensures that customers have access to the right type of soil for their specific projects, which promotes efficiency and quality in construction work.

The business also contributes to the local economy by creating job opportunities and fostering relationships with other local suppliers. By sourcing materials responsibly and engaging with the community, it supports regional development while enhancing the overall quality of construction and landscaping in the area. With a commitment to customer service and expert advice, the business not only serves as a reliable supplier but also as a valuable resource for anyone looking to improve their properties.

7.3.7 Access to Basic Services

Access to basic services in rural areas significantly affects residents' quality of life and economic growth. Reliable transportation, clean water, electricity, and healthcare are crucial for stability. Good transportation connects residents to jobs and education, enhancing their prospects. Clean water and sanitation improve public health, reducing diseases and allowing for healthier lives. Better health reduces the strain on local healthcare, freeing resources for prevention and education.

Electricity can boost rural economies by supporting small businesses and improving access to education through digital means. Internet connectivity is essential for remote work and online learning, bridging rural-urban gaps. Investing in these

services uplifts' families, drives regional growth, attracts investment, and supports sustainable development. Strong rural communities contribute to a balanced national economy and social cohesion, making improved access to basic services vital for the future.

In the study area under the IDP (2023 – 2024) the community needs for basic services under Ward 55 as identified by the ward councillor includes refurbishment of sub-station and repairing of roads including upgrading of settlement for access to proper roads and stormwater drainage. The informal settlements within the ward are in need of electricity and energy efficiency electricity.

7.3.7.1 Access to Water

Reliable access to clean water reduces the prevalence of waterborne diseases, leading to better health outcomes. This, in turn, reduces medical costs and improves productivity as fewer people are sick and unable to work or attend school.

Water tanks and reservoirs provide a reliable source of clean drinking water, reducing the incidence of waterborne diseases such as cholera and dysentery. Consistent water supply enables better hygiene practices, including hand washing and sanitation, which are crucial for preventing the spread of infectious diseases. Reliable water supply supports irrigation for farming, leading to increased agricultural productivity and more stable food supplies. Farmers can grow a wider variety of crops, including those that require more water, improving nutrition and food security. In addition, water availability supports livestock farming, which can be a significant source of income and food.

Reliable water supply also attracts businesses that depend on water, such as food processing, and hospitality services. Improved agricultural productivity and livestock farming lead to surplus produce that can be sold in local markets, increasing household incomes. With a reliable water source, children, especially girls, spend less time fetching water and more time in school. Improved access to water and sanitation facilities can be coupled with health education, promoting better hygiene practices.

7.3.7.2 Refuse Collection

There are some areas where illegal dumping is taking place in the primary zone of influence -refer to Figure 7-44. Illegal dumping, the unauthorised disposal of waste in areas not designated for such purposes, can have significant and detrimental social impacts on a community. These impacts affect the well-being, safety, and overall quality of life for residents of that particular community.

In South Africa, empirical evidence suggests that lack of support infrastructure such as containers used for shared waste collection and 150 L black bins for waste disposal at the household level, inadequate waste collection and backyard dwellers are some of the reasons behind illegal dumping of waste (Ngalo, 2023)

Illegal dumping is widespread in low-income neighbourhoods. Poor service delivery by the local municipality seems to be central to the problem of illegal dumping. Given the history of a segregated approach to urban development, it is plausible to argue that poor service delivery by the local municipalities has disproportionate impacts on the urban poor, making

addressing illegal dumping a social justice issue. For poor communities, illegal dumping can have far-reaching impacts on well-being because it takes place closer to homes, in recreational facilities meant to serve these communities and on public infrastructure such as electricity substations. Since these communities often cannot afford these alternatives, the impacts of illegal dumping should be serious concern for urban authorities, planners and practitioners.

Illegal dumping also impacts communities in the following ways:

- **Health Risks.** Not only are dump zones breeding grounds for insects, but they become hot spots for animals that transmit diseases, such as rats.
- **Decreasing Property Values.** Illegal dumpsite may significantly reduce property values. Not only are trash heaps unsightly, but buyers are aware of the health and lifestyle implications of living in such a place.

Addressing the social impacts of illegal dumping requires a multi-faceted approach involving community engagement, education, law enforcement, and waste management strategies. Encouraging responsible waste disposal practices and implementing measures to prevent illegal dumping are essential for safeguarding community well-being and fostering a healthy, safe, and vibrant environment.

Refuse collection in South Africa plays a vital role in municipal service delivery, with the aim of upholding public health, cleanliness, and environmental sustainability. However, there are challenges regarding waste management services, particularly in areas outside municipal boundaries. During consultations, it was noted that waste collection is typically limited to municipal areas and offices, leaving residents in other areas responsible for disposing of their waste independently. This situation often leads to the emergence of illegal dumpsites and unauthorised waste disposal, posing significant social impacts on affected communities.

In South Africa, empirical evidence, as highlighted by Ngalo (2023), indicates several factors contributing to illegal dumping. These include the absence of support infrastructure like shared waste collection containers and standardized waste disposal bins at the household level, as well as insufficient waste collection services, especially in areas with informal settlements. Additionally, the presence of backyard dwellers further exacerbates the challenges associated with waste management.

Such illegal dumping not only undermines public health and environmental sustainability but also negatively affects the overall well-being, safety, and quality of life of residents within these communities. Addressing these issues requires comprehensive strategies that involve improving waste collection infrastructure, enhancing waste management services, and raising awareness about the importance of responsible waste disposal practices among residents.

7.3.7.3 Sanitation

Adequate sanitation services help prevent the spread of diseases, contributing to a healthier community. Improved sanitation also enhances dignity and privacy, particularly for women and children. Proper waste management services reduce environmental degradation and pollution, contributing to a cleaner and healthier living environment. This also supports tourism and other economic activities that rely on a clean environment.

The presence of porta potties in the area provides essential sanitation services to residents who lack access to permanent restroom facilities. These portable toilets offer a practical solution for waste disposal, helping to maintain hygiene and reduce the risk of disease transmission in densely populated or underserved regions. Their availability is particularly important during community events or in temporary housing situations, where traditional sanitation infrastructure may be inadequate.

While porta potties serve a vital role in promoting public health, they require regular maintenance to ensure cleanliness and prevent unpleasant odours. Proper servicing is crucial to mitigate health risks associated with inadequate waste management. By ensuring that these facilities are well-maintained, the community can effectively support the sanitation needs of its residents, contributing to overall health and well-being.

7.3.7.4 Roads and Transportation

Reliable roads and transportation services are essential for community development and well-being. Well-maintained roads reduce travel time, lower vehicle maintenance costs, and enhance safety, leading to better economic outcomes and increased productivity. Efficient transportation networks connect residents to vital services like healthcare, education, and employment, improving overall quality of life. Good road infrastructure supports economic growth by facilitating smooth and safe travel for goods and services, attracting businesses, and reducing logistics costs.

Public transportation services, such as buses and taxis, provide crucial mobility for those without private vehicles, including the elderly and low-income families, ensuring they can access essential services and participate in community life. Additionally, reliable transportation benefits agriculture by improving access to markets for farmers, enhancing food security, and increasing household incomes. Overall, well-maintained roads and transportation services are key to fostering economic stability, safety, and accessibility, contributing to a more connected and prosperous community.



Figure 7-35: Gravel Road near the Bundu Sand area

The lack of tarred surfaces on roads in the area, leaving them as gravel, creates several challenges for the community. Gravel roads produce dust, which can affect air quality and lead to health issues. They also result in rougher travel, increasing vehicle maintenance costs and safety risks, especially in wet conditions. Poor road quality can impede economic activities by making it harder for businesses and farmers to transport goods efficiently. Additionally, gravel roads can hinder

access to essential services, impacting residents' quality of life. Overall, the absence of tarred roads highlights the need for improved infrastructure to ensure safer, more efficient transportation and support economic and social well-being.



Figure 7-36: Sasol Petrol Station

A petrol station in a community is a vital resource, offering essential fuel services that support transportation and economic activities. It provides residents and businesses with convenient access to fuel, facilitating daily commuting and efficient vehicle operation. Additionally, the petrol station creates local employment opportunities for attendants, maintenance staff, and other roles, and it can boost the local economy by attracting customers who may also shop at nearby businesses.

However, the presence of a petrol station also comes with potential drawbacks. Environmental risks, such as fuel spills or leaks, can pose significant hazards if not properly managed. Increased traffic to the station may lead to congestion and safety concerns in the surrounding area. To maximize the benefits while minimizing negative impacts, it is crucial for the petrol station to be managed with stringent safety and environmental measures. Overall, while a petrol station is a valuable asset for providing necessary fuel services and supporting local economic growth, careful management is essential to address potential risks and ensure its positive contribution to the community.

7.3.8 Religion and Culture



Figure 7-37: Dutch Reformed Magaliesmoot, Roux

There are numerous places of worship (e.g. Figure 7-44) which were observed during the site visit within the primary zone of influence. Churches can have significant social impacts on communities, playing a vital role in fostering a sense of community, providing support systems, and contributing to social well-being. It is important to note that the social impact of churches can vary based on factors such as the denomination, leadership, and specific community needs. Additionally, collaboration between churches and other community organizations can amplify the positive effects and create a more comprehensive support system for residents.

7.3.9 Disaster Management

In rural communities, the consequences of poor emergency and disaster management can be severe, affecting various aspects of life. Specifically, in the event of a disaster such as a fire, the socio-economic impacts can be extensive and long-lasting. Lack of effective emergency response can result in higher death rates during disasters. Poor management can lead to more severe injuries, with limited access to medical care exacerbating health outcomes.

Excavation work and trenches also pose a hazard to the safety of people, particularly children and animals, who may fall into these works and who may have difficulty in getting out. There is also likely to be an increased risk of fires brought about by workers lighting fires for cooking and warmth during cold periods. The transportation of heavy machinery and equipment will increase the exposure of the public to hazards. It will be of use for the project to ensure that fire safety and prevention rules are adequately covered at induction before commencement of the mining activities.. Even more it will be important to ensure that a smoking policy is implemented, communicated to the workforce, monitored and enforced. This would mean that the mine manager would need to keep close watch on those who are smoking as it should be carefully controlled and

confined to a designated area. Also, smoking in areas of high fire risk or outside of any designated smoking areas should be prohibited.

The economic consequences of poor disaster management include

a. Loss of Property and Livelihoods

- Destruction of Homes: Fires can destroy homes, leading to homelessness and the loss of personal possessions.
- Impact on Agriculture: Rural communities often rely on agriculture, which can be severely affected by fires, leading to loss of crops, livestock, and equipment.
- Business Disruption: Local businesses may be destroyed or disrupted, leading to loss of income and employment.

b. Increased Poverty

- Economic Hardship: The loss of property and livelihoods can plunge families into poverty, with limited resources for rebuilding.
- Reduced Economic Activity: The overall economic activity in the community can decline due to decreased productivity and increased financial strain on residents.

Poor management of one disaster can leave the community more vulnerable to future emergencies, as resources and capacities are depleted. Failure to manage disasters effectively can erode trust in local authorities and emergency services, reducing community cooperation in future emergencies.

Poor emergency and disaster management, such as in the case of a fire, can have profound and far-reaching socio-economic impacts on rural communities. The loss of life, health impacts, economic hardships, social disruptions, environmental degradation, and infrastructure damage can severely undermine the resilience and development of these communities. It underscores the critical importance of investing in robust emergency management systems, preparedness, and community education to mitigate the impacts of disasters and enhance overall community resilience.

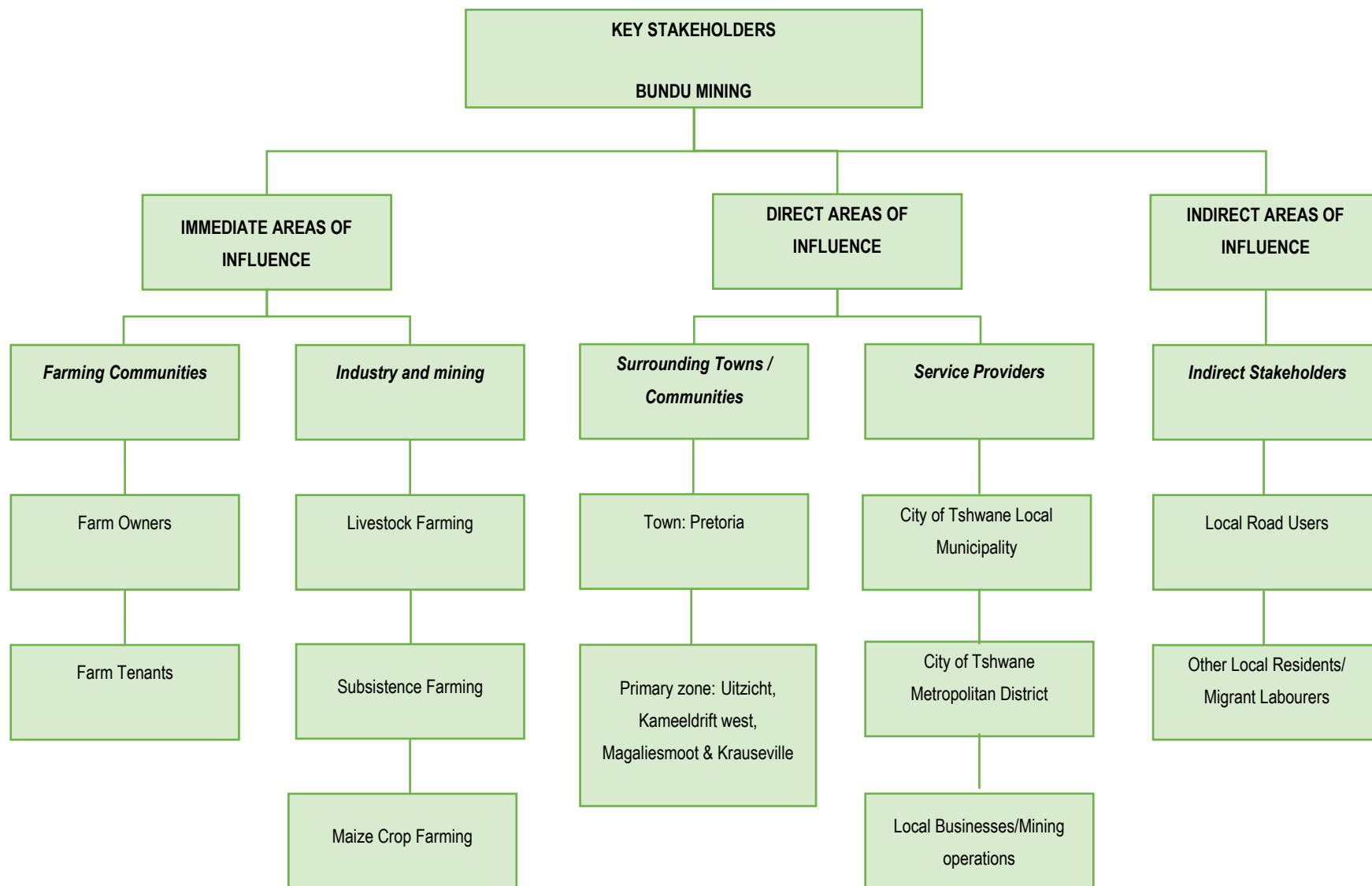
7.3.10 Stakeholder Consultation and Engagement

Effective stakeholder consultation and engagement are vital components of any SIA. This process facilitates open communication, fosters collaboration, and builds trust among all parties involved in or affected by the project. Telephonic consultations were carried out in October 2024 with several key stakeholders and informants. The aims of these interviews were:

- To verify and augment data on local socio-economic conditions obtained from secondary sources; and
- To gain insight into local experiences, perceptions and feelings about the Project.
- Familiarise themselves with the Project area and surrounding environments and to collect primary data. Semi-structured interviews were set up with Government and Community Stakeholders and the community centres were

visited. The consultant also wanted to obtain an overview of the social characteristics of the study area and visit farms within the vicinity of the proposed Project area.

Stakeholder consultation and engagement are critical to the success of the SIA process. By actively involving stakeholders, the project can achieve greater social acceptance, minimize adverse impacts, and promote positive community outcomes. Establishing a comprehensive engagement strategy will ensure that all relevant voices are heard, ultimately leading to a more sustainable and effective project implementation.



Several concerns, challenges and perception were contributed with regards to the proposed Project and existing community issues. These have been summarised Table 7-6:

Table 7-6: Summary of issues from consultations

#	Stakeholder	Area represented	Date of contacted	Notes and feedback (not verbatim, only summarised)	Responses by the Specialist(s)
1	Zure Technologies	Business	SIA form 11 October 2024	Water Sources: Identifies primary water sources for domestic and agricultural purposes, highlighting potential reliance on municipal or borehole water systems. Energy Sources: Describes energy sources used for lighting, cooking, and heating, possibly indicating the prevalence of electricity, gas, or alternative energy sources. Sanitation and Refuse: Provides details on the type of sanitation available (e.g., flush toilets or pit latrines) and the regularity of refuse collection. Social Services: Evaluates the adequacy of healthcare, education, and infrastructure, potentially noting gaps and challenges in service delivery. Educational and Healthcare Facilities: Lists locations of primary, secondary, and tertiary institutions, as well as the nearest healthcare facilities and police stations. Social Support Institutions: Identifies the presence of social support institutions like pension houses, shelters, and orphanages, and assesses the community's need for such services.	Water Sources: The identification of primary water sources is crucial, especially given the community's reliance on them for domestic and agricultural purposes. The project's existing water management and monitoring plans, as established in the specialist studies, should be strictly implemented to ensure these sources remain protected throughout the mine's operational phase. Regular water quality assessments will be essential to maintain community trust and address potential contamination concerns. Energy Sources: Understanding the community's energy sources highlights an opportunity for the project to support local energy needs. If feasible, incorporating sustainable energy solutions could enhance the community's energy security and contribute positively to the project's social license to operate. Sanitation and Refuse: Recognizing the current sanitation and refuse challenges presents an opportunity for the project to partner with local authorities to improve waste management infrastructure. Engaging with local stakeholders to enhance these services can significantly benefit the community and mitigate potential impacts from the mining operation.

#	Stakeholder	Area represented	Date of contacted	Notes and feedback (not verbatim, only summarised)	Responses by the Specialist(s)
				• Community Needs: Addresses pressing social problems like unemployment, homelessness, and healthcare challenges, as well as infrastructure needs such as roads, refuse removal, and water quality. • Perceptions of the Mining Project: Reflects community awareness of the proposed mining project, concerns regarding health, safety, environmental impacts, and its potential effects on employment and livelihoods. • Cultural and Social Impacts: Explores potential disruptions to cultural traditions and social cohesion due to the project. • Environmental Concerns: Outlines concerns about how the mining project may affect air and water quality, biodiversity, and any specific environmental risks. • Participation and Decision-Making: Gauges the community's sense of involvement in decision-making processes and suggests ways to improve participation. • Needs Analysis: Ranks key issues affecting the community, such as employment, healthcare, education, crime, and infrastructure, and assesses their impact on quality of life.	Social Services: The assessment of social services indicates significant gaps that the project can help address. By collaborating with local NGOs and government entities, the mine can contribute to improving healthcare access and educational resources in the community, ensuring that social infrastructure keeps pace with any project-related influx of people. Community Needs: Addressing the pressing issues of unemployment, homelessness, and healthcare is critical. The project's local employment initiatives, informed by specialist studies, should aim to create sustainable job opportunities that align with community needs. Ongoing community engagement will be vital to adapt these initiatives based on evolving local circumstances. Perceptions of the Mining Project: Community awareness and concerns regarding health and safety must be met with transparent communication strategies. Proactively sharing information on potential impacts and mitigation measures will help build trust and address fears regarding the project's effects on employment and livelihoods. Cultural and Social Impacts: The potential disruptions to cultural traditions and social cohesion require careful consideration. The project should actively engage with community leaders and cultural representatives to

#	Stakeholder	Area represented	Date of contacted	Notes and feedback (not verbatim, only summarised)	Responses by the Specialist(s)
					develop strategies that promote cultural preservation and community solidarity. Environmental Concerns: Addressing environmental impacts is paramount. The project must implement the comprehensive environmental management plans developed in previous studies, ensuring that air and water quality are closely monitored and that community concerns are regularly communicated. Participation and Decision-Making: Enhancing community participation in decision-making is crucial for fostering a sense of ownership. Establishing formal channels for ongoing dialogue will ensure that local voices are heard and valued throughout the project lifecycle.
2	Kyle Pieterse	Business	SIA form 12 October 2024	The concerns are raised are: • Noise impacts: It is believed that the operation will produce noise that may lend a drop in the productivity on the poultry farm. • Livelihood: People's main source of livelihood is through farming / land bou and boerdery • Health: Impacts on water pollution as a main concern. • Additional support to the community: Job creation and clean water as the benefits that should be improving communities • Environmental impact: Contamination of ground and surface water. Concerns on air pollution from dust and particles. Noise and	Noise Impacts: The concerns regarding noise pollution impacting productivity on nearby farms must be addressed through the existing noise mitigation strategies outlined in the specialist studies. Regular noise monitoring and community feedback mechanisms should be implemented to assess the effectiveness of these measures. Livelihood: Understanding that farming is the primary source of livelihood underscores the importance of developing synergies between mining and agriculture. The project should explore collaborative opportunities that support local farmers and enhance agricultural productivity.

#	Stakeholder	Area represented	Date of contacted	Notes and feedback (not verbatim, only summarised)	Responses by the Specialist(s)
				vibrations as another concern. Disrupting local wildlife. Erosion and landslides • Impacts from the projects from environmental point of view would be water/air and noise pollution. • Looking at the needs analysis and summarising it: the major problems that affects quality of life negatively is employment problems, illegal land use, bad roads, water for drinking, healthcare facilities, crime/violence/vandalism, housing and alcohol abuse.	Health Concerns: Water pollution remains a critical concern. The comprehensive water management plan should incorporate community feedback and prioritize regular updates on water quality assessments to alleviate fears regarding contamination. Environmental Impact: Addressing potential contamination and air quality concerns is essential. The project must adhere to the environmental management practices outlined in previous studies, with transparent reporting on the effectiveness of mitigation measures. Community Needs Analysis: The needs analysis provides a valuable framework for developing targeted interventions. The project should actively collaborate with local stakeholders to prioritize initiatives that address employment, healthcare, and infrastructure needs.
3	Piet van der Schyff Thembi Sepeng	Armaments Corp of South Africa (Pty) Ltd Portion 171 of the farm Elandsfontein 352 JR	Telephonic 16 October 2024 & Face to face 18 October 2024	The following concerns were raised by a directly affected landowner: • Location & Proximity: The mine will be situated on the north slope of a mountain, while the community resides on the south slope, within 1-2 km of the mining activity. Some individuals attempt to cross the mountain illegally, likely for employment or access. • Dust, Noise & Environmental Concerns: Dust and noise impacts are seen as significant issues, particularly due to the planned use of dynamite and regular dolomite blasting. Noise from these activities is a major concern,	Location & Proximity: The proximity of the mine to residential areas necessitates ongoing communication about mining activities. Clear information dissemination regarding operational schedules and potential impacts will help build community understanding and trust. Dust, Noise & Environmental Concerns: The scepticism surrounding dust and noise mitigation measures highlights the importance of community engagement. The project should provide regular updates on the effectiveness of these measures and demonstrate a commitment to addressing any emerging concerns.

#	Stakeholder	Area represented	Date of contacted	Notes and feedback (not verbatim, only summarised)	Responses by the Specialist(s)
				particularly for high-end areas like Kyalami. Secondly residents are also worried about water usage, groundwater depletion, and the potential risk of sinkholes, despite the area not being prone to them. These environmental concerns could also affect livestock grazing and the health of exotic animals in the region. • Community Perceptions: The community acknowledges that they have been informed about the project and its intended processes. However, there is still worry about the project's negative effects, such as increased road dust and the impact on local flora and fauna. • Employment: There is a high level of interest in employment opportunities, particularly from individuals in newly formed settlements. Many are looking to cross the mountain to seek work at the mine. • Mitigation: While mitigation measures for dust and noise have been mentioned, community members are skeptical about their effectiveness in addressing these impacts, especially concerning noise and the quality of life in nearby upmarket areas. During the face-to-face engagement the following issues were raised • Social services: The social services are not adequate enough due to informal settlement with no utilities, no clinic in our proximity but as far as 17km radius to the nearest clinic. Changes to social services will be due to the influx of people in the area.	Employment Opportunities: High interest in employment opportunities necessitates clear communication about recruitment processes and local hiring initiatives. The project should prioritize transparency in its hiring practices to ensure local community members can benefit from job openings. Social Services: The project's commitment to improving social services is essential, especially in informal settlements. By working closely with local authorities, the project can help address infrastructure gaps and enhance service delivery. Existing Health Issues: Concerns about air quality and groundwater pollution must be continuously addressed. The project should engage with local health authorities to monitor potential health impacts and provide community support as needed.

#	Stakeholder	Area represented	Date of contacted	Notes and feedback (not verbatim, only summarised)	Responses by the Specialist(s)
				Existing health issues: Air quality issues and ground water pollution especially using borehole water.	
4	Bheki Zulu	Surrounding landowner	Telephonic 16 October 2024	Location & Proximity: - Community members are unsure about the mine's exact location but know it is around 5-7 km away. - There are concerns that the mine's proximity may worsen tremors, although tremors have not yet been felt in the area. Water Dependency: - The community depends heavily on borehole water, and there is significant concern that mining activities could impact the water supply. Employment/Unemployment: - The area experiences high unemployment, despite the presence of farms and brick-making companies. However, many employers hire non-South Africans, which does not help local employment. - Community members communicate about job opportunities through group chats, but there is uncertainty about how the project will affect employment for locals, especially farm owners, many of whom are white and use a different system for hiring. - There is a positive outlook that the project could create some employment, which would be beneficial. 4. Community Well-Being:	Location & Proximity: The community's uncertainty about the mine's location should be resolved through enhanced communication. Providing detailed project maps and updates will help clarify any misunderstandings and improve community awareness. Water Dependency: The heavy reliance on borehole water underscores the need for stringent water management practices. Regular monitoring and community involvement in water management discussions will be essential to ensure water resources are safeguarded. Employment/Unemployment: Targeted strategies to address high unemployment should include active engagement with local labor groups. The project should work to create pathways for local hiring and skills development. Community Well-Being: Enhancing community engagement is crucial. The project should implement outreach programs to ensure that all community members have the opportunity to participate in discussions about the project.

#	Stakeholder	Area represented	Date of contacted	Notes and feedback (not verbatim, only summarised)	Responses by the Specialist(s)
				- The community is not fully informed, as many members did not attend public meetings about the project. - Semi-formal jobs in the area include roles in motor mechanics, farming, and brick making. - The community supports local crime-fighting initiatives, with volunteers using two vans to respond to incidents. - Healthcare facilities are quite far away (15-16 km), and there are concerns about road conditions and the impact of mining on public health and safety. 5. Cultural and Social Cohesion: - There is limited information, but the community appears to be tightly knit, organizing initiatives like crime prevention, although they desire more support from the company for such activities. 6. Environmental Impact: - Blasting during mining could affect the physical stability of the ground and disrupt water supplies, which is a major concern for the community. - Waste removal is a challenge, as the municipality does not provide services in the area, forcing residents to make private arrangements or burn waste, which contributes to environmental issues. 7. Participation & Decision-Making: - There is only one school in the area, and the government provides transportation. However, the community feels the local roads (such as	Cultural and Social Cohesion: The community's cohesion should be respected and supported. The project can assist local initiatives that promote social solidarity and community resilience, ensuring that local voices are included in project planning. Environmental Impact: Addressing concerns regarding blasting and waste removal requires effective environmental management practices. Regular updates on environmental monitoring and mitigation efforts should be shared with the community.

#	Stakeholder	Area represented	Date of contacted	Notes and feedback (not verbatim, only summarised)	Responses by the Specialist(s)
				Pretoria Road) are in poor condition, particularly due to damage caused by trucks from brick-making operations, which impacts the community's quality of life and decision to stay in the area.	
5	Ida van der Schyf	Surrounding landowner	SIA form 15 October 2024	The concerns are raised are: • Pollution: Project will bring about water and noise pollution which can impact the community as well as surrounding landowners. Apart from this the project will bring about air pollution as well as a decrease to the biodiversity found within the area. • Health: Impacts to human health and the exacerbation of noise, mental and physical impacts to the body • Lack of participation in the decision process: The landowner did highlight the significance of the PPP process but felt that the public doesn't have much influence with regards to the outcome of the final decision • Biodiversity Loss: Loss of biodiversity and bird life due to high noise levels	Pollution Concerns: Pollution fears must be taken seriously. The project should commit to implementing the environmental controls established in specialist studies and regularly communicate with the community about their effectiveness. Health Impacts: Health concerns regarding noise and air quality require proactive monitoring. The project should work closely with local health services to address potential health impacts and provide community support. Lack of Participation: The perception of limited community influence in decision-making underscores the need for more inclusive engagement strategies. The project should establish formal mechanisms for community input to ensure that local perspectives are incorporated into decision-making processes. Biodiversity Loss: The potential for biodiversity loss must be prioritized in project planning. The project should adhere to comprehensive biodiversity management strategies that protect local ecosystems and species.
6	Jane Le Roux	Surrounding landowner	SIA form 15 October 2024	The concerns are raised are: • Pollution: Main concern centred around groundwater pollution which can result to	Pollution Concerns: Groundwater pollution concerns necessitate a detailed monitoring program to ensure water quality is protected. Regular testing and

#	Stakeholder	Area represented	Date of contacted	Notes and feedback (not verbatim, only summarised)	Responses by the Specialist(s)
				health issues for members within the community. • Impacts to the biosphere: Activities can impact biodiversity and natural resources • Lack of communication on the overall impacts of the project: More needs to be done in terms of informing the community on the impacts the project can have.	transparent reporting will help alleviate community fears. Biosphere Impacts: The impact on biodiversity has been thoroughly assessed, with a focus on conservation efforts. The project must prioritize protecting local ecosystems in line with the strategies outlined in specialist studies. Communication Needs: Improved communication is essential for addressing community concerns. The project should establish a clear communication plan that provides regular updates on potential impacts and engages the community in meaningful dialogue.
7	Ilva Vorster	Surrounding landowner	Face to face, P18 Uitzchr Rietvalei 18 October 2024	The concerns raised are: • Poverty stricken area: concern around drug abuse, illegal immigrants and the place becoming an area that is degraded. • Unemployment rate: is very high caused by poverty, drugs, alcohol abuse, influx control of immigrants and school accessibility. There are not enough jobs, and community has a lot of informal settlements. Lack of education, training is needed in the area to increase the unemployment rate. • Potential impacts from this proposed project: include destruction of the environment, water pollution, loss of water quantity, loss of biodiversity, silicon dust pollution resulting in health problems for community, cracking of houses from blasting.	Poverty and Unemployment: The project's potential impacts on poverty and unemployment require ongoing consideration. Initiatives focused on local employment and skills development should be prioritized to enhance community resilience. Environmental Impacts: Addressing environmental degradation concerns is paramount. The project should implement and adhere to the environmental management plans established in previous studies, ensuring that potential negative impacts are effectively mitigated. Perception of the Project: Building trust through open communication and proactive engagement is critical for addressing community apprehensions. Demonstrating a commitment to addressing concerns while fostering

#	Stakeholder	Area represented	Date of contacted	Notes and feedback (not verbatim, only summarised)	Responses by the Specialist(s)
				• Perception of the project is negative: due to destruction of the environment • Positive perception due to employment: although the area of impact or influence in terms of community affected needs to be defined. • Health impacts: including silicon dust particles causing lung, respiratory problem and over time chronic diseases such as cancer. • Overall comments: project is not welcomed although we do appreciate the dialog through public participation, if the mine adhered to the mitigation of air, noise and water pollution we can co-exist.	collaboration will be essential for achieving a positive relationship with the community. Overall Comments: Acknowledging both the community's concerns and the potential benefits of the project is crucial. The project should prioritize transparency and community engagement to ensure that stakeholders feel heard and valued throughout the project lifecycle.

8 Impact Assessment

Socio-economic impacts have to be identified and assessed so that it can be understood and communicated to the impacted communities and decision makers. Unlike biological and physical impacts, socio-economic impacts are to a large extent based on and responsive to people's perceptions and therefore the intensity and significance could change over time as new perceptions are formed (e.g., people might oppose a housing development during the EIA process but once the housing development is constructed and assimilated into the baseline, people don't notice it anymore and their animosity is reduced).

Determining socio-economic impacts is a challenging process because the elements that combine to form an impact are generally multi-dimensional and interrelated. The linkages between project-induced changes are also complex and mutually reinforcing, e.g., employment creation can be an important Project benefit, but at the same time it could also contribute to social conflict or excessive in-migration. Socio-economic impacts also have the potential to spread further to other (sometimes unrelated) areas, e.g., project-induced in migration could place pressure on local services (i.e., the Project itself did not create the impact but caused a by-product that caused an impact). This is what Vanclay (2002) refers to as change processes.

The assessment of socio-economic impacts was categorised as per the following change processes:

- Demographic processes: changes and impacts related to the composition of local communities;
- Economic processes: changes and impacts on the way in which the local people make a living and the economic activities in the society;
- Geographical processes: changes and impacts on land use patterns;
- Institutional and Legal processes: changes and impacts that affect the efficiency and effectiveness of local authorities; and
- Socio-cultural processes: changes and impacts that affect the culture of the local society, i.e., the way that people live together.

The discussion of each impact is structured as follows:

- Description of the expected change(s) to the baseline profile and resultant impact(s);
- Description of mitigation or augmentation measures to minimise or avoid negative impacts and enhance positive ones; and
- A table presenting the rating of an impact, summarising the recommended mitigation/augmentation measures, repeating the rating exercise after the application of mitigation/augmentation to determine the effectiveness thereof.

Where findings from other specialist studies are applicable, these have been included, particularly where such findings may contribute to the identified social impacts.

It is expected that the Project will result in social changes which may positively and negatively affect communities within the study area. In terms of the social changes that have been assessed, the following social impacts have been identified:

- Access to adequate water and sanitation facilities;
- Employment opportunities;
- Skills development and training
- Access to adequate healthcare facilities and services
- Community development and social upliftment

Report that will be accessible to a non-specialist audience and meet the requirements of the proponent, as well as international best practice. For this reason, predicted impacts have been categorised within the project phase (construction, operation and decommissioning) it is likely to originate, recognising that many impacts will span over more than one project phase.

8.1 Employment opportunities - Economic Process

8.1.1 Construction Impact

NATURE OF THE IMPACT: Employment opportunities - Economic Process		
	Impact Rating Without Mitigation	Impact Rating With Mitigation
Extent (Local, Regional, International)	Footprint (1)	Footprint (1)
Duration (Short term, Medium term, Long term)	Medium term (3)	Long term (4)
Magnitude (Major, Moderate, Minor)	Very High (5)	Very High (5)
Probability (Definite, Possible, Unlikely)	Highly Likely (4)	Highly Likely (4)
Calculated Significance Rating (Low, Medium, High)	Low (36)	Medium (40)
Impact Status: (positive or negative)	Positive	Positive
Reversibility: (Reversible or Irreversible)	Not applicable	
Irreplaceable loss of resources: (Yes or No)	Not applicable	
Can impacts be enhanced: (Yes or No)	Yes	
Residual impacts		
- Developed local economy - The residual impacts associated with the creation of employment and business opportunities and training during the development of additional infrastructure is that the workers can improve their skills by gaining more experience.		

NATURE OF THE IMPACT: Employment opportunities - Economic Process

	Impact Rating Without Mitigation	Impact Rating With Mitigation
Mitigation measures - Set employment targets aimed at increasing local employment; - Set monitoring indicators for local employment; - To accommodate those that do not have access to android phones or internet, widely advertise employment opportunities using community newspapers, notice boards, etc; - Ensure that local communities understand the Project's procurement and employment requirements in terms of skills and type of contracts and employment. This will be achieved using existing stakeholder communication channels at zone of influence; - Where reasonable and practical the contractors appointed by the Applicant should appoint local contractors and implement a 'locals first' policy, especially for semi and low-skilled job categories. However, due to the low skills levels in the area, the majority of skilled posts are likely to be filled by people from outside the area; there is a skills development plan in place to upskill employees over time stipulated in the SLP - Ways to enhance local community benefits with a focus on BBBEE need to be explored; - Local construction companies should be used whenever possible, especially for subcontracting work; - Adopt recruitment strategies that ensure local people are given employment preference; - A specific contact person should be identified to allow community members and property owners to easily direct their queries and concerns and obtain general information regarding the construction process; - Promote employment of women and youth; and - Women must be provided access to all employment opportunities as well as measures to increase accessibility and safety considerations.		

8.1.2 Operational Impact

NATURE OF THE IMPACT: Employment opportunities - Economic Process

	Impact Rating Without Mitigation	Impact Rating With Mitigation
Extent (Local, Regional, International)	Local (1)	Site (2)
Duration (Short term, Medium term, Long term)	Short term (1)	Long term (4)
Magnitude (Major, Moderate, Minor)	Medium (6)	High (8)
Probability (Definite, Possible, Unlikely)	Highly Likely (4)	Definite (5)
Calculated Significance Rating (Low, Medium, High)	Low (32)	High (70)
Impact Status: (positive or negative)	Positive	Positive

NATURE OF THE IMPACT: Employment opportunities - Economic Process		
	Impact Rating Without Mitigation	Impact Rating With Mitigation
Reversibility: (Reversible or Irreversible)	N/A	
Irreplaceable loss of resources: (Yes or No)	N/A	
Can impacts be enhanced: (Yes or No)	Yes	
Residual impacts - Developed local economy; - Increased capacity to develop and maintain livelihood strategies		
Mitigation measures Maximise benefits from local employment, skills and economic development		

8.1.3 Decommissioning Impact

Closure will entail significant downsizing and workforce retrenchment over an extended period. While there will be a gradual reduction in workforce during this phase, some community members would have gained experience working at the proposed mine, forming a pool of trained personnel.

The repercussions of lost economic opportunities will be enduring, particularly for those unable to secure alternative employment. This effect will be compounded by the general scarcity of economic prospects in the City of Tshwane and surrounding area as well as the wider nation. The brunt of this impact will primarily affect individuals who relied on the economic activities provided by the mine within both the immediate vicinity and the surrounding region.

8.2 Multiplier impacts on local economy

8.2.1 Construction Impact

NATURE OF THE IMPACT: Multiplier Impacts on the Local Economy		
	Impact Rating Without Mitigation	Impact Rating With Mitigation
Extent (Local, Regional, International)	Footprint (1)	Regional (3)
Duration (Short term, Medium term, Long term)	Long term (4)	Long term (4)
Magnitude (Major, Moderate, Minor)	High (4)	High (4)
Probability (Definite, Possible, Unlikely)	Highly Likely (4)	Definite (5)
Calculated Significance Rating (Low, Medium, High)	Low (36)	Medium (55)
Impact Status: (positive or negative)	Positive	Positive

Reversibility: (Reversible or Irreversible)	N/A
Irreplaceable loss of resources: (Yes or No)	No
Can impacts be enhanced: (Yes or No)	Yes
Residual impacts	
Developed local economy	
Mitigation measures	
- Development of a register of local SMMEs; - Linkages with skills development/ SMME development institutions and other mining operations; - SMME skills development as part of mine commitments - Create synergies with other mining/electricity enterprises LED/ Corporate Social Responsibility (CSR) projects - Preference should be given to capable subcontractors who based within the local municipal area; - Align skills development to build capacity of SMMEs; - Monitoring of sub-contractor's procurement; - Development of a register of local SMME; and - Local procurement targets should be formalised in the Mine's procurement policy.	

8.2.2 Operational Impact

NATURE OF THE IMPACT: Multiplier Impacts on the Local Economy		
	Impact Rating Without Mitigation	Impact Rating with Mitigation
Extent (Local, Regional, International)	Footprint (1)	Footprint (1)
Duration (Short term, Medium term, Long term)	Long term (4)	Long term (4)
Magnitude (Major, Moderate, Minor)	Medium (3)	High (4)
Probability (Definite, Possible, Unlikely)	Highly Likely (4)	Definite (5)
Calculated Significance Rating (Low, Medium, High)	Low (32)	Medium(45)
Impact Status: (positive or negative)	Positive	Positive
Reversibility: (Reversible or Irreversible)	Not applicable	
Irreplaceable loss of resources: (Yes or No)	Not applicable	
Can impacts be enhanced: (Yes or No)	Yes	
Residual impacts		

- Local suppliers will have gained experience and exposure to meeting standards of quality and scale that could be transferrable to business opportunities

Mitigation measures

- Preference should be given to capable subcontractors who based within the local municipal area; and
- Measures recommended to maximise benefits from local employment, skills and economic development.

8.2.3 Decommissioning Impact

NATURE OF THE IMPACT: Multiplier Impacts on the Local Economy		
	Impact Rating Without Mitigation	Impact Rating With Mitigation
Extent (Local, Regional, International)	Footprint (1)	Regional (3)
Duration (Short term, Medium term, Long term)	Medium term (3)	Long term (4)
Magnitude (Major, Moderate, Minor)	Moderate (6)	Low (4)
Probability (Definite, Possible, Unlikely)	Highly Likely (4)	Highly Likely (4)
Calculated Significance Rating (Low, Medium, High)	Medium (40)	Medium (44)
Impact Status: (positive or negative)	Negative	Negative
Reversibility: (Reversible or Irreversible)	Yes	
Irreplaceable loss of resources: (Yes or No)	No	
Can impacts be enhanced: (Yes or No)	Yes	
Residual impacts Loss of livelihood		
Mitigation measures - The Project team/ developer to ensure there are retrenchment packages provided to all retrenched staff when operation decommissions; - All structures and infrastructure associated with the proposed facility should be dismantled and transported off-site for decommissioning - Revenue generated from sale of scrap metal during decommissioning should be allocated to funding closure and rehabilitated of disturbed areas		

8.3 Skills development and training

8.3.1 Construction Impact

NATURE OF THE IMPACT: Skills Development and training		
	Impact Rating Without Mitigation	Impact Rating With Mitigation
Extent (Local, Regional, International)	Site (2)	Regional (3)
Duration (Short term, Medium term, Long term)	Long term (4)	Permanent (5)
Magnitude (Major, Moderate, Minor)	Medium (3)	High (4)
Probability (Definite, Possible, Unlikely)	Possible (2).	Highly Likely (4)
Calculated Significance Rating (Low, Medium, High)	Low (18)	Medium(48)
Impact Status: (positive or negative)	Positive	Positive
Reversibility: (Reversible or Irreversible)	N/A	
Irreplaceable loss of resources: (Yes or No)	N/A	
Can impacts be enhanced: (Yes or No)	Yes	
Residual impacts - Improved economic development; - Increased capacity to develop and maintain livelihood strategies		
Mitigation measures - Ensure that there is stakeholder buy-in (through the meaningful engagement with local communities and working with industry leaders and government bodies); - Aligning LED projects with those of other development role-players; - Liaison with beneficiaries to ensure needs are met; - Collaboration with other developmental role players (e.g., local and district municipalities, neighbouring mines and Non-Governmental Organisations NGOs) during implementation of envisaged projects, and where possible aligning envisaged development projects with existing ones; - Monitoring system to regulate Historically Disadvantaged South African procurement - Tap into the existing structures provided by government and the existing database of SMMEs to identify needs and requirements such as training and equipment; - Make training and capacity building initiatives compulsory; - Set up support initiatives to enhance procurement and small business opportunities wherever feasible; - Where feasible, training should be National Qualifications Framework Accredited;		

8.3.2 Operational Impact

NATURE OF THE IMPACT: Skills Development and training		
	Impact Rating Without Mitigation	Impact Rating With Mitigation
Extent (Local, Regional, International)	Footprint (1)	Site (2)
Duration (Short term, Medium term, Long term)	Short term (1)	Long term (4)
Magnitude (Major, Moderate, Minor)	Medium (3)	High (5)
Probability (Definite, Possible, Unlikely)	Highly Likely (4)	Definite (5)
Calculated Significance Rating (Low, Medium, High)	Low (20)	High (60)
Impact Status: (positive or negative)	Positive	Positive
Reversibility: (Reversible or Irreversible)	N/A	
Irreplaceable loss of resources: (Yes or No)	N/A	
Can impacts be enhanced: (Yes or No)	Yes	
Residual impacts - Developed local economy; - Increased capacity to develop and maintain livelihood strategies		
Mitigation measures Maximise benefits from local employment, skills and economic development		

8.3.3 Decommissioning Impact

The decommissioning and closure of the mine can have significant socio-economic impacts on the surrounding communities. These impacts can be both positive and negative and affect various aspects of community life.

8.4 Impact on Property Values

Property, as in real estate, forms part of the built environment and influences the standard of living as well as the quality of life in a given area. Households invest in residential property to obtain security of tenure and to supplement their future income sources. Therefore, a decline in property values can have significant negative impacts on both the wealth and living standards of households, ultimately influencing their quality of life.

Property value is determined by the equilibrium between supply and demand. An increase in demand for property in certain income brackets in a market where supply is limited can significantly increase the value of property. Conversely, lacklustre demand in a property market that has an abundance of supply can lead to a significant devaluation of property.

The demand for residential property is directly linked to the size of the population, its growth rate, and households' affordability levels. If the population declines and the area loses households that can afford to rent or own property, the demand for existing properties is likely to decrease drastically. The situation can become catastrophic if the property market in the area was already in turmoil, as this can lead to a sharp decline in house prices or rental rates, eroding households' investments. Poor demand for properties may also lead to limited investment in refurbishments and upgrades, which means that properties could become dilapidated over time and lose most of their value.

NATURE OF THE IMPACT: Property value		
	Impact Rating Without Mitigation	Impact Rating With Mitigation
Extent (Local, Regional, International)	Regional (3)	Regional (3)
Duration (Short term, Medium term, Long term)	Long term (5)	Long term (5)
Magnitude (Major, Moderate, Minor)	High (5)	High (5)
Probability (Definite, Possible, Unlikely)	Possible (4)	Possible (4)
Calculated Significance Rating (Low, Medium, High)	Low (17)	Low (17)
Impact Status: (positive or negative)	Negative	Positive
Reversibility: (Reversible or Irreversible)	Not applicable	
Irreplaceable loss of resources: (Yes or No)	Not applicable	
Can impacts be enhanced: (Yes or No)	Yes	

8.4.1 Mitigation Measures

Mitigating the negative impacts of dropping property values due to mining requires a comprehensive approach that addresses environmental, social, and economic concerns.

Listed below are some mitigation measures that can help alleviate the effects that mining/ mining activities can pose on decreasing property values:

- **Environmental Remediation:** Implement measures to mitigate environmental degradation caused by mining activities, such as reclamation and restoration of affected land, water, and ecosystems. This can involve revegetation, soil stabilization, and water treatment to restore the natural environment and mitigate negative impacts on property values.
- **Health and Safety Measures:** Implement strict health and safety regulations to minimize risks to nearby residents and workers. This may include monitoring air and water quality, controlling noise and vibration, and enforcing safety protocols to reduce the likelihood of accidents and health hazards associated with mining activities.

- **Community Engagement and Consultation:** Involve local communities in decision-making processes related to mining activities to ensure their concerns are heard and addressed. Establish channels for transparent communication and meaningful engagement with residents, including public forums, community meetings, and consultation mechanisms to build trust and foster collaboration.
- **Land Use Planning and Zoning:** Develop land use plans and zoning regulations that consider the potential impacts of mining activities on property values and neighbouring land uses.
- **Community Development Initiatives:** Invest in community development initiatives to diversify the local economy and reduce dependency on mining-related activities. Support small businesses, entrepreneurship, and job training programs to create alternative employment opportunities and stimulate economic growth in affected communities.
- **Environmental Monitoring and Enforcement:** Establish robust monitoring and enforcement mechanisms to ensure compliance with environmental regulations and mitigation measures. Implement regular inspections, environmental assessments, and enforcement actions to hold mining companies accountable for their environmental performance and mitigate negative impacts on property values.
- **Information and Education Campaigns:** Provide accurate and accessible information to residents about the potential impacts of mining on property values and how they can protect their interests. Educate residents about their rights, available resources, and avenues for recourse in case of adverse effects on property values due to mining activities.
- **Long-Term Planning and Sustainability:** Adopt a long-term perspective in planning and decision-making processes related to mining activities, considering the economic, social, and environmental sustainability of local communities. Encourage responsible mining practices that prioritize environmental stewardship, community engagement, and long-term benefits for residents.

By implementing these mitigation measures in a proactive and collaborative manner, stakeholders can work together to address the negative impacts of dropping property values due to mining activities and build more resilient and sustainable communities.

8.5 Impacts Related to Community Health and Safety

The IFC Performance Standard 4 recognizes that project activities, equipment, and its related infrastructure can increase community exposure to risks and impacts. Mining is a high-risk industry, which can have serious health and safety consequences. Most of the impacts related to this will occur in all project phases. Those likely to experience health, safety and security impacts are neighbouring landowners, farm workers, and surrounding communities such as those that reside in Ward 55 of City of Tshwane.

8.5.1 For Community

Community health and safety risks could include:

- Increase in numbers of heavy motor vehicle traffic associated with the proposed Project, if not effectively mitigated, will likely pose a safety risk for existing road users as well as pedestrians, livestock, and other animals in the areas adjacent to the access road;
- Road accidents (reckless drivers, etc.), subsequently placing pressure on local emergency, disaster management and health services (fire, ambulance, police services, etc.);
- Unauthorised access/trespassing at the resulting in theft, public safety issues and accidents for humans and livestock;
- Fire hazards and the possibility of fires spreading and damaging surrounding farm land and infrastructure;
- Pollution problems, flies, rodents and pests and possible contamination of water sources due to insufficient sanitation facilities, littering and refuse;
- Dust generation and air pollution caused by gravel roads, construction activities and machinery resulting in respiratory diseases and negatively impacting crops and/or livestock;
- Residents of the primary study area are reliant on underground water resources for portable, domestic, and drinking water for livestock. It is anticipated that blasting activities associated with the mine may result in contamination of underground water resources thus changing the quality of water. This may lead to water-borne illnesses;
- It is anticipated that the ambient air quality within the primary study area will decrease due to emissions from project site clearance, establishment of project infrastructure, vehicles, equipment, etc. This may result in poor health outcomes from those exposed to poor air quality;
- There are several activities that would be undertaken by the Project that would involve the use of hazardous materials such as hazardous chemicals or other blasting products; and hydrocarbons (e.g., diesel, oil etc). It is likely that some of the hazardous chemicals or hydrocarbons stored on-site or during transportation may pose a human health and safety risk if not managed appropriately;
- The rate of spread of communicable diseases may increase within communities because due to potential interactions between the mine workers (and construction workforce during construction phase) and local communities profiles compared to the existing community.

8.5.2 For Workers

Mining is recognised as one of the most hazardous employment sectors, despite the efforts made in the industry around occupational health and safety. Mining is linked to several occupational health risks. Many of the health risks are associated with mining and the extractive industries are caused by the inhalation of airborne pollutants which are not controlled at

source. Amongst the health-related impacts around pollutants are exposure to toxic chemicals, heavy work, noise, vibration, health, and cold-related stress, etc.

The Minerals Council of South Africa (2020) have released the Occupational Health factsheet for 2020, highlighting that the most common occupational diseases in the mining industry are Tuberculosis (TB), silicosis and noise induced hearing loss (NIHL). NIHL is a common occupational disease in all areas of mining, however silicosis is problematic in the mining sectors.

Inadequate management of the mining process and general mining related activities could result in health and safety risks for workers that could manifest in the following ways:

- Construction related accidents due to structural safety of Project infrastructure;
- Dust generation and air pollution causing respiratory diseases (limited);
- High ambient noise levels caused by machinery and mining equipment, resulting in loss of hearing (unlikely);
- Dehydration, sunburn and related issues due to unsafe and insufficient drinking water and high temperatures during summer months; and
- Possible increase in HIV/AIDS and other STDs due to prostitution activities and temporary sexual relationships with local women, unwanted pregnancies that place further pressure on Basic Health Care Services (should contractors and/or workers from outside the local/regional study areas be used).

8.6 Dependency on the Mine for sustaining local economy (during closure)

While the proposed Project can contribute significantly to economic development through its lifetime, this positive impact also has an adverse aspect, in that the proposed mine will inevitably close, and this may have devastating consequences for an area that has not invested in economic diversification. The Decommissioning and Closure Phase of the Project will result in several potential negative socio-economic impacts. A considerable number of people and their families will also become increasingly dependent on the mine for their livelihood.

Employment opportunities associated with the proposed Project will be lost at closure (a large percentage of whom will have been sourced from the local area or have become permanent residents in the area in accordance with the SLP), as will be the corresponding project benefits such as community development, LED and CSI programmes). More widely, project benefits arising from the procurement of goods and services as well as demand for goods and services by wage-earning employees will cease. The mine's direct involvement in community development initiatives will also cease. Economic downturn and the resultant loss of employment could result in increases in social pathologies, such as crime, gender violence, prostitution and substance abuse (IFC, 2012).

The severity of this impact depends to a large extent on the degree to which the local economy has grown dependent on the Project throughout its operation. For this reason, skills development, SMME development, and the design of community

development initiatives to be sustainable beyond the life of the mine are key elements in successful mitigation of this impact. It will also be important to mitigate the negative impact of retrenchment on employees and their dependents.

The continual investment in Human Resource Development and facilitation of training during the lifetime of the proposed Rietvalei has the purpose to sustain skills that will support employment of the workers beyond the life of the mine. The proposed Bundu Mining intends to comply with the Basic Conditions of Employment Act in respect of specific skills development directed at facilitating the further acquisition of skills that will be of value to employees at the mine at the time of downscaling and retrenchment. The company will follow the procedures for downscaling and retrenchment as set out by the Department of Labour and the Labour Relations Act (LRA). The mine will develop turnaround strategies and mechanisms to save jobs, prevent unemployment and avoid downscaling. The “notification process” as outlined in the Social Plan Guidelines and the LRA will be followed.

Retrenchments before the end of life of the Project are another possibility and could be necessitated by downscaling because of external forces such as reduced profitability, and technical innovation. At such a time, project employees may not be able to secure alternative employment.

- Job losses and retrenchments would lead to loss of income and local expenditure. Unemployed staff may be unable to pay for municipal services and will be unable to service their debts, including any home loans/ mortgages they may have. Taking into consideration the likely dependency on employee income, the loss of income will have considerable negative impacts on the wellbeing of households, especially where employees were the sole breadwinners.
- Suppliers could also be affected as the opportunity to sell goods and services to the proposed Bundu mining will be lost. This could furthermore affect those companies that supply these businesses with their goods and services. This impact will mostly be felt by suppliers at a local municipal level.
- Economic downturn and the resultant loss of employment could also result in increases in social pathologies, such as crime, prostitution and substance abuse (IFC, 2012).

Other socio-economic impacts usually associated with such Projects dependencies include:

- Impacts on the workforce – Psychological issues (distraction from normal activities with a potentially negative impact on performance and safety), and personal and family income issues (e.g., concerns about the effect of reduced income on family life); and
 - Impacts on the wider community - the regional economy (e.g., impact on the viability of other indigenous industries due to the loss of locally produced outputs), financing of decommissioning (e.g., adequate funds may not have been provided for decommissioning and site rehabilitation); and infrastructure (e.g., possible requirement for reconfiguration of essential national systems to maintain stability and reliability in power supply to the communities who are benefitting from the supply).
-

It is recommended that a Social Closure Plan be formulated at least five years before planned closure, including the undertaking of a SIA and stakeholder consultation process, which should focus on the following:

- Predicting the likely socio-economic impact on employee households, communities and the region;
- Identifying critical issues affecting the on-going sustainability of employees and communities during closure, by means of a detailed consultation process;
- Identification of alternative livelihood and socio-economic development opportunities and projects, which may become sustainable over the long term; and
- Mitigating and managing the adverse impacts of closure.

The proposed Bundu mining should make every effort to ameliorate the social and economic impact on individuals, regions and economies where retrenchment and closure of the mine are certain. Should downscaling and retrenchment take place, the mine should assist affected employees in finding alternative employment or livelihood opportunities. This should be done in cases where employees cannot be integrated or redeployed to any of the other mining operations, or where they are not of a retirement age.

Bundu Mining, in partnership with the Department of Provincial and Local Government, should jointly manage any process of this nature. The integration of the workforce into various LED projects, if required, could be done in collaboration with relevant municipalities, and other stakeholders serving on Municipal Development Forums, especial LED Forums. Where workers cannot be absorbed into LED initiatives, they should be furnished with portable skills training opportunities, enabling them to find alternative employment after decommissioning or retrenchment. Other initiatives could focus on assessment and counselling services for affected individuals.

Dependency on the Mine for sustaining local economy (during closure)		
	Impact Rating Without Mitigation	Impact Rating With Mitigation
Extent (Local, Regional, International)	Site (2)	Local (1)
Duration (Short term, Medium term, Long term)	Long term (4)	Short term (1)
Magnitude (Major, Moderate, Minor)	High (8)	Medium (6)
Probability (Definite, Possible, Unlikely)	Definite (5)	Highly Probable (4)
Calculated Significance Rating (Low, Medium, High)	High (70)	Low (32)
Impact Status: (positive or negative)	Negative	Negative
Reversibility: (Reversible or Irreversible)	Partly reversible	
Irreplaceable loss of resources: (Yes or No)	This impact can result in consequences that will have irreplaceable losses of a physical and psychological nature.	

Dependency on the Mine for sustaining local economy (during closure)		
	Impact Rating Without Mitigation	Impact Rating With Mitigation
Can impacts be enhanced: (Yes or No)	No	
Residual impacts		
Economic Vulnerability:		
• Long-term unemployment risks due to the depletion of key industries like mining or resource extraction, making the community economically dependent on a single source of income. • Reduced investor confidence in the region due to the uncertainty associated with economic transitions, limiting opportunities for local businesses. • Increased income inequality as wealthier individuals and companies may adapt to changes more quickly, while poorer community members struggle to adjust.		
Social Disruption:		
• Loss of social cohesion as job losses and economic downturns may cause migration out of the area, fracturing established community bonds. • Increased crime and social unrest due to economic desperation, leading to greater strain on local law enforcement and social services.		
Health Impacts:		
• Mental health issues associated with economic stress, job loss, and social instability, leading to a rise in anxiety, depression, and substance abuse. • Reduced access to healthcare due to economic hardship, especially if health facilities are reliant on local industries for funding and resource		
Environmental Degradation:		
• Prolonged environmental damage from legacy industrial activities, including contaminated land, water, and air that continues to affect local communities after operations cease. • Inadequate land rehabilitation, leading to unusable land for future agriculture or development, perpetuating economic and environmental challenges.		
Infrastructure Strain:		
• Deteriorating public services as the local government loses tax revenue and funding from dominant industries, leading to reduced maintenance of roads, utilities, and schools. • Overburdened infrastructure as population shifts occur, either from migration out or new development in areas ill-prepared for growth		

Dependency on the Mine for sustaining local economy (during closure)		
	Impact Rating Without Mitigation	Impact Rating With Mitigation
Cultural and Social Identity: • Erosion of cultural heritage as younger generations may migrate in search of employment, leading to a loss of traditional knowledge, practices, and languages. • Social alienation as communities adapt to new industries or economic realities that may not align with their historical or cultural identity. Legacy Effects: • Generational poverty where the lack of economic diversity leads to long-term economic stagnation, preventing upward mobility for future generations. • Contamination and health issues persisting for years due to previous industrial operations, impacting food security, water safety, and public health for decades. • Inadequate compensation or reparations for communities affected by environmental or economic disruptions, resulting in unresolved grievances and ongoing socio-economic challenges.		
Mitigation measures • Effect retrenchments according to procedures stipulated in approved SLP; • The proposed Project's SLP should provide strategies and measures that prevent job loss; • Support economic diversification through development of alternative markets; • Develop a Social Mine Closure Plan; • Proactively and effectively implement mine closure plan; • Collaborate with adjacent mining companies to develop and implement sustainable community; • Develop alternative and sustainable livelihoods; • Alternatives to save jobs/avoid downscaling should be investigated beforehand; • Proactively assess and manage the social and economic impacts on individuals, regions and economies where retrenchment and/or closure of the mine are certain; and • Partner with the relevant government departments, to jointly manage Closure process.		

8.7 Cumulative Impacts²

Cumulative impacts are contextual and encompass a broad spectrum of impacts at different spatial and temporal scales (IFC, 2013) –i.e., cumulative impacts can result from individually minor but collectively significant activities taking place over a period of time (Dutta, et al., 2012). These are not new types of impacts but recognition that impacts from individual projects and activities can combine together in time and space.

From a social perspective, some of the most significant cumulative impacts relate to the following aspects:

- **Environmental Degradation:** Continuous mining activities, including excavation, blasting, and transportation, can lead to habitat destruction, soil erosion, and loss of biodiversity. Pollution from mining operations, such as air and water pollution, can further degrade ecosystems and affect wildlife populations.
- **Water Quality and Quantity:** mining can impact water quality through the release of contaminants such as heavy metals, sedimentation, and acid mine drainage. Additionally, mining operations may alter the hydrology of the area, leading to changes in water quantity and flow patterns, which can affect downstream ecosystems and water users.
- **Air Pollution:** mining activities, including blasting, transportation, , can release pollutants such as particulate matter, sulfur dioxide, nitrogen oxides, and volatile organic compounds into the atmosphere. These pollutants can contribute to air quality degradation and respiratory health problems for nearby communities.
- **Land Use Change:** The expansion of mining operations can result in the conversion of natural landscapes, including forests, grasslands, and agricultural land, into mine sites and associated infrastructure. This land use change can lead to habitat loss, fragmentation, and displacement of communities and wildlife.
- **Social and Health Impacts:** mining can have significant social and health impacts on nearby communities, including disruptions to traditional livelihoods, loss of access to land and natural resources, and increased risks of accidents and occupational health hazards for mine workers. Additionally, mining operations may contribute to social tensions, conflicts, and inequalities within affected communities.
- **Economic Dependence and Vulnerability:** Communities and regions reliant on mining for employment and economic development may become economically dependent on the industry, making them vulnerable to fluctuations in product prices, market demand, and regulatory changes. The decline of the mining industry can lead to economic downturns, job losses, and socioeconomic challenges for affected communities.

² The impacts which combine from different projects and which result in significance change, which is larger than the sum of all the impacts.

9 Potential Social Risks

The objective of this section is to identify any aspects of the receiving socio-economic environment that would represent significant risks to the Project.

These may constitute constraints that would have to be accommodated during the Project design phase, or concerns and disputes that would require appropriate management and mitigation. Social risk is linked to a project's stakeholders and can either be a risk to a project as a result of the impact on stakeholders or stakeholders' impact on the Project. In most cases a risk can be financial, delay or reputational.

- Financial: A financial risk can result in the expansion being financially unfeasible due to costs.
- Delay: could result in a delay to a project at any stage.
- Reputational: could cause damage to a company's reputation, which could result in delays or have financial implications.

The potential social risks, which the proposed Project might be exposed to are listed below:

- Community expectations

Community expectations play a critical role in shaping the relationship between the Bundu Mining and the surrounding communities. When these expectations are not met, it can lead to unrest and protests, resulting in various negative consequences for the project. One significant impact of community dissatisfaction is the potential for unrest and protests, which can result in the destruction of property and infrastructure. Additionally, such events can lead to the loss of work hours, as well as pose business and reputational risks for the project. Community expectations are often centered around employment opportunities and Corporate Social Responsibility (CSR) initiatives. Failure to address these expectations through appropriate interventions or communication can result in stakeholder opposition and public mobilization against the project.

To mitigate these risks, it is essential for Bundu Mining to engage with the surrounding communities proactively, address their concerns, and ensure transparency and accountability in its operations. By fostering positive relationships and meeting community expectations, the project can minimize the likelihood of unrest and protests, thereby promoting a more stable and mutually beneficial relationship with the communities it operates in.

- Supply Chain- Capacity and Opportunities

The Project operations are anticipated to expand opportunities within the local supply chain, offering both direct contracts with the project and indirect procurement opportunities to meet rising local demand for goods and services. To maximize the involvement of locally based businesses in the project's supply chain, Bundu Mining must prioritize the implementation of the SLP. This plan should support the advancement of education and skills

among local communities within their sphere of influence, including the provision of on-the-job training opportunities.

- Community Unrest

Failure to carefully manage the expectations of surrounding communities may result in social discontent. It is crucial to include local businesses in the mine's supply chain. Affected communities should be encouraged to utilize Bundu Mining grievance procedure to communicate their issues, ensuring timely responses to all lodged complaints and grievances. Furthermore, it is imperative to ensure Bundu Mining implementation and adherence to both the Social and Labour Plan (SLP) and the social closure plan.

10 Need and Desirability

During the 'Investing in African Mining Indaba' in Cape Town in May 2022, President Cyril Ramaphosa referred to the mining sector as the "Continuous Sunrise Sector" due to its enduring contribution to South Africa's economy. Despite facing challenges exacerbated by the Covid-19 pandemic, the mining sector remains a vital contributor to export earnings, a significant source of foreign direct investment, and a major employer, highlighting its resilience and importance in driving economic growth.

As the economic impacts of the Covid-19 Pandemic gradually diminish, the mining sector has played a crucial role in the recovery of South Africa's economy. In 2021, the sector experienced substantial growth of 11.8%, the highest among all industries, effectively restoring production levels close to pre-pandemic conditions.

According to a 2019 report by StatSA, the South African Mining Industry emerged as a cornerstone of the economy, generating a total of R527.5 billion in sales that year. Notably, 61% of these sales (R323.8 billion) came from exports, highlighting the sector's significant contribution to foreign revenue. The quarrying market is highly fragmented, with a large number of small players dominating the market. Currently, the key players within the sector are focusing on expanding their operational and business presence through strategic acquisition of emerging companies. According to BusinessWire (2021) the quarrying industry was valued at \$8 billion in 2020, representing a compound annual growth rate (CAGR) of 1.2% since 2015. The industry is expected to grow to \$11,1 billion by 2025 and further reach \$14,3 billion by 2030.

The mining sector is a major employer in South Africa, with 514,859 individuals employed in 2019. Distribution across sectors revealed that 39% of employees worked in the platinum group metals sector, 21% in coal, and 20% in gold. Despite the challenges posed by the pandemic, recent statistics indicate that the industry still directly employs over half a million people.

At the 4th South African Investment Conference in 2022, approximately R46 billion in investments were pledged towards mining and mineral beneficiation, signalling robust investor confidence in South Africa's mining potential and operations.

The mining industry is recognized as a key driver of Rapid Economic Growth, as emphasized in the State of the Nation Address in 2019. Addressing poverty and unemployment hinges on leveraging the sector's potential. Key issues surrounding mining in South Africa include:

- The need for a strong capable state;
 - Cost reduction for businesses and consumers;
 - The need for reindustrialisation and a revitalised mining sector;
 - Faster growth in tourism;
 - Improved infrastructure;
 - Better support for small businesses; and
 - Marked reduction in unemployment
- Mining's contribution to provincial GDP (2020) is 25.9% and the sector employs 53 000 people. The activity of mining has numerous social and economic benefits in local, regional and national context. These include:
- Job creation.
 - Skills development.
 - SMME development.
 - Local economic development.
 - Contribution to local and national tax income (royalties, companies' tax etc.).
 - Contribution to the national gross domestic product, and
 - Future business opportunities.

The production of goods and supply of services of infrastructure results in expenditure within a regional economy which has knock-on effects and results in additional expenditure which contributes to the regional economy.

11 Social Management Plans

Based on impacts assessed, social management plans have been developed these plans include:

11.1 Stakeholder Engagement Plan

Social impacts already start in the planning phase of a project and as such it is imperative to start with stakeholder engagement as early in the process as possible. A Stakeholder Engagement Plan will assist in outlining the approach on how to effectively communicate with community members. It is recommended that the SEP is updated annually ensure that

it stays relevant and that it addresses relevant concerns/comments raised by stakeholders. Develop and implement a stakeholder engagement plan (SEP) for the Project, inclusive of a communications plan for liaising with residents of the Project affected households specifically. Open, transparent and continuous two-way engagement with stakeholders is of utmost importance in establishing a relationship with the Colliery's impacted communities.

To identify and assess the processes and/or mechanisms that will improve the communication between local communities, the wider community and Mine:

- Provide a guideline on how to effectively share information with community members- information must be communicated to stakeholders early in the decision-making process in ways that are meaningful and accessible, and this communication should be continued throughout the life of the project;
- Serves as a tool to facilitate grievance management – accessible and responsive means for stakeholders to raise concerns and grievances about the project must be established throughout the life of the project

The SEP should be aligned with the requirements of the Equator Principles (2013) and the IFC Performance Standards (2012). The plan should cover (but not be limited to) the following:

- Outline the aim and objectives of ongoing engagement;
- Describe all internal and external stakeholder groups (including levels of support and influence);
- Describe all stakeholder issues and concerns as known currently (this will require exploratory meetings with each stakeholder group);
- Define engagement techniques and protocols for each stakeholder group;
- Present a schedule that includes all identified stakeholders and topics;
- Outline resources required for implementation, timeframes, responsible people, monitoring mechanisms; and
- Layout process for undertaking and documenting engagement, including a clear process for registering and responding to issues and concerns raised.

11.1.1 Objectives of the Stakeholder Engagement Plan

- To provide continuous and accessible information regarding project operations, updates, and potential impacts.
- To identify, engage, and understand the perspectives of all relevant stakeholders, ensuring their voices are heard throughout the project lifecycle.
- To facilitate feedback mechanisms that allow stakeholders to express concerns, suggestions, and experiences related to mining activities.
- To build trust and positive relationships between Bundu Mining and local communities, promoting a sense of shared responsibility and partnership.

11.1.2 Stakeholder Identification

Key Stakeholder Groups:

- **Local Communities:** Residents and farmers in the vicinity of the mining operations.
- **Local Authorities:** City of Tshwane Local Municipality and relevant district authorities.
- **Regulatory Bodies:** Department of Mineral Resources and Energy (DMRE), Department of Water and Sanitation (DWS), Department of Forestry, Fisheries and the Environment (DFFE).
- **Environmental NGOs:** Organizations advocating for environmental protection and sustainable practices.
- **Industry Stakeholders:** Other mining companies, trade associations, and local businesses benefiting from the mining operations.
- **Academic and Research Institutions:** Local universities and organizations conducting research related to mining impacts and socio-economic issues.

11.1.3 Engagement Strategies

11.1.3.1 Ongoing Communication

- **Regular Updates:** Provide regular updates via emails to keep stakeholders informed about project activities, developments, and any changes in operations.
- **Dedicated Project Webpage:** Maintain a project-specific webpage with information, updates, documents, and a feedback section for stakeholders to submit inquiries and concerns.

11.1.3.2 Public Meetings and Forums

- **Community Meetings:** Host public meetings to meet the legal requirements related to upcoming activities, and address stakeholder questions. Ensure meetings are held at convenient times and accessible locations.

11.1.3.3 Direct Engagement

- **One-on-One Meetings:** Schedule as required one-on-one meetings with key stakeholders, such as local leaders, business owners, and farmers, to discuss specific concerns and build strong relationships.
- **Stakeholder Advisory Group:** Establish a group comprising representatives from various stakeholder segments to provide ongoing input and feedback on project operations and impacts.

11.1.4 Feedback Mechanisms

- **Complaint Resolution Mechanism:** Implement a clear process for stakeholders to lodge complaints or express concerns, ensuring timely responses and resolution of issues raised.
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11.1.5 Continuous Monitoring

- **Environmental Monitoring Reports:** Environmental Monitoring Reports: Stakeholders have the right to request access to environmental monitoring information regarding the project's impact on local ecosystems. Bundu Mining will respond to these requests in accordance with regulatory requirements, promoting transparency while safeguarding the company's rights.
- **Health and Safety Reports:** Regularly communicate health and safety performance metrics and any incidents that occur, ensuring stakeholders are aware of the measures taken to protect their well-being.

11.1.6 Monitoring and Evaluation

- **Stakeholder Feedback Analysis:** Regularly analyse feedback received from stakeholders to identify trends, issues, and opportunities for improvement.
- **Engagement Effectiveness Assessment:** Conduct evaluations of engagement activities through participant surveys, attendance records, and feedback to measure effectiveness and inform adjustments as needed.
- **Annual Reporting:** Provide an annual summary of stakeholder engagement activities, feedback received, and responses to the local community and relevant authorities, highlighting the project's commitment to transparency and accountability.

The successful implementation of an SEP will ensure that Bundu Mining actively engages with stakeholders throughout the operational phase and lifecycle of the project. By fostering transparent communication and responsiveness to community concerns, Bundu Mining can build lasting relationships that contribute to the project's sustainability and enhance its social license to operate. Continuous engagement will not only mitigate potential conflicts but also promote a sense of shared responsibility for the project's impacts and benefits.

11.2 Grievance Mechanism

A grievance mechanism is a formal, legal or non-legal complaint process that can be used by individuals, workers, communities and/or civil society organisations that are being negatively affected by certain business activities and operations. A grievance mechanism plan aims to prevent, defuse and resolve community complaints and disputes.

The World Bank Group (2005:72) states that a company's grievance procedures should be communicated to all stakeholders, community members should be made aware of the procedures to follow (i.e.) people should know where to go and whom to talk to if they have a complaint and understand what the process will be for handling the complaint. Communication with stakeholders should be provided in a format and language that will be understood by stakeholders. It is recommended information is communicated orally in areas where literacy levels are low.

A grievance mechanism provides stakeholders with an opportunity to raise their concerns and provides them with confidence that their issues will be addressed- this encourages better community relations and good reputation for the company.

The objectives of a Grievance Mechanism are:

- To establish a clear process for stakeholders to voice their grievances related to project operations, environmental impacts, or socio-economic issues.
- To ensure grievances are addressed promptly and effectively, fostering trust and accountability between Bundu Mining and stakeholders.
- To provide an opportunity for continuous improvement by learning from grievances raised and making necessary adjustments to operations.

11.2.1 Scope of a Grievance Mechanism

The mechanism should apply to all stakeholders, including:

- Local community members (residents and farmers)
- Local authorities and government agencies
- Non-governmental organizations (NGOs)
- Employees of Bundu Mining
- Other interested parties

11.2.2 Grievance Submission Process

To facilitate accessibility, stakeholders can submit grievances through various channels. These include in-person visits to the project office or designated grievance handling office, as well as written complaints submitted via letter or email. Contact details for grievance submissions will be made widely available through newsletters, the project website, and community notice boards. Furthermore, to promote anonymity, stakeholders may submit grievances through suggestion boxes located at community centres or Bundu Mining offices.

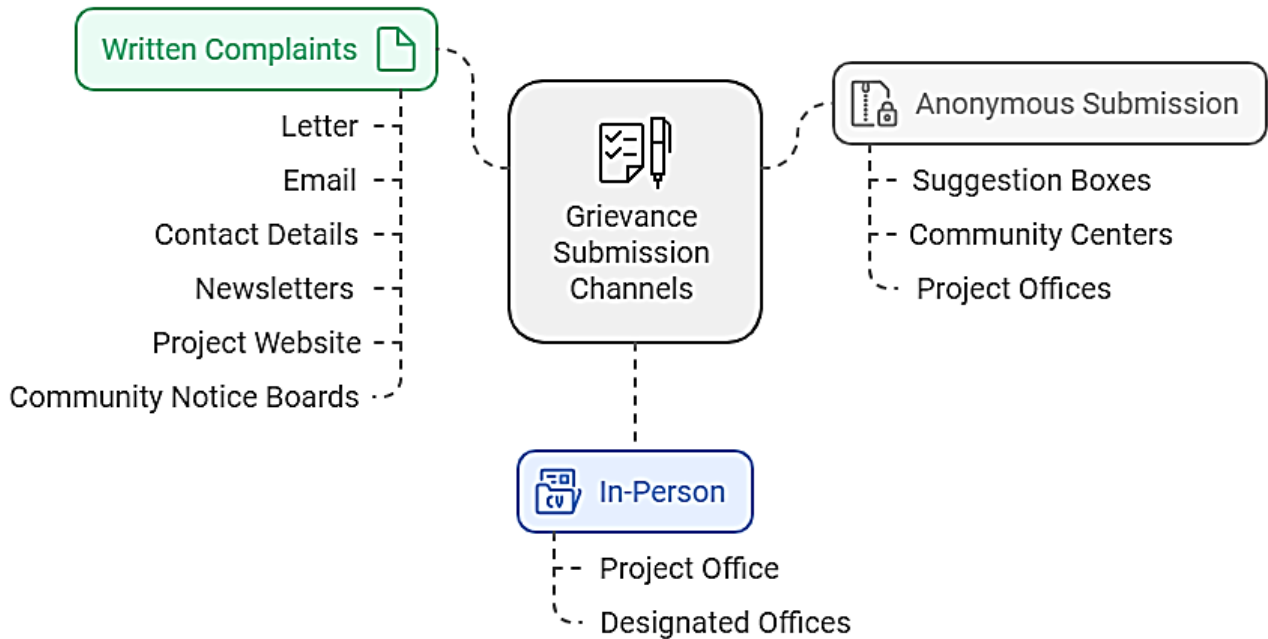


Figure 11-1: Grievance Submission Process

When submitting a grievance, stakeholders are encouraged to provide essential information, including a description of the grievance or concern, the date and time of the incident (if applicable), the location of the incident (if applicable), and contact information (if the stakeholder wishes to be contacted for follow-up). This information will help the Applicant to understand the issue clearly and address it appropriately.

Steps to Submit a Grievance

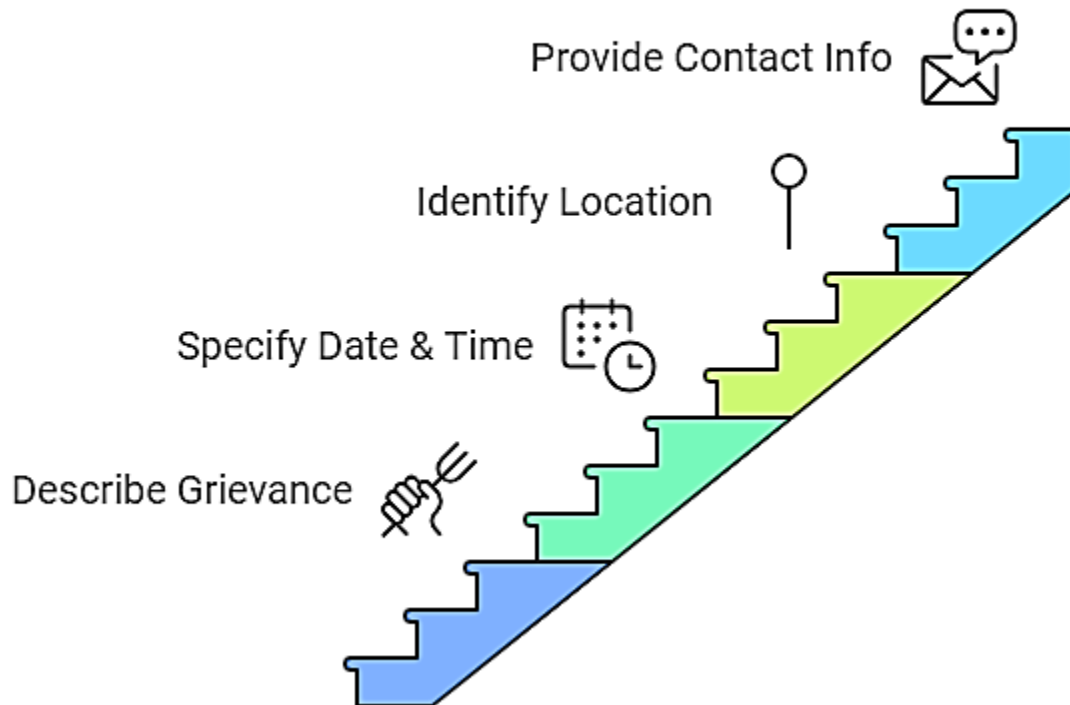


Figure 11-2: Steps to submitting a grievance

11.2.3 Grievance Acknowledgment and Response

Upon receipt of a grievance, Bundu Mining will acknowledge it within five working days. A confirmation of the grievance will be sent to the stakeholder via their preferred communication channel, ensuring they are informed that their concern is being addressed. Following acknowledgment, the grievance will be investigated by the Mine, which includes representatives from the project management team and the Environmental Assessment Practitioner (EAP). The team will conduct a thorough investigation to understand the nature of the grievance and any underlying issues.

A response will be provided to the stakeholder within twenty working days of receiving the grievance. This response will detail the findings of the investigation and any actions taken or proposed to address the concern raised. By adhering to this timeline, Bundu Mining aims to demonstrate its commitment to resolving grievances in a timely and efficient manner.

11.2.4 Resolution and Follow-up

Bundu Mining must work collaboratively with stakeholders to propose resolution options that effectively address the grievance. These options may include corrective actions, compensation, or changes to project operations as deemed necessary. Once a resolution has been reached, stakeholders will be invited to provide feedback on the resolution process to ensure their concerns were adequately addressed. Follow-up communication will occur within thirty days after the resolution to confirm stakeholder satisfaction with the outcome.

11.2.5 Monitoring and Reporting

To maintain transparency and accountability, a comprehensive log of all grievances submitted will be maintained. This log will detail the nature of each grievance, actions taken, and outcomes achieved. Additionally, Bundu Mining will prepare an annual report summarizing grievances received, actions taken, and lessons learned. This report will be shared with stakeholders and made publicly available on the project website, reinforcing the company's commitment to transparency.

11.2.6 Continuous Improvement

Feedback gathered through the grievance mechanism will be instrumental in identifying areas for improvement in project operations and stakeholder engagement practices. Bundu Mining will conduct regular reviews of the grievance process to ensure its effectiveness and responsiveness to stakeholder needs. This continuous improvement approach will help the company adapt to emerging challenges and enhance its overall performance.

The Grievance Mechanism for the Bundu Mining Project will be designed to provide stakeholders with a structured and fair process for raising concerns and receiving timely responses. By implementing this mechanism in alignment with national and international guidelines, Bundu Mining demonstrates its commitment to respecting human rights, fostering open communication, and maintaining positive relationships with all stakeholders. Through this proactive approach, the company aims to minimize potential conflicts and enhance its social license to operate, ultimately contributing to the sustainable development of the local community.

11.3 Social Monitoring

The key relevant social aspects to be monitored are based on the social impacts and the relevant mitigation measures that have been identified. These social aspects are as follows:

- Water quality impacts;
 - Procurement targets;
 - Grievances;
 - Community development initiatives as part of the SLP;
 - Local employment targets; and
 - Livestock monitoring (assessing any negative animal health and productivity).
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12 Conclusion

In summary, the Project has the potential to bring about several, positive impacts/ changes. These are briefly listed below:

- **Economic Growth:** The approval/ authorisation of the Project can stimulate economic growth in the province. The Project will provide direct employment opportunities for the host communities within the mining industry and can also create jobs in related industries such as transportation and manufacturing.
- **Revenue Generation:** The affected Local and District Municipalities may benefit from taxes, royalties, and fees paid by the Applicant. This revenue can in turn be used to fund public services, infrastructure projects, and community development initiatives.
- **Infrastructure Development:** Mining operations very often lead to the development or improvement of local infrastructure, including roads, utilities, and transportation networks. The Mine has the potential to do the same.
- **Skills Development and Training:** Through their SLP, it is anticipated that the Mine will provide training programs and skills development opportunities for local residents, which will enhance employability even after the mine closes.

The proposed Project also has the potential to bring about negative changes, namely:

- **Air and Water Pollution:** Mining activities at the Mine may release pollutants into the air and water, affecting the health of local communities. This can lead to respiratory problems, water contamination, and other health issues.
- **Noise and Vibration:** Mining operations can generate significant levels of noise (nuisance) and ground vibrations, which can disrupt communities, impact mental well-being, and potentially damage structures.
- **Health Risks:** Mining and processing can expose communities to health risks due to exposure to dust, chemicals, and hazardous substances. This can lead to respiratory diseases, skin disorders, and other health problems.

The Mine need to establish a monitoring framework to track the actual impacts of their mining operation over time. Regular reporting to stakeholders, including the host communities, government, and the Competent Authorities, is essential.

The Bundu Mining project presents both significant opportunities and challenges for the surrounding community, which is predominantly engaged in farming activities. While the project promises economic benefits, including job creation and local business growth, it also carries potential risks to agriculture, water resources, local infrastructure, and community health. These socio-economic impacts must be carefully managed to ensure that the project contributes positively to the local area without undermining the livelihoods of its residents.

From a socio-economic perspective, the project's potential to diversify local employment and stimulate economic growth is a notable advantage. However, the anticipated strain on agricultural productivity, water resources, and local infrastructure, along with potential health risks, presents significant concerns. Therefore, Bundu Mining will need to commit to stringent

environmental and social management plans, particularly in minimizing dust, noise, and water use impacts. Effective community engagement will also be critical to ensure transparency and maintain good relations with local stakeholders.

After considering all socio-economic factors, it is the opinion of the social specialist that the Bundu Mining project could proceed conditionally, provided that the following mitigation measures are rigorously implemented:

- Comprehensive environmental management and monitoring plans to minimize the impact on local agriculture, water resources, and infrastructure.
- Active and ongoing engagement with local communities, ensuring their involvement in decision-making and equitable access to employment opportunities.
- Investment in local infrastructure, particularly in maintaining roads affected by mining activities.

Without these measures, the risks to the socio-economic fabric of the area may outweigh the benefits, leading to potential conflicts and long-term negative impacts on the local economy and quality of life. Therefore, authorisation to proceed with the project should only be granted if Bundu Mining commits to these mitigation strategies and ensures regular monitoring and reporting of their social and environmental performance.

In light of the SIA findings the following recommendations should be considered:

- It is recommended that the mitigation and management measures as contained in this SIA report be actively pursued and incorporated in the EMP where applicable; and
- Regular internal and external monitoring should be undertaken to ensure compliance with the Environmental and Social Management Plan.

In conclusion, it is recommended that the proposed Project is approved based on the assurance that potential negative impacts on the receiving socio-economic environment will be mitigated and managed as far as possible, and that potential positive impacts are enhanced to ensure the greatest value.

13 References

- Aucamp 2009b. Environmental Impact Assessment: A Practical Guide for the Discerning Practitioner. Pretoria: Van Schaik.
- Aucamp, IC, Woodbourne, S, Perold, JJ, Bron, A and Aucamp, SM. 2011. Looking Beyond Social Impact Assessment to Social Sustainability. In Vanclay, F and Esteves, AM. New Directions for Social Impact Assessments, Cheltenham, UK: Edward Elgar.
- Barbour, T. 2007: Guidelines for Involving Social Assessment Specialists in the EIA Process. Western Cape: Department of Environmental Affairs & Development Planning
- Becker, D.R., Harris, C.C., Nielsen, E.A. & McLaughlin, W.J. 2004. A comparison of a technical and participatory application of social impact assessment. *Impact Assessment and Project Appraisal*. 22(3): 177-189.
- Bezuidenhout, H. (2009). An improved social impact evaluation framework for the completion of SIA sections during the environmental impact assessment process for residential developments in South Africa. Pretoria: MA dissertation, University of Pretoria.
- Branch, K., Hooper, D.A., Thompson, J. and Creighton, J. 1984. Guide to Social Assessment: A Framework for Assessing Social Change. Westview Press: London.
- Burdge, R.J. 1998. A Conceptual approach to Social Impact Assessment. Revised Edition. Social Ecology Press: Middleton.
- Burdge, R.J. and Vanclay, F. (1996). Social Impact Assessment: a contribution to the state-of-the-art series. *Impact Assessment*, 14, 59-86.
- Carley, M. (1983). A review of selected methods. In K. L. Finsterbusch, *Social Impact Assessment Methods* (pp. 35-54). London: Sage Publications.
- Constitution of the Republic of South Africa, 1996 (Act no. 108 of 1996). (n.d.).
- City of Tshwane, Integrated Development Plan (IDP) 2021 - 2026
- DEAT. (2002a). Specialist Studies. Information Series 4. Pretoria: Department of Environmental Affairs and Tourism (DEAT).
- DEAT. (2002b). Impact Significance, Integrated Environmental Management. Information Series 5. Pretoria: Department of Environmental Affairs and Tourism (DEAT).
- DEAT. (2006). Socio-Economic Impact Assessment. Integrated Environmental Management Series 22. Pretoria: Department of Environmental Affairs and Tourism (DEAT).
- Du Pisani, J.A. and Sandham, L.A. (2006). Assessing the performance of SIA in the EIA context: a case study of South Africa. *Environmental Impact Assessment Review*, 26(8), 707-724.
- Henry, R. 1990. Implementing social impact assessment in developing countries: A comparative approach to the structural problems. *Environmental Impact Assessment Review*. 10(1): 91 - 102.
-

- IFC (2012). IFC Performance Standards on Environmental and Social Sustainability. https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/performance-standards
- International Association for Impact Assessment. 2003. Social Impact Assessment: International Principles. Special Publication Series no.2. IAIA: Fargo.
- Interorganizational Committee on Principles and Guidelines for Social Impact Assessment. 2004. US Principles and Guidelines – Principals and guidelines for social impact assessment in the USA. In Burdge, R.J. The Concepts, Process and Methods of Social Impact Assessment. Wisconsin. Social Ecology Press
- Kemp, D. (2010). Mining and community development: Problems and possibilities of local-level practice. *Community Development Journal*, 45(2), 198-218.
- Limpitlaw, D. (2011). Post-mining rehabilitation, land use and pollution at collieries in South Africa. University of the Witwatersrand, Johannesburg.
- Lockie, S., Franetovich, M., Sharma, S., & Rolfe, J. (2009). Democratisation versus engagement? Social and economic impact assessment and community participation in the coal mining industry of the Bowen Basin, Australia. *Impact Assessment and Project Appraisal*, 27(2), 117-123.
- Ngalo, N & Thondhlana, G. 2023. Illegal Solid-Waste Dumping in a Low-Income Neighbourhood in South Africa: Prevalence and Perceptions. *Int. J. Environ. Res. Public Health* 2023, 20(18), 6750.
- Noble, M., Babita, M., Barnes, H., Dibben, C., Magasela, W., Noble, S., Ntshongwana, P., Phillips, H., Rama, S., Roberts, B., Wright, G. and Zungu, S. 2006. The Provincial Indices of Multiple Deprivation for South Africa 2001. UK: University of Oxford.
- Plumlee, G.S., & Ziegler, T.L. (2003). The medical geochemistry of dusts, soils, and other earth materials. *Environmental Geochemistry*, 9, 263-310.
- Social Profile of Vulnerable Groups 2002–2012, Statistics South Africa. Pretoria: Statistics South Africa, 2012.
- South African Police Service: Crime Statistics. Accessed online: <https://www.saps.gov.za/services/crimestats.php>.
- Statistics South Africa (2016) South African Community Survey 2016.
- Statistics South Africa (2022) Census
- Stats SA (2022). Interactive census results accessed through Wazimap (www.wazimap.co.za).
- Stats SA, 2017. Detailed GDP Tables 2010-2015, S.I.: Statistics South Africa.
- Stats SA, 2017. Detailed GDP Tables 2010-2015, S.I.: Statistics South Africa.
-

Strydom, H. 2002. Ethical aspects of research in the social sciences and human service professions. In De Vos, A.S., Strydom, H., Fouché, C.B. & Delport, C.S.L. 2002. Research at Grass Roots for the social sciences and human science professions. Pretoria: Van Schaik Publishers.

Teachmint Accessed February 2024 <https://blog.teachmint.com/role-of-schools-in-community-development>

The Employment Equity Amendment Act 47 of 2013, Government Gazette, RSA, Volume 583, 16 January 2014, Cape Town.

Trombetta, 2013. 7 Reasons Libraries Are Essential, Now More Than Ever <https://playandshine.wordpress.com/>

Twerefou, D.K. (2009). Mineral Exploitation, Environmental Sustainability and Sustainable Development in EAC, SADC and ECOWAS Regions. *African Development Review*, 21(2), 306-318.

Umar. A. 2023. The Effects of Class Size on Students Academic Performance in an introduction to computer science (CMP 111) Course, at Kebbi-state polytechnic Dakin-Gari, Nigeria

Vanclay, F. (2002). Conceptualising Social Impacts. In: *Environmental Impact Assessment Review* 22 (2002: pp. 183– 211).

Vanclay, F. 1999. Social Impact Assessment. (In Petts, J. ed. *Handbook of Environmental Impact Assessment*, Volume 1. Oxford: Blackwell. p. 301-306).

Vanclay, F. 2002. Conceptualising social impacts. *Environmental Impact Assessment Review*. 22: 183-211

Vanclay, F. 2003. Conceptual and methodological advances in Social Impact Assessment. In Vanclay, F. & Becker, H.A. 2003. *The International Handbook for Social Impact Assessment*. Cheltenham: Edward Elgar Publishing Limited.

Veiga, M.M., Scoble, M., & McAllister, M.L. (2001). Mining with communities. *Natural Resources Forum*, 25(3), 191-202.

Wazimap (2019). Statistics South Africa: Census 2022 and Community Survey 2016.
