Appendix G9: Socio-economic

Royal HaskoningDHV
Enhancing Society Together

forestry, fisheries
& the environment
Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

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SPECIALIST DECLARATION FORM – AUGUST 2023

Specialist Declaration form for assessments undertaken for application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

REPORT TITLE
Soufflet Malt Production Facility within Randvaal, Gauteng Province.

Kindly note the following:

1. This form must always be used for assessment that are in support of applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting, where this Department is the Competent Authority.
2. This form is current as of August 2023. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at https://www.dffe.gov.za/documents/forms.
3. An electronic copy of the signed declaration form must be appended to all Draft and Final Reports submitted to the department for consideration.
4. The specialist must be aware of and comply with '*the Procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the act, when applying for environmental authorisation - GN 320/2020)'*, where applicable.

1. SPECIALIST INFORMATION

Title of Specialist Assessment	Social-Economic Impact Assessment
Specialist Company Name	Eco Thunder Consulting (Pty) Ltd
Specialist Name	Marvin Gabara
Specialist Identity Number	[redacted]
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Cell phone	[redacted]
E-mail	[redacted]

2. DECLARATION BY THE SPECIALIST

I, Marvin Gabara declare that –

- I act as the independent specialist in this application;
- I am aware of the procedures and requirements for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the National Environmental Management Act (NEMA), 1998, as amended, when applying for environmental authorisation which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. "the Protocols") and in Government Notice No. 1150 of 30 October 2020.
- 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 48 and is punishable in terms of section 24F of the NEMA Act.

[redacted]

Signature of the Specialist

Eco Thunder Consulting (Pty) Ltd

Name of Company:

30/05/2024

Date

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, _ Marvin Gabara_____, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

[redacted]

Signature of the Specialist

Eco Thunder Consulting (Pty) Ltd

Name of Company

30/05/2024

Date

[redacted]

Signature of the Commissioner of Oaths

2024/05/30

Date

SOUTH AFRICAN POLICE SERVICE
CLIENT SERVICE CENTRE
2024 -05- 30
SUNNYSIDE
SOUTH AFRICAN POLICE SERVICE

Socio-Economic Impact Assessment for the Proposed Soufflet Malt Production Facility, within Randvaal, Gauteng Province

SUBMITTED FOR ENVIRONMENTAL AUTHORISATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) (NEMA) (AS AMENDED).

Name of Applicant	Soufflet Malt South Africa (Pty) Ltd
Name of Client	Royal HaskoningDHV (Pty) Ltd
Telephone No.	+27 (0)87 352 1577
Physical Address	Building No. 5 Country Club Estate, 21 Woodlands Drive, Woodmead, 2191 PO Box 867, Gallo Manor, 2052, Gauteng, South Africa
DFFE Ref No.	DRAFT FOR COMMENT

This report is provided solely for the purposes set out in it and may not, be used for any other purpose without Eco-Thunder Consulting written consent.

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CONTROL SHEET

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	Date:	11th June 2024
Applicant:	Soufflet Malt South Africa (Pty) Ltd	
Revision Number:	001 - Draft	
Date Issued:	12th June 2024	

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This document should be cited as Eco Thunder Consulting, 2024. SEIA for the Proposed Soufflet Malt Production Facility, within Randvaal, Gauteng Province.

SPECIALIST DECLARATION

Full name	**Title/Position**
Marvin Gabara	Environmental Consultant
Telephone Number	**Email Address:**
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Experience (years):	4
Registration(s):	[redacted]

I, Marvin Gabara, declare that: –

- I act as an independent specialist in this application;
- I will perform the work relating to the application objectively, 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 concerning 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 offense and is punishable by law.

12/06/2024

Signature of the Specialist *Date*

Findings, recommendations, and conclusions provided in this report are based on the best available scientific methods and the author's professional knowledge and information at the time of compilation. The author of this report, however, accepts no liability for any actions, claims, demands, losses, liabilities, costs, damages, and expenses arising from or in connection with services rendered, and by the use of the information contained in this document.

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Any recommendations, statements, or conclusions drawn from or based on this report must cite or refer to this report. Whenever such recommendations, statements or conclusions form part of the main report relating to the current investigation, this report must be included in its entirety.

EXECUTIVE SUMMARY

INTRODUCTION

Soufflet Malt South Africa (Pty) Ltd is developing a new malt production facility strategically located in a greenfield area within the Sedibeng District Municipality, in the Midvaal Local Municipality, Gauteng Province. This facility, situated on Erf 244 Graceview, will support the adjoining Heineken Sedibeng Brewery with a steady supply of malt. The proposed Soufflet Malt Production Facility aims to enhance the local barley production and support the brewing industry in South Africa.

The project is designed to initially produce 93 KT/year of malt, with a future expansion to 135 KT/year. The facility will incorporate advanced technologies and processes to ensure high-quality malt production while optimising energy and water usage. The production process will include several key stages: barley intake, cleaning and grading, steeping, germination, kilning, and malt storage and dispatch.

The facility will include various key components:

- Working Building: For the process of barley intake, cleaning, grading, and malt blending.
- Barley and Malt Storage: Facilities for storing barley before and after the malting process.
- Steeping Building: Housing the steeping tanks for barley hydration.
- Germination Vessels: For controlled germination of barley.
- Kilning Vessel: For drying and curing the germinated barley.
- Malt Dispatch System: Conveyor system connecting the malt plant to the Heineken Brewery.
- Energy System: Including combined heat and power (CHP) gensets, boilers, and possibly future solar PV integration.
- Administration Building: Offices, laboratories, canteen, and other support facilities.
- Wastewater Storage and Treatment Plant: Facilities for treating domestic and industrial effluents.

KEY FINDINGS

The SEIA for the proposed Soufflet Malt Production Facility has identified several key findings:

- Economic Growth: The project is expected to significantly stimulate both local and regional economic growth. During construction, the influx of workers and increased demand for materials and services will inject capital into the local economy. Operationally, the facility will generate sustained economic activity through the

production and distribution of malt, thereby supporting local businesses and contributing to the GDP of the Sedibeng District Municipality.

- Employment Opportunities: The facility will create numerous job opportunities. During the construction phase, approximately 265 jobs will be created, prioritizing local labour to enhance community benefits. Once operational, the facility is expected to employ around 180 permanent staff, ranging from unskilled to highly skilled positions, thus providing long-term employment and promoting skills development within the local community.
- Sustainability and Efficiency: The facility will incorporate advanced technologies to ensure efficient use of resources. Key sustainable practices include the use of Combined Heat and Power (CHP) systems to optimize energy consumption, water recycling systems to minimise water usage, and potential future integration of solar PV systems to enhance renewable energy use. These measures align with South Africa's sustainability goals and contribute to reducing the facility's environmental footprint.
- Community Engagement: Active engagement with local communities and stakeholders has been integral to the SEIA process. Multiple stakeholder meetings and public consultations have been conducted to understand community concerns and expectations. This ongoing dialogue has ensured that local perspectives are considered in project planning, thereby fostering a sense of ownership and support for the project.
- Minimal Environmental Impact: The strategic location of the facility within the Graceview Industrial Park, an area already designated for industrial use, minimises environmental disruption. The project design includes comprehensive mitigation measures such as dust and noise control during construction, efficient waste management systems, and green buffer zones to reduce visual impact. These measures ensure that environmental impacts are kept to a minimum.

RECOMMENDATIONS

The following recommendations are made based on the SEIA and a thorough review of the concerns and suggestions raised by stakeholders and interested and affected parties during the stakeholder engagement process. The proposed mitigation measures should be implemented to limit the negative impacts and enhance the positive impacts. Based on the socio-economic assessment, the following recommendations are made:

- Local Employment: Prioritise the hiring of local labour, particularly for unskilled and semi-skilled positions, to maximise economic benefits for the community. Establish partnerships with local recruitment agencies and community organisations to facilitate this process.
- Training Programs: Collaborate with local educational institutions, such as technical colleges and universities, to develop training programs tailored to the facility's needs. These programs should focus on both immediate skills required for construction and long-term skills for operational roles, ensuring a continuous supply of skilled labour.

- Local Suppliers: Develop a comprehensive list of local suppliers and service providers and prioritise them in procurement processes. This approach will stimulate local businesses and create additional economic opportunities within the community.
- Construction Mitigation: Implement robust measures to address potential disruptions during construction. These measures should include dust suppression techniques, noise barriers, and traffic management plans to minimise inconvenience to the local community.
- Safety and Security: Develop and implement a comprehensive safety and security plan for both construction and operational phases. This plan should address potential risks, provide clear protocols for emergency situations, and ensure the well-being of both workers and the local community.
- Community Engagement: Maintain open communication with the local community through a dedicated liaison officer. This officer should provide regular updates on project progress, facilitate feedback sessions, and address grievances promptly to ensure community concerns are addressed.
- Infrastructure Improvements: Collaborate with local authorities to address infrastructure needs arising from the project. This includes enhancements to local roads, utilities, and other essential services to support the increased activity associated with the facility.
- Socio-Economic Best Practices: Ensure equitable distribution of benefits, promote gender equality, and support vulnerable groups within the community. Implement programs that specifically target disadvantaged populations to ensure inclusive development.
- By implementing these recommendations, the facility can ensure that it contributes positively to the local community and economy, while minimising any potential negative impacts.

CONCLUSION

The proposed Soufflet Malt Production Facility is well-positioned to contribute to the sustainable development of the Sedibeng District Municipality. The facility's focus on employment creation, economic stimulation, sustainable practices, and community engagement ensures that it will provide long-term benefits to both the local community and the broader economy.

The SEIA has identified potential challenges and provided robust mitigation strategies to address them, ensuring that the project aligns with South Africa's broader developmental goals. With the implementation of the recommended measures, there are no socio-economic objections to the development proceeding, and no fatal flaws have been identified. The project stands as a promising model for industrial development that balances economic growth with social and environmental stewardship. By addressing the needs and concerns of the local community and adhering to best practices in socio-economic development, the proposed

Soufflet Malt Production Facility is poised to make a lasting positive impact, contributing to the region's prosperity and sustainability for years to come.

The facility's successful implementation will serve as a catalyst for further development in the region, attracting additional investments and fostering a thriving economic environment. This, in turn, will enhance the quality of life for local residents, ensuring that the benefits of the project are shared broadly and equitably.

TABLE OF CONTENTS

1 Background 1

1.1 Terms of Reference 1
1.2 Structure of the Report 1
1.3 Limitations and Assumptions 2
1.4 Seasonal Change 3
1.5 Specialist Details 3
1.6 Level of Confidence 3

2 Project Description 5

2.1 Introduction 5
2.2 Project Location 6
2.3 Project Technical Details 7
2.4 Basic Assessment Alternatives 20
2.5 Study Objectives 22

3 Legislation and Policy Review 24

3.1 National Legislation and Guidelines 24
3.2 Provincial Policy 26
3.3 District and Local Municipality Policies 27
3.4 International Finance Corporation (IFC) 28
3.5 Policy Result 34

4 Approach and Methodology 36

4.1 Purpose of the Study 39
4.2 Approach to Study 40

5 Socio-Economic Settings 43

5.1 Study Area Overview 43
5.2 Site Specific Sensitivities 43
5.3 Stakeholder Engagement 55
5.4 Gauteng Province 56
5.5 Sedibeng District Municipality (SDM) 69
5.6 Midvaal Local Municipality 78

5.7 Sustainable Practices Context 88
6 Impact and Risk Assessment 90
6.1 Impacts and Risk Methodology 90
6.2 Assessment Criteria 90
6.3 Identification of Key Socio-Economic Issues 92
7 Environmental Management Programme (EMPr) 110
7.1 Construction Phase 110
7.2 Operational Phase 114
8 Environmental Impact Statement and Conclusion 118
8.1 Key Findings 118
8.2 Recommendations 119
8.3 Conclusion 120
9 References 121
9.1 Source 121
9.2 Websites ..... **Error! Bookmark not defined.**
9.3 Further Sources ..... **Error! Bookmark not defined.**

LIST OF FIGURES

Figure 1: Locality Map of the Proposed Soufflet Malt Production Facility 10
Figure 2: Detailed Layout of the Proposed Soufflet Malt Production Facility 11
Figure 3: Malting Production Process 20
Figure 4: Overview of Sensitivities Associated with the Proposed Soufflet Malt Production Facility 51
Figure 5: Site Photos 54
Figure 6: Provincial District Map of Gauteng 57
Figure 7: Gauteng Province Dynamics 58
Figure 8: Gauteng Migration Patterns 59
Figure 9: Gauteng Quarterly Economic Growth Rate 60
Figure 10: Gauteng Seasonally Adjusted Real GDP Growth (Non-Annualised) 61

Figure 11: Gross Fixed Capital Formation 62
Figure 12: Sector Output Growth and Contribution of 2023 63
Figure 13: Employment Growth and Sector Share 64
Figure 14: Labour Market Indicators 65
Figure 15: Education Attainment for People Aged 20+ 66
Figure 16: Income Inequality Measured by Gini Coefficient 67
Figure 17: Poverty Rate – Share of Total Population 68
Figure 18: Sedibeng District Local Municipalities 69
Figure 19: Population Pyramid for SDM, 2022 70
Figure 20: Population Pyramid by Local Municipality in SDM, 2022 72
Figure 21: Gross Value Added by Region (GVA-R) Constant 2021 Prices 73
Figure 22: Average Annual Growth 74
Figure 23: Contribution to Total Economic Growth 74
Figure 24: Economic Performance by Region 75
Figure 25: Labour Absorption Rate 76
Figure 26: Unemployment Rate (%) 76
Figure 27: Education Attainment 77
Figure 28: HDI for SDM and the Local Municipalities 78
Figure 29: Population and Household Growth 79
Figure 30: Population Groups 80
Figure 31: Population Pyramid 80
Figure 32: Economic Activity by Sector 82
Figure 33: Municipality Contribution to District GVA (%) 82
Figure 34: GVA by Economic Sector 83
Figure 35: Average Sectoral Growth Rate, 2021 84
Figure 36: Unemployment Rate - 2001, 2011 85
Figure 37: Education Attainment, 2022 86

LIST OF PHOTOGRAPHS

Photograph 1: Landscape View 1 of the Proposed Development Area 52
Photograph 2: Landscape View 2 of the Proposed Development Area 52
Photograph 3: Heineken Sedibeng Solar Farm (Left), Heineken Sedibeng Brewery (Centre) and the Proposed Development area (Right) 52
Photograph 4: Heineken Sedibeng Brewery Entrance, located to the North-West of the Proposed Development Area 52
Photograph 5: Mid Vaal Graceview Substation, located to the West of the Proposed Development Area 53
Photograph 6: Industrial Activities within close proximity of the Proposed Development Area 53
Photograph 7: Railway Infrastructure located to the East of the Proposed Development Area 53
Photograph 8: Klipriver Business Park, located to the North of the Proposed Development Area 53
Photograph 9: Heineken Sedibeng Solar Farm Entrance 54
Photograph 10: R550 and R59 Road Views 54
Photograph 11: R550 Road View 54
Photograph 12: Informal Settlement within close proximity of the Proposed Development Area 54

LIST OF TABLES

Table 1: Details of the Study Area 7
Table 2: Details of the Soufflet Malt Production Facility 7
Table 3: The Annual Direct Raw Material Requirement of the Proposed Soufflet Malt Production Facility at Different Phases of Operation 12
Table 4: IFC Performance Standards – Key Objectives 29
Table 5: Topics Covered by the General EHS Guidelines 32
Table 6: Equator Principles 33
Table 7: Details of the Study Area 43

Table 8: Site Specific Sensitive Attributes Identified for the Soufflet Malt Production Facility 44
Table 9: Labour Force Characteristics by Age Group 64
Table 10: Age Groups Census, 2001 and 2022 70
Table 11: Population Distribution by Gender, 1996-2022 71
Table 12: Population Groups 71
Table 13: SDM and Local Municipalities Population 72
Table 14: SDM and Local Municipalities Contribution to the GDP and Average Annual Economic Growth Rate 81
Table 15: HDI for SDM and Local Municipalities, 2009 87
Table 16: Population Poverty Level, 2009 87
Table 17: Criteria for the Ranking of Impacts 91
Table 18: Impact Significance 92
Table 19: Potential Impacts during Construction Phase for the Soufflet Malt Production Facility 93
Table 20: Potential Impacts during Operational Phase for the Soufflet Malt Production Facility 101
Table 21: Potential Cumulative Impacts for the Soufflet Malt Production Facility 108
Table 22: EMPr – Construction Phase 110
Table 23: EMPr – Operational Phase 114

LIST OF ABBREVIATIONS

Abbreviations	Description
DFFE	Department of Forestry, Fisheries and the Environment
DM	District Municipality
DoE	Department of Energy
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
ETC	Eco Thunder Consulting (Pty) Ltd
GDP	Gross Domestic Product

Abbreviations	Description
GNR	Government Notice
I&AP	Interested and Affected Party
IDP	Integrated Development Plan
IEP	Integrated Energy Plan
IRP	Integrated Resource Plan
km	Kilometre
LM	Local Municipality
NDP	National Development Plan
NEMA	National Environmental Management Act (No. 107 of 1998)
O&M	Operation and Maintenance
PGDS	Provincial Growth and Development Strategy
PICC	Presidential Infrastructure Coordinating Committee
PSDF	Provincial Spatial Development Framework
RHDHV	Royal HaskoningDHV (Pty) Ltd
SDF	Spatial Development Framework
SEIA	Socio-Economic Impact Assessment
SIP	Strategic Infrastructure Project

SPECIALIST CHECKLIST

No.	NEMA 2014 (as amended) Regs - Appendix 6(1) Requirement	Report Section
	A specialist report prepared in terms of these Regulations must contain—	
a	details of— I. the specialist who prepared the report; and II. the expertise of that specialist to compile a specialist report including a curriculum vitae.	Specialist Details
b	a declaration that the specialist is independent in a form as may be specified by the competent authority;	Appendix B
c	an indication of the scope of, and the purpose for which, the report was prepared;	Specialist Declaration
	an indication of the quality and age of base data used for the specialist report	Section 4.2

No.	NEMA 2014 (as amended) Regs - Appendix 6(1) Requirement	Report Section
	a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change	Section 6.3
d	the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	Section 4.2.1
e	a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	Section 8.1
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 4.2.3
g	an identification of any areas to be avoided, including buffers;	Section 6.3
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;	Section 5.4
I	a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 1.3
j	a description of the findings and potential implications of such findings on the impact of the proposed activity or activities;	Section 5.4
k	any mitigation measures for inclusion in the EMPr;	Table 7
l	any conditions for inclusion in the environmental authorisation;	Section 1.4
m	any monitoring requirements for inclusion in the EMPr or environmental authorisation;	Section 7.1
n	a reasoned opinion— I. whether the proposed activity, activities or portions thereof should be authorised; II. regarding the acceptability of the proposed activity or activities; and III. 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 8
o	a description of any consultation process that was undertaken during the course of preparing the specialist report;	Table 4.2
p	a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	Section 5.5
q	any other information requested by the competent authority.	N/A

1 Background

Eco Thunder Consulting (Pty) Ltd (referred to as "ETC") was commissioned by Royal HaskoningDHV (Pty) Ltd (referred to as “RHDHV”) as the lead consultant to manage the Socio-Economic Impact Assessment (SEIA) process for the establishment of the proposed Soufflet Malt Production Facility located on Erf 244 Graceview, within the Midvaal Local Municipality in the Sedibeng District Municipality, Gauteng Province. This project aims to develop a new greenfield malt production facility, strategically located to support the adjoining Heineken Sedibeng Brewery with a steady supply of malt.

1.1 Terms of Reference

A specialist study is required to establish the socio-economic baseline and to identify and potential socio-economic impacts arising from the proposed development based on the general requirements for a comprehensive SEIA.

The following terms of reference were established:

- **Baseline Study**: Conduct a socio-economic baseline study to understand the current conditions in the project area.
- **Stakeholder Engagement**: Identify and engage with key stakeholders to understand their views and concerns related to the project.
- **Stakeholder Engagement Plan:** Assist in the compilation of the Stakeholder Engagement Plan, including a Grievance Mechanism.
- **Impact Assessment**: Identify and assess potential socio-economic impacts, both positive and negative, arising from the project.
- **Mitigation and Enhancement**: Develop measures to mitigate negative impacts and strategies to enhance positive impacts.
- **Monitoring Plan**: Develop a plan to track the implementation of measures and monitor actual socio-economic impacts post-project.
- **Compliance**: Ensure the SEIA complies with relevant legislation, guidelines, and best practices.
- **Reporting**: Prepare a comprehensive, clear, and concise SEIA report suitable for submission to relevant authorities.
- **Environmental and Social Management Plan (ESMP):** Provide input into the Environmental and Social Management Plan.
- **GIS Data:** Provide GIS data and shapefiles required for sensitivity mapping.
- **Site Visits:** Conduct site visits to gather relevant data and insights.

1.2 Structure of the Report

The report is organised into six sections:

- Section 1: Background;
- Section 2: Project Description
- Section 3: Legislation and Policy Review;
- Section 4: Approach and Methodology;
- Section 5: Socio-Economic Setting;
- Section 6: Impact and Risk Assessment;
- Section 7: Environmental Management Programme (EMPr);
- Section 8: Environmental Impact Statement and Conclusion; and
- Section 9: References.

1.3 Limitations and Assumptions

The following assumptions and limitations are applicable to this SEIA:

- The proposed site fulfils the requirements for a suitable site based on technical information regarding local climatic conditions, solar radiation, topography, and land availability.
- The legislative and policy context plays a crucial role in assessing the socio-economic impacts of the project.
- The planning and feasibility study of the project was undertaken with integrity, and the information provided by the project proponent was accurate and true at the time of preparing this report.
- This report is based on available information at the time of preparation, and there may be additional information that could strengthen arguments, contradict the information presented, or identify additional relevant data.
- The socio-economic data presented relies largely on Census information and additional data collected from communities near the proposed project site. These data sources may have limitations due to the data collection process, including potential underrepresentation of certain groups or interests and a small sample size.
- The assessment is based on a snapshot in time and does not account for future changes in socio-economic trends, legislation, or technology that could affect the project's socio-economic impacts.
- The assessment may not capture all potential indirect or cumulative socio-economic impacts, particularly those that result from complex socio-economic processes or interactions with other projects or activities in the area.
- The assessment relies on certain methods and tools to predict and evaluate socio-economic impacts. These methods and tools have inherent uncertainties and limitations, and different methods or tools may yield different results.

1.4 Seasonal Change

In terms of Appendix 6 of the 2014 EIA Regulations, a specialist report must contain information on "the date and season of the site investigation and the relevance of the season to the outcome of the assessment". The site visit was undertaken in **Autumn** on the **16th of May 2024**. The season in which the site visit was undertaken does not have any considerable effect on the significance of the impacts identified, the mitigation measures, or the conclusions of the assessment, since the vegetation cover does not vary significantly over the seasons.

1.5 Specialist Details

ETC is a 100% woman-owned, private company that specialises in a range of specialist studies, such as visual impact assessments, air quality impact assessments, noise impact assessments socio-economic impact assessments, socio-economic research, economic development planning, development program design and implementation as well as community trust management. Based across South Africa, Eco-Thunder has established itself as an expert on the conditions, needs and assets of communities that are linked to independent power generation facilities.

ETC has conducted research on behalf of and advised IPPs since 2017. Its client base is thus comprised of IPPs that have been successful across all the REIPPPP bidding rounds. ETC also implements development programs in energy communities, which ensures a comprehensive understanding of the how to drive positive socio-economic impact

1.6 Level of Confidence

Level of confidence is determined as a function of:

The information available, and understanding of the study area by the practitioner:

- 3: A high level of information is available of the study area and a thorough knowledge base could be established during site visits, surveys etc. The study area was readily accessible.
- 2: A moderate level of information is available of the study area and a moderate knowledge base could be established during site visits, surveys etc. Accessibility to the study area was acceptable for the level of assessment.
- 1: Limited information is available of the study area and a poor knowledge base could be established during site visits and/or surveys, or no site visit and/or surveys were carried out.

The information available, understanding of the study area and experience of this type of project by the practitioner:

- 3: A high level of information and knowledge is available of the project and the visual impact assessor is well experienced in this type of project and level of assessment.
- 2: A moderate level of information and knowledge is available of the project and/or the visual impact assessor is moderately experienced in this type of project and level of assessment.

- 1: Limited information and knowledge are available of the project and/or the visual impact assessor has a low experience level in this type of project and level of assessment.

The level of confidence for this assessment is determined to be 9 and indicates that the author's confidence in the accuracy of the findings is high.

2 Project Description

2.1 Introduction

Soufflet Malt South Africa (Pty) Ltd is developing a new malt production facility strategically located in a greenfield area within the Sedibeng District Municipality, in the Midvaal Local Municipality, Gauteng Province. This facility, situated on Erf 244 Graceview, will support the adjoining Heineken Sedibeng Brewery with a steady supply of malt. The proposed Soufflet Malt Production Facility aims to enhance the local barley production and support the brewing industry in South Africa.

The project is designed to initially produce 100 KT/year of malt, with a future expansion to 135 KT/year. The facility will incorporate advanced technologies and processes to ensure high-quality malt production while optimising energy and water usage. The production process will include several key stages: barley intake, cleaning and grading, steeping, germination, kilning, and malt storage and dispatch.

The facility will include various key components:

- Working Building: For the process of barley intake, cleaning, grading, and malt blending.
- Barley and Malt Storage: Facilities for storing barley before and after the malting process.
- Steeping Building: Housing the steeping tanks for barley hydration.
- Germination Vessels: For controlled germination of barley.
- Kilning Vessel: For drying and curing the germinated barley.
- Malt Dispatch System: Conveyor system connecting the malt plant to the Heineken Brewery.
- Energy System: Including combined heat and power (CHP) gensets, boilers, and possibly future solar PV integration.
- Administration Building: Offices, laboratories, canteen, and other support facilities.
- Wastewater Storage and Treatment Plant: Facilities for treating domestic and industrial effluents.

The SEIA is a critical component of the comprehensive environmental impact assessment process. It aims to identify, evaluate, and propose mitigation measures for the potential socio-economic effects associated with the proposed development. These effects may include changes to the local community's way of life, culture, economy, health and wellbeing, environment, and personal and property rights.

The objective of the SEIA is not merely to predict the potential impacts of the project on the local community. Instead, it seeks to understand the socio-economic context of the area, identify the potential positive and negative impacts of the project, and propose strategies to

enhance benefits and mitigate adverse effects. This process involves engaging with stakeholders, including local communities, to understand their perspectives and concerns.

The SEIA process includes several key steps, such as:

- Identifying and understanding the socio-economic context and baseline conditions of the area.
- Engaging with stakeholders to identify potential socio-economic impacts and mitigation measures.
- Assessing the potential socio-economic impacts of the project, considering both the construction and operational phases.
- Developing a Socio-Economic Impact Management Plan that outlines strategies to mitigate negative impacts and enhance positive impacts.
- Monitoring and evaluating the implementation of the Socio-Economic Impact Management Plan.

The SEIA is conducted in accordance with guidelines provided by the relevant authorities and best practice principles in socio-economic impact assessment. It assumes that the project will comply with all relevant laws, regulations, and standards, and that the mitigation measures proposed will be effectively implemented.

The SEIA primarily focuses on the potential socio-economic impacts of the proposed development, considering factors such as changes to local employment, community cohesion, access to services and facilities, and health and wellbeing. It also considers the potential cumulative socio-economic impacts, considering other existing, planned, or reasonably foreseeable developments in the area.

2.2 Project Location

The proposed Soufflet Malt Production Facility is strategically located in a greenfield area within the Graceview Industrial Park, Randvaal, in the Sedibeng District Municipality, specifically within the Midvaal Local Municipality, Gauteng Province. The site is situated on Erf 244 Graceview, adjacent to the Heineken Sedibeng Brewery, providing an ideal location for a malt production facility due to its proximity to the brewery and accessibility to major transportation routes.

The site is positioned in a well-connected industrial zone, which offers several advantages, including ease of access to raw materials, availability of ample land for industrial development, and close proximity to the national highway network. This strategic location will facilitate efficient logistics and transportation, crucial for the operational success of the facility.

The project site encompasses approximately 10ha of land, providing sufficient space for the planned infrastructure and future expansion. The location's suitability is further enhanced by its alignment with the local zoning regulations and its designation as an industrial development area.

Table 1, Table 2, Figure 1 and Figure 2 below provides the details of the project, including the main infrastructure components and services that will be required during the project life cycle.

Table 1: Details of the Study Area

Component	Description/Dimensions
District Municipality	Sedibeng District Municipality (SDM)
Local Municipality	Midvaal Local Municipality (MLM)
Ward Number(s)	12
Nearest Town(s)	Randvaal

2.3 Project Technical Details

The infrastructure associated with the proposed Soufflet Malt Production Facility will include:

Table 2: Details of the Soufflet Malt Production Facility

Component	Description/Dimensions
Farm Name(s) and Number(s) of Properties Affected by the Facility, incl. SG 21 Digit Code (s)	Erf 244 Graceview (T0IR09870000024400000)
Current Zoning	Commercial Annual Crops Rainfed
Site Coordinates (centre of development area)	Latitude: 26° 25' 50.19" S Longitude: 28° 4' 12.30" E
Total extent of the Affected Properties, also referred to as the project site[1]	~14ha
Total extent of the Development area[2]	~10ha
Total extent of the Development footprint[3]	~8.2ha
Working Building	• The process of barley intake, cleaning and grading and malt blending, cleaning and bulk shipping will take place at this building. • Pit for grain will be arranged in front of the processing tower for receiving and shipping by truck. • Several bins with steel support structure will be situated on beams system of the building. • Conveyor systems also run inside the building.
Barley Storage	Storage of barley before the malting process starts.
Malt Storage	Storage and distribution of malt.

1 The project site is that identified area within which the development area and development footprint are located. It is the broader geographic area assessed as part of the EIA process, within which indirect and direct effects of the project may occur.
2 The development area is that identified area where the Soufflet Malt Production facility is planned to be located. This area has been selected as a practicable option for the facility, considering technical preference and constraints.
3 The development footprint is the defined area (located within the development area) where the PV panel array and other associated infrastructure for the Soufflet Malt Production Facility is planned to be constructed. This is the actual footprint of the facility, and the area which would be disturbed.

Component	Description/Dimensions
Steeping Building	• The barley steeping process will occur in this building. • Steeping tanks with steel support structures will be arranged inside the building. • There will be conveyor system for transferring malt from here to the germination vessels.
Germination Vessels	The germination process will occur in these vessels.
Kilning Vessel	• This building is where the kilning process takes place. • The kilning process occurs at various degrees Celsius ranging from 40ºC to 90ºC.
Malt Dispatch	Malt dispatch will be via a conveyor system between the malt plant and the Heineken Sedibeng Brewery.
Energy System	• Capacity of the combined heat and power genset (CHP) (including back up system) - 8MW of heating energy, 4MW of cooling energy and 3MW of electrical power through the CHP Plant, heat pumps and heat exchangers. • 70GWh gas for CHP will be used. • Capacity of the boilers (back-up) – 2 x 8MW using liquified natural gas (LNG) as a fuel source • Approximately 70GWh of gas will be used per year. • The Solar PV Project will not form part of the project scope but will be considered in future.
Administration Building	• The administration building contains the following functions: office space, meeting room, laboratory, security/weighbridge office, canteen, toilet, lockers, and dressing rooms. This building is a single storey structure is a local designed building with traditional features optimised to facilitate the corporate identity. • The canteen and lockers are to serve an assumed 50 personnel with an estimated max. 40 persons in the day shift.
Workshop and Spare Parts	The building will comprise of welding workshop, forklift maintenance, storage area, office, and ablutions
Electrical Buildings	Switch gear and transformers.
Water Storage	• The malting process consumes large amounts of water on a daily basis. The expected water usage for the current mandate based on the process mass energy balance spreadsheet is projected at 1000m^3/day peak load. • The arrangement of the water storage tanks is described below: • One (1) freshwater tank of 1000m^3 available water storage volume. This volume includes 10% spare capacity for malt production usage demand for 24 hours.

Component	Description/Dimensions
	• One (1) process water tank of 1000m^3 available water storage volume. This volume including the option to be 50% recycled water.
Wastewater Storage and Treatment Plant	Effluent will either be discharged directly into ERWAT and on-site treatment of wastewater may only be considered as an alternative option. Process wastewater: • Volume of wastewater stored in Reservoir below Steeping Building – 1000m^3. Treatment of the following wastewater streams: • Domestic sewage/wastewater from the Administration building. • Industrial effluent/wastewater emanating from the washing and germination process of a maximum of 900m^3/d. • Volume of wastewater treated per day – 575m^3 (Phase 1). • Concrete tank at the bottom of the steeping building which will serve as (bulk) process effluent storage with a capacity of 1000m^3.
Ammonia Storage	Approximately 1.5 tonnes (2000m^3).
Ancillary Infrastructure	Construction lay-down area, Internal conveyor system to transport grain between the Steeping building, Germination vessels, Kilning area, Bagging and chemical storage buildings, Fire pump room, gatehouse, weighbridge, truck staging area, waste pick-up area, internal access roads, staff parking.
Access Roads and Internal Roads	Existing roads will be used, wherever possible, to access the project site and development area. Access to the Soufflet Malt Production Facility development area is provided via the R59, R550 (Perdekop Road) and tertiary gravel roads.

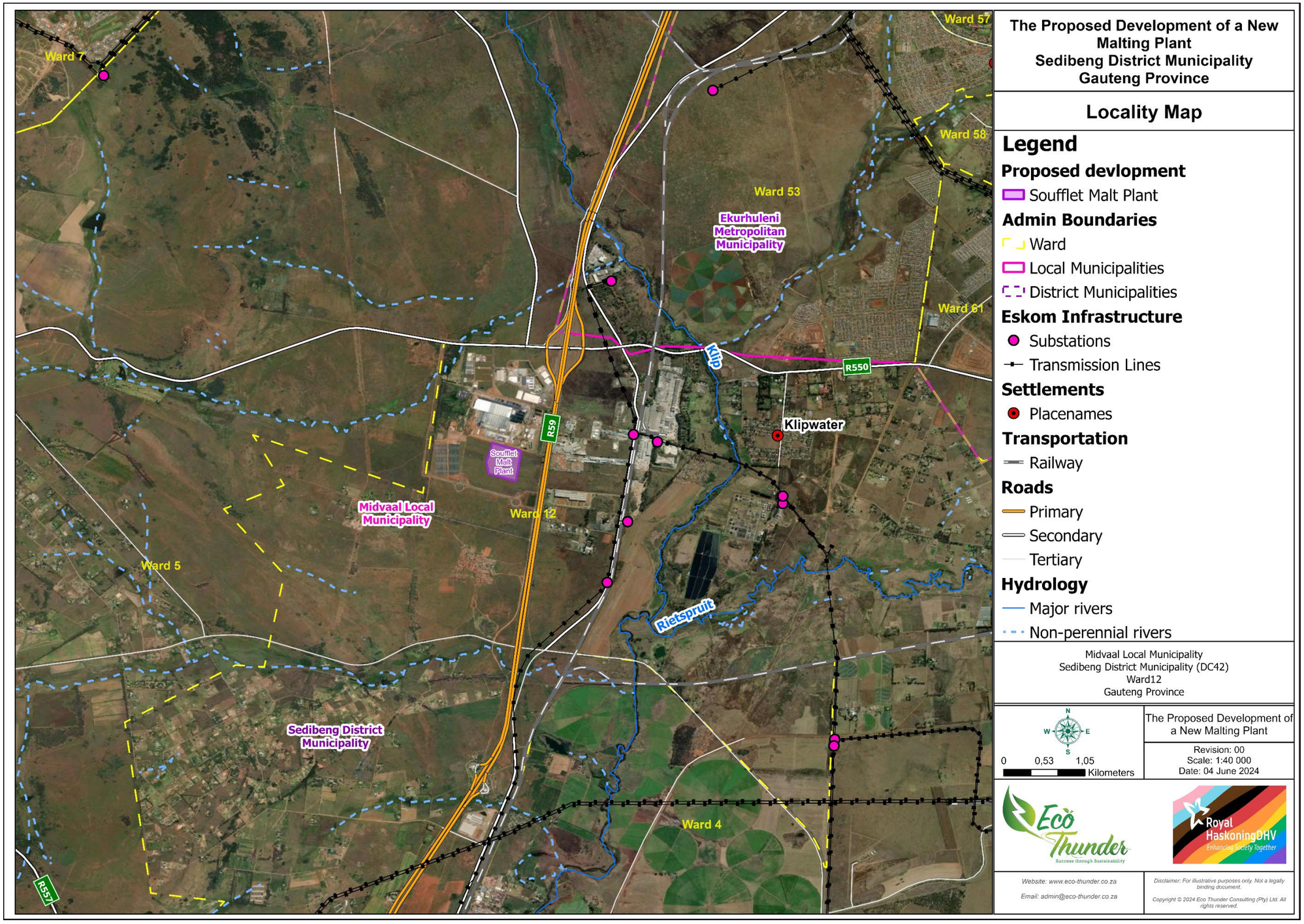


Figure 1: Locality Map of the Proposed Soufflet Malt Production Facility

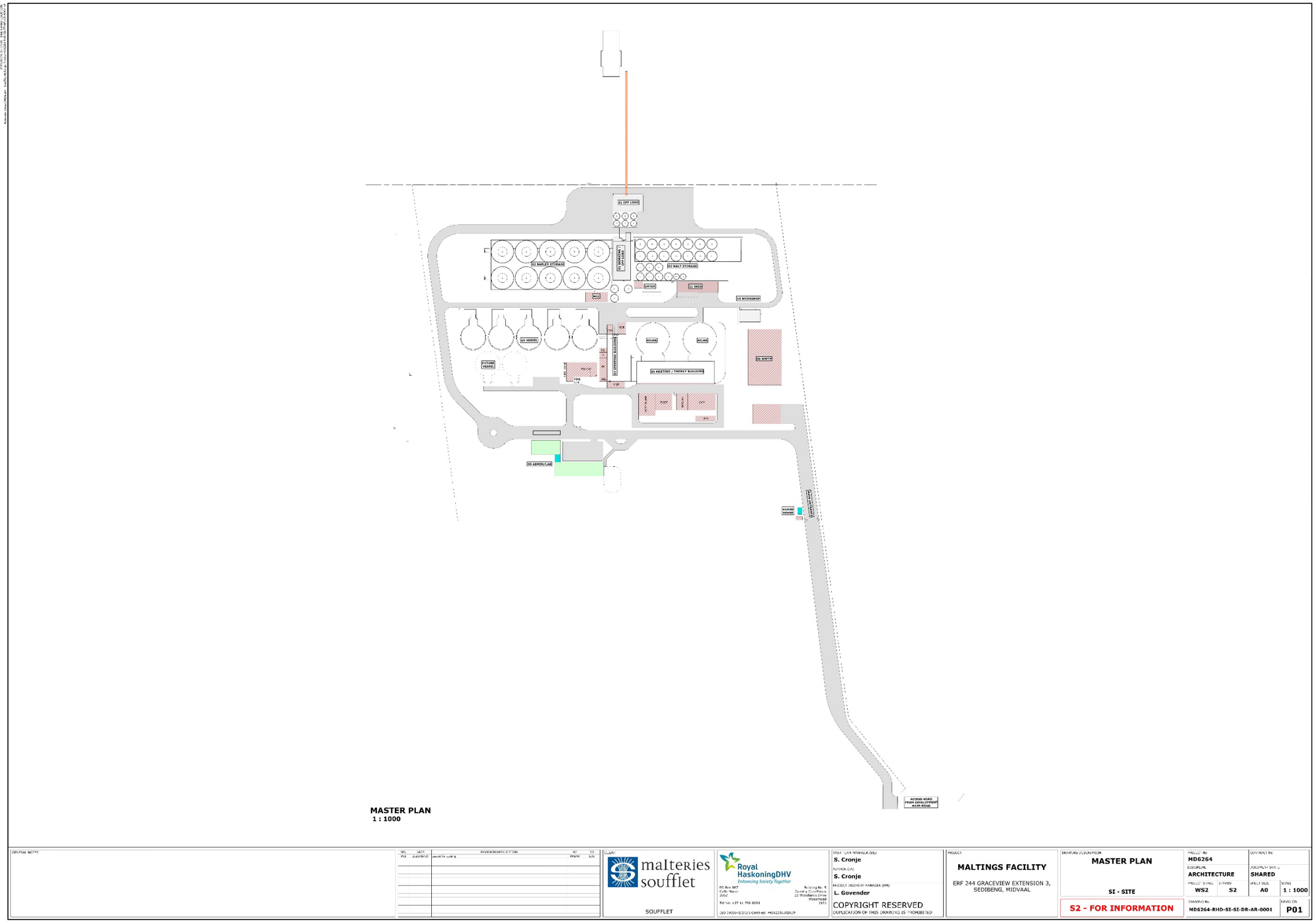


Figure 2: Detailed Layout of the Proposed Soufflet Malt Production Facility

2.3.1 Raw Materials and Inputs

The materials and inputs required by the proposed Soufflet Malt Production Facility can be classified broadly into three categories namely direct, indirect (auxiliary) and utilities. Each of these three categories is discussed briefly hereunder:

- **Direct Raw Material:** Direct materials and inputs comprise items that are directly utilised for the production of malt or go to the product. Raw barley and water are the major raw materials that are required to produce barley malt. The proposed malt project planned to acquire the raw barley from the local market whereas its water requirement will be met by the local municipality The annual direct raw material requirement of the proposed Soufflet Malt Production Facility at different phases of operation is given in Table 3 below.

Table 3: The Annual Direct Raw Material Requirement of the Proposed Soufflet Malt Production Facility at Different Phases of Operation

Description	Unit	Required Quantity	
		Phase 1	Phase 2
Raw Barley	Metric Ton	125,000	170,000
Water	Cubic Meters	250,000	325,000

- **Indirect (Auxiliary) Raw Materials:** Indirect (auxiliary) raw materials are not used directly for the production of malt or do not go to the product but indirectly support the production of malt. The indirect (auxiliary) raw materials required for the proposed Soufflet Malt Production Facility are air and heat.
- **Utilities:** The main utilities required by the proposed Soufflet Malt Production Facility are electricity, water, compressed air and a cooling/heating system. Electricity shall be generated from the gas-powered Cogeneration/CHP units, while water supply comes from the local municipality. The required annual electrical power consumption for the proposed Soufflet Malt Production Facility is 4MW for Phase 1 and 6MW for Phase 2. The anticipated energy consumption is 70GWh and 94GWh for Phase 1 & 2 respectively.

2.3.2 Production Process

The malting production process combines four separate stages:

- Barley Intake and Storage.
- **Steeping:** Initiation of growth through forced grain hydration.
- **Germination:** Controlled growth of barley to facilitate endosperm modification.
- **Kilning:** The termination of grain growth to fix extract potential and malt specifications through grain dehydration.

2.3.3 Process Management

Soufflet Group, the world's leading malt producer operates more than 41 malting plants worldwide and is currently the biggest maltster in the world. Thanks to its great experience, Soufflet Group has developed high know-how in process management to achieve high-quality malt and to optimise energy consumption.

2.3.3.1 Barley Intake and Storage

Following harvest barley must be sufficiently dried to prevent germination and reduce the risk of microbial infections occurring prior to use. If dried incorrectly the quality of the grain will deteriorate in store. Barley harvested from the field will vary in moisture content from around 13% in a dry year to 20% in a wet year. Whatever the moisture at intake, barley must be dried down to about 13% for safe storage. Above 13% moisture, the grain is susceptible to insect attack.

After drying, barley is cooled and stored until it is ready for use. During storage the grain respires, even though at a low rate, and must be kept fresh by aeration. All (medium to long-term) barley silos are fitted with low-volume fans for this purpose. As mentioned earlier the grain in store has to be protected against fungal growth and insect infestation. This is achieved by drying the grain to 13% moisture and holding the temperature as low as possible. Regular temperature monitoring and physical inspection of the grain in store is essential to ensure that localised infestations are not occurring, and pre-cleaning/fumigation of silos/ stores is very important.

Barley is stored in deep silos, some with capacities in excess of large volumes. As a living tissue, prolonged storage in such conditions can suffocate the barley grain. To prevent the cessation of grain respiration, the barley is aerated periodically. If necessary, the barley can also be moved and combined with cleaning and pest fumigation. The proposed Soufflet Malt Production Facility is planning to install 8 silos with barley storage capacity of 4,200t each for Phase 1 and additional 2 silos with similar capacity for the second phase of the project.

Barley cleaning: The grain first passes over revolving or vibrating screens and sieves, in combination with air jets and magnets. These act to remove any non-barley material that is not of equal size or weight. The material that is removed can contain twigs, leaves, straw, stone, pieces of metal and dust. Throughout malting, great care is taken to remove dust and any material that could generate a spark. This is to prevent violent and dangerous dust explosions.

2.3.3.2 Steeping

The process of malting is the forced growth of the barley grain to achieve the required endosperm modification. By allowing the grain to germinate under controlled conditions, the ability of the grain to produce hydrolytic enzymes can be manipulated. Hydrolytic enzymes released during germination are required to partially degrade (or modify) the starchy endosperm during malting and later to release fermentable extract during mashing. The processes that take place during steeping are:

- Moisture content of the grain is increased to 40% - 45%;
- Increased respiration rate;
- Initiation of enzymatic activity that will continue during the germination phase;
- Washing dust off and leaching of substances from outer layers of grains;
- Production of waste steep liquors with high biological oxygen demand (BOD);
- "Chitting" - the appearance of the coleorhiza, surrounding the first rootlet.

Grain modification is the overall enzymatic action in the endosperm during malting, which transforms the hard starchy endosperm of barley into friable (crushable) malt. During steeping, barley grains are placed in conical vessels with capacities of about 60t. During the steeping process, the grains are submerged in steep water, which is changed as required and the barley aerated (known as an air rest) for the following reasons:

- To remove CO_2
- To remove toxic metabolites
- To remove competitive micro-organisms
- To discharge excess heat
- To replenish oxygen

During steeping, hydration rejuvenates the barley grain and respiration recommences, slowly at first, but quickly gaining vigour. Grain respiration (the production of energy to drive metabolic processes) produces heat, CO_2, and metabolites. If unchecked, the heat generated during steeping as the grain respires has a cumulative effect and forces the grain to respire more efficaciously. The steeping process physically washes and cleans the grain, leaving dirt suspended in the steep liquor. This can be removed when steep liquor is changed.

Barley is immersed in water at a given temperature in order to increase the moisture content and to initiate germination. Steep water is periodically drained from the grain and replaced with fresh. The minimum acceptable number of water changes is used since both the supply of fresh water and the disposal of steep effluent are costly. It is important that the moisture content of the resulting germinating barley is distributed as evenly through each corn as possible. If this were not the case then uneven, partly modified malt may result. Also, the steeping of water-sensitive grains must be considered.

These requirements can be met by the use of multiple steeping cycles where an air rest with good CO2 extraction follows each immersion. In the case of water-sensitive grains, experience has shown that if the amount of water taken up by the grain in the early stages of steeping is limited then the water-sensitive grains will begin to germinate.

As a general rule, air rest temperature should not exceed 21 - 23°C as damage to the embryo could occur and certain enzyme systems can be impaired – especially proteases that break down the protein matrix in which the starch grains are embedded. A consequence of this could be that less starch is available to the brewer leading to reduced soluble extract, and increased

viscosity leading to poor mash turn-off – both of which would reduce the throughput of the brewery.

Once germination has commenced it is important that steeping raises the moisture of the grain to a level that will promote the production, distribution and activation of the enzymes. Generally, moisture of 40 - 45% is typical for malting but, as stated previously, it is important that this moisture is distributed as evenly as possible throughout each grain.

The steeping process for the proposed Soufflet Malt Production Facility will be carried out using 8 cylindrical stainless-steel tanks with a capacity up to 68 tons each. The plant will not require additional similar steeping tanks for the second phase of the project. These tanks are made of stainless steel with all necessary auxiliary devices such as aeration during wet periods and ventilation during dry periods, spraying and cleaning devices. The main advantage of using conical tanks is the reduction of water consumption due to the small volume of the false bottom.

In order to reduce the water consumption as much as possible, while maintaining optimal conditions for barley, a so called “washing screw” to steep in has been chosen. It has the great advantage to wash and wet the barley and therefore to reduce the water consumption, replacing a wet stage. The proposed Soufflet Malt Production Facility also selected a dry transfer of steeped barley from the steeping tank to the germination box (instead of wet transfer using water) using specific conveying equipment. Transfer time to germination vessel shall not take more than 2 hrs. without any need of additional water.

During the steeping process, the grains are submerged in steep liquor, which is changed as required and the barley aerated (known as an air rest) for the purpose of removing CO_2. Excess heat is also discharged, and replenishment of oxygen takes place in the steeping process. The moisture content of the grain is increased to 40% - 44% during the steeping process. The process also washes dust off and leaching of substances from outer layers of grains. Waste steep liquors with high biological oxygen demand (BOD) is also generated by the steeping process. The beginning of germination is indicated by the appearance of the small, white `chit', the root sheath (coleorhiza) that protrudes from the base of each germinated grain.

2.3.3.3 Germination

At this stage the grain is transferred to a germination vessel. As the steeped barley strive for further growth, oxygen requirements increased dramatically to facilitate respiration. This demand for oxygen cannot be met in the steep tank. If the chitting grain is left submerged in the steep, it takes up too much water and effectively drowns. The grain is therefore, moved to germination chambers where its physical demands can be met more easily.

The proposed Soufflet Malt Production Facility is planning to incorporate 5 circular germination vessels (capacity 250 tons each) and additional 2 similar germination vessels for the second phase of the project. Germinating barley lies in a 1.4m thick bed on a perforated floor – Each box is equipped with a turning machine and a loading and unloading screw, a 180000m^3/h fan capacity for keeping temperature in the barley bed within suitable limits and air conditioning

system (cooling and humidification) - fresh and re-circulated air flaps. In order to reduce electricity consumption by adjusting air flow rate to germination intensity, fans are equipped with frequency inverters for speed regulation. 2 or 3 turnings per day prevent germinating barley from sticking together (agglomeration) and ensure homogeneity. After 5 days, green malt is transferred to kiln with bucket elevator and conveyors. Transfer time is about 2.0 hours.

After steeping, the activated and chitted barley at about 42% moisture is transferred into the germination vessel and levelled. The germination process consists of 5 days of actively managing the aerobic respiration process that was activated at steep. Oxygen and moisture must be provided to the barley, and the CO_2 and heat generated must be dissipated.

There are various types of germination chambers in use around the world, but they all operate around similar principles:

- Controlling grain temperature.
- Maintaining at least 40% grain moisture content.
- Turning and mixing of the grain.
- Supplying sufficient oxygen to the grain.

The steeped grain can be transferred between the steeping tank and germination chamber as a slurry, or dry with spraying, to prevent grain dehydration. The grain is then spread out to form an even bed, on average between 1-1.6m in depth.

Throughout germination, it is essential that the grain bed is kept moist. If the grain is allowed to dehydrate, modification will slow down or cease. If the grain dehydrates, hydrolytic enzymes will be unable to progress throughout the endosperm, resulting in an under-modified malt of poor quality that will cause serious brew house problems. The problem of dehydration is overcome by lightly spraying the grain bed with water. In addition, the germinating malt is aerated with cool air, saturated with moisture at 100% relative humidity. Although the circulating air is at 100% humidity as it enters the grain bed, it is warmed removing the heat generated by grain respiration. This warming of the air decreases its relative humidity and is sufficient to affect some water removal and therefore, dehydration of the grain.

Bed aeration serves the following purposes:

- Apart from helping to maintain bed hydration, circulating air replenishes the supply of oxygen for the grain and purges out any CO_2 that could stifle respiration. By maintaining air circulation, cooling of the grain bed is also accomplished.
- Turning the grain bed using helical screws also lifts the bed to allow easier passage of the circulating air and hence more efficient cooling and CO_2 removal.
- Germination will typically last between 3-5 days, at temperatures between 13-20°C. As germination proceeds, respiration within the grain gains strength and by the end of the process the heat generated can result in the grain mass reaching temperatures of up to 22°C.

The malt producer (maltster) aims to control the formation of α- and β-Amylase, proteolysis and degradation of β-glucans which are summarised below:

- α-Amylase
  - This does not exist in unmalted barley;
  - The level increases with germination;
  - The amount of α-amylase produced varies with barley variety.
  - It is stimulated by higher moisture content and lower germination temperature.
- β-Amylase
  - Exists in unmalted barley in an inactive form;
  - The amount of β-amylase produced varies with barley variety;
  - Activation requires proteolysis, is linked to embryo activity and respiration;
  - It is stimulated by average moisture content (e.g. 43% moisture and lower germination temperatures).
- Proteolysis
  - Higher moisture content and lower germination temperatures stimulate production.
  - Elevated germination temperatures decrease activity.

It is worth performing a germinative energy (% of barley sample germinated in lab analysis) test on barley prior to malting, as a high proportion of dead or dormant grains will lead to heterogeneous malt containing non-degraded β-glucans and problems in the brew house.

2.3.3.4 Kilning

Following the completion of germination, the green malt is transferred to the kiln for finishing. The proposed Soufflet Malt Production Facility will install 2 circular kilns (capacity 250 tons each), with both being installed during Phase 1.

The kilning section of the malting plant, contained in 2 floors (one per each kilning stage) located side by side and a so called “energy building” for kiln fans, heating system, heat recovery, air ducts and flaps. Each floor consists in a circular steel building (with inner stainless-steel coating) with a diameter of 31m. Green malt lies in a 0.8m height bed. A 3m height space below perforated floor allows uniform air distribution and easy access for cleaning. Each floor is equipped with a loading-levelling and unloading screw. In the energy building, they are 4 fans (2 per floor operating in parallel) with a capacity of about 450000m^3/h each, together with hot water exchangers.

In order to reduce electricity consumption by adjusting fan capacity to process requirement (only 50 to 60% of nominal capacity is needed during last stage of the process), fans are equipped with frequency inverters for speed regulation. In order to reduce heat consumption, a glass tubes heat exchanger allows recovering heat from air going out of the kiln to air coming

in. Also, at the end of the drying process, the air is partially recirculated to optimize energy consumption.

At the present state of technology, this is the best-performing kilning system. At the end of the process, kilned malt is cooled and transferred to silo within 1.5 hours. The malt storage capacity will consist of 12 malt cylindro-conical malt cells in Phase 1, with an additional 6 cells having a capacity of 700t each. There will be another 8 buffer cells (1 batch capacity) and some bins for malt expedition and by-products storage.

The final heat treatment, called curing step, has the characteristics of a typical industrial drying process. The primary aim of kilning is the reduction of the moisture content of green malt from the germination conditions of 45% to a condition which ensures stability for transportation and storage (typically in the range 4 to 5%). Removal of water from green malt is essential to prevent further growth and modification, to achieve a stable product which can be stored, transported and to preserve enzymes. Moreover, this step is to develop and stabilise properties such as flavour and colour, remove undesirable flavours and dry the rootlets to permit their removal.

Drying occurs in two different stages. Initially, moisture is removed from the grain from approximately 44% to 12%. With an upward flow of air, this process takes approximately 12 to 24 hours to pass through the bed for a double-deck kiln, depending upon the airflow. This phase of drying is rapid and is referred to as the “free-drying” or “withering” stage. The second phase of drying where the malt is dried from 12% to 4% occurs in a much slower process, commonly referred to as the “curing” stage. At the end of the drying process, the kiln temperature may be raised for one to 3 hours in the “curing” stage. This is followed by a cooling period to achieve a temperature suitable for discharge and storage. The kilning cycle should ensure that the maximum drying effect occurs at the lowest possible temperature. In this way, the final curing temperature can be achieved whilst the enzyme losses are kept to an acceptable level.

Beers which differ in taste, colour, aroma, mellowness and head retention, need to use malts produced by different processes, in particular in the use of drying and roasting conditions. These later stages lead to the development of flavour and colours of different degrees of intensity for the preparation of a range of beers.

The rootlets of the malt (also known as culms) are removed from the malt soon after transfer from the kiln. The removed culms are sold or processed as animal feed. The cooled malt is agitated to break up the brittle rootlets and these, and dust, are separated by sieving and aspiration with air currents.

Malts are stored in ways intended to minimise the pickup of moisture, and to exclude birds, rats, mice and insects. It is important to prevent malts from being mixed or being contaminated with un-malted barley during handling or storage. It is impossible to make successive batches of malt that have precisely the same analysis. Each batch should be stored separately and blended homogeneously to ensure consistent deliveries.

2.3.3.5 The Malting Process

The main aim of malting is to transform the food reserves of grain, which are insoluble starch and protein, into a substrate capable of dissolution and extraction by hot water during the later mashing stage to produce wort. The malting of barley for brewing utilises and directs nature's germination process. In nature, when a seed, any seed, is planted in the ground, it takes up moisture, and with the right balance of moisture and warmth it germinates or sprouts.

Prior to kilning, the malting production process follows exactly the natural steps through steeping (the moisture up- take) and germination (the enzyme creation, protein reduction, starch simplification, and cell wall weakening). After these enzyme actions take place, modification for the purposes of the brewer is complete. Maltsters and brewers are interested in the created enzymes and the partially digested (modified) barley kernel that represent the state of the kernel at the end of germination. The maltster interrupts the germination process with kilning. In the kiln, the germinated barley is first dried to deprive the growing barley kernel of moisture to stop the germination process, and then cured at higher temperatures for colour and flavour development.

Combining the fundamentals of germination with a kilning step results in a very simple batch malting process that involves barley, lots of water and air, and applied heat to dry and cure the malt. The key differences between a barley kernel germinating in nature and in a production malting process are the requirement to run a scheduled and repeatable production process, and the effect of massed seeds in close proximity to each other performing germination simultaneously.

The malting process needs a lot of water and air, along with the utility infrastructure to seasonally heat and cool them. Malting is a batch process without any continuous elements. The grain in process is moved from malting vessel to malting vessel for each progressive step.

The total malting process generally takes 7–9 days, consisting of 2 days of steeping, 4-5 days of germination, and 1- 2 days of kilning. After kilning, there is a critical cooling step before storage, followed by an aging period and the blending of batches prior to shipment.

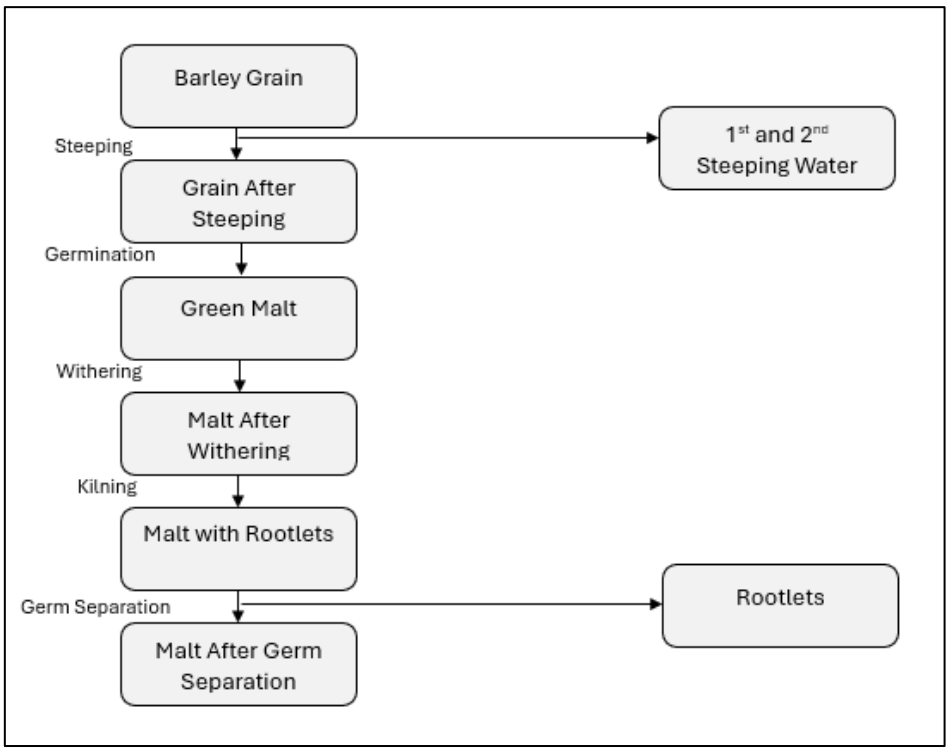


Figure 3: Malting Production Process

2.4 Basic Assessment Alternatives

2.4.1 Location Alternatives

The chosen site at Erf 244 Graceview, within the Sedibeng District Municipality in the Midvaal Local Municipality, Gauteng Province, was selected based on its strategic location, accessibility, and potential to support the adjoining Heineken Sedibeng Brewery effectively. No location alternatives were assessed for the proposed Soufflet Malt Production Facility.

2.4.2 Technology Alternatives

Different technology options for the Soufflet Malt Production Facility were considered to ensure the most efficient and sustainable technologies are employed. The project will utilise advanced malting technologies and processes to ensure high-quality malt production while optimising energy and water usage. Alternative technologies, such as conventional malting methods with higher water and energy consumption, were considered but deemed less sustainable and less aligned with the project's goals of reducing environmental impact.

2.4.2.1 Malting Technology

The proposed Soufflet Malt Production Facility will consist of stainless steel cylindro-conical steeping tanks, circular stainless steel lined germinating boxes and kilning section contained in circular building (inner stainless steel coated). Circular malting vessels are the current standard.

Steeping vessels having conical bottom tanks with screen area in the cone bottom for water fill and drain, and to establish air flow with a suction fan when the barley is on air rest. Cylindro-conical tanks are simple and self-emptying. In the malting process, large quantities of water are necessary during the steeping (major share) and germination phases to transform barley into malt. During steeping the grain is immersed. During germination, the grain is kept in a moist condition by spraying. The proposed Soufflet Malt Production Facility will use steeping tanks designed to reduce water consumption and loss compared to traditional tanks.

Moreover, dry transfer (instead of wet transfer using water) of the steeped barley from the steeping tank to the germinating box reduces considerable amount of water. To restore clean water at the end of the process, all wastewater is processed in water treatment plants in compliance with legislation on water emissions to significantly reduce effluents.

Circular germination vessels and circular kilns have the advantages of simplified grain loading and unloading and offer improved distribution of air. There is no practical limitation on size for these vessels, generally they are constructed with a fixed floor and turning machine that pivots on a centre column while travelling on an outside rail.

During the processing of barley into malt, it is during the kilning phase that the most energy is used. The majority of the heat demand is for kilning process, with grain drying representing the largest heat energy use. At least 90% of the heat demand in a kiln is thought to be associated with the evaporation of water, in order to dry the malt to its final moisture content. The proposed Soufflet Malt Production Facility kilns will be fitted with static glass tube heat exchangers to recover some of (about 20%) vaporisation energy of water (latent heat) from the air off from the kiln to pre-heat the ambient air coming into the kiln. The second plan for increased energy recovery that will be deployed by the proposed Soufflet Malt Production Facility is by installing open cycle heat pumps which will suit the malting process. Open cycle heat pumps differ from closed cycle heat pumps in that they are able to use the water evaporated from the malt as the means to recover energy. A higher energy recovery factor can be achieved than possible with closed heat pumps (about 43%).

The proposed Soufflet Malt Production Facility's energy recovery from the kilning process through fitting glass tube heat exchangers and possible installation of open cycle heat pumps achieves more than 60% recovery of the energy used in the kiln.

The final heat source will be from the CHP, optimising to a very high level the global energy cycle. CHP will produce electricity that will be used by the heat pumps. Complementary heat will be coming from cooling of the CHP. This cycle, so called trigeneration, is the state of the art in term of energy optimisation.

2.4.3 Design or Layout Alternatives

Various design and layout options were explored to optimise land use, minimise environmental impacts, and ensure operational efficiency. The final design includes strategically placed buildings and infrastructure to maximise production efficiency and minimise land disturbance. The layout was planned to avoid environmentally sensitive areas and to incorporate natural features for visual screening and mitigation of potential visual impacts. Alternative designs that

involved more extensive land clearing or less efficient use of space were rejected in favour of a layout that balances functionality with environmental and socio-economic stewardship.

2.4.4 No-Go Alternative

The “no-go” alternative is the option of not constructing the Soufflet Malt Production Facility. The implementation of the proposed project is expected to result in several positive and negative social impacts. Most negative impacts identified for the project are associated with the construction phase of the project, while the positive impacts are associated with both the construction and operation phases of the project.

Potential negative social impacts associated with the construction and operation of the project include the following:

- Potential influx of job seekers and an associated change in population and increase in pressure on basic services;
- Potential safety and security impacts; and
- Potential nuisance impacts (noise and dust).

Potential positive social impacts associated with the construction and operation of the project include the following:

- Potential direct and indirect employment opportunities;
- Potential contribution to skill development; and
- Potential development of non-polluting, efficient production infrastructure.

Considering the socio-economic viewpoint, the “implementing the project” option is preferable to the “no-go” alternative due to the project not resulting in any significant negative socio-economic impact. The potential social and socio-economic benefits of the project would be employment opportunities and its contribution to the nation's economy by substituting the import of malt.

2.5 Study Objectives

The primary objective of this SEIA is to identify, evaluate, and propose mitigation measures for the potential socio-economic impacts associated with the proposed project. The SEIA is a critical component of the comprehensive environmental impact assessment process, providing valuable insights into the socio-economic implications of the proposed Soufflet Malt Production Facility.

The specific objectives of the SEIA include:

- **Understanding the Socio-Economic Context**: To gain a comprehensive understanding of the socio-economic environment within the project area, including demographic characteristics, economic activities, social infrastructure, and key socio-economic issues.

- **Identifying Stakeholders**: To identify key stakeholders, including local communities, government agencies, non-governmental organisations, and other relevant parties who may be affected by or have an interest in the proposed project.
- **Assessing Potential Socio-Economic Impacts**: To identify and assess potential socio-economic impacts, both positive and negative, that may arise from the proposed project. This includes impacts on employment, local economy, community health and safety, cultural heritage, and social cohesion.
- **Developing Mitigation Measures**: To propose effective and practical mitigation measures for any negative socio-economic impacts identified, and strategies to enhance positive impacts.
- **Compliance with Legislation and Guidelines**: To ensure that the SEIA is conducted in accordance with relevant legislation, guidelines, and best practices, including the principles of socio-economic sustainability and socio-economic justice.
- **Engaging with Stakeholders**: To facilitate meaningful engagement with stakeholders throughout the SEIA process, ensuring that their views and concerns are adequately considered and addressed.

The SEIA aims to provide a robust and comprehensive analysis that will inform decision-making and contribute to the sustainable development of the proposed Soufflet Malt Production Facility. It is committed to promoting economic equity, enhancing social well-being, and ensuring that the benefits of the project are shared equitably among all stakeholders.

3 Legislation and Policy Review

The proposed Soufflet Malt Production Facility must comply with a comprehensive array of policies and legislative frameworks to ensure sustainable development and operational excellence. Key legislative instruments governing the project include national, provincial, and local regulations, each contributing to the overarching goal of environmental protection, economic development, and social well-being.

The following key pieces of documentation were reviewed as part of this legislation and policy review process:

3.1 National Legislation and Guidelines

The following documentation provides national policy guidelines:

- Constitution of the Republic of South Africa, 1996.
- National Environmental Management Act, 107 of 1998 (NEMA).
- National Water Act, 1998 (Act No. 36 of 1998).
- National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)
- National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
- Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

3.1.1 Constitution of the Republic of South Africa 1996

Section 24 of the Constitution pertains specifically to the environment. It states that everyone has the right to an environment that is not harmful to their health or well-being, and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and socio-economic development.

The Constitution outlines the need to promote socio-economic and economic development. Section 24 of the Constitution therefore requires that development be conducted in such a manner that it does not infringe on an individual's environmental rights, health, or well-being. This is especially significant for previously disadvantaged individuals who are most at risk to environmental impacts.

3.1.2 National Environmental Management Act (No. 107 of 1998) (NEMA)

This piece of legislation is South Africa's key piece of environmental legislation and sets the framework for environmental management in South Africa. NEMA is founded on the principle that everyone has the right to an environment that is not harmful to their health or well-being as contained within the Bill of Rights.

The national environmental management principles state that the social, economic and environmental impacts of activities, including disadvantages and benefits, must be

considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.

The need for responsible and informed decision-making by government on the acceptability of environmental impacts is therefore enshrined within NEMA.

3.1.3 National Water Act, 1998 (Act No. 36 of 1998)

The National Water Act aims to ensure the sustainable use and protection of South Africa's water resources. It provides a legal framework for the equitable allocation, use, and management of water resources, ensuring that water use supports social and economic development while maintaining ecological integrity. Key provisions include the establishment of water use licensing and permitting requirements, the protection of water resources through the classification of water bodies, and the setting of resource quality objectives. It also mandates the establishment of Catchment Management Agencies (CMAs) and Water User Associations (WUAs), as well as the preparation of catchment management strategies and water resource management plans.

3.1.4 National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)

This act provides a framework for the prevention, control, and reduction of air pollution to protect human health and the environment. It establishes national norms and standards for air quality management, including ambient air quality standards and emissions limits. The act requires the preparation and implementation of Air Quality Management Plans (AQMPs), sets out requirements for atmospheric emission licensing, and mandates the monitoring and reporting of air quality and emissions.

3.1.5 National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)

The Waste Act seeks to prevent and manage waste generation to minimise its impact on human health and the environment. It promotes the reduction, reuse, recycling, and recovery of waste, and establishes a regulatory framework for waste management activities. Key provisions include the requirement for the development of Integrated Waste Management Plans (IWMPs), the establishment of norms and standards for waste management, the licensing of waste management activities, and the encouragement of waste minimisation and recycling through extended producer responsibility schemes.

3.1.6 Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

The Occupational Health and Safety Act aims to ensure the health and safety of workers in the workplace. It imposes duties on employers and employees to maintain safe working conditions and prevent workplace injuries and illnesses. Key provisions include the requirement for employers to provide a safe working environment and maintain safety equipment, the mandate to identify and assess workplace hazards, the necessity for training and supervision of employees on safety practices, and the establishment of procedures for reporting and investigating workplace incidents and accidents.

3.2 Provincial Policy

Relevant policy and planning documents on provincial level include:

- Gauteng Spatial Development Framework (GSDF) (2030);
- Gauteng Growth and Development Strategy (GGDS) (2030);
- Gauteng Industrial Policy (2018/2019).
- Gauteng Integrated Waste Management Plan (IWMP) (2017).

3.2.1 Gauteng Spatial Development Framework (GSDF) (2030)

The Gauteng Spatial Development Framework (GSDF) outlines the spatial planning and development objectives for the Gauteng Province. It aims to promote balanced and sustainable development, reduce spatial inequalities, and support economic growth. The GSDF provides guidelines for land use, infrastructure development, and the integration of social, economic, and environmental goals to create a cohesive and well-planned province. The framework emphasises the need for efficient land use, improved infrastructure, and the creation of sustainable human settlements, while addressing historical spatial imbalances and promoting equitable access to resources and opportunities. The Proposed Soufflet Malt Production Facility supports the GSDF by promoting industrial development and economic growth in the Sedibeng District, being in Graceview Industrial Park which aligns with coordinated infrastructure development and contributing to reducing spatial inequalities by creating job opportunities and supporting local economic activities.

3.2.2 Gauteng Growth and Development Strategy (GGDS) (2030).

The Gauteng Growth and Development Strategy (GGDS), aims to drive economic growth, job creation, and sustainable development in the province. It outlines strategic priorities such as improving infrastructure, enhancing human capital, fostering innovation, and promoting inclusive economic development. The GGDS seeks to position Gauteng as a globally competitive and sustainable region by leveraging its economic potential and addressing key socio-economic challenges. The strategy focuses on creating a conducive environment for business, enhancing the quality of life for residents, and promoting sustainable resource use, while emphasizing the importance of collaboration between government, private sector, and civil society. The Proposed Soufflet Malt Production Facility aligns with the GGDS by creating numerous job opportunities, enhancing local infrastructure through the establishment of a malt production plant, and including technology transfer and skills development to foster innovation and enhance human capital in the region.

3.2.3 Gauteng Industrial Policy (2018/2019)

The Gauteng Industrial Policy focuses on supporting the growth and development of the industrial sector in the province. It aims to enhance competitiveness, promote innovation, and encourage sustainable industrial practices. The policy provides a framework for the development of industrial clusters and value chains, supporting economic diversification and growth. By fostering a competitive and innovative industrial environment, the policy seeks to attract investment, create jobs, and enhance the province's economic resilience, while

emphasising the importance of sustainability in industrial development. The Proposed Soufflet Malt Production Facility supports the Gauteng Industrial Policy by establishing a large-scale production facility, incorporating innovative malting technology and efficient process management, and implementing sustainable practices such as waste management and energy recovery.

3.2.4 Gauteng Integrated Waste Management Plan (IWMP) (2017)

The Gauteng Integrated Waste Management Plan (IWMP), revised in 2017, provides a comprehensive framework for waste management in the province. It aims to reduce waste generation, promote recycling and recovery, and ensure the safe and sustainable disposal of waste. The plan sets targets for waste reduction and provides guidelines for the development of waste management infrastructure and services. By promoting efficient and sustainable waste management practices, the IWMP seeks to minimise the environmental and health impacts of waste, enhance resource efficiency, and support the transition to a circular economy. The Soufflet Malt Production Facility aligns with the IWMP by including a robust waste management plan that targets waste reduction and recycling, committing to sustainable waste disposal and the recovery of by-products, and promoting public participation and awareness in waste management practices as part of the project's environmental management strategy.

3.3 District and Local Municipality Policies

The strategic policies at a district and local level have similar objectives for the respective areas, namely, to accelerate economic growth, create jobs, and uplift communities. The proposed Soufflet Malt Production Facility is considered to align with the aims of these policies, even if contributions to achieving the goals therein are only minor.

A brief review of the most relevant district and local municipal policies is provided below:

- Sedibeng District Municipality Integrated Development Plan (2023-2024)
- Midvaal Local Municipality Integrated Development Plan (2023-2024)

3.3.1 Sedibeng District Municipality (SDM) Integrated Development Plan (2022-2027)

The Sedibeng District Municipality Integrated Development Plan (IDP) for 2022/27 is a comprehensive strategic plan aimed at addressing the critical development needs within the Sedibeng District, which includes the Emfuleni, Lesedi, and Midvaal Local Municipalities. The IDP aligns with national and provincial priorities, integrating them into a localized context to improve the quality of life for residents and promote sustainable economic growth. The document is structured to provide a clear roadmap for development, focusing on infrastructure, economic growth, social development, and environmental sustainability.

The Sedibeng District Municipality IDP 2022/27 provides a robust framework for addressing the region's development challenges and opportunities. The Proposed Soufflet Malt Production Facility is well-aligned with the IDP's strategic objectives, contributing to economic growth, infrastructure development, and sustainable practices. By integrating these efforts, the

project and the IDP collectively work towards achieving the vision of a prosperous, sustainable, and inclusive Sedibeng District.

3.3.2 Midvaal Local Municipality (MLM) Integrated Development Plan (2023-2024)

The Midvaal Local Municipality Integrated Development Plan (IDP) for 2022-2027 is a strategic framework designed to guide the municipality's development efforts over the next five years. This plan aligns with national and provincial development objectives, including the National Development Plan (NDP) 2030 and the Gauteng Growth and Development Strategy (GGDS). The IDP focuses on economic development, infrastructure enhancement, social upliftment, and environmental sustainability to improve the quality of life for residents within the Midvaal Local Municipality.

The Midvaal Local Municipality IDP 2022-2027 provides a robust framework for addressing the region's development challenges and opportunities. The Soufflet Malt Production Facility is well-aligned with the IDP's strategic objectives, contributing to economic growth, infrastructure development, and sustainable practices. By integrating these efforts, the project and the IDP collectively work towards achieving the vision of a prosperous, sustainable, and inclusive Midvaal Local Municipality.

3.4 International Finance Corporation (IFC)

The IFC Performance Standards were developed to provide guidance on how to identify environmental and socio-economic risks and impacts of business operations. These standards are designed to help avoid, mitigate, and manage risks and impacts towards doing business in a sustainable way, including meeting stakeholder engagement and disclosure obligations. In South Africa, the scope and intent of the IFC PS is addressed or partially addressed in the country's environmental and Socio-economic regulatory framework.

Performance Standard 1 establishes the importance of:

- integrated assessment to identify the environmental and Socio-economic impacts, risks, and opportunities of projects;
- effective community engagement through disclosure of project-related information and consultation with local communities and other interested parties on matters that directly affect them; and
- the client’s management of environmental and socio-economic performance throughout the life of the project.

Performance Standards 2 through 8 establish objectives and requirements to avoid, minimise, and where residual impacts remain, to compensate/offset for risks and impacts to workers, affected communities, and the environment.

The purpose and scope of each of the IFC Performance Standards is summarised in Table 4. Only those Performance Standards that have been identified as being applicable to the project in this table are discussed further below, where the project’s alignment with these standards is considered in detail.

Table 4: IFC Performance Standards – Key Objectives

Standard	Key Requirement	Applicability
PS 1: Assessment and Management of Environmental and Socio-economic Risks and Impacts	This PS relates to integrating and managing environmental and Socio-economic performance throughout the life of a project in line with national regulations and international standards.	It provides guidance on identifying and assessing the potential environmental and socio-economic risks and impacts associated with a project. This includes potential socio-economic impacts on local communities, such as changes in access to resources, income, and employment opportunities. The standard also emphasises the importance of stakeholder engagement and consultation in the impact assessment process, which is a key aspect of socio-economic impact assessments. It requires that projects obtain the free, prior, and informed consent of affected communities, which is a critical aspect of ensuring that the impacts of the project are understood and addressed in a manner that is appropriate and respectful of local communities.
PS 2: Labour and Working Conditions	This PS aims to ensure that clients establish, maintain, and improve worker-management relationships that promotes the fair treatment, non-discrimination and equal opportunity of workers, and compliance with national labour and employment laws and international standards (as defined by the International Labour Organisation, ILO)	As part of the assessment, it is crucial to evaluate the potential impact of the project on the working conditions and labour rights of the workers in the project area. The following are some of the key areas that are relevant to a socio-economic impact assessment: ▪ Fair Treatment: The assessment should evaluate the extent to which the project promotes fair treatment of workers, including non-discrimination and equal opportunity, and the measures in place to prevent discrimination and promote diversity. ▪ Labour Laws: The assessment should evaluate compliance with national labour and employment laws, including the provisions for minimum wage, working hours, health and safety, and other labour rights. ▪ International Standards: The assessment should evaluate the extent to which the project complies with the international standards set by the International Labor Organization (ILO), including the core conventions on freedom of association, collective bargaining, forced labour, child labour, and discrimination. ▪ Worker-Management Relationship: The assessment should evaluate the relationship between the workers and the management of the project, including the communication

Standard	Key Requirement	Applicability
		channels and mechanisms in place to resolve any conflicts or grievances.
PS 3: Resource Efficiency and Pollution Prevention	This PS aims to abate pollution to air, water, and land that may threaten people and the environment at the local, regional, and global levels. This PS promotes the ability of private sector companies to adopt such best available technologies and industry best practices where feasible.	Seeks to ensure that the project is developed in a sustainable manner, with minimal negative impacts on the environment and the health of local communities. It is important to assess the potential pollution and environmental impacts of the project on the surrounding area, including air, water, and land quality. The assessment should also consider the adoption of best available technologies and industry best practices to mitigate and prevent pollution. By doing so, the project can promote sustainable development and ensure the protection of the environment and public health.
PS 4: Community, Health, Safety and Security	The role of this PS is to anticipate and avoid adverse impacts on the health and safety of the affected communities throughout the life of the project as a result of routine and non-routine events.	Requires that the potential health and safety impacts on the affected communities are anticipated and avoided throughout the project's life. A socio-economic impact assessment should consider the potential effects of a project on the health and safety of the local community and identify measures to prevent or mitigate any adverse impacts. The assessment should consider the impact of routine and non-routine events that could affect the health and safety of the community, such as accidents or exposure to hazardous materials. The assessment should also consider the potential long-term health impacts of the project on the community.
PS 5: Land Acquisition and Involuntary Resettlement	PS5 aims to anticipate and avoid physical and economic resettlement or, where avoidance is not possible, to minimise adverse Socio-economic and economic impacts of economic and physical displacement.	Aims to ensure that projects do not result in negative social and economic impacts of economic and physical displacement. A socio-economic impact assessment can identify the potential for physical and economic resettlement and the related impacts on the affected communities. The assessment can also identify strategies to avoid or minimise these impacts. Therefore, PS5 should be considered during the planning and implementation of a socio-economic impact assessment.
PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	This PS aims to protect and conserve biodiversity based on the convention on biological diversity. It divides habitat into three categories: modified, natural, and critical. It	To identify if the project under assessment has the potential to impact biodiversity and its habitats, such as in cases where the project is located in a natural or critical habitat. The assessment should include an analysis of the potential impact on biodiversity and its habitat and identify measures to minimise the impact, including compensation or mitigation

Standard	Key Requirement	Applicability
	provides a list of Criteria to be used to determine the occurrence of Critical Habitat.	measures. Additionally, the assessment should consider the potential socio-economic impact of biodiversity conservation measures on local communities and stakeholders, such as impacts on their livelihoods, traditional practices, or cultural values.
PS 7: Indigenous Peoples	This PS deals with safeguarding Indigenous Peoples and aims to protect the interests of Indigenous Peoples during project implementation.	To ensure that the interests and rights of Indigenous Peoples are protected and promoted throughout the project development process, including during the socio-economic impact assessment. Identify if Indigenous Peoples are present in the project area and whether they will be affected by the project. Identify the rights and interests of Indigenous Peoples that may be affected by the project, including land, resources, and cultural heritage. Determine whether the project could have an adverse impact on Indigenous Peoples, including the potential for displacement, loss of livelihoods, and cultural harm. Evaluate the potential risks and impacts associated with the project and develop appropriate mitigation measures to safeguard the rights and interests of Indigenous Peoples. Ensure that Indigenous Peoples have meaningful and informed participation in the project development process and are consulted on decisions that affect them. Ensure that Indigenous Peoples are provided with appropriate benefits and compensation for any adverse impacts that cannot be avoided or minimised.
PS 8: Cultural Heritage	Cultural heritage refers to tangible forms of cultural heritage, such as tangible movable or immovable objects, property, sites, structures, or groups of structures, having archaeological (prehistoric), paleontological, historical, cultural,	The assessment should identify the cultural heritage that may be affected and evaluate the potential impacts on the cultural heritage. The socio-economic impact assessment should also identify measures to avoid, minimise, or mitigate any adverse impacts on cultural heritage, in line with national and international legal requirements and conventions. The assessment should include consultation with affected communities, Indigenous Peoples, and other stakeholders to ensure that their

Standard	Key Requirement	Applicability
	artistic, and religious values.	cultural heritage values are taken into account in project planning and implementation.

3.4.1 IFC Environmental, Health and Safety Guidelines

The IFC's General Environment, Health and Safety (EHS) Guidelines contain information on cross-cutting environmental, health, and safety issues potentially applicable to all industry sectors. Table 5 includes a summary of the EHS topics covered by the General Guidelines.

Table 5: Topics Covered by the General EHS Guidelines

Environment	Occupational Health and Safety
• Air Emissions and Ambient Air Quality • Energy Conservation • Wastewater and Ambient Water Quality • Water Conservation • Hazardous Materials Management • Waste Management • Noise • Contaminated Land	• General Facility Design and Operation • Communication and Training • Physical Hazards • Chemical Hazards • Biological Hazards • Radiological Hazards • Personal Protective Equipment (PPE) • Special Hazard Environments • Monitoring
Community Health and Safety	**Construction and Decommissioning**
• Water Quality and Availability • Structural Safety of Project Infrastructure • Life and Fire Safety (L&FS) • Traffic Safety • Transport of Hazardous Materials • Disease Prevention • Emergency Preparedness and Response	• Environment • Occupational Health and Safety • Community Health and Safety

The IFC has also published industry specific ESG guidelines. These documents specify performance levels and measures that are acceptable to the IFC, and that are generally considered to be achievable in new facilities at reasonable costs with existing technology.

The Environmental, Health, and Safety Guidelines for Wind Energy (World Bank Group, 2015) contains specific criteria with respect to aspects such as noise and shadow flicker for wind turbines. The Environmental, Health, and Safety Guidelines for Electric Power Transmission and Distribution (IFC, 2007) and Thermal Power (IFC, 2008) also provide guidance.

3.4.2 Equator Principles

The Equator Principles (EPs) is a voluntary credit risk management framework for determining, assessing, and managing environmental and socio-economic risks in project finance transactions. This framework comprises a set of principles adopted by the Equator Principles Financial Institutions (EPFIs) to ensure that the projects they finance are developed and implemented in a manner that is socio-economically responsible and environmentally

sound. These principles apply to project-financing with total project capital costs of US$10 million or more across all industry sectors.

The Equator Principles are closely aligned with the IFC Performance Standards and adopt the same approach to project categorisation.

Four versions of the EPs have been published since their origin in 2006. The applicability of the principles of EP IV, which have been in place since 2020, are outlined in Table 6.

Table 6: Equator Principles

Principle	Requirement
Review and Categorisation	The project is screened and categorised in accordance with its anticipated risks on the same basis as IFC PS 1.
Environmental and Socio-economic Assessment	An ESIA needs to be conducted on the proposed project, similar to the requirements of IFC PS 1.
Applicable Environmental and Socio-Economic Standards	The ESIA process must comply with the legal requirements of the country in which the project is proposed to be implemented. However, this principle recognises that standards differ across countries, and differentiates between Designated and Non-designated countries. The laws of Designated Countries are deemed to be sufficient to ensure effective assessment of environmental and socio-economic risks. Compliance with IFC PSs is required for projects in all non-designated countries.
Environmental and Socio-economic Management System and Equator Principles Action Plan	For all Category A and Category B Projects, the EPFI will require the client to develop or maintain an Environmental and Socio-economic Management System (ESMS).
Stakeholder Engagement	For all Category A and Category B Projects, the EPFI will require the client to demonstrate effective stakeholder engagement as an ongoing process in a structured and culturally appropriate manner.
Grievance Mechanism	A Grievance Mechanism needs to be established as part of the ESMS for all Category A projects and, as appropriate, Category B projects.
Independent Review	For all Category A and, as appropriate, Category B Projects, an Independent Environmental and Socio-economic Consultant, not directly associated with the client, will carry out an independent review of the assessment documentation, including the ESMPs, the ESMS, and the stakeholder engagement process documentation to assist the EPFI's due diligence, and assess Equator Principles compliance.
Covenants	For all Projects, the client will covenant in the financing documentation to comply with all relevant host country

Principle	Requirement
	environmental and Socio-economic laws, regulations and permits in all material respects. Furthermore, for all Category A and Category B Projects, the client will covenant the financial documentation: a. to comply with the ESMPs and Equator Principles AP (where applicable) during the construction and operation of the Project in all material respects; b. to provide periodic reports in a format agreed with the EPFI at least annually; and c. to decommission the facilities, where applicable and appropriate, in accordance with an agreed decommissioning plan.
Independent Monitoring and Reporting	Independent monitoring of project compliance with the Equator Principles is required for the life of a loan for all Category A projects and Category B projects, as appropriate.
Reporting and Transparency	This principle requires for all Category A projects and appropriate Category B projects, that a summary of the ESIA is, at a minimum, accessible and available online; and that the client will publicly report GHG emission levels (combined Scope 1 and Scope 2 Emissions) during the operational phase for Projects emitting over 100,000 tonnes of CO_2 equivalent annually.

3.5 Policy Result

The legislative and policy framework reviewed in this section underscores the alignment of the Soufflet Malt Production Facility with national, provincial, and local development objectives. The project's compliance with these frameworks ensures that it contributes positively to the socio-economic and environmental goals set by various governing bodies.

The Soufflet Malt Production Facility aligns with key national legislation and guidelines, promoting sustainable development, economic growth, and environmental protection. The facility's operations will adhere to the principles outlined in the National Environmental Management Act (NEMA), ensuring that environmental impacts are minimised and managed effectively. Compliance with the National Water Act and the National Environmental Management: Air Quality Act will ensure sustainable use of water resources and control of air pollution, respectively. The project's alignment with the National Heritage Resources Act ensures the protection of cultural and historical resources, while adherence to the National Forests Act promotes the conservation of forest biodiversity.

At the provincial level, the project supports the Gauteng Environmental Management Framework (EMF) and the Gauteng Spatial Development Framework (GSDF). By situating the facility within the Graceview Industrial Park, the project aligns with the provincial aim of coordinated infrastructure development and spatial planning. The project also supports the Gauteng Growth and Development Strategy (GGDS) by creating job opportunities and enhancing local infrastructure. The project's waste management practices align with the

Gauteng Integrated Waste Management Plan (IWMP), ensuring sustainable waste management and promoting a circular economy.

The Soufflet Malt Production Facility is well-aligned with the strategic objectives of the Sedibeng District Municipality and the Midvaal Local Municipality Integrated Development Plans (IDP). The facility's development contributes to economic growth, job creation, and infrastructure enhancement within the district and local municipalities. The project's emphasis on local hiring, skills development, and support for local businesses aligns with the socio-economic upliftment goals of the municipalities. Additionally, the facility's commitment to sustainable practices supports the environmental sustainability objectives outlined in the IDPs.

The project's alignment with the International Finance Corporation (IFC) Performance Standards ensures that it meets international best practices for environmental and social sustainability. The facility will integrate assessment and management of environmental and socio-economic risks, engage effectively with stakeholders, and ensure fair treatment and safe working conditions for workers. By adhering to these standards, the project not only meets local regulatory requirements but also aligns with global sustainability goals.

The review of relevant legislation, policies, and documentation indicates that the establishment of the Soufflet Malt Production Facility is supported at the national, provincial, and local levels. The project will contribute positively towards several targets and policy aims, including sustainable development, economic growth, job creation, and environmental protection. The facility's alignment with key legislative frameworks and policy guidelines ensures that it operates in a manner that benefits both the local community and the broader socio-economic environment, while maintaining compliance with environmental standards.

4 Approach and Methodology

Standard	Key Requirement	Applicability
PS 1: Assessment and Management of Environmental and Socio-economic Risks and Impacts	This PS relates to integrating and managing environmental and Socio-economic performance throughout the life of a project in line with national regulations and international standards.	It provides guidance on identifying and assessing the potential environmental and socio-economic risks and impacts associated with a project. This includes potential socio-economic impacts on local communities, such as changes in access to resources, income, and employment opportunities. The standard also emphasises the importance of stakeholder engagement and consultation in the impact assessment process, which is a key aspect of socio-economic impact assessments. It requires that projects obtain the free, prior, and informed consent of affected communities, which is a critical aspect of ensuring that the impacts of the project are understood and addressed in a manner that is appropriate and respectful of local communities.
PS 2: Labour and Working Conditions	This PS aims to ensure that clients establish, maintain, and improve worker-management relationships that promotes the fair treatment, non-discrimination and equal opportunity of workers, and compliance with national labour and employment laws and international standards (as defined by the International Labour Organisation, ILO)	As part of the assessment, it is crucial to evaluate the potential impact of the project on the working conditions and labour rights of the workers in the project area. The following are some of the key areas that are relevant to a socio-economic impact assessment: Fair Treatment: The assessment should evaluate the extent to which the project promotes fair treatment of workers, including non-discrimination and equal opportunity, and the measures in place to prevent discrimination and promote diversity. Labour Laws: The assessment should evaluate compliance with national labour and employment laws, including the provisions for minimum wage, working hours, health and safety, and other labour rights. International Standards: The assessment should evaluate the extent to which the project complies with the international standards set by the International Labor Organization (ILO), including the core conventions on freedom of association, collective bargaining, forced labour, child labour, and discrimination. Worker-Management Relationship: The assessment should evaluate the relationship between the workers and the management of the project, including the communication channels and

Standard	Key Requirement	Applicability
		mechanisms in place to resolve any conflicts or grievances.
PS 3: Resource Efficiency and Pollution Prevention	This PS aims to abate pollution to air, water, and land that may threaten people and the environment at the local, regional, and global levels. This PS promotes the ability of private sector companies to adopt such best available technologies and industry best practices where feasible.	Seeks to ensure that the project is developed in a sustainable manner, with minimal negative impacts on the environment and the health of local communities. It is important to assess the potential pollution and environmental impacts of the project on the surrounding area, including air, water, and land quality. The assessment should also consider the adoption of best available technologies and industry best practices to mitigate and prevent pollution. By doing so, the project can promote sustainable development and ensure the protection of the environment and public health.
PS 4: Community, Health, Safety and Security	The role of this PS is to anticipate and avoid adverse impacts on the health and safety of the affected communities throughout the life of the project as a result of routine and non-routine events.	Requires that the potential health and safety impacts on the affected communities are anticipated and avoided throughout the project's life. A socio-economic impact assessment should consider the potential effects of a project on the health and safety of the local community and identify measures to prevent or mitigate any adverse impacts. The assessment should consider the impact of routine and non-routine events that could affect the health and safety of the community, such as accidents or exposure to hazardous materials. The assessment should also consider the potential long-term health impacts of the project on the community.
PS 5: Land Acquisition and Involuntary Resettlement	PS5 aims to anticipate and avoid physical and economic resettlement or, where avoidance is not possible, to minimise adverse Socio-economic and economic impacts of economic and physical displacement.	Aims to ensure that projects do not result in negative social and economic impacts of economic and physical displacement. A socio-economic impact assessment can identify the potential for physical and economic resettlement and the related impacts on the affected communities. The assessment can also identify strategies to avoid or minimise these impacts. Therefore, PS5 should be considered during the planning and implementation of a socio-economic impact assessment.
PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	This PS aims to protect and conserve biodiversity based on the convention on biological diversity. It divides habitat into three categories: modified, natural, and critical. It	To identify if the project under assessment has the potential to impact biodiversity and its habitats, such as in cases where the project is located in a natural or critical habitat. The assessment should include an analysis of the potential impact on biodiversity and its habitat and identify measures to minimise the impact, including compensation or mitigation

Standard	Key Requirement	Applicability
	provides a list of Criteria to be used to determine the occurrence of Critical Habitat.	measures. Additionally, the assessment should consider the potential socio-economic impact of biodiversity conservation measures on local communities and stakeholders, such as impacts on their livelihoods, traditional practices, or cultural values.
PS 7: Indigenous Peoples	This PS deals with safeguarding Indigenous Peoples and aims to protect the interests of Indigenous Peoples during project implementation.	To ensure that the interests and rights of Indigenous Peoples are protected and promoted throughout the project development process, including during the socio-economic impact assessment. Identify if Indigenous Peoples are present in the project area and whether they will be affected by the project. Identify the rights and interests of Indigenous Peoples that may be affected by the project, including land, resources, and cultural heritage. Determine whether the project could have an adverse impact on Indigenous Peoples, including the potential for displacement, loss of livelihoods, and cultural harm. Evaluate the potential risks and impacts associated with the project and develop appropriate mitigation measures to safeguard the rights and interests of Indigenous Peoples. Ensure that Indigenous Peoples have meaningful and informed participation in the project development process and are consulted on decisions that affect them. Ensure that Indigenous Peoples are provided with appropriate benefits and compensation for any adverse impacts that cannot be avoided or minimised.
PS 8: Cultural Heritage	Cultural heritage refers to tangible forms of cultural heritage, such as tangible movable or immovable objects, property, sites, structures, or groups of structures, having archaeological (prehistoric), paleontological, historical, cultural,	The assessment should identify the cultural heritage that may be affected and evaluate the potential impacts on the cultural heritage. The socio-economic impact assessment should also identify measures to avoid, minimise, or mitigate any adverse impacts on cultural heritage, in line with national and international legal requirements and conventions. The assessment should include consultation with affected communities, Indigenous Peoples, and other stakeholders to ensure that their

Standard	Key Requirement	Applicability
	artistic, and religious values.	cultural heritage values are taken into account in project planning and implementation.

4.1 Purpose of the Study

The International Principles for Socio-Economic Impact Assessment define SEIA as *"The processes of analysing, monitoring and managing the intended and unintended socio-economic consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any socio-economic change processes invoked by those interventions".*

The International Principles for Socio-Economic Impact Assessment define socio-economic impacts as changes to one or more of the following:

- People's way of life – that is, how they live, work, play and interact with one another on a day-to-day basis.
- Their culture – that is, their shared beliefs, customs, values and language or dialect.
- Their community – its cohesion, stability, character, services and facilities.
- Their political systems – the extent to which people are able to participate in decisions that affect their lives, the level of democratisation that is taking place, and the resources provided for this purpose.
- Their environment – the quality of the air and water people use, the availability and quality of the food they eat, the level of hazard or risk, dust and noise they are exposed to, the adequacy of sanitation, their physical safety, and their access to and control over resources.
- Their health and wellbeing – health is a state of complete physical, mental, social and spiritual wellbeing and not merely the absence of disease or infirmity.
- Their personal and property rights – particularly whether people are economically affected or experience personal disadvantage which may include a violation of their civil liberties.
- Their fears and aspirations – their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children.

The purpose of this SEIA Process is therefore to:

- Provide baseline information describing the socio-economic environment within which the project is proposed, and which may be impacted (both positively and negatively) as a result of the proposed development.
- Identify, describe and assess possible socio-economic risks/fatal flaws and socio-economic impacts that may arise as a result of the proposed development (in terms of

the detailed design and construction, operation, and decommissioning phases of the project).

- Recommend ways in which negative impacts can be avoided, minimised, or their significance reduced, and positive impacts maximised or enhanced.

4.2 Approach to Study

The approach to the SEIA study is based on the Western Cape Department of Environmental Affairs and Development Planning Guidelines for Socio-Economic Impact Assessment (*February 2007*). These guidelines are based on international best practice. The key activities in the SEIA process embodied in the guidelines include:

- Describing and obtaining an understanding of the proposed intervention (type, scale, and location), the settlements, and communities likely to be affected by the proposed project.
- Collecting baseline data on the current social and economic environment.
- Identifying the key potential socio-economic issues associated with the proposed project. This requires a site visit to the area and consultation with affected individuals and communities.
- Assessing and documenting the significance of socio-economic impacts associated with the proposed intervention.
- Identifying alternatives and mitigation measures.
- A site visit will be undertaken during the Assessment Phase of the SEIA. The site visit will include interviews with interested and affected parties.
- Preparation of a SEIA for inclusion in the EIA to be prepared for the project.

4.2.1 Collection and Review of Existing Information

Existing desktop information that has relevance to the proposed project, project area and/or surroundings was collected and reviewed. The following information was examined as part of this process:

- Project maps and layouts.
- Google Earth imagery.
- A description of the project (as provided by the project proponent).
- Responses to questions posed to the project proponent regarding employment and socio-economic upliftment and local economic development opportunities (as provided by the project proponent).
- Latest Census Data and the Local Government Handbook (2019).
- Planning documentation such as Provincial Growth and Development Strategies (PGDSs), Local and District Municipality Integrated Development Plans (IDPs), Spatial Development Frameworks (SDFs), and development goals and objectives.

- Relevant legislation, guidelines, policies, plans, and frameworks.
- Available literature pertaining to socio-economic issues associated with the development, operations, and associated infrastructure.

The identification of potential socio-economic issues associated with the proposed Soufflet Malt Production Facility is based on primary and secondary information about the area and visits to the relevant communities and town by field workers/members of the SEIA study team.

4.2.2 Definition of Social Impacts

"The consequences to human populations of any public or private actions (including policies, programs, plans, and/or projects) that alter the ways in which people live, work, play, relate to one another, organize to meet their needs, and generally live and cope as members of society." These effects are felt at various levels, including the individual, family or household, community, organization, or society. Some social impacts are physically felt by the body, whereas others are perceptual or emotional" (Vanclay, 2002).

When considering social impacts, keep in mind that socio-economic change is natural and ongoing when considering social impacts (Burdge, 1995). It's also important to realize that government and private sector policies, plans, programs, and projects can affect social change's pace and direction. Social impacts are often change processes (Vanclay, 2002). For instance, temporary construction workers don't affect society. However, their presence can increase anti-social behaviour and other socio-economic issues. Understanding processes with social impacts is Vanclay's approach. Socio-economic assessment specialists must consider the complex causal mechanisms that cause socio-economic impacts. Following impact pathways, or causal chains, and considering likely interactions can reveal the full range of impacts (Vanclay, 2002).

A SIA should thus enable authorities, project proponents, individuals, communities, and organizations to understand and anticipate the potential socio-economic consequences of implementing a proposed policy, program, plan, or project. The SIA process should inform communities and individuals about the proposed project and its potential socio-economic consequences, while also allowing them to assess the implications and identify potential alternatives. The assessment process should also alert proponents and planners to the likelihood and nature of socio-economic impacts, allowing them to anticipate and predict these impacts ahead of time, so that the assessment's findings and recommendations are incorporated into and inform the planning and decision-making process.

However, the issue of social impacts is complicated by the way in which different people from different cultural, ethnic, religious, gender, and educational backgrounds, etc. view the world. This is referred to as the “social construct of reality”. The social construct of reality informs people’s worldview and the way in which they react to changes.

4.2.3 Timing of Social and Economic Impacts

Socio-economic impacts vary in both time and space. In terms of timing, all projects and policies go through a series of phases, usually starting with initial planning, followed by implementation (construction), operation, and finally closure (decommissioning). The

activities, and hence the type and duration of the socio-economic impacts associated with each of these phases are likely to differ.

5 Socio-Economic Settings

5.1 Study Area Overview

This section provides a comprehensive overview of the socio-economic environment of the province, District Municipality (DM), and Local Municipality (LM) in which the proposed Soufflet Malt Production Facility is situated. It delves into the relevant administrative context, encompassing provincial socio-economic dynamics and municipal contexts, and culminates with a detailed description of the immediate surroundings of the project. This foundation serves as the socio-economic backdrop for pinpointing potential issues related to the development.

Table 7: Details of the Study Area

Province	Gauteng Province
District Municipality	Sedibeng District Municipality (SDM)
Local Municipality	Midvaal Local Municipality (MLM)
Ward number(s)	12
Nearest town(s)	Randvaal
Current Zoning	Commercial Annual Crops Rainfed
Current land use	The land in question is mainly used for industrial and commercial activities.
Access	Access to the Soufflet Malt Production Facility development area is provided via the R59, R550 (Perdekop Road) and tertiary gravel roads.
Site Visit Date	16th May 2024

5.2 Site Specific Sensitivities

Table 5 presents a preliminary assessment of key socio-economic attributes identified in the study area which can be seen on Figure 4, their potential impacts, and proposed next steps for each attribute. The attributes have been identified based on a review of existing information, site visits, and initial stakeholder consultations. Table 5 provides a structured framework for the ongoing SEIA process and will be further refined as the assessment progresses.

The SEIA for the Proposed Soufflet Malt Production Facility, within Randvaal, Gauteng Province, presents both challenges and opportunities from a socio-economic perspective. Through a robust SEIA process, we aim to ensure that the development is socio-economically sustainable and contributes positively to the local socio-economic environment.

Table 8: Site Specific Sensitive Attributes Identified for the Soufflet Malt Production Facility

Sensitive Attribute Identified	Description	Impact Associated	Socio-Economic Risk/ Opportunity	Next Steps
Rivers, Streams and Wetlands	Rivers and streams within close proximity of the proposed development include: • Klip River, located ~2km east of the proposed development. • Rietspruit, located ~2.5km south-east of the proposed development area.	Development of the Soufflet Malt Production Facility could potentially impact these hydrological features, affecting water availability and quality for local communities.	Risk	A freshwater study should be conducted to assess potential impacts on these features. Measures should be taken to avoid or minimise impacts, in line with the facility's environmental management practices.
Main access roads	The main access roads to access the site are the R59, R550 (Perdekop Road) and tertiary gravel roads	These roads will provide access for the components of the Soufflet Malt Production Facility to be transported along, as well as for the workers to gain access. This could lead to increased traffic and associated risks for local communities.	Risk	Develop a traffic management plan to manage the increased traffic during construction and operation, ensuring minimal disruption to local communities.
Mixed residential	Along the main access road in amongst the subsistence farming houses are some mixed residential homes and guest houses, such as: • Kliprivier Guest House, ~2.7km east of the proposed development area. • Guest House Kliprivier Sinet,	The Soufflet Malt Production Facility could potentially impact these residences, for example through increased traffic or noise. This could affect the quality of life for residents.	Risk	The extent of the impact and associated mitigation measures will be assessed within this SEIA.

Sensitive Attribute Identified	Description	Impact Associated	Socio-Economic Risk/ Opportunity	Next Steps
	~2.9km north-east of the proposed development. • Suikerbosch Country Guest House & Caterers, ~3.2km north-east of the proposed development.			
Informal Settlements	Pilis Farm is located ~1km south of the proposed development.	The Soufflet Malt Production Facility could potentially impact these settlements, for example through increased traffic or noise. This could affect the quality of life for residents. The proposed site may also provide employment opportunities for residents in the settlement.	Risk/ Opportunity	The extent of the impact and associated mitigation measures will be assessed within this SEIA.
Mixed Industrial/ Commercial Activities	The proposed development is located among mixed industrial and commercial activities, such as: • The proposed development falls within the Graceview Industrial Park. • Heineken Sedibeng Brewery, borders the northern section of the proposed development area. • Heineken Solar Farm, ~0.3km west of the proposed development. • Erwat Waterval Solar Farm, ~2.3km south-	The Soufflet Malt Production Facility is situated among several industrial and commercial activities. The presence of these businesses indicates a supportive industrial environment but also necessitates careful coordination to minimise any operational	Opportunity	The extent of the impact and associated mitigation measures will be assessed within this SEIA.

Sensitive Attribute Identified	Description	Impact Associated	Socio-Economic Risk/ Opportunity	Next Steps
	east of the proposed development. • BSi Steel, ~0.4km south-east of the proposed development. • Awesome Fire Braai Products SA, ~0.5km south-east of the proposed development. • Klipriver Business Park, ~0.6km north of the proposed development, which includes businesses such as Facility Fire, FlowSafe Holdings, Merensky, Lil Masters, Iveco Midvaal, Faw, Gift of the Educators, Paramount Trailers, Airshrink SA, etc. • Revive Electrical Transformers, ~0.7km north-east of the proposed development. • Pipestar Africa, ~1km south-east of the proposed development. • Isilo Steel, ~1km south-east of the proposed development. • Quality Corrosion and Projects, ~1.2km south-east of the proposed development. • Kwikspace Modular Buildings, ~1.3km east of the proposed development area. • Calvary Tankers and Engineering, ~1.4km south-west of the proposed development.	disruptions or conflicts.		

Sensitive Attribute Identified	Description	Impact Associated	Socio-Economic Risk/ Opportunity	Next Steps
	• FABCON Steel, ~1.5km south-east of the proposed development. • Egoli Waterworld and Funpark, ~1.6km south-west of the proposed development. • Everite Building Products, ~1.65km north-east of the proposed development. • Twinsaver, ~2.4km north-east of the proposed development, etc.			
School	Schools noted within a 5km radius of the proposed development include: • Sky Kiddies Day Care, ~2km north-east of the proposed development. • Little Sprouts Preschool, ~2.8km north-east of the proposed development. • Sibonile School For The Blind, ~3.6km north-east of the proposed development. • Greener Pastures Preschool, ~3.8km north-east of the proposed development. • Future Bokamoso Nursery School, ~3.9km north-east of the proposed development. • Royal School Sky City, ~4km north-east of the proposed development.	The proximity of schools to the development site could result in potential impacts such as increased traffic, noise, and safety concerns during construction and operation phases. These impacts could affect the learning environment and well-being of students. Additionally, the facility could provide opportunities for learner programmes and educational purposes, potentially benefiting local schools.	Risk/ Opportunity	The extent of the impact and associated mitigation measures will be assessed within this SEIA.

Sensitive Attribute Identified	Description	Impact Associated	Socio-Economic Risk/ Opportunity	Next Steps
	• Gardenvale Academic School, ~4km north-east of the proposed development. • Queen Academy School, ~4km north-east of the proposed development.			
Towns and Settlements	The proposed development lies within the town of Randvaal, ~1.4km south of Eikenhof, ~2.5km west of Klipwater, and ~2.6km west of Gardenvale AH, Gauteng Province.	The Soufflet Malt Production Facility could potentially impact these settlements, for example through increased traffic or noise. This could affect the quality of life for residents.	Risk	The extent of the impact and associated mitigation measures will be assessed within this SEIA.
Labour and Working Conditions	The Soufflet Malt Production Facility will create employment opportunities during construction and operation.	Potential for job creation and improved livelihoods, but also potential risks to worker health and safety. This could lead to improved economic conditions, but also potential social risks related to labour conditions.	Opportunity	Develop / implement a labour management plan that aligns with the facility's social labour plan, ensuring fair labour practices and safe working conditions.
Resource Efficiency and Pollution Prevention	The Soufflet Malt Production Facility will use resources (e.g., land, water for cleaning panels) and could generate waste (e.g., packaging materials, end-of-life panels).	Potential for efficient use of resources and prevention of pollution, but also potential environmental impacts. This could affect the	Opportunity	Develop a resource efficiency and pollution prevention plan that aligns with the facility's environmental management

Sensitive Attribute Identified	Description	Impact Associated	Socio-Economic Risk/ Opportunity	Next Steps
		local environment and resources available to the community.		practices, aiming to minimise resource use and prevent or mitigate pollution.
Indigenous Peoples	It is assumed that there are no indigenous communities that will be directly impacted.	No direct impacts anticipated. However, if there are unrecognised indigenous communities, they could be affected by the project.	N/A	No specific action needed unless new information about indigenous communities in the area becomes available.
Protected Areas	Protected areas found within a 15km radius of the proposed development includes: • While not within greenbelt land, which tends to be protected, the proposed development is located ~0.4km south-east of a greenfield. • Suikerbosrand Nature Reserve, ~11km south-east of the proposed development area. • Klipriviersberg Nature Reserve, ~14km north-west of the proposed development.	No direct impacts anticipated, however, regarding the greenfield, these are generally considered to be an important area of countryside to people who see them every day.	N/A	Due to the proximity of these Protected Areas and the fact that the greenfield site is not being developed, no specific action is needed unless new information becomes available.
Railway	The Klipriver train station is located ~1.8km north-east, and the railway runs ~1.3km east of the proposed development.	The proximity of the railway station could provide logistical advantages for transporting raw materials and finished products. This could	Risk/ Opportunity	The extent of the impacts and associated mitigation measures will be assessed within this SEIA.

Sensitive Attribute Identified	Description	Impact Associated	Socio-Economic Risk/ Opportunity	Next Steps
		enhance the efficiency of the facility's operations and reduce road traffic. However, the presence of the railway also necessitates careful planning to mitigate potential noise and safety concerns during construction and operation.		

Photograph 1 to Photograph 12 illustrate various views observed during the site visit to the proposed Soufflet Malt Production Facility.

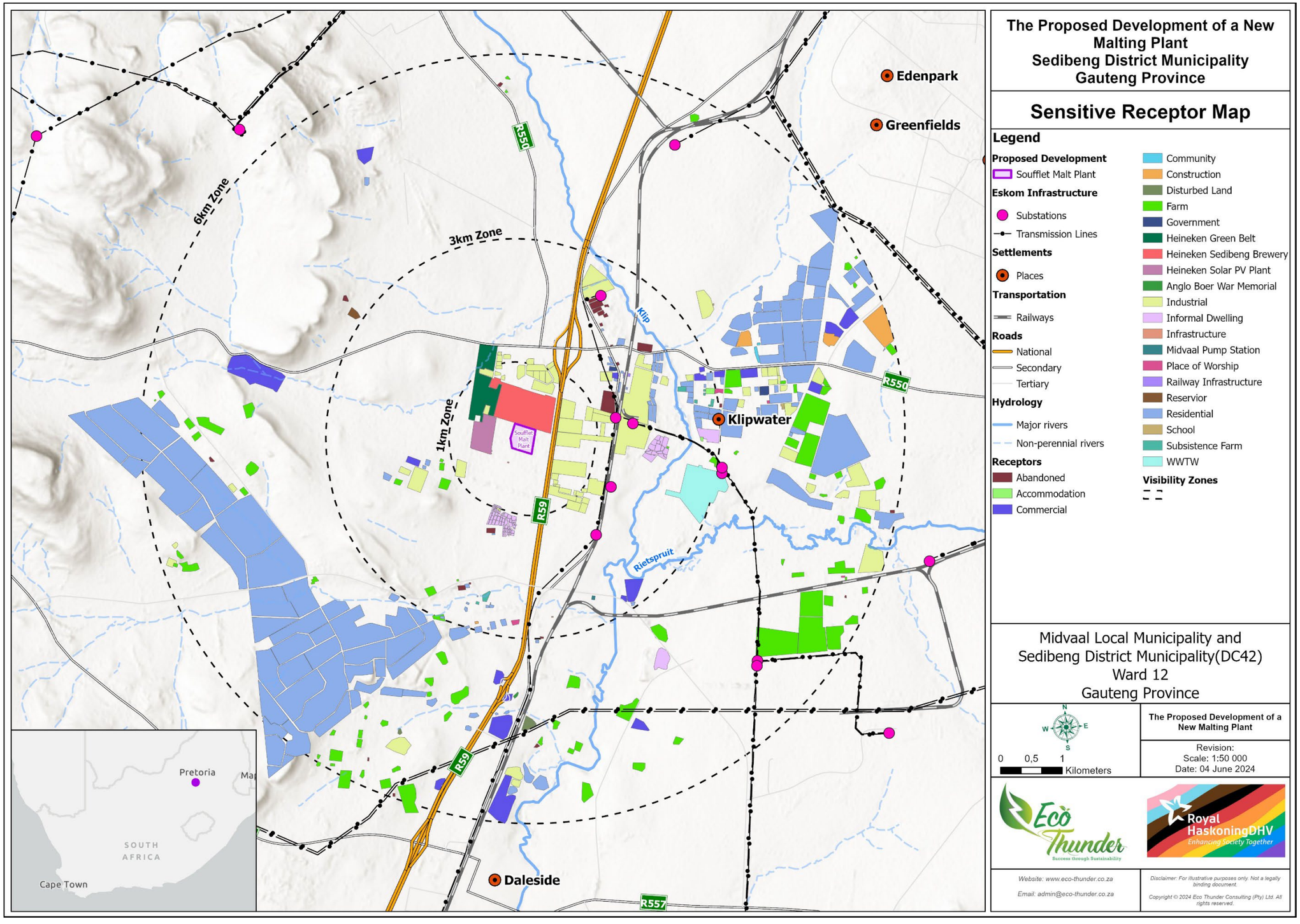


Figure 4: Overview of Sensitivities Associated with the Proposed Soufflet Malt Production Facility

Photograph 1: Landscape View 1 of the Proposed Development Area

Photograph 2: Landscape View 2 of the Proposed Development Area

Photograph 3: Heineken Sedibeng Solar Farm (Left), Heineken Sedibeng Brewery (Centre) and the Proposed Development area (Right)

Photograph 4: Heineken Sedibeng Brewery Entrance, located to the North-West of the Proposed Development Area

Photograph 5: Mid Vaal Graceview Substation, located to the West of the Proposed Development Area

Photograph 6: Industrial Activities within close proximity of the Proposed Development Area

Photograph 7: Railway Infrastructure located to the East of the Proposed Development Area

Photograph 8: Klipriver Business Park, located to the North of the Proposed Development Area

Photograph 9: Heineken Sedibeng Solar Farm Entrance

Photograph 10: R550 and R59 Road Views

Photograph 11: R550 Road View

Photograph 12: Informal Settlement within close proximity of the Proposed Development Area

Figure 5: Site Photos

5.3 Stakeholder Engagement

Stakeholder engagement is a critical component of the socio-economic impact assessment process. It provides an opportunity for stakeholders to express their views, concerns, and suggestions regarding the proposed Soufflet Malt Production Facility. The engagement process for this report was designed to be inclusive, transparent, and respectful of all participants.

The stakeholder engagement process for this report included the following steps:

- **Stakeholder Identification:** Stakeholder Identification: We began by identifying a comprehensive list of stakeholders who could potentially be affected by or have an interest in the proposed project. This list included local community members, local and regional government officials, environmental and socio-economic advocacy groups, and others.
- **Information Dissemination:** We disseminated information about the proposed project and the Socio-Economic Impact Assessment process to identified stakeholders through surveys and on-site engagement.
- **Stakeholder Consultation:** We conducted stakeholder consultation to gather feedback on the proposed project through surveys and on-site engagement. This provided a platform for stakeholders to express their views, concerns, and suggestions.
- **Feedback Incorporation:** We carefully reviewed all feedback received during the stakeholder consultation process. This feedback was used to inform the Socio-Economic Impact Assessment and to develop appropriate mitigation strategies.
- **Ongoing Engagement:** We are committed to maintaining an open dialogue with stakeholders throughout the project lifecycle. We will continue to provide updates on the project's progress and to seek feedback on proposed mitigation strategies.

The stakeholder engagement process for this report was conducted in accordance with the International Finance Corporation's (IFC) Performance Standard 1 on Assessment and Management of Environmental and Socio-Economic Risks and Impacts, which emphasises the importance of effective stakeholder engagement in managing environmental and socio-economic risks.

Key Findings from Stakeholder Engagement:

The responses from the stakeholder surveys revealed several important themes and concerns, summarised as follows:

- **Employment Opportunities:** Respondents highlighted the potential for job creation as a major benefit of the project. This was particularly important in the surrounding communities facing high unemployment rates.
- **Environmental Concerns:** Some stakeholders expressed concerns about potential environmental impacts, such as pollution and habitat disruption. Suggestions for comprehensive environmental monitoring and mitigation measures were made.

- **Community Health and Safety:** Safety concerns were raised, especially related to increased traffic and construction activities. Stakeholders suggested implementing traffic management plans and ensuring robust safety protocols.
- **Infrastructure Impact:** The impact on local infrastructure, including roads and public services, was noted. Stakeholders recommended coordinating with local authorities to enhance infrastructure capacity and manage increased demand.
- **Education and Outreach:** There was support for the idea of incorporating educational programs related to the facility, which could provide learning opportunities for local schools and educational institutions.

The stakeholder engagement process for the Soufflet Malt Production Facility involves a wide range of activities and collecting valuable feedback from various stakeholder groups. By maintaining open and transparent communication with stakeholders, the Soufflet Malt Production Facility aims to build strong relationships and ensure the successful implementation of the project, benefiting both the local community and the broader region.

5.4 Gauteng Province

Gauteng, the smallest of South Africa's provinces, spans an area of 18,178 km², representing approximately 1.4% of the country's total surface area. Despite its size, it is the most populous province of the national population. Gauteng is bordered by the Free State, North West, Limpopo, and Mpumalanga provinces. It lies on the highest part of the interior plateau on the rolling plains of South Africa's Highveld, with Johannesburg as its capital, alongside other key areas such as Pretoria, the East Rand, West Rand, and Vaal regions.

Gauteng plays a pivotal role as the economic engine room of both the country and the subcontinent. It is the powerhouse of the nation, driving the commercial business and industrial sectors. The most significant contributors to its GDP include finance, real estate, business services, manufacturing, and general government services. Notably, Gauteng stands as the financial services capital of Africa, hosting the headquarters of more than 70 foreign banks, numerous South African banks, stockbrokers, and insurance companies.

The province is also renowned for its gold and diamond mining industries, with major companies like Anglo American and De Beers headquartered in Johannesburg. Gold mining alone accounts for 80% of Gauteng's mineral production output. Administratively, Gauteng is divided into three metropolitan municipalities—City of Ekurhuleni, City of Johannesburg, and City of Tshwane Metropolitan Municipalities—and two district municipalities, further subdivided into six local municipalities.

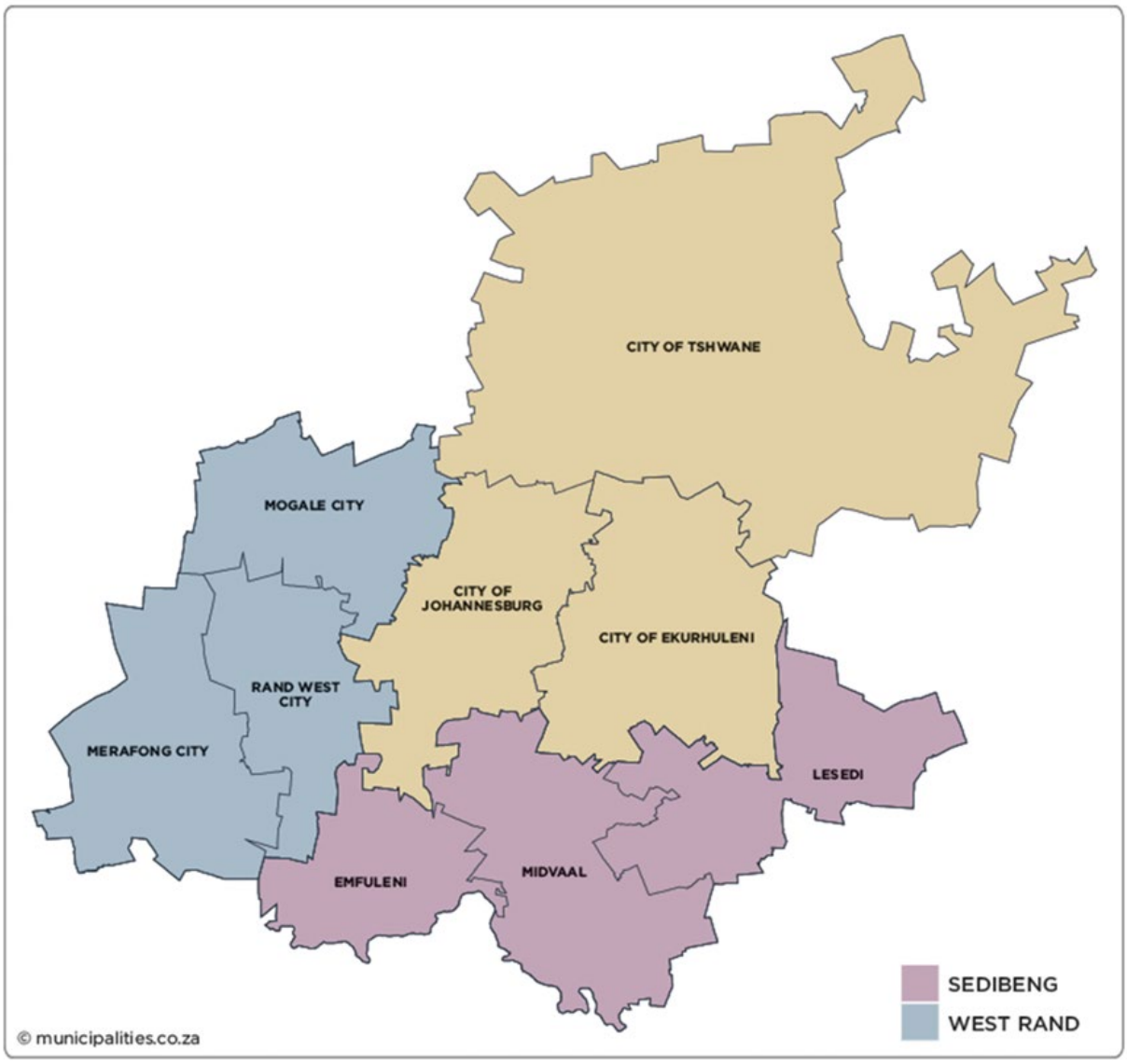


Figure 6: Provincial District Map of Gauteng

5.4.1 Population

Gauteng, known for its vibrant and urbanized economy, is the most densely populated province in South Africa, attracting individuals in search of job and economic opportunities. Between 2011 and 2022, its population surged by 23%, adding 2.8 million people and growing at an average annual rate of 2.3%. The population nearly doubled since 1996, reaching 15.1 million in 2022.

In 2022, the gender distribution in Gauteng was almost balanced, with women making up 50.5% and men 49.5% of the population, showing a slight increase in the female population since 2011. The demographic composition reveals significant growth in the Black population, which rose rapidly since 1996, constituting 84.6% of the population by 2022. Although the Coloured and Indian populations also grew during this period, their proportional representation decreased, with

Coloured individuals comprising 2.9% and Indian individuals 2.2% of the population. Conversely, the White population experienced a decline of over 400,000 people between 2011 and 2022, reducing its share from 15.6% in 2011 to 10% in 2022. This shift in demographic trends highlights the dynamic and evolving nature of Gauteng's population landscape.

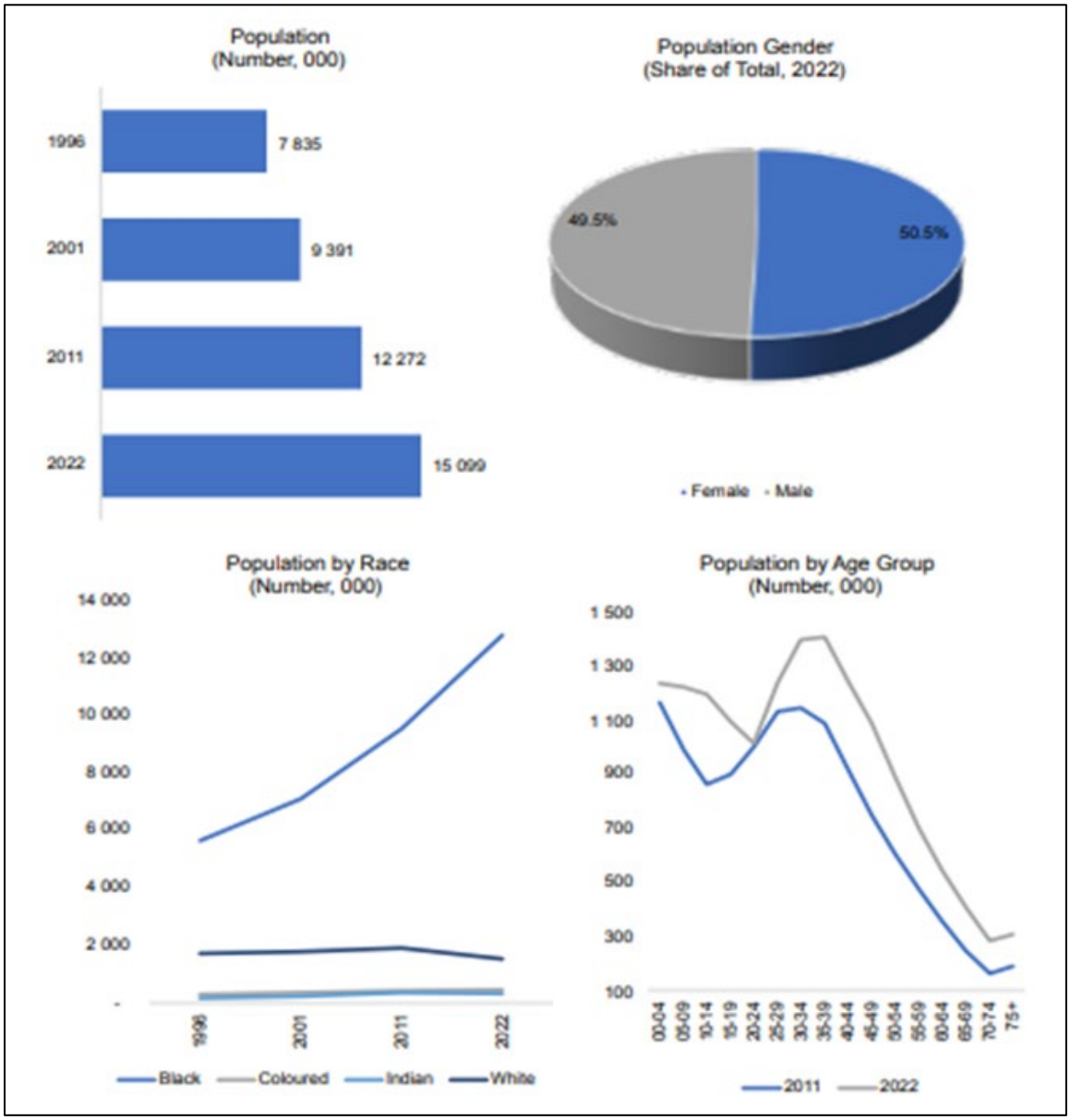


Figure 7: Gauteng Province Dynamics

Gauteng's demographic structure remains notably young, with a large number of residents aged between 15 and 34 years. In 2022, this age group grew by 566,400 people compared to 2011, bringing their total to over 4.2 million. Despite this increase, their proportion of the population declined from 34.9% in 2011 to 31.1% in 2022, due to the rising number of individuals in the 35–64-year age range. This older age group saw a significant rise, from 35% of the population in 2011 to 38.5% in 2022, adding over 1.5 million people during this period.

Furthermore, the elderly population (65 years and older) also expanded, growing by more than 400,000 individuals since 2011. Their share of the total population increased from 4.6% in 2011 to 6.6% in 2022. This shift reflects a broader aging trend within Gauteng, even as a significant portion of the population remains youthful. The demographic landscape of Gauteng is thus marked by both an increasing number of older adults and a substantial youth presence.

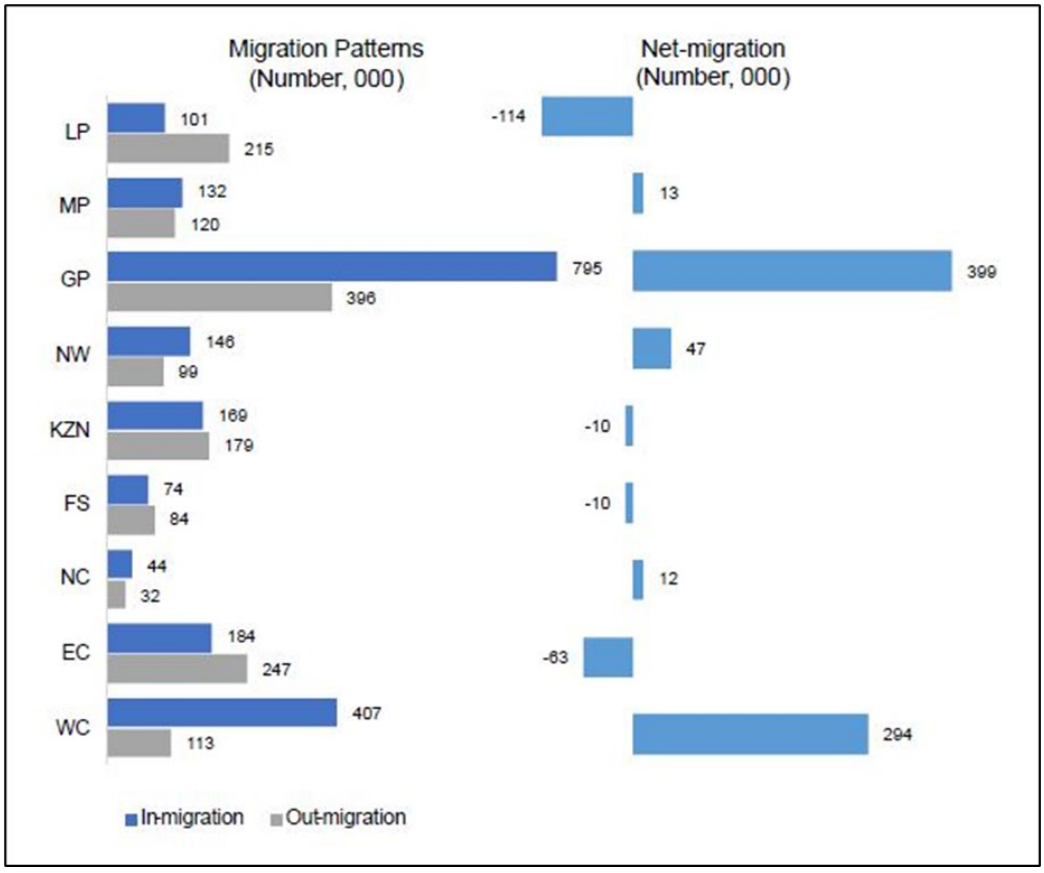


Figure 8: Gauteng Migration Patterns

Gauteng remains the province with the highest contribution to South Africa's population, accounting for 24.3%, followed by KwaZulu-Natal at 20%. The province's large and continuously growing population is largely due to high levels of in-migration. Between 2011 and 2022, Gauteng received an estimated 795,330 in-migrants, the highest in the country, while 395,977 people left the province. This resulted in a net migration of 399,353 significantly bolstered Gauteng's status as the most populous province in the country.

5.4.2 Economy

Gauteng's economy has encountered considerable challenges due to both global and domestic monetary policy tightening. High debt levels have necessitated fiscal consolidation measures at all government levels, prompting provincial treasuries to restrict expenditure growth to stabilize fiscal outlooks. Additional budget cuts are expected over the Medium-Term Expenditure Framework (MTEF) period. Moreover, persistent issues with electricity supply and logistical

inefficiencies have further impeded economic growth. In 2023, Gauteng's economic activity grew modestly by an estimated 0.6%, with projections suggesting slight increases to 1.3% in 2024 and 2.8% in 2025. These minimal growth rates pose a threat to the province's developmental goals, especially in reducing poverty and addressing high unemployment levels.

In 2023, rising interest rates aimed at controlling inflation significantly affected household credit uptake, leading to decreased demand and economic activity. Despite these obstacles, the province saw economic growth in the first two quarters of the year but experienced a decline in the third quarter. Structural challenges, such as energy supply shortages, transport inefficiencies, and the avian flu outbreak, further contributed to the downturn in economic activity. These factors collectively impacted revenue collection for both the country and the province, compounding the economic difficulties Gauteng faces

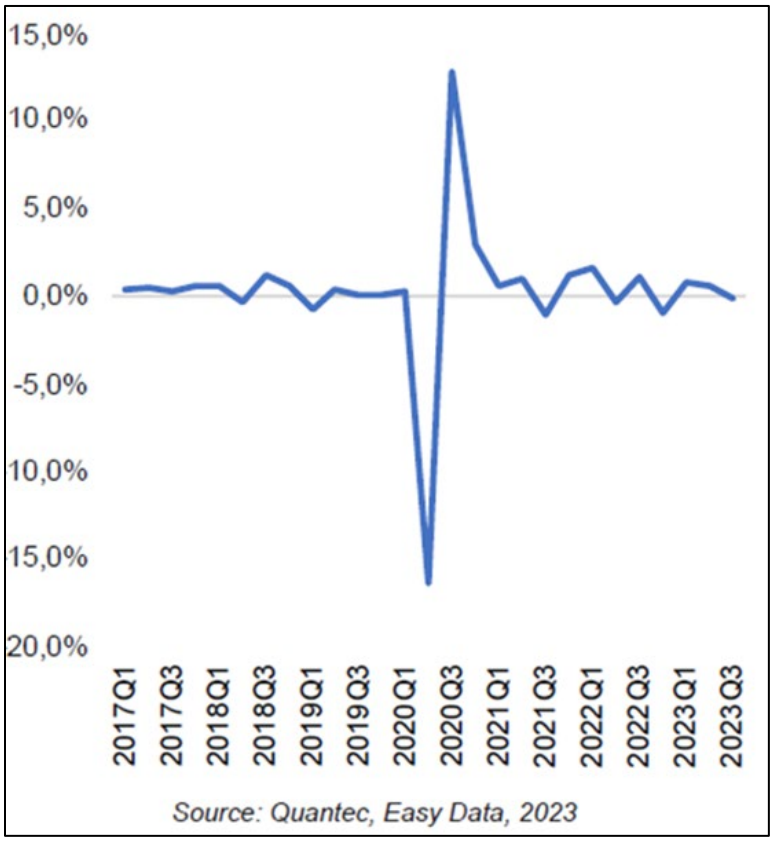


Figure 9: Gauteng Quarterly Economic Growth Rate

Economic activity in Gauteng grew by 0.8% in the first quarter and 0.6% in the second, before declining by 0.1% in the third quarter of the year. This decrease in the third quarter was driven by a decline in primary sector activities, with the agricultural sector decreasing by 9.7% and the mining sector by 3%. The secondary sector also experienced declines, with the construction sub-sector decreasing by 2.7% and manufacturing by 1.3%. Despite the challenges posed by electricity shortages and logistical constraints, the primary driver of the decline in provincial activity was the avian flu outbreak, which severely impacted the agriculture sector nationwide.

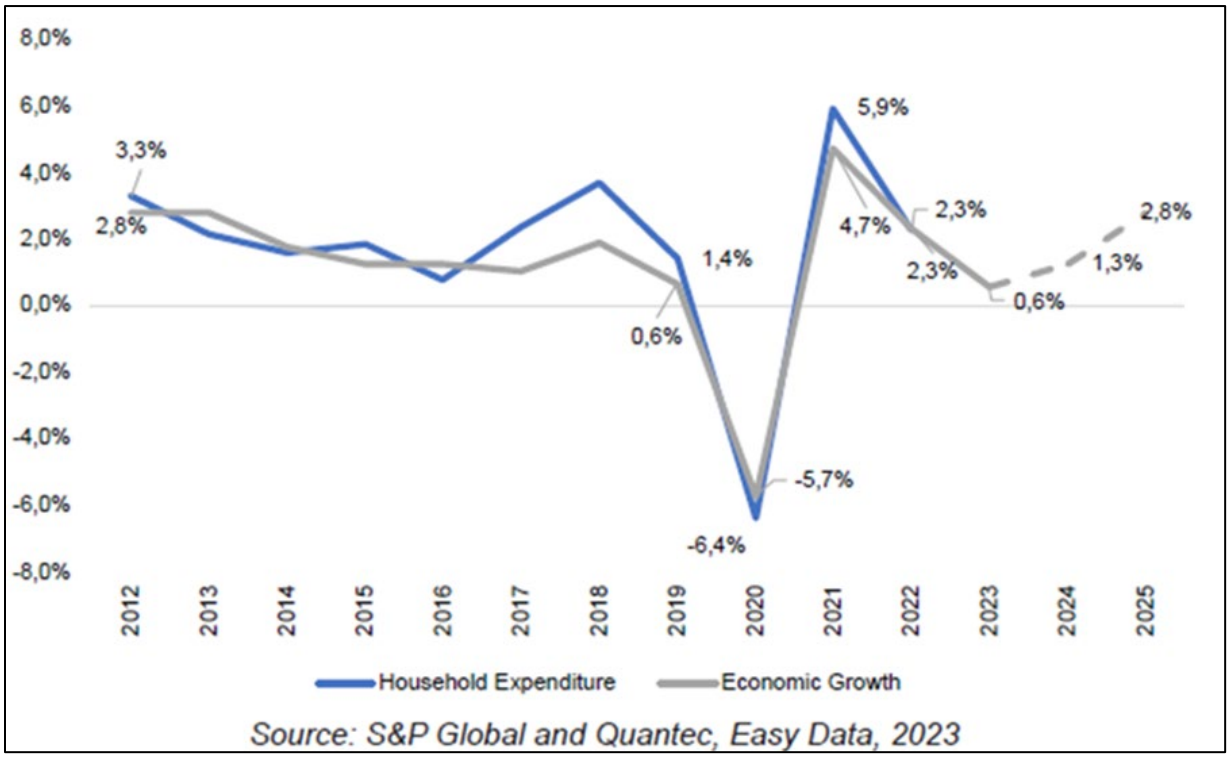


Figure 10: Gauteng Seasonally Adjusted Real GDP Growth (Non-Annualised)

Economic activity in Gauteng is estimated to have slowed to an average of 0.6% in 2023, down from 2.3% in 2022. The trend in household consumption expenditure closely mirrors the province's economic growth during this period. In 2021, household consumption expenditure rose by 5.9% but slowed to 2.3% in 2022, paralleling the economic growth rate that expanded by 4.7% before also slowing to 2.3%. These trends highlight the significant impact of heightened inflationary pressures, rising interest rates, and borrowing costs on household spending. With economic activity expected to remain below 1% for both the country and the province, tax revenue is projected to stay relatively low. Despite this, expenditure commitments are anticipated to increase, posing challenges to containing the national budget deficit and potentially affecting the state's ability to meet its developmental objectives and deliver services to households.

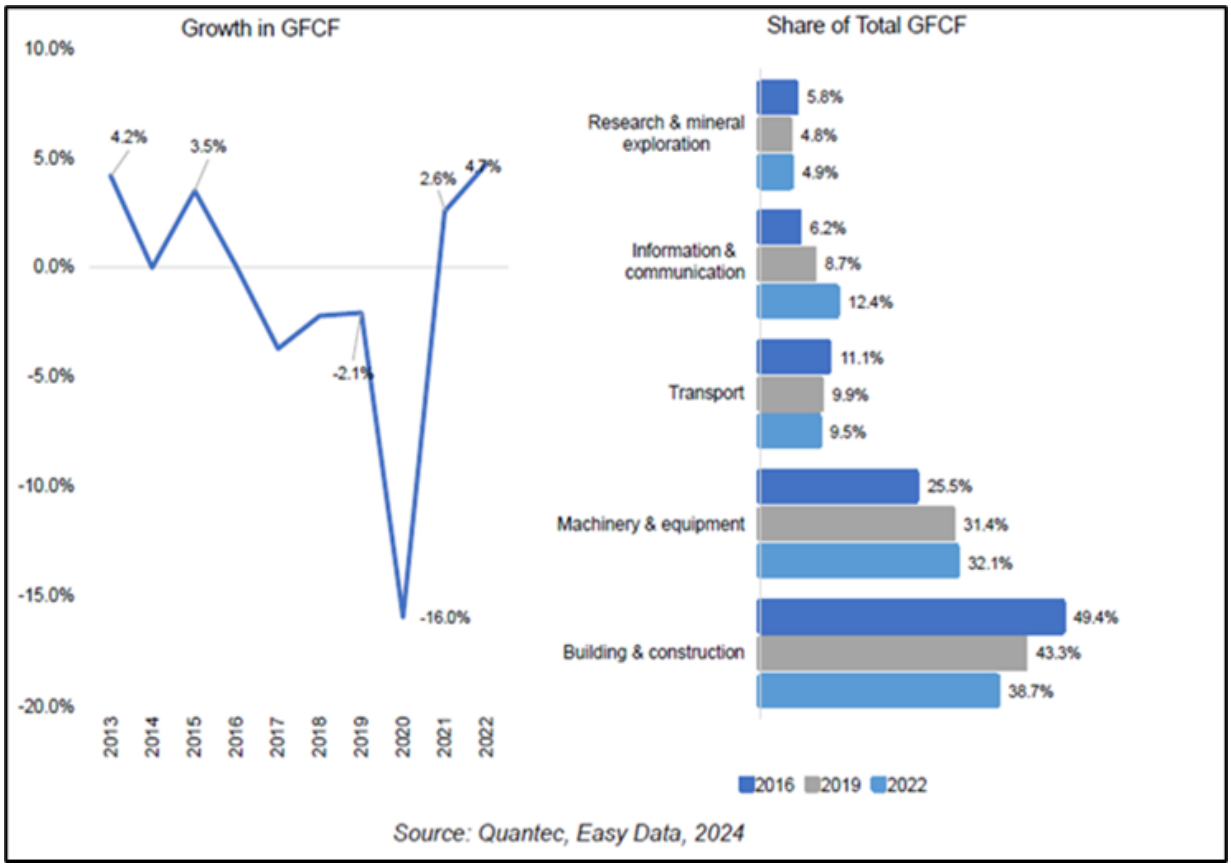


Figure 11: Gross Fixed Capital Formation

In 2020, Gross Fixed Capital Formation (GFCF), which represents total investment, decreased by 16%. However, it rebounded with a growth of 2.6% in 2021 and further increased by 4.7% in 2022. Nearly half (49.4%) of the overall investment in the province was directed towards building and construction. Machinery and equipment accounted for 25.5% of total investment in 2022, a decrease from 31.4% in 2019, yet still a substantial share. Investment in research and mineral exploration contributed 5.8% to the total investment in 2022, up from 4.8% in 2019.

The underperformance of the economy has negatively impacted both national and provincial finances, resulting in cuts to conditional grants. These cuts will adversely affect both planned and ongoing investment projects. According to the State of the Province Address (SoPA), of the total R1.14 trillion pledged at the 5th South Africa Investment Conference held in 2023, approximately R22 billion is allocated to the Gauteng province. Additionally, the province has attracted around R68 billion in investment from foreign companies in 2023.

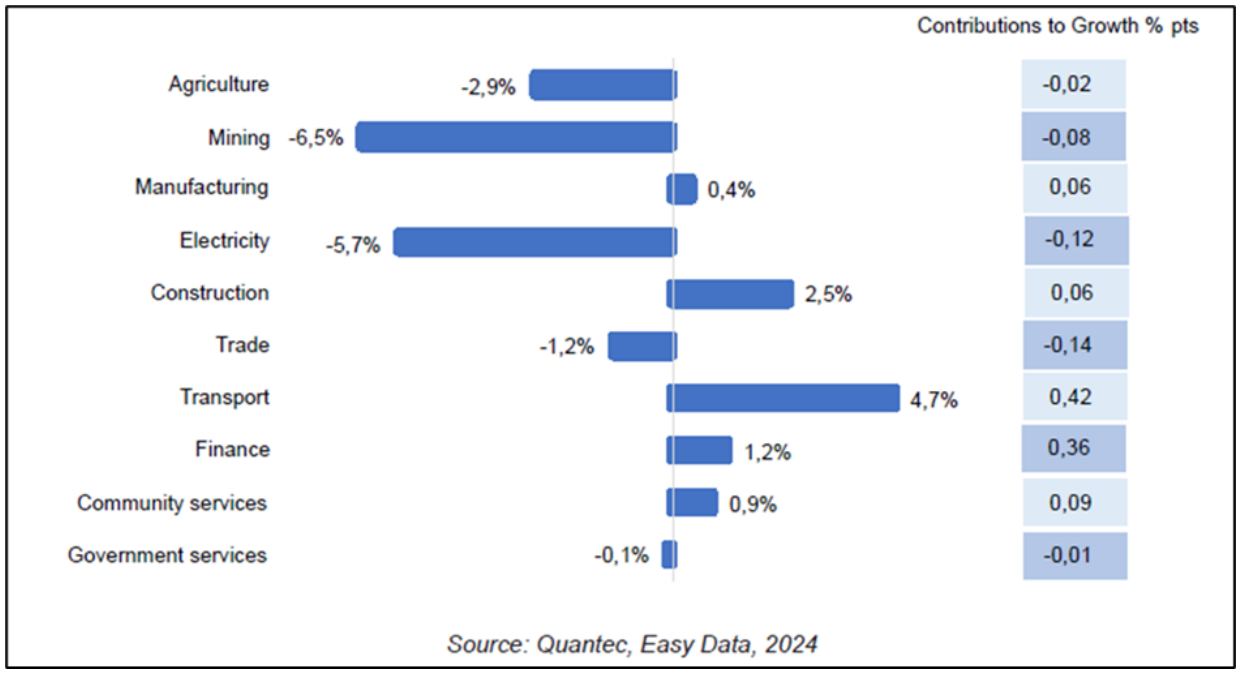


Figure 12: Sector Output Growth and Contribution of 2023

In 2023, Gauteng's economic activity was mainly driven by the finance sector, contributing 33.9% of the total provincial activity, followed by manufacturing and trade at 15% and 12.1%, respectively. However, these sectors depend heavily on energy availability, making power outages a significant factor in economic performance. The first two quarters of 2023 saw growth, but the third quarter experienced a decline, resulting in an overall growth estimate of 0.7% for the first three quarters. The transport sector led with a 4.7% growth, contributing 0.42 percentage points, followed by the finance sector at 1.2% growth, adding 0.36 percentage points. Construction grew by 2.5%, contributing 0.06 percentage points. Conversely, the mining sector declined by 6.5%, subtracting 0.08 percentage points, and the electricity sector fell by 5.7% due to power outages, subtracting 0.12 percentage points. Additionally, the agriculture sector was affected by avian flu, declining by 2.9% and subtracting 0.02 percentage points from overall growth.

5.4.3 Employment and Unemployment

The labour market in Gauteng presents a significant challenge due to its large labour force and high labour participation rate, which can lead to elevated unemployment levels if job opportunities are insufficient. According to the 2022 census, Gauteng has the highest share of the country's population, accounting for 24.3%. Most of this population falls within the working age of 15 to 64 years.

The unemployment rate for the 15-24 age group was the highest, reaching 67.2% in 2021 and decreasing to 65.3% in 2022. For the 25-34 age group, the unemployment rate was 43.7% in 2021 and reduced to 43% in 2022. Generally, the youth experienced the highest unemployment

rates and rely on state support due to their inability to find work, which puts pressure on the fiscal budget.

Table 9: Labour Force Characteristics by Age Group

2021				
Age Group	**Labour Force**	**Employed**	**Unemployed**	**Unemployment Rate**
15-24	546 095	178 990	367 105	67,2%
25-34	2 073 931	1 167 772	906 160	43,7%
35-44	2 187 380	1 502 968	684 412	31,3%
45-54	1 542 846	1 167 051	375 795	24,4%
55-64	567 753	472 445	95 307	16,8%
Total	**6 918 006**	**4 489 227**	**2 428 779**	**35,1%**
2022				
Age Group	**Labour Force**	**Employed**	**Unemployed**	**Unemployment Rate**
15-24	662 871	229 834	433 037	65,3%
25-34	2 096 813	1 195 605	901 208	43,0%
35-44	2 247 323	1 544 255	703 068	31,3%
45-54	1 582 938	1 202 483	380 456	24,0%
55-64	561 311	470 599	90 712	16,2%
Total	**7 151 257**	**4 642 775**	**2 508 482**	**21,9%**

Source: S&P Global, 2024

The labour absorption rate refers to the proportion of new entrants to the labour market who secure employment in the formal sector of the economy. The Labour Force Participation Rate (LFPR) estimates the active labour force in an economy. The labour absorption rate tends to be higher in the 35-54 age group, as this cohort typically has more work experience. The 45-54 age cohort experienced the highest absorption rate, reaching 60.6% in 2022. The LFPR was highest in the 35-44 age group, at 84.3% in 2021, and increased slightly to 84.5% in 2022.

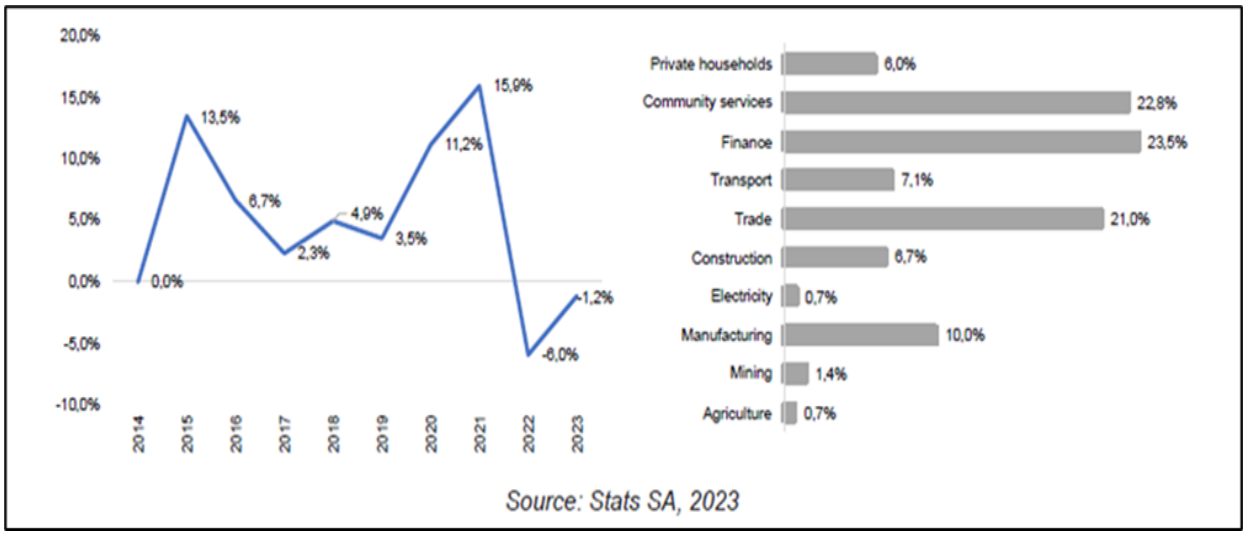


Figure 13: Employment Growth and Sector Share

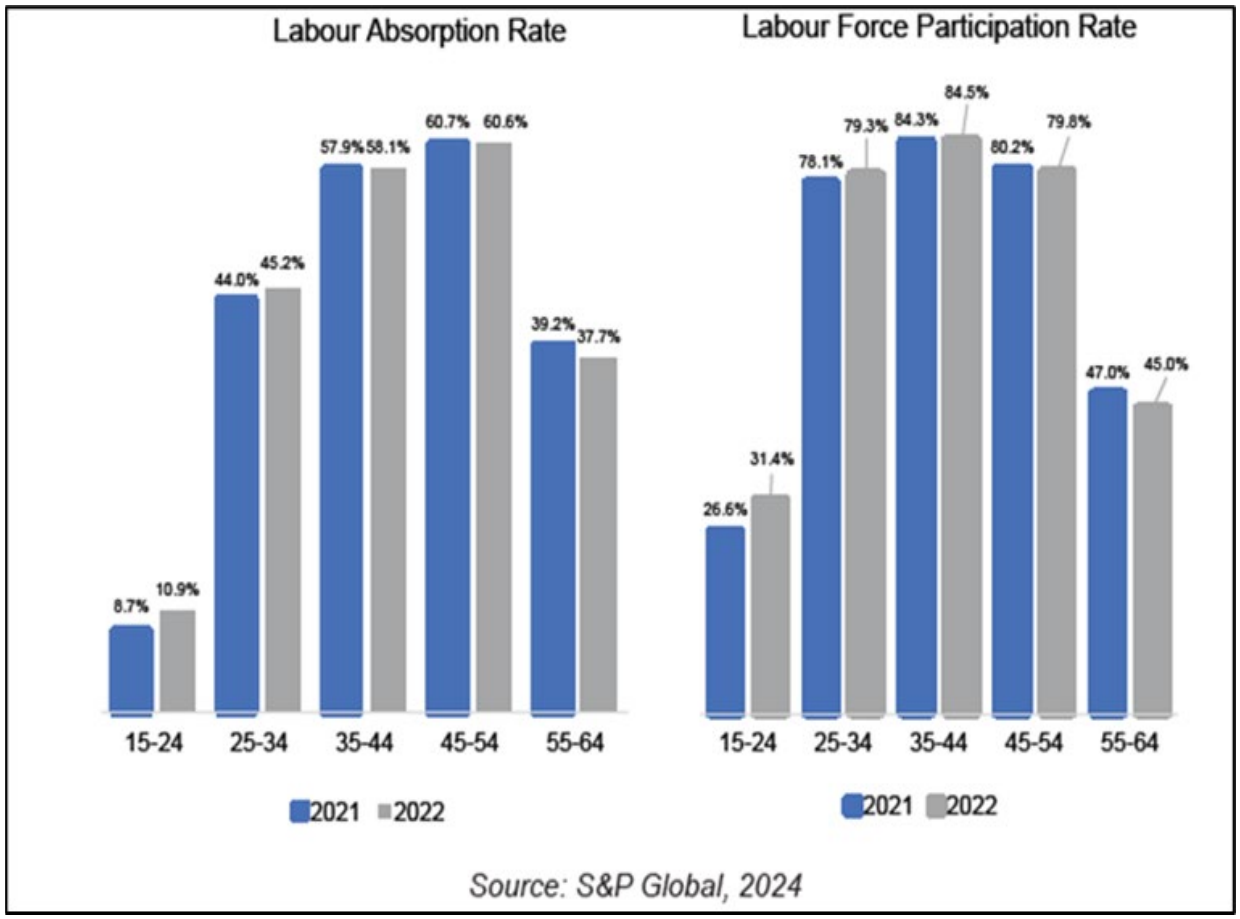


Figure 14: Labour Market Indicators

Total employment growth for the province showed a negative trend in both 2022 and 2023, with declines of 6% and 1.2%, respectively. The finance sector, the largest contributor to the region's economy, employed the highest number of people at 23.5% in 2023. The community services sector came in second at 22.8%, followed by the trade sector at 21%.

5.4.4 Education

Educational attainment in Gauteng has shown significant improvements over the years. The proportion of the population that has not completed primary education has decreased from 2011 to 2022, reaching 4.3%. Similarly, the percentage of those who have not completed secondary education has also declined to 29.2% during the same period.

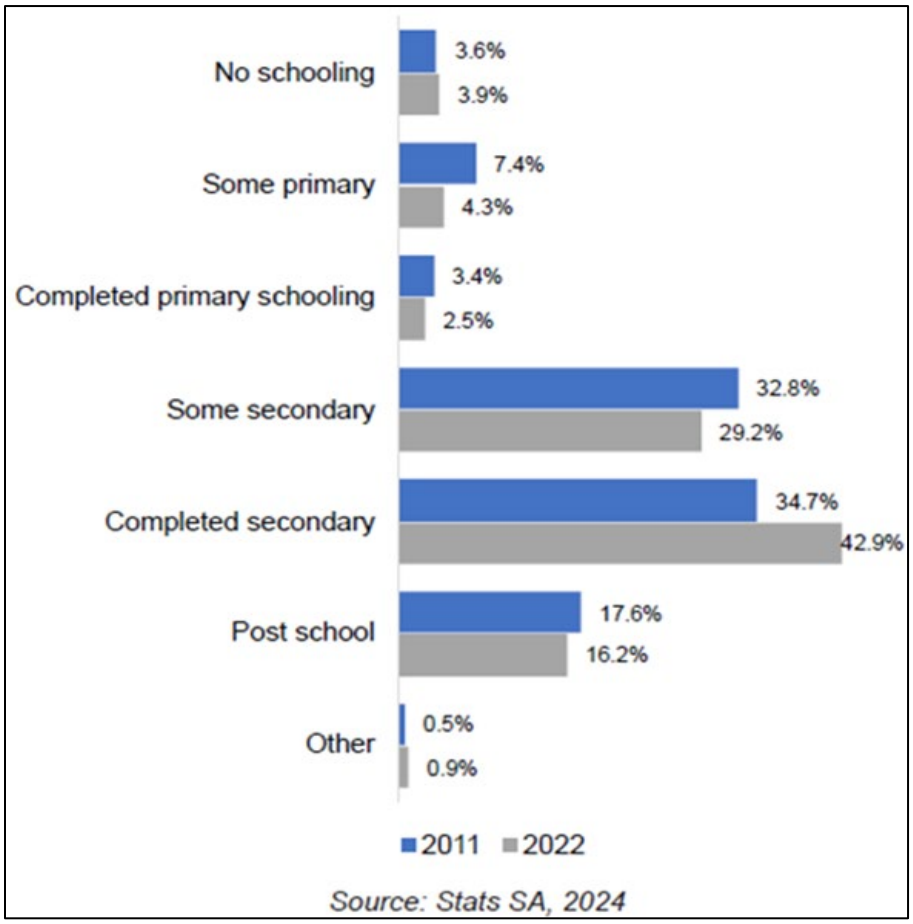


Figure 15: Education Attainment for People Aged 20+

Conversely, the percentage of individuals who have completed secondary school has increased from 34.7% to 42.9%. However, there has been a slight decrease in the proportion of the population with post-school education, dropping from 17.6% in 2011 to 16.2% in 2022.

5.4.5 Gini Coefficient

The Gini coefficient, a key indicator of income inequality, has demonstrated a decreasing trend in Gauteng over the reviewed period. Despite this reduction, it remains high at 0.60, which is only marginally lower than the national average of 0.63. This value signifies that income distribution in Gauteng is highly unequal, as a Gini coefficient exceeding 0.5 indicates severe income disparity according to the United Nations Children's Fund (UNICEF).

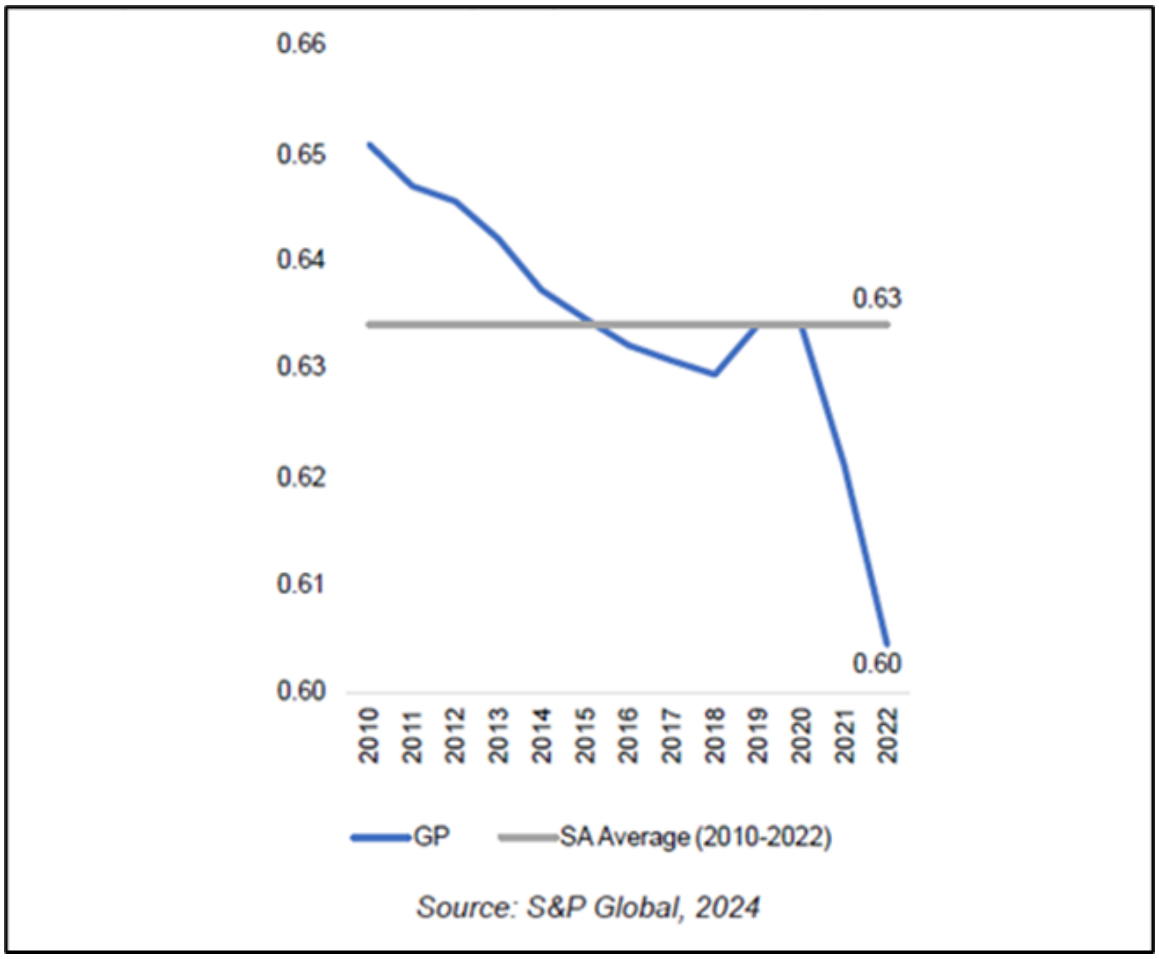


Figure 16: Income Inequality Measured by Gini Coefficient

Figure 17 illustrates the poverty rates in Gauteng from 2000 to 2022, using three distinct poverty lines: food poverty, lower-bound poverty, and upper-bound poverty. These lines are defined by monthly income thresholds of R760 (food poverty), R1,058 (lower-bound poverty), and R1,558 (upper-bound poverty) per person.

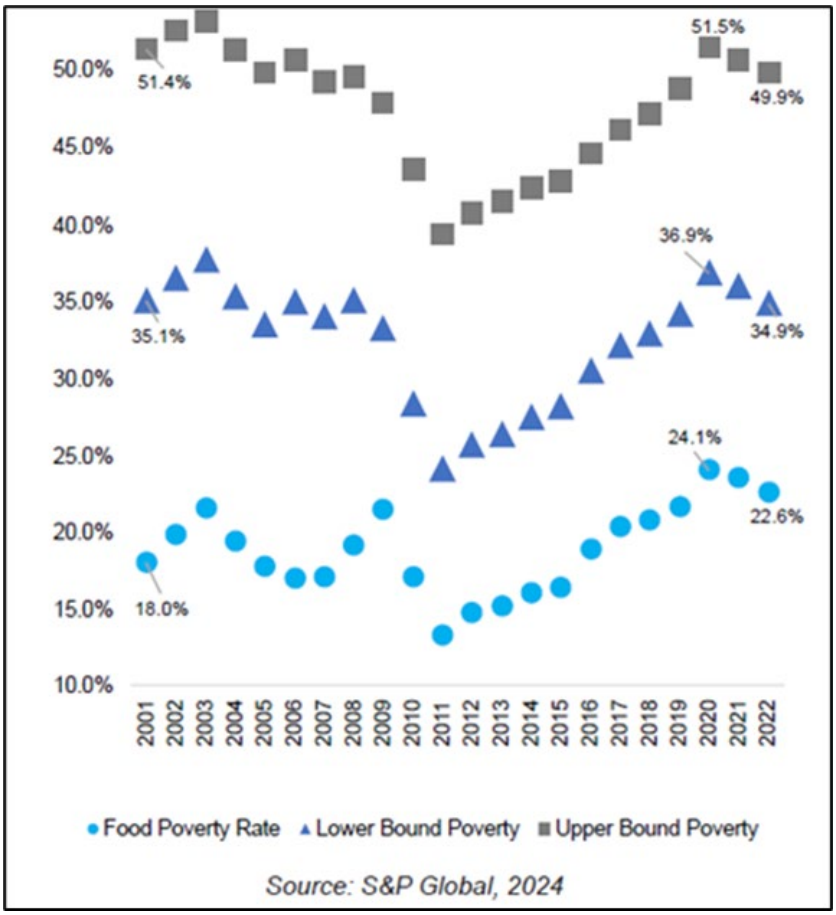


Figure 17: Poverty Rate – Share of Total Population

Since around 2011 and 2012, there has been a notable increase in the proportion of Gauteng's population living below these poverty lines. Specifically, the percentage of the population living below the food poverty line increased from 14.8% in 2012 to 22.6% in 2022. This rise follows a previous peak of nearly 30% during the global financial crisis in 2009.

Similarly, the percentage of people living below the lower-bound poverty line grew from 24.1% in 2011 to 34.9% in 2022. The upper-bound poverty line saw an increase as well, with the proportion of the population living below this threshold rising by 10 percentage points to reach 49.9% during the same period.

The establishment of the Soufflet Malt Production Facility in the Gauteng province may potentially influence the socio-economic profile of the region, albeit modestly on a provincial scale. The project is expected to create both direct and indirect employment opportunities, fostering job creation in a province already challenged by high unemployment rates. Additionally, the plant's demand for raw materials, particularly barley, could stimulate local agriculture and related industries, contributing to economic diversification. However, the project's significant water and energy consumption may strain local resources, and the generation of solid waste and emissions could have environmental repercussions, highlighting the need for careful management and mitigation strategies.

5.5 Sedibeng District Municipality (SDM)

The Sedibeng District Municipality (SDM) is a Category C municipality located on the southern tip of the Gauteng Province, strategically positioned at the intersection of the Free State, North West, and Mpumalanga provinces. This unique location, combined with its positioning on the banks of the Vaal River and Vaal Dam, encompasses the area formerly known as the Vaal Triangle. Sedibeng is situated a short distance from Johannesburg along the scenic Vaal, Klip, and Suikerbos Rivers.

Covering an area of 4,173 km², the Sedibeng District includes the cities and towns of De Deur/Walkerville, Devon, Eikenhof, Evaton, Heidelberg, Meyerton, and more. The main economic sectors are manufacturing (30.8%), government (17.8%), business services (17.8%), and trade (13.7%).

The municipality consists of the Emfuleni, Lesedi, and Midvaal Local Municipalities. The name "Sedibeng" means "the place of the pool" in Sesotho, referring to the water sources such as the Vaal River, Suikerbosrand River, Klip River, and Vaal Dam. The Vaal River, a primary water source for Gauteng and beyond, is crucial to the economic heartland of South Africa. The district's strategic location, bordered by the Free State to the south, Mpumalanga to the east, and North West to the west, makes it a vital hub for inward and outward migration, impacting the surrounding districts of Gert Sibande (Mpumalanga), Fezile Dabi (Free State), and Dr. Kenneth Kaunda (North West).

Figure 18: Sedibeng District Local Municipalities

(Source: IHS Markit GIS)

5.5.1 Population

The SDM is home to 1,190,688 people, contributing 1.8% to South Africa's total population. The population was 717,055 in 1996, increased by 10.8% to 794,559 in 2001, and further grew by 15.3% to 916,484 in 2011. From 2011 to 2022, Sedibeng's population saw an overall increment of 29.9%, reaching 1,190,688. Black Africans constitute the largest proportion of Sedibeng's population at 88.4%, followed by Whites at 9.7%, and Coloureds at 1.0%.

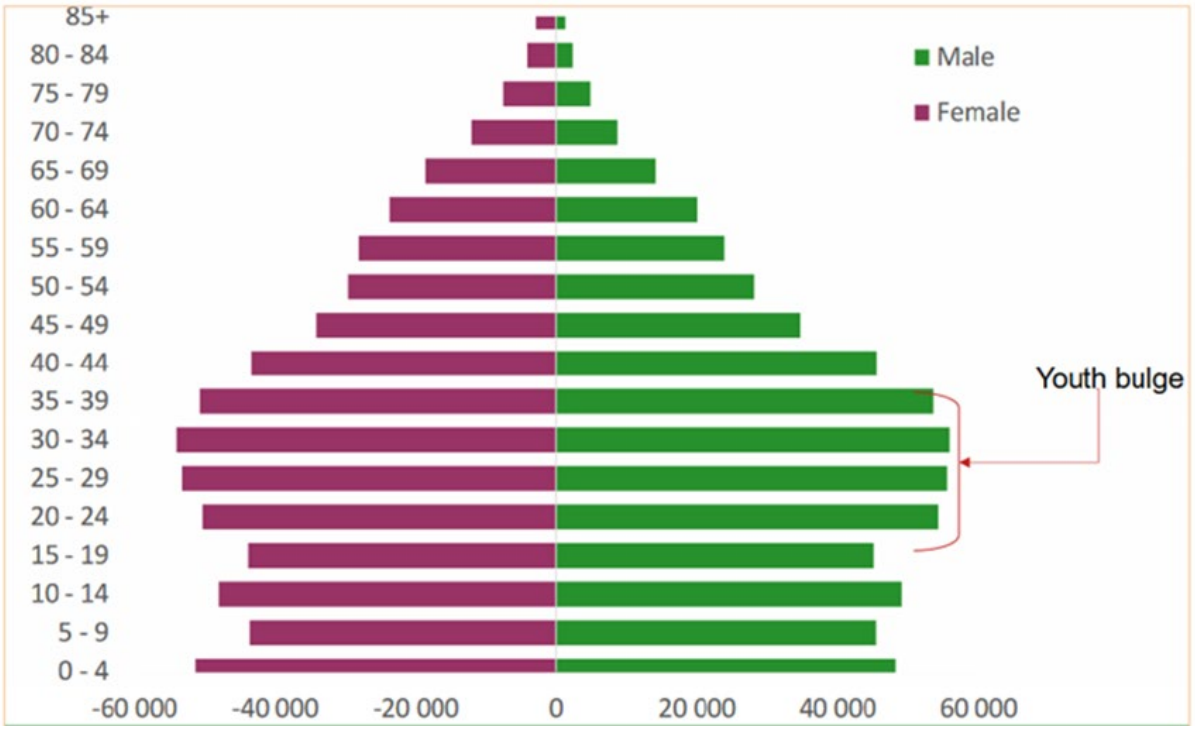


Figure 19: Population Pyramid for SDM, 2022

Understanding age groups is crucial in demographic assessments as the population's age structure directly indicates the long-term demand for community and social services, housing, and infrastructure. The population pyramid reflects four age categories: preschool population, school population, economically active population, and the elderly population.

Table 10: Age Groups Census, 2001 and 2022

Age group	0-4	5-14	15-34	35-60	60+
2011	89564	142847	345678	263568	74826
2022	99594	186362	412352	371878	120467

Source: *Census 2022*

The 20 to 65-year age cohort is particularly significant, with the male-female ratio in this group serving as an important indicator. Male absenteeism or a male surplus can be a proxy for migrant labour. A surplus of males might indicate an area attracting migrant labour, signalling higher expectations for economic growth and job creation.

Table 11: Population Distribution by Gender, 1996-2022

	1996	2001	2011	2016	2020	2022
Males	355,119	391,697	455,272	478,307	533,855	590 983
Females	361,080	404,009	461,051	479,221	519,178	599 705
Population density (persons/ha)	1.27	1.91	2.20	2.29	2.53	2.85
Total Population	716,199	795,706	916,324	957,528	1,055,070	1,190,688

Population groups, while not central to development analysis, help explain current dynamics based on historical settlement patterns. Sedibeng's population structure shows the largest cohort comprises people aged 35 to 64, followed by the 15-34 years cohort. The 0-14 age group also represents a relatively high share of the population. However, the region's dependence on a limited number of economic sectors limits its ability to absorb the youth bulge, resulting in fewer economic opportunities for most of the population.

Table 12: Population Groups

	1996	2001	2011	2016
Black	555,126	649,881	748,543	773,736
White	143,974	130,148	143,347	161,753
Coloured	6,810	8,863	11,027	12,388
Indian	5,639	6,814	9,113	9,651

Since the COVID-19 outbreak, mortality rates have risen across the region, affecting life expectancy and migration patterns. These changes are expected to shift the population structure. Such demographic changes due to the pandemic should be considered when implementing future health, economic development, and social welfare policies in the country and all its regions.

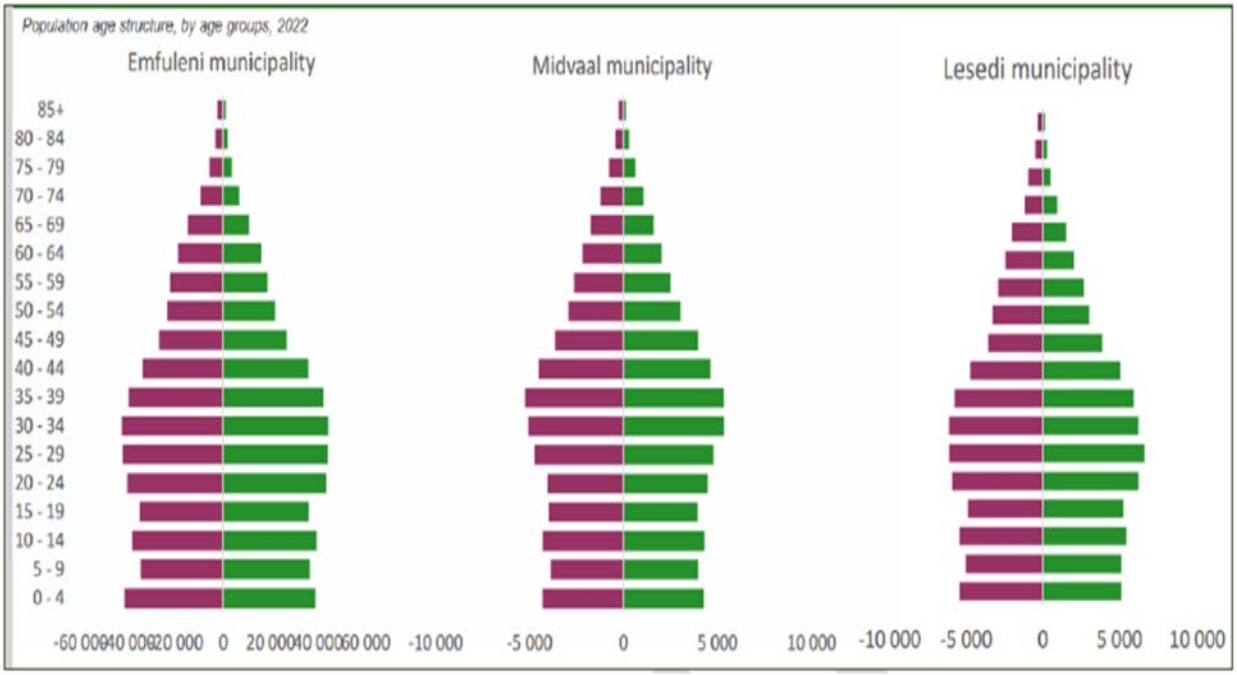


Figure 20: Population Pyramid by Local Municipality in SDM, 2022

In 2022, the total district population exceeded 1 million. Emfuleni accounted for the largest share at 76.6%, followed by Lesedi at 12%, and Midvaal at 11.4%. Between 2019 and 2021, Lesedi and Midvaal experienced the highest average population growth rates, at 2% and 1.9% respectively.

Table 13: SDM and Local Municipalities Population

Population size					
Municipality	2016	2019	2021	2022	2023
Sedibeng	982,424	1,032,833	1,063,790	1,081,355	1,099,827
Emfuleni	758,757	793,083	815,150	828,275	842,351
Midvaal	109,931	117,609	121,777	123,791	125,753
Lesedi	113,736	122,142	126,863	129,290	131,723
Average growth					
Municipality	2004-2008	2009-2013	2014-2018	2019-2021	2022-2024
Sedibeng	1.5%	1.7%	1.6%	1.6%	1.7%
Emfuleni	1.0%	1.2%	1.3%	1.4%	1.7%
Midvaal	3.8%	3.6%	2.6%	1.9%	1.6%
Lesedi	3.5%	3.8%	2.6%	2.0%	1.9%

5.5.2 Economy

Sedibeng is the fourth-largest contributor to the Gauteng economy. A significant component of the Gross Value Added (GVA) in the SDM is comprised of the secondary sector, followed by the tertiary sector, and lastly the primary sector. The GVA indicates which sectors contribute the most value to the district's economy.

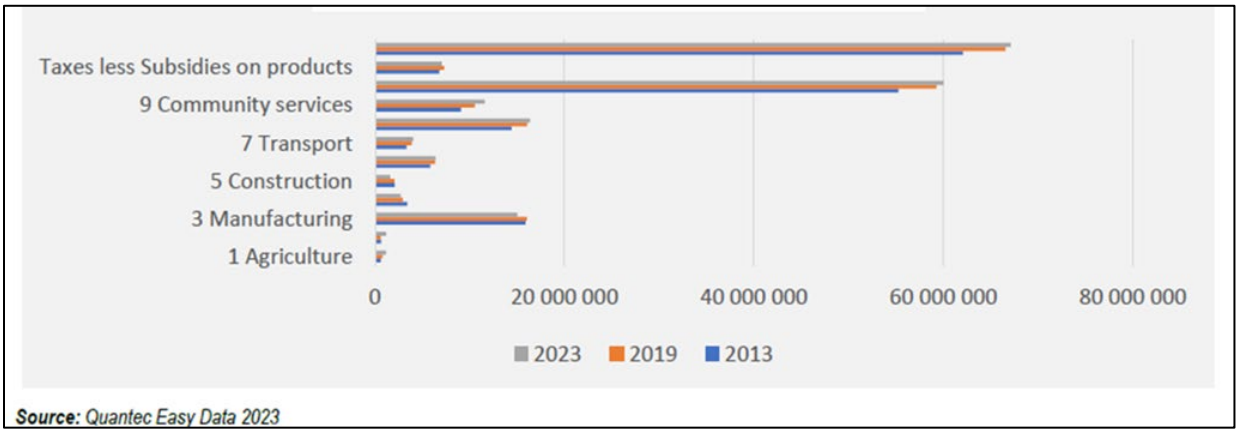


Figure 21: Gross Value Added by Region (GVA-R) Constant 2021 Prices

Despite a decline in its contribution over the years, the manufacturing sector remains a key driver of economic activity in Sedibeng. However, due to its heavy reliance on this sector, the district and its regions are vulnerable to national issues such as electricity supply constraints, labour unrest, and weak external and domestic demand.

The agriculture sector has demonstrated improved growth, increasing from 3.6% over the past ten years to 6.8% in the SDM region, with an average annual growth rate of 0.7% in terms of GVA. The mining sector has experienced fluctuations, with a growth rate of 4.8% in 2013 and a positive growth rate of 12.1% in 2023. Conversely, the manufacturing sector is in decline, with an average annual growth rate of -0.7% for SDM. This decline is concerning when compared to the 2.4% growth rate in Gauteng. The construction sector has also declined, albeit at a lower rate, with an annual rate decrease of 0.3% in all areas within SDM.

The service sectors, including trade, transport, finance, and community services, have shown relatively high growth rates over the last ten years, with growth rates between 3.9% and 4.8% for all service sectors, except for community services, which grew at an average rate of 2.1% in the SDM area.

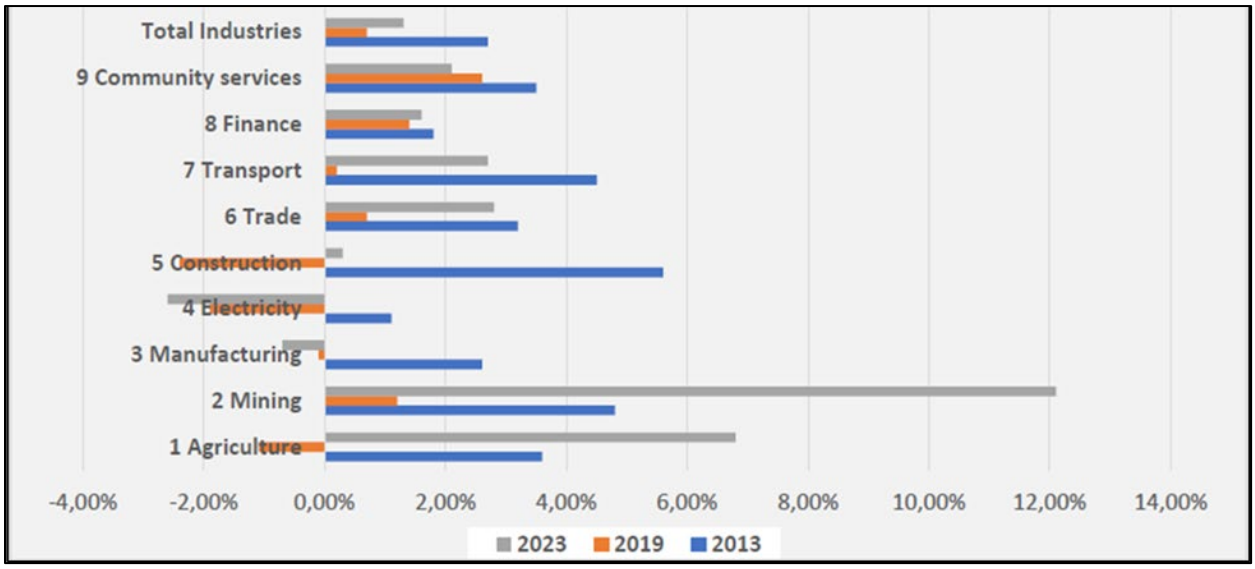


Figure 22: Average Annual Growth

The presence of manufacturing in Sedibeng, which accounted for 2.6% of economic activity in 2013, has declined to 0.7% in 2023. In fact, the manufacturing, electricity, and construction sectors (secondary sector) together accounted for a combined 9.3% of economic output. The primary sectors of mining and agriculture were at 4.8% and 3.6% in 2013, respectively, and have grown to nearly 29% in 2023. Within the district, agriculture and mining activities are relatively prominent, accounting for 12.2% and 6.8% of economic activity in 2023.

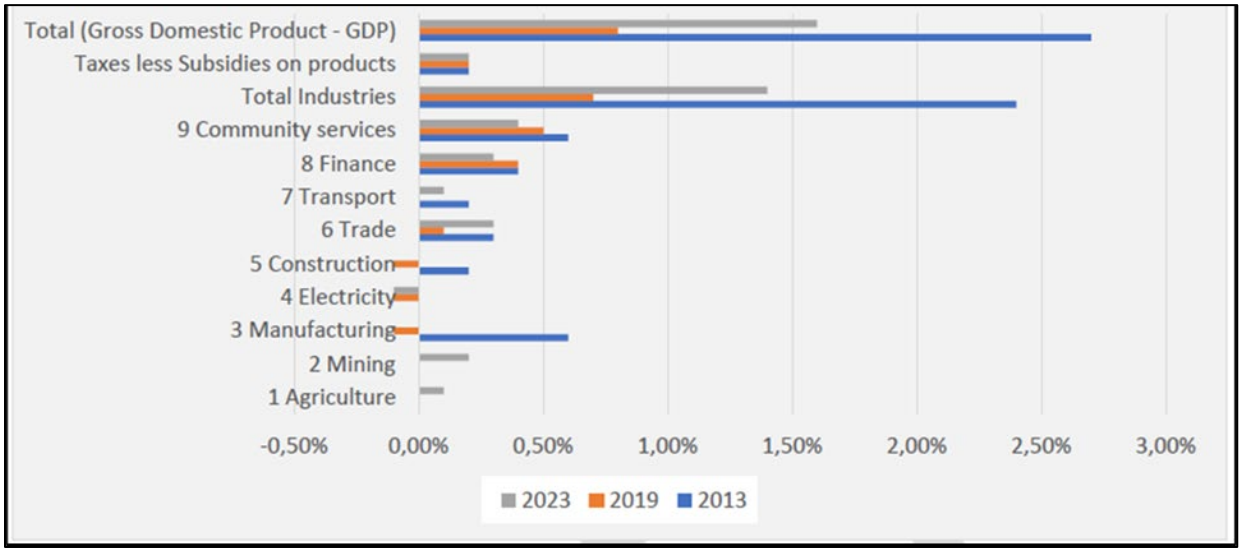


Figure 23: Contribution to Total Economic Growth

This composition of current economic activity underlines the need for the diversification approach detailed in the Local Economic Development strategy of the district. The economic growth disaggregation presented here highlights that the secondary sector, led predominantly by

manufacturing and processing activities, remains the largest contributor to the district's economic activity. The tertiary sector includes personal services and the retail sector.

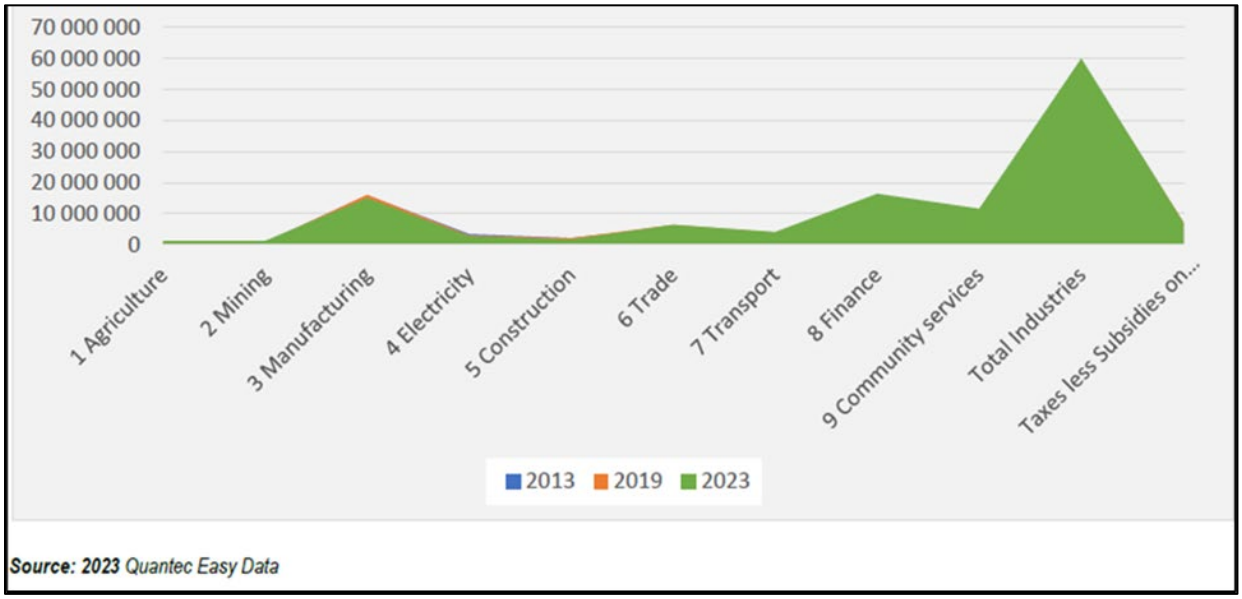


Figure 24: Economic Performance by Region

In 2023, economic activity in the district and its regions stabilized after a volatile 2022, with growth in the first quarter followed by a decline in the second, and then growth in the third quarter. Output growth in the district was 2.3% in the first quarter, decreased by 1% in the second quarter, and rose by 1.3% in the third quarter.

5.5.3 Employment and Unemployment

The aftermath of lockdowns and COVID-19 has severely impacted the labour market in Sedibeng. Many businesses closed, the number of discouraged work-seekers increased, and movement restrictions led to the labour participation rate reaching its lowest levels. Despite a return to positive economic growth in 2021, employment levels remained weak across several sectors. Although there was a slight decline in the unemployment rate and an increase in the number of people employed in the second and third quarters of 2022, this did not significantly affect the overall unemployment rate, which remains relatively high. Power outages in the last quarter of the year likely reversed all gains, making it difficult for businesses to remain viable.

The long-term challenge of low employment growth in the country has been associated with low economic growth over the past few years. Even during periods of higher growth, the tertiary sector exhibited low labour absorption rates. Moreover, employment growth lagged behind economic activity growth. For example, in 2021, while economic activity in the district rose by 4.5%, employment growth declined by 3.6%.

However, new mining activities in the region led to a significant increase in employment within that sector, growing by over 134% in 2022. Conversely, the largest job losses occurred in the

electricity and manufacturing sectors, with employment growth declining by 22.4% and 22.5%, respectively, in 2022.

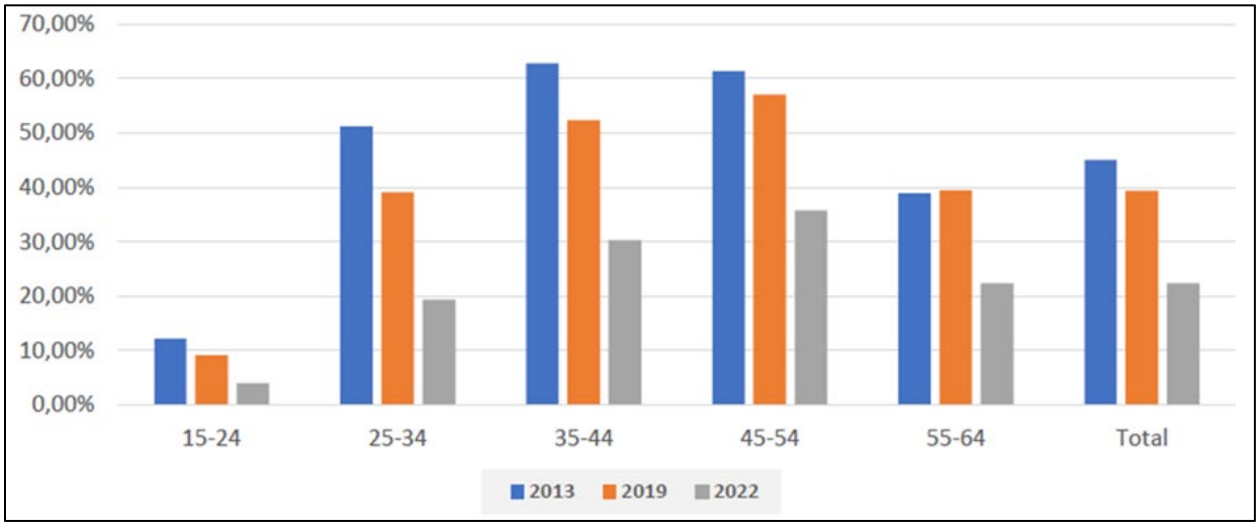


Figure 25: Labour Absorption Rate

In 2022, the overall unemployment rate was 60.8%, a reduction of 2% from 62.3% in 2021, but a significant increase from 41.1% in 2019. Among those unemployed, 87.7% were in the 15-24 age cohort in 2022, up from 74.3% in 2019.

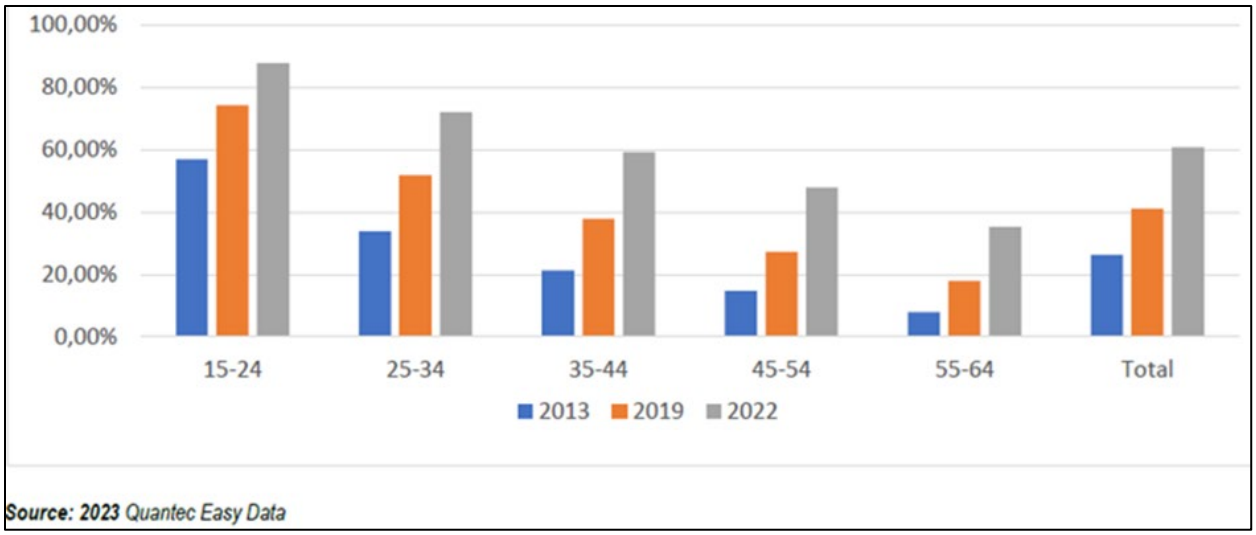


Figure 26: Unemployment Rate (%)

In Sedibeng, while the unemployment rate stood at 60.8% in 2022, the trade sector provided the largest number of jobs but was still performing below pre-pandemic levels. Similarly, the manufacturing sector, which was previously dominant in the region, has not recovered to its 2019 levels. This stagnation in key sectors does not bode well for employment creation in the district.

5.5.4 Education

The educational attainment in Sedibeng and its three local municipalities has seen notable improvements. The figure below illustrates the highest educational attainment levels. Notably, four out of ten persons aged 20 years and above have completed Grade 12/Matric. The number of individuals achieving this level of education increased significantly by 21.7%, from 19.6% in 2011 to 41.3% in 2022. Additionally, the number of individuals with postgraduate qualifications increased by 6%, from 7.2% in 2011 to 13.2% in 2022.

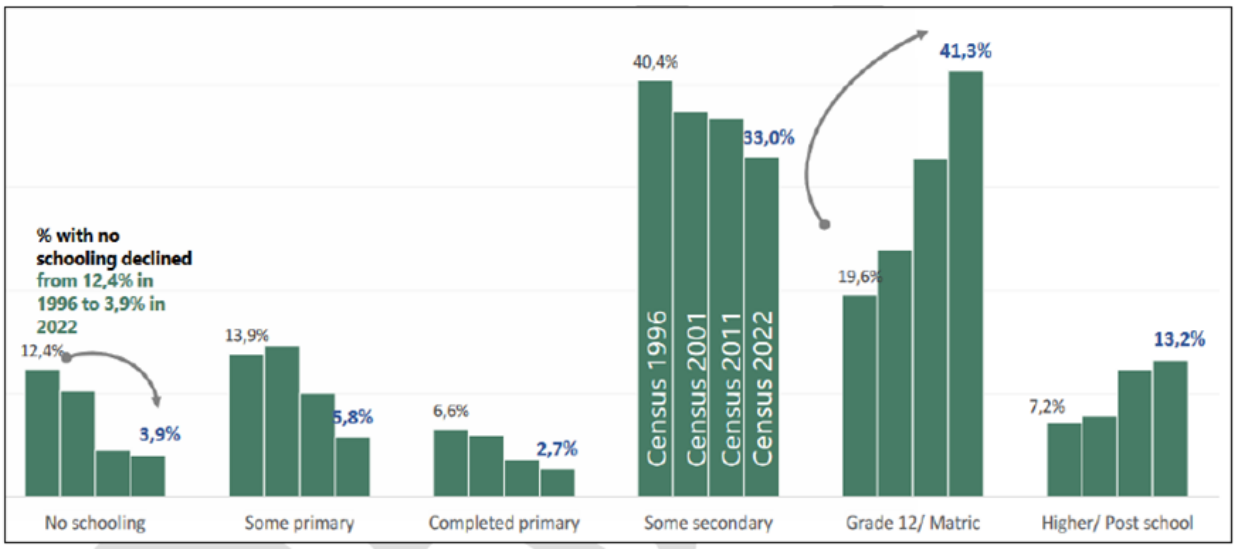


Figure 27: Education Attainment

The proportion of individuals with no schooling has significantly declined from 12.4% in 1996 to 3.9% in 2022. Similarly, the percentage of those who completed primary school has decreased by 3.9%, from 6.6% in 1996 to 2.7% in 2022, as depicted in the figure above.

5.5.5 Human Development Index

Human Development Index (HDI) combines three fundamental aspects of human development: longevity, education, and standard of living. The HDI for both the district and its local regions has shown an increasing trend from 2004 to 2020. This positive trend is attributed to improvements in educational attainment and life expectancy, as more people gained access to healthcare.

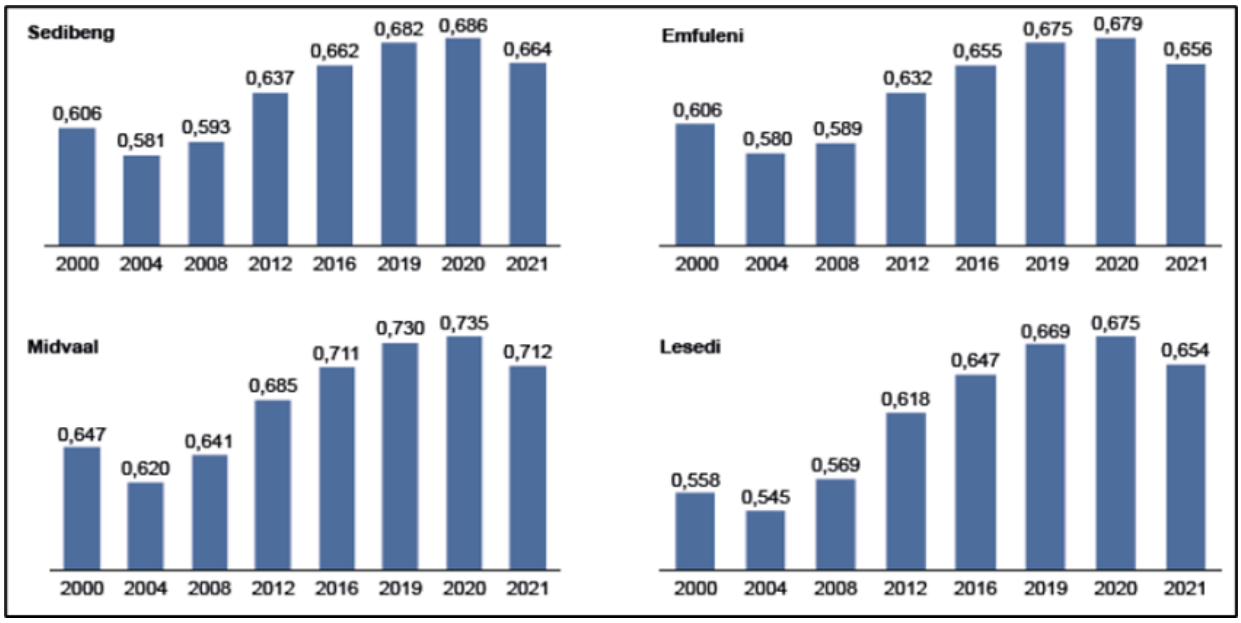


Figure 28: HDI for SDM and the Local Municipalities

In 2020, Emfuleni had an HDI of 0.679, which declined to 0.656 in 2021. Similarly, Midvaal's HDI was 0.735 in 2020, decreasing to 0.712 in 2021. These changes reflect variations in the underlying indicators that comprise the HDI and highlight the ongoing challenges and progress in human development within the district.

The establishment of the Soufflet Malt Production Facility could positively impact the socio-economic profile of the Sedibeng District Municipality by creating job opportunities and stimulating local agricultural activities, thus promoting economic upliftment and diversification. However, the project also poses potential challenges, including significant water and energy consumption, waste generation, and environmental impacts, which could strain local resources and affect community health. Therefore, while the project offers promising benefits, careful management and mitigation of its negative effects are essential to ensure sustainable development in the region.

5.6 Midvaal Local Municipality

The Midvaal Local Municipality (MLM) is a Category B municipality situated within the Sedibeng District in the southern part of the Gauteng Province. It is bordered to the north by the City of Ekurhuleni and the City of Johannesburg Metropolitan Municipalities, to the south by the Free State Province, and to the east by the Mpumalanga Province. Midvaal is the largest municipality in the district, encompassing nearly half of its geographical area. MLM comprises 15 wards and is one of three local municipalities that constitute the Sedibeng District Municipality.

Covering an area of 1,723 km², Midvaal includes the towns and cities of De Deur/Walkerville, Eikenhof, Meyerton, and Vaal Marina. The main economic sectors in the municipality are manufacturing, community services, finance, trade, transport, electricity, construction, and agriculture.

The R59 and R82 are the primary transport corridors within Midvaal. The R59 is earmarked as a development corridor linking the City Deep logistics hub and OR Tambo International Airport in the north to the Vereeniging-Vanderbijlpark complex in the south. Additionally, the main railway line, running parallel to the R59, is a freight line connecting Vereeniging to Germiston, while a commuter railway line along the eastern boundary of Midvaal links Emfuleni to the City of Johannesburg.

5.6.1 Population

MLM is predominantly rural, with extensive farming activities constituting approximately 90% of its total jurisdiction. The municipality does not conduct its own demographic surveys and relies on Statistics South Africa as the official source of demographic data. The demographic data outlined below are derived from the Census 2022 provided by Statistics SA. Previous data from Census 2011 and Community Survey 2016 have been used in earlier Integrated Development Plans (IDPs), and where Census 2022 data is not yet available, these sources have been retained.

As of 2022, Midvaal has a population of 112,254, up from a base of 95,301 in 2011, reflecting an annual growth rate of 1.6%. The number of households has also grown significantly, from 29,964 in 2011 to 36,464 in 2022.

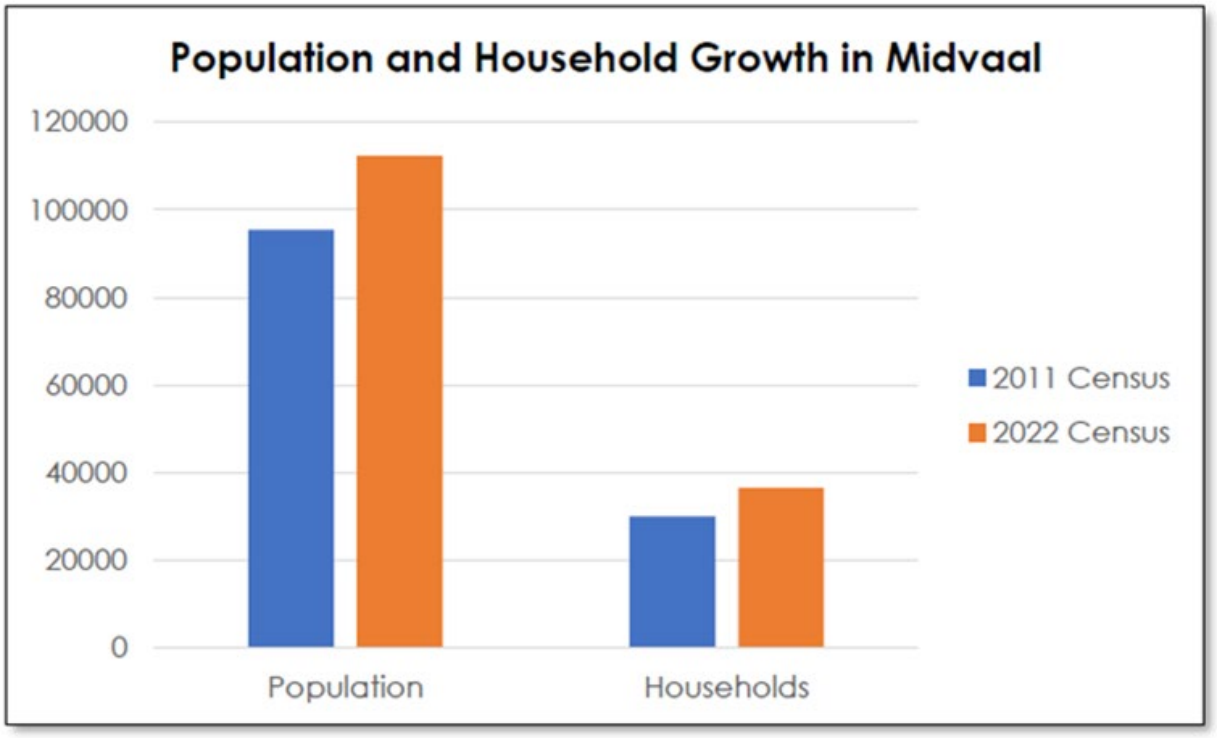


Figure 29: Population and Household Growth

The population of Midvaal is largely dominated by African black and white populations, which together constitute more than 97% of the total population.

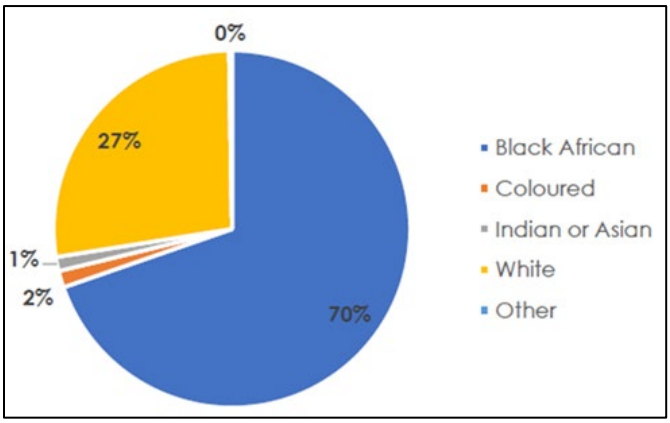


Figure 30: Population Groups

The age profile of Midvaal's population is primarily youthful, with approximately 58% of the total population falling within the youth category. Additionally, around 70% of the population is within the working age group, defined as individuals aged between 15 and 64. The gender profile of Midvaal slightly favours males over females, with 52% of the population being male and 48% female, according to data from 2016. This distribution has remained relatively consistent since 2011, with less than a 1% shift in the profile.

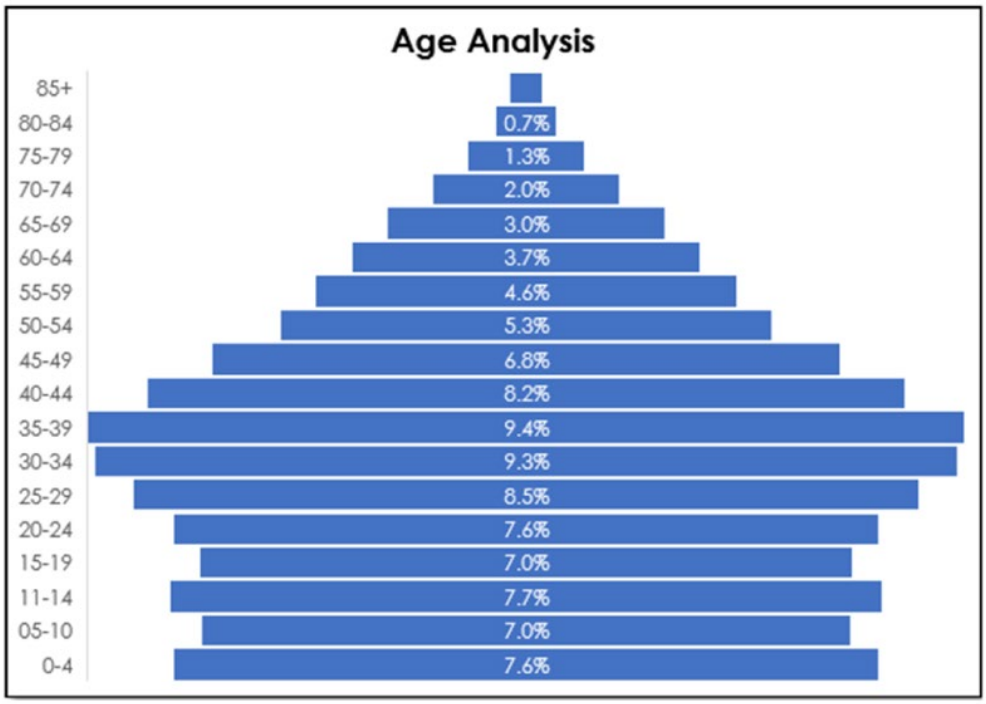


Figure 31: Population Pyramid

The population density in MLM has seen a substantial increase over the past decade. In 2022, the population density was recorded at 6515 persons per km², a significant rise from 55.31 persons per km² in 2011. This dramatic increase highlights the growing concentration of people

in the area, which has implications for infrastructure development, service delivery, and urban planning.

The dependency ratio in MLM has remained relatively stable over the past decade. In 2022, the dependency ratio was 42.0, slightly up from 41.9 in 2011. This consistency indicates that the proportion of dependents (individuals aged 0-14 and 65+) to the working-age population (15-64) has not changed significantly. A stable dependency ratio suggests a balanced demographic structure, which is crucial for sustainable economic and social development in the municipality.

5.6.2 Economy

In 2013, the total GDP for the SDM was R42.7 billion, with the MLM contributing R6.52 billion. Notably, MLM had the highest average annual economic growth rate in the district, averaging 5.4% between 2003 and 2013. The table below presents the municipal contributions to the SDM GDP and the average annual economic growth rate for each local municipality.

Table 14: SDM and Local Municipalities Contribution to the GDP and Average Annual Economic Growth Rate

District	GDP (2013)	Share of district municipality GDP	Average annual economic growth rate
Emfuleni	R32.7 billion	76.6%	3.12%
Midvaal	**R6.5billion**	**15.3%**	**5.4%**
Lesedi	R3.5 billion	8.1%	4.3%
Sedibeng	R42.7	100%	

The local Gross Domestic Product per Region (GDPR) in Midvaal is distributed among various sectors: the tertiary sector, including government, community and social services, and infrastructure services, contributes 31.5%; the secondary sector, encompassing manufacturing, wholesale and retail trade, finance, and property, accounts for 66.8%; and the primary sector, which includes agriculture, forestry, fishing, mining, and quarrying, represents 1.7%. This distribution, as illustrated in the pie chart, highlights the significant role of the secondary sector in the local economy, followed by the tertiary and primary sectors. This sectoral breakdown emphasizes Midvaal's diverse economic base, with a strong focus on manufacturing and trade, complemented by substantial contributions from government and social services.

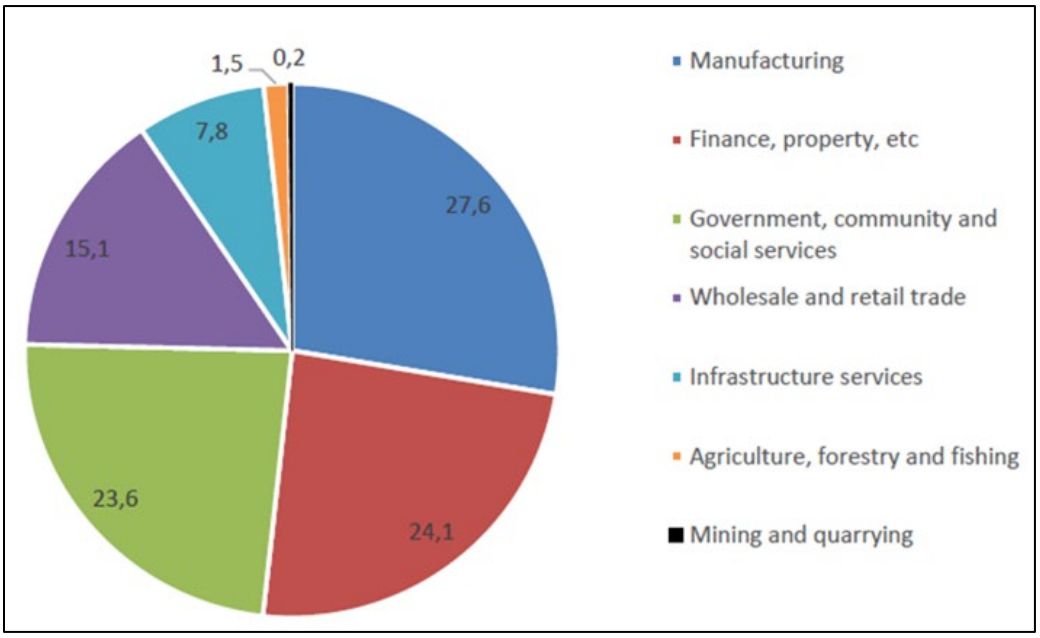


Figure 32: Economic Activity by Sector

MLM is part of the SDM, which also includes Emfuleni and Lesedi Local municipalities. Emfuleni is the largest contributor to the district's GVA, accounting for 72.81%, while Midvaal and Lesedi contribute 14.98% and 12.21%, respectively. GVA measures the economic output of a region, reflecting the value created within that area.

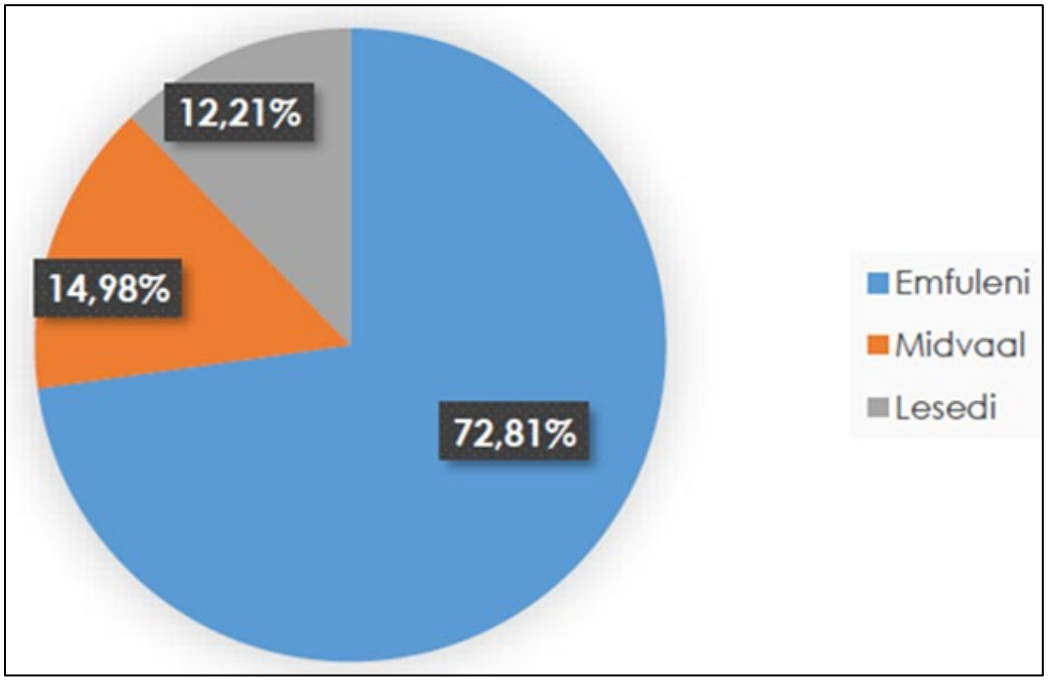


Figure 33: Municipality Contribution to District GVA (%)

According to the Midvaal Economic Analysis (2021), the total GVA for Sedibeng was R49 billion in 2018, with Midvaal contributing R7 billion, Lesedi R6 billion, and Emfuleni R36 billion. Between 2001 and 2018, Midvaal had the second-highest GVA growth rate at 2.79%, with Lesedi at 3.07% and Emfuleni at 2.03%.

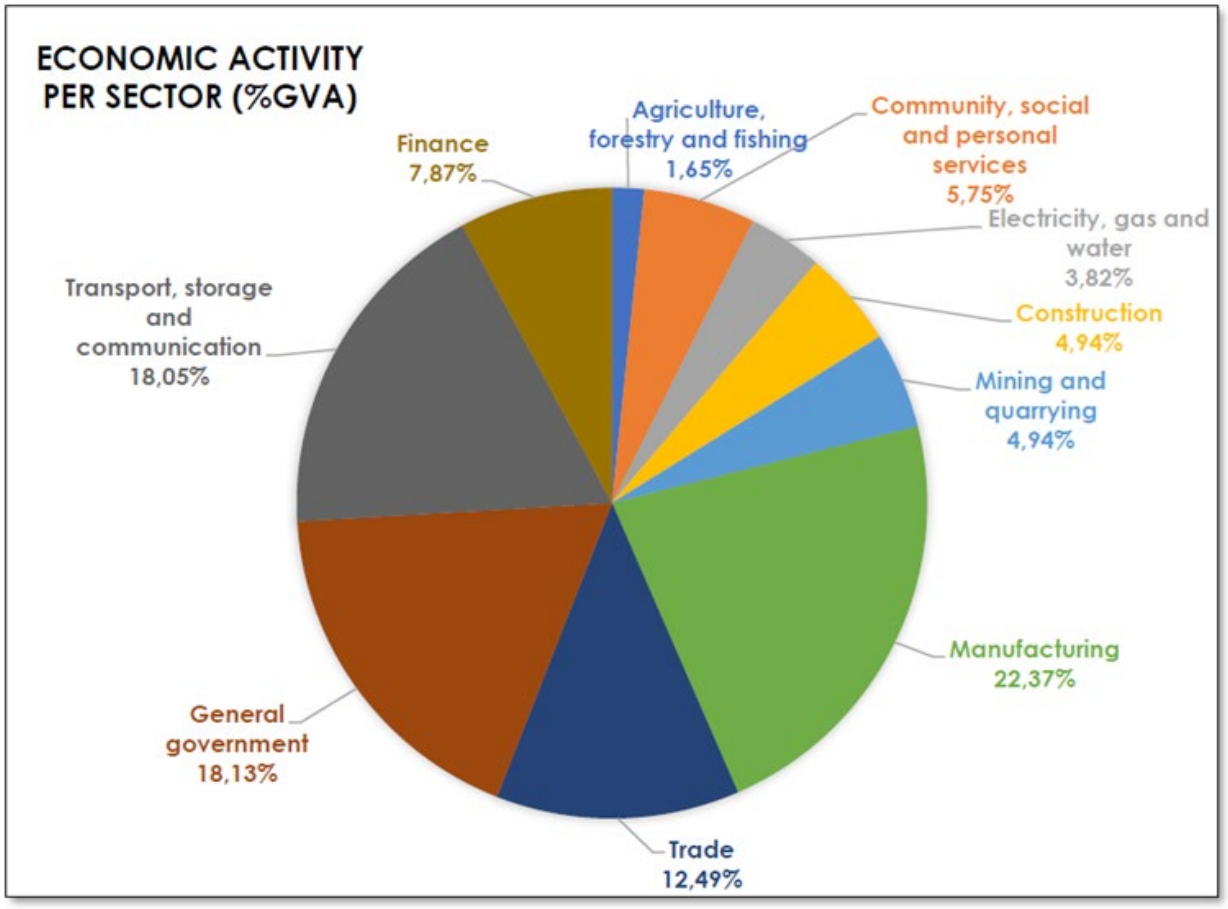


Figure 34: GVA by Economic Sector

The pillars of the local economy in Midvaal include manufacturing, general government, transport, storage and communication, and trade, which cumulatively contribute 71.04% of the GVA. The pie chart illustrates the economic activity per sector in Midvaal, as analyzed in 2021. The manufacturing sector is the largest contributor, accounting for 22.37% of the GVA. This is followed by the general government sector at 18.13%, and the transport, storage, and communication sector at 18.05%. Trade contributes 12.49%, while finance adds 7.87% to the economic activity. Community, social, and personal services represent 5.75%, and construction and mining and quarrying each account for 4.94%. The electricity, gas, and water sector contribute 3.82%, with agriculture, forestry, and fishing being the smallest sector at 1.65%. This distribution underscores the dominance of manufacturing and government services in Midvaal's economy, complemented by significant contributions from trade, transport, and finance sectors.

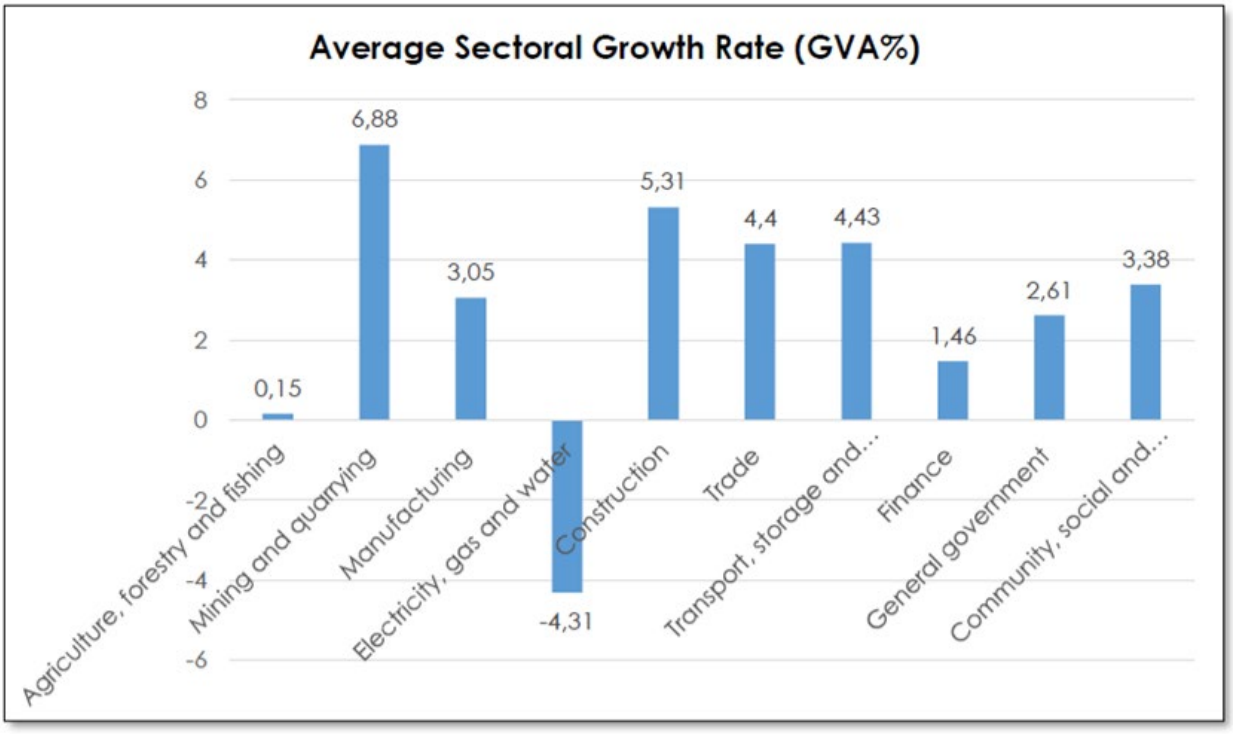


Figure 35: Average Sectoral Growth Rate, 2021

In terms of average sectoral growth, Midvaal's strongest sectors included mining and quarrying (6.88%), construction (5.31%), and transport and logistics (4.43%). Both Emfuleni and Lesedi exhibited similar growth trends, with mining and quarrying and construction sectors exceeding a 5% average annual growth.

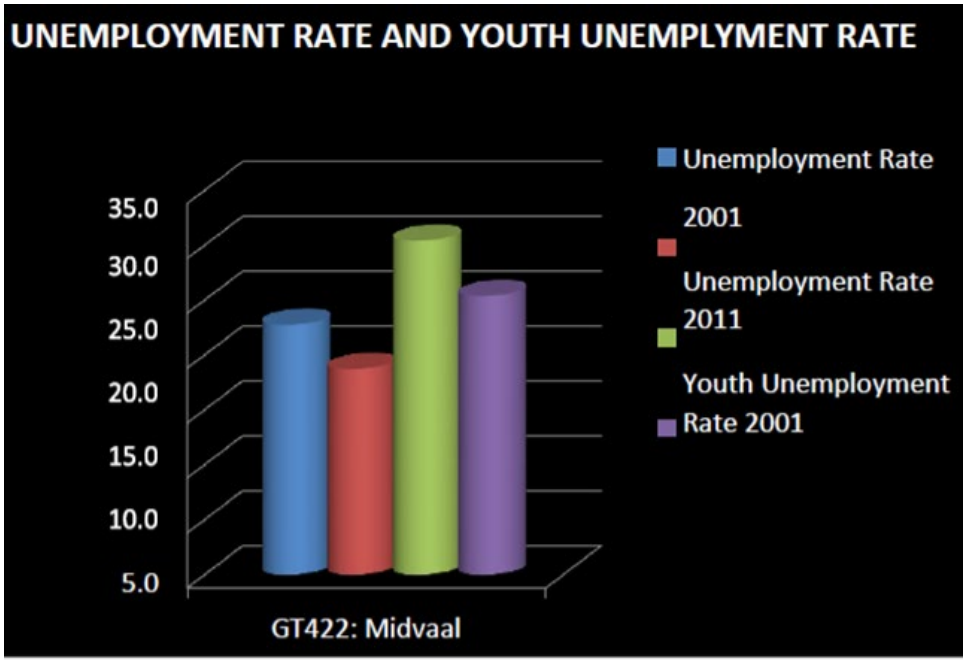
5.6.3 Employment and Unemployment

The social well-being of a society is significantly influenced by the ability of its working-age population to secure employment and meet their basic needs. Employment not only contributes to the economic viability of a community, making it more self-sustainable, but also reduces reliance on government social assistance. In Midvaal, 70.4% of the population is economically active, with an employment rate of 81.2% and an unemployment rate of 18.8%.

According to the Midvaal Economic Analysis report, employment within the municipality spans both formal and informal sectors. The 2011 census data reveals that the formal employment sector is largely driven by financial and business services, which account for 21.9% of jobs, followed by community services at 18.7%, manufacturing at 18.6%, trade at 16.7%, and general government at 8.3%. While sectors like community services, general government, and trade have seen growth in employment opportunities, sectors such as agriculture, manufacturing, construction, and mining and quarrying have experienced a decline in job creation.

In the realm of informal employment, trade emerges as the dominant sector, contributing 45.0% of job opportunities. This is followed by community services at 13.6%, construction at 11.3%, transport, storage, and communication at 10.5%, financial and business services at 10.4%, and

manufacturing at 8.3%. Informal employment has shown growth in community services, financial and business services, and transport, storage, and communication, while sectors like construction, manufacturing, and agriculture have faced a decline. These trends reflect a parallel pattern of growth in both formal and informal employment sectors in Midvaal, underscoring the dynamic nature of the local job market.



(Source: Global Insight, 2011)

Figure 36: Unemployment Rate - 2001, 2011

The figure above illustrates a definite decline in both the overall unemployment rate and the youth unemployment rate between 2001 and 2011 in Midvaal. This decline is likely due to several new businesses investing in the area over the last few years, creating employment opportunities for the local community.

MLM has the highest level of economically active population within the district, with 70.4% of its population being economically active. This high level of labour supply contrasts with the non-economically active population (29.6%), which includes children, youth, the elderly, and disabled individuals who are not able to be employed.

Furthermore, MLM boasts the highest employment rate compared to national, provincial, and district levels, with 81.2% of its population employed. Consequently, the unemployment rate in MLM stands at 18.8%. According to Stats SA, the working-age population in Midvaal is growing by approximately 1,204 people per annum, while the economically active population is expanding by about 720 people per annum. However, the local economy can absorb only around 189 people per annum, highlighting the challenges in matching job creation with the growing labour force.

5.6.4 Education

The educational profile of MLM in 2022 reveals a diverse range of educational attainment among its residents. A small proportion of the population, 3.5%, has no schooling, while 5.4% have completed some primary education and 2.7% have completed primary school. A significant portion, 29.9%, has attained some secondary education, and 40.1% have completed Grade 12 or Standard 10. Higher education levels are also notable, with 17.1% of the population having pursued post-secondary education. Additionally, 1.2% of residents fall into other categories of educational attainment. This distribution highlights the municipality's relatively high level of educational achievement, with a substantial segment of the population reaching secondary and higher education levels.

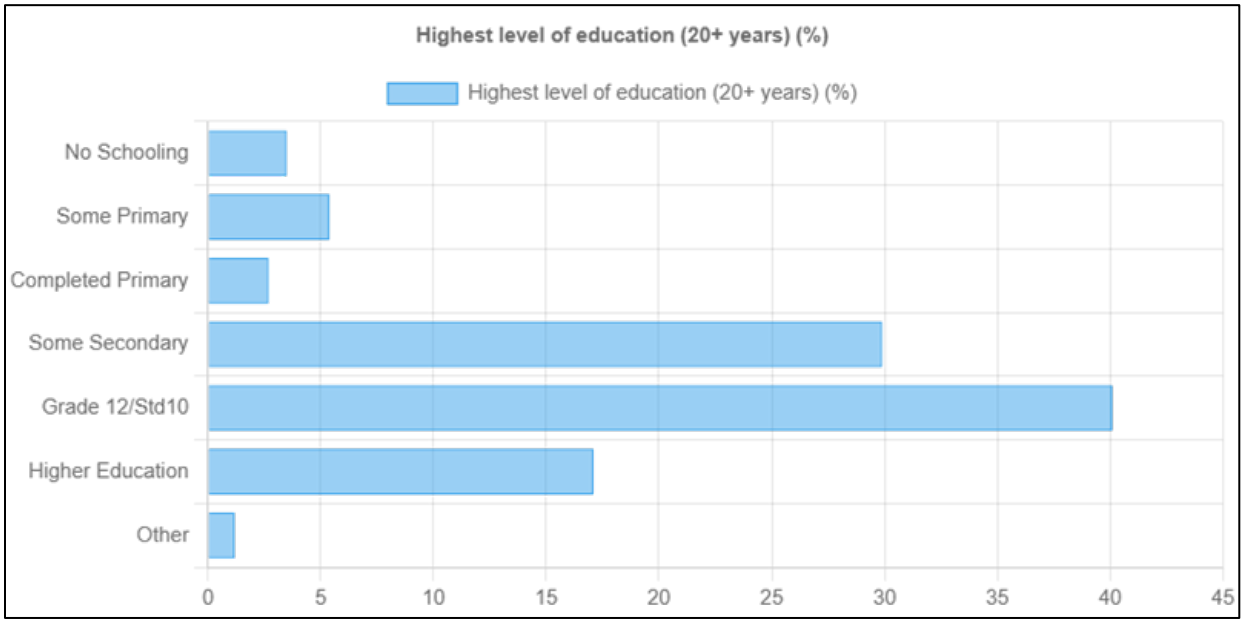


Figure 37: Education Attainment, 2022

5.6.5 Human Development Index and Gini Coefficient

According to the relevant data, MLM has the highest HDI compared to the other local municipalities within the Sedibeng District Municipality. This suggests that Midvaal enjoys a better-balanced society overall, with higher levels of life expectancy, literacy, and income, reflecting improved human development outcomes.

Table 15: HDI for SDM and Local Municipalities, 2009

	Sedibeng District	Emfulen i Local	Midvaal Local	Lesedi Local Municipality
Black	0.52	0.53	0.45	0.47
White	0.87	0.87	0.88	0.87
Coloured	0.60	0.62	0.55	0.49
Asian	0.77	0.76		
Total	**0.60**	**0.60**	**0.64**	**0.56**

Table: 6 Human Development Index (Source: Global Insight, 2009)

According to the data, there exists a significant imbalance in terms of overall income distribution in MLM compared to adjoining local and district municipalities. This high Gini coefficient indicates a pronounced income inequality within Midvaal, highlighting the disparity between the highest and lowest income earners in the area.

The number of people in poverty refers to those living in households with an income below the poverty threshold. The poverty threshold, or poverty line, represents the minimum level of income necessary to achieve an adequate standard of living. This threshold varies significantly between developed and developing countries and is defined by the minimum monthly income needed to sustain a household, which increases with household size.

Table 16: Population Poverty Level, 2009

	Sedibeng District	Emfulen i Local	Midvaal Local	Lesedi Local Municipality
Black	0.52	0.53	0.45	0.47
White	0.87	0.87	0.88	0.87
Coloured	0.60	0.62	0.55	0.49
Asian	0.77	0.76		
Total	**0.60**	**0.60**	**0.64**	**0.56**

(Source: Global Insight, 2009)

According to the data, MLM has a lower poverty rate of 17.2% compared to the district average of 38.4%. This indicates that a smaller proportion of Midvaal's population lives below the poverty line relative to the broader district. Additionally, the poverty threshold in Midvaal stands at 28, which is considerably lower than in Lesedi (50) and Emfuleni (475). This lower poverty rate and threshold reflect a relatively better standard of living and economic conditions in Midvaal compared to its neighbouring municipalities.

The establishment of the Soufflet Malt Production Facility could have a significant impact on the socio-economic profile of the Midvaal Local Municipality. Positively, the project is expected to create substantial job opportunities, which could help reduce the local unemployment rate and

enhance economic stability. The plant's demand for agricultural produce, particularly barley, could invigorate local farming activities, promoting economic diversification and supporting the predominantly rural economy. Additionally, the influx of businesses and services associated with the plant may stimulate local commerce and infrastructure development.

However, the significant consumption of water and energy by the plant could strain local resources, affecting the availability of these essential utilities for other community needs. Environmental concerns, such as waste generation and emissions, could impact the local ecosystem and public health if not managed properly. These factors could potentially offset some of the socio-economic benefits. Therefore, while the Soufflet Malt Production Facility offers promising economic opportunities for the Midvaal Local Municipality, it is essential to implement robust resource management and environmental protection measures to ensure sustainable development.

5.7 Sustainable Practices Context

The Soufflet Malt Production Facility aims to incorporate sustainable practices and energy-efficient technologies as part of its operations. This commitment to sustainability is in line with global trends towards reducing environmental impact and enhancing resource efficiency in industrial processes.

5.7.1 Energy Recovery and Efficiency

The malting process at the Soufflet facility involves several stages where significant energy is required, particularly during the kilning phase. To address this, the facility will implement advanced energy recovery systems. These systems include static glass tube heat exchangers and potentially open cycle heat pumps, which can recover up to 60% of the energy used in the kilning process. This recovered energy will be reused, thus reducing the overall energy consumption and improving the facility's environmental footprint.

5.7.2 Use of Renewable Energy

A Solar PV Plant (independent of the Heineken Solar PV Plant) will be considered in the future. Utilising solar energy not only reduces reliance on fossil fuels but also aligns with broader environmental goals of reducing greenhouse gas emission.

5.7.3 Water Conservation and Management

Water is a crucial resource in the malting process, particularly during the steeping and germination phases. The Soufflet Malt Production Facility will implement water-efficient technologies and practices to minimise water usage. This includes the use of steeping tanks designed to reduce water consumption and the incorporation of dry transfer systems for barley, which further conserves water. Additionally, all wastewater will be treated in compliance with environmental regulations, significantly reducing effluent and ensuring sustainable water management.

5.7.4 Applicability for the Development

The Soufflet Malt Production Facility's commitment to sustainability through energy recovery, renewable energy use, and water conservation sets a benchmark for industrial projects. These initiatives demonstrate the facility's dedication to minimizing its environmental impact while contributing to the local economy and promoting sustainable development.

In conclusion, the integration of renewable energy and sustainable practices at the Soufflet Malt Production Facility not only supports environmental goals but also enhances operational efficiency and socio-economic benefits. This holistic approach to sustainability positions the facility as a forward-thinking and responsible industrial development, aligning with global trends and local needs.

6 Impact and Risk Assessment

This section aims to rate the significance of the identified potential impacts pre-mitigation and post-mitigation. The potential impacts identified in this section are a result of both the environment in which the Project activity takes place, as well as the activity itself. The identification of potential impacts is performed by determining the potential source, possible pathways and receptors. In essence, the potential for any change to a resource or receptor (i.e., environmental aspect) brought about by the presence of a Project component or by a Project-related activity has been identified as a potential impact.

The potential impacts are discussed per environmental feature/aspect and according to each phase of the Project i.e., the Construction, Operational and Decommissioning/ Post Closure Phases. The significance, probability and duration of these potential impacts have been assessed based on the detailed specialist studies undertaken on the sensitivity of the receiving environment.

6.1 Impacts and Risk Methodology

The EIA Methodology assists in evaluating the overall effect of a proposed activity on the environment. Determining of the significance of an environmental impact on an environmental parameter is determined through a systematic analysis.

6.2 Assessment Criteria

The potential environmental impacts associated with the project will be evaluated according to its

nature, extent, duration, intensity, probability and significance of the impacts, whereby:

- Nature: A brief written statement of the environmental aspect being impacted upon by a particular action or activity;
- Extent: The area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales. This is often useful during the detailed assessment phase of a project in terms of further defining the determined significance or intensity of an impact. For example, high at a local scale, but low at a regional scale;
- Duration: Indicates what the lifetime of the impact will be;
- Intensity: Describes whether an impact is destructive or benign;
- Probability: Describes the likelihood of an impact actually occurring; and
- Cumulative: In relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

This approach incorporates two aspects for assessing the potential significance of impacts, namely occurrence and severity, which are further sub-divided as follows:

Occurrence		Severity	
Probability of occurrence	Duration of occurrence	Scale/extent of impact	Magnitude of impact

To assess each of these factors for each impact, the following four ranking scales are used:

Table 17: Criteria for the Ranking of Impacts

Probability	Duration
5 - Definite/ don't know	5 - Permanent
4 - Highly probable	4 - Long-term
3 - Medium probability	3 - Medium-term (8 - 15 years)
2 - Low probability	2 - Short-term (0 - 7 years) (impact ceases after the operational life of the activity)
1 - Improbable	1 - Immediate
0 - None	0 - None
Scale	Magnitude
5 - International	10 – Very high/ don't know
4 - National	8 - High
3 - Regional	6 - Moderate
2 - Local	4 - Low
1 – Site only	2 - Minor
0 - None	0 - None

Once these factors have been ranked for each impact, the significance of the two aspects, occurrence

and severity, must be assessed using the following formula:

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

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

Table 18: Impact Significance

SP > 75	Indicates High Environmental Significance	An impact which could influence the decision about whether or not to proceed with the project regardless of any possible mitigation.
SP 30 - 75	Indicates Moderate Environmental Significance	An impact or benefit which is sufficiently important to require management and which could have an influence on the decision unless it is mitigated.
SP < 30	Indicates Low Environmental Significance	Impacts with little real effect and which should not have an influence on or require modification of the project design.
+	Positive Impact	An impact that constitutes an improvement over pre-project conditions

Impacts are rated before and after mitigation.

The summarising of assessment impacts in a prescribed table format including the rating values as per the above criteria. Measures for inclusion in the Environmental Management Programme.

6.3 Identification of Key Socio-Economic Issues

This section of the SEIA report delineates the primary socio-economic issues associated with the Soufflet Malt Production Facility. The identification of these issues is informed by a thorough understanding of the local context, stakeholder engagement, and a review of pertinent policy and planning documents. These issues are bifurcated into policy and planning-related matters, as well as local and site-specific concerns. The latter are further segmented into issues pertinent to the construction and operational phases of the Soufflet Malt Production Facility.

The SEIA adheres to local best practice guidelines, ensuring the assessment is deeply rooted in the unique socio-economic and cultural milieu of the Soufflet Malt Production Facility area.

The following has been identified as the main impacts (positive or negative) for the project and will be evaluated in section 6.3.

- Direct and indirect employment opportunities.
- Economic multiplier effects.
- Influx of jobseekers and change in population.
- Safety and security impacts.
- Nuisance impacts, including noise and dust.

6.3.1 Construction Phase

The majority of socio-economic impacts associated with the project are anticipated to occur during the construction phase of the development and are typical of the type of socio-economic impacts generally associated with construction activities. These impacts will be temporary and short-term (~8 months) but could have long-term effects on the surrounding socio-economic environment if not planned or managed appropriately. It is therefore necessary that the detailed design phase be conducted in such a manner so as not to result in permanent socio-economic impacts associated with the ill-placement of project components or associated infrastructure or result in the mismanagement of the construction phase activities.

The positive and negative socio-economic impacts identified and assessed for the construction phase include:

- Direct and indirect employment opportunities.
- Economic multiplier effects.
- Influx of jobseekers and change in population.
- Safety and security impacts.
- Nuisance impacts, including noise and dust.

Table 19: Potential Impacts during Construction Phase for the Soufflet Malt Production Facility

Impact: Direct and Indirect Employment Opportunities and Skills Development		
Nature: The construction phase is likely to result in the creation of ~265 direct employment opportunities. Skills developed through experience in the construction of the facility will be retained by the community members involved. Additionally, the project will create permanent employment opportunities, which will be realised in the operational phase. The construction period is estimated to be ~8 months, and employment will therefore only be semi-permanent (for the duration of construction). Employment figures are estimated as follows: • Unskilled workers: ~95 people • Semi-skilled workers: ~100 people • Skilled workers: ~70 people		
	Without Mitigation	With Mitigation
Scale	Regional (3)	Local (2)
Duration	Short-Term (2)	Short-Term (2)
Magnitude	Low (4)	Moderate (6)
Probability	Medium Probability (3)	Highly Probable (4)
Significance	Low (27)	Moderate (40)
Status	Positive	Positive

Reversibility	Yes – Loss of Employment	Yes – Loss of Employment
Irreplaceable loss of resources?	Impact will improve the Job Market	Impact will improve the Job Market
Can impacts be mitigated?	Enhanced	Enhanced

Enhancement measures:

To enhance the local employment, skills development and business opportunities associated with the construction phase, the following measures should be implemented:

- Prioritise hiring from the local community to boost local employment.
- Partner with local employment training centres to provide skills development programmes.
- The developers be committed to involving and benefiting the communities surrounding the development, contributing to their development and growth.
- Training and skills development programmes should be offered to employees of the development prior to the commencement of the construction phase.
- The communities which are most in need of employment on a local level should be considered for employment before outsourcing.
- Engage proactively with local stakeholders and implement transparent hiring practices to ensure equitable distribution of employment opportunities.
- Regularly communicate with the community about job opportunities and project progress.

Cumulative impact:

The combined effect of the project's employment opportunities, skills development, and enhancement measures will result in a strengthened local job market, improved skills base, and overall socio-economic upliftment of the community. The initiatives to eliminate unfair discrimination, targeted training, and development programs, and the emphasis on portable skills training will further enhance the long-term benefits to the community, ensuring sustainability and growth.

Residual opportunities:

- Initiatives to eliminate unfair discrimination in employment.
- Recruit and select suitably qualified individuals from the designated groups.
- Employees from designated groups who have been identified in the talent pool should be advanced and accelerated through targeted training and development programs.
- Assist employees in obtaining an initial vocational education and pre-qualification, as well as additional education and training that refreshes knowledge, skills, work and life competencies that are critical for overall development.
- Provide portable skills training to employees who express an interest in obtaining such training, with a special emphasis on employees who have been incapacitated or retrenched, in order for them to remain economically active, employable, or self-sustaining in their communities.
- Growth of talent is facilitated, thereby providing opportunities for all employees to contribute to their full potential.

Impact: Economic Multiplier Effects

Nature: Economic multiplier effects from the use of local goods and services opportunities include but are not limited to, the provision of construction materials and equipment, and workforce essentials such as services, safety equipment, ablution, accommodation, transportation, and other goods. The increase in demand for goods and services may stimulate local business and local economic development (however locally sourced materials and services may be limited due to availability). There is likely to be a direct increase in industry and indirect increase in secondary businesses.

	Without Mitigation	With Mitigation
Scale	Regional (3)	Local (2)
Duration	Short-Term (2)	Short-Term (2)
Magnitude	Low (4)	Moderate (6)
Probability	Medium Probability (3)	Highly Probable (4)
Significance	Low (27)	Moderate (40)
Status	Positive	Positive
Reversibility	Yes – Loss of economic benefits	Yes – Loss of economic benefits
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Enhanced - Yes	Enhanced - Yes

Enhancement measures:

- Preference is given to suppliers that are local to the operation where the service will be consumed.
- Establishing liaison and communication structures with the district and local government structures.
- Liaise with the local governmental structures and municipal authorities in the labour- sending communities to ensure that group development initiatives are integrated into the economic and development plans of those areas.
- It is recommended that a local procurement policy be adopted by the developer to maximise the benefit to the local economy, where feasible.
- Create job opportunities, boost local economies by supporting business activities, and contribute to government tax revenues through the development of the Soufflet Malt Production Facility.
- Prior to the start of the construction contractor procurement, a database of local companies, specifically Historically Disadvantaged (HD) companies, that qualify as potential service providers (e.g., construction companies, catering companies, waste collection companies, security companies, etc) should be identified and informed about the tender process and invited to bid on project-related work, if applicable.
- Engage with local authorities and business organisations to investigate the feasibility of obtaining construction materials, goods, and products from local suppliers, where possible.

Cumulative impact:

The project's economic multiplier effects, combined with the enhancement measures, will lead to a sustained boost in the local economy. The increased demand for local goods and services will not only

benefit primary suppliers but will also have a ripple effect, benefiting secondary businesses and service providers. Over time, this will lead to a more robust and diversified local economy, with increased resilience and capacity for growth.

Residual opportunities:

- Improved local service sector, growth in local business.
- Community development and stimulation of the local economy.
- Growth in the local markets.

Impact: Influx of Jobseekers and Change in Population:

Nature: An influx of people seeking employment or other economic opportunities can place increased pressure on the economic and socio-economic infrastructure, leading to changes in the local population's size, structure, density, and demographic profile. Such an influx can temporarily raise crime levels, cause socio-economic disruption, and strain basic services. Additionally, it might create conflict between locals and newcomers due to potential cultural and ethnic differences. Another potential negative impact is a rise in unemployment levels, particularly among semi- and unskilled workers, due to an oversupply of available labour.

	Without Mitigation	With Mitigation
Scale	Regional (3)	Local (2)
Duration	Short-Term (2)	Short-Term (2)
Magnitude	Low (4)	Low (4)
Probability	Highly Probable (4)	Medium Probability (3)
Significance	Moderate (36)	Low (24)
Status	Negative	Negative
Reversibility	Medium	High
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	Yes

Mitigation measures:

- The communities which are most in need of employment on a local level should be considered for employment before outsourcing.
- Making the surrounding landowners aware of the dangers associated with the influx of workers during the construction period.
- Encourage employees to stop working when a workplace is considered unsafe and/or to prevent unsafe actions.
- Prioritising local hiring to reduce the influx of external job seekers and support community development.
- Implementing training programs for local residents to enhance employability in the project, thereby reducing reliance on external semi-skilled and unskilled labour.

- Access in and out of the construction area should be strictly controlled.
- A Community Liaison Officer should be appointed.

Cumulative impact:

The combined effects of the influx of jobseekers and the change in population, even with mitigation measures in place, could lead to a strain on local resources, potential socio-economic disruptions, and a temporary increase in crime rates. The cumulative impact also encompasses the potential for heightened social tensions due to perceived inequalities in job distribution and benefits from the project. However, with the proposed mitigation measures, the severity of these impacts can be reduced, leading to a more controlled and manageable influx, and ensuring that the local community benefits from the project in a sustainable manner.

Residual risks:

- Potential for conflict: If there are perceptions of unfair hiring practices or unequal distribution of project benefits, this could lead to social tensions or conflicts, which could have implications for local safety and security. This is a potential residual impact as it is dependent on perceptions and social dynamics, which can be difficult to fully mitigate.

Impact: Safety and Security Impacts.

Nature: The commencement of construction activities can be associated with an increase in crime within an area. The perceived loss of security during the construction phase of a project due to an influx of workers and/or outsiders to the area (as in-migration of newcomers, construction workers or jobseekers are usually associated with an increase in crime), may have indirect effects such as increased safety and security concerns for neighbouring properties, damage to property, increased risk of veld fire, stock theft, poaching, crime and so forth.

The labour force will not permanently reside within the construction site. And may have a low impact on the surrounding socio-economic community.

	Without Mitigation	With Mitigation
Scale	Local (2)	Local (2)
Duration	Short-Term (2)	Short-Term (2)
Magnitude	Moderate (6)	Low (4)
Probability	Medium Probability (3)	Low Probability (2)
Significance	Moderate (30)	Low (16)
Status	Negative	Negative
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	Yes

Mitigation measures:

- Safety awareness and training as well as positive behaviour reinforcement.
- Improving system monitoring and analysis to improve risk management.
- Making the surrounding landowners aware of the dangers associated with the influx of workers during the construction period.
- Identifying abandoned buildings and utilising them or ensuring they cannot be used for malicious activities.
- Ensuring that access cannot be gained to surrounding properties.
- Encourage employees to stop working when a workplace is considered unsafe and/or to prevent unsafe actions.
- Access in and out of the construction area should be strictly controlled.
- The contractor must provide adequate firefighting equipment on site and provide firefighting training to selected construction staff.
- Have clear rules and regulations for access to the proposed site to control loitering.
- A comprehensive employee induction programme would cover land access protocols, fire management and road safety must be prepared.
- A Community Liaison Officer should be appointed.
- A method of communication should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process.

Cumulative impact:

The combined effects of the construction activities, especially the movement of heavy vehicles and influx of workers, can lead to heightened safety and security concerns in the area. This includes potential increases in crime rates, disturbances to local communities, and strain on local infrastructure. Even with mitigation measures in place, the cumulative impact of these activities can lead to a perceived decrease in the safety and security of the area, affecting the well-being and peace of mind of local residents.

Residual risks:

- Potential for increased crime: Despite mitigation measures, there's always a risk of a temporary spike in crime rates due to the influx of outsiders and increased activity in the area.
- Disturbance to local communities: The presence of construction activities and workers can lead to disturbances in daily life, affecting the well-being of local residents.
- Strain on local infrastructure: The increased activity can put a strain on local roads, utilities, and other infrastructure, leading to wear and tear or potential breakdowns.

Impact: Nuisance Impacts, including Noise and Dust:

Nature: Nuisance impacts associated with construction related activities include noise, dust, and possible disruption to adjacent properties. Site clearing activities increase the risk of dust and noise being generated, which can in turn negatively impact on adjacent properties. The movement of heavy construction vehicles, construction activities, and equipment also have the potential to create noise, as well as impacts on travellers. The primary sources of noise during construction would be from construction equipment, bulldozers, generators, metal grinders, concrete mixers, and truck traffic. Noise levels can be audible over a large distance although are generally short in duration. Dust would be

generated from construction activities as well as trucks / vehicles driving on gravel access roads. This impact will negatively impact sensitive receptors. The impact of noise and dust on sensitive receptors can be reduced through the application of appropriate mitigation measures.

	Without Mitigation	With Mitigation
Scale	Site (1)	Site (1)
Duration	Short-Term (2)	Short-Term (2)
Magnitude	Moderate (6)	Low (4)
Probability	Definite (5)	Highly Probable (4)
Significance	Moderate (40)	Low (28)
Status	Negative	Negative
Reversibility	Medium	High
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	Yes

Mitigation measures:

- Plant equipment such as generators, compressors, concrete mixers, and vehicles should be kept in good working order and, where possible, equipped with effective exhaust mufflers.
- Implement a construction communication plan to keep the local community informed about construction schedules, disruptions, and progress.
- Establish noise and dust control measures to minimise environmental disturbances.
- Provide clear signage and alternative routes to manage traffic effectively and ensure safe pedestrian access.
- Schedule construction activities during less disruptive times when possible.
- Engage with local businesses and residents to understand and address specific concerns related to the construction.
- Rapid response team to address any emergent issues related to construction activities, ensuring quick resolution.
- Offer community support services if necessary, such as a hotline for construction-related inquiries or complaints.
- Dust suppression measures should be implemented on a regular basis and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers.

Cumulative impact:

The combined effects of noise and dust from construction activities can lead to a significant disturbance for local residents and other sensitive receptors. Over time, these nuisances can accumulate, leading to a decrease in the quality of life for those living or working nearby. The cumulative impact of these nuisances can also affect local ecosystems, particularly if dust settles on nearby water sources or vegetation.

Residual risks:

- Potential for prolonged traffic disruptions: Despite mitigation measures, there's always a risk of unexpected delays or disruptions due to unforeseen construction activities or incidents.
- Deterioration of local roads: The increased traffic and heavy vehicles can lead to faster wear and tear on local roads, which might require more frequent maintenance.
- Increased safety hazards: Even with mitigation measures in place, the influx of construction traffic can introduce new safety hazards for local residents, especially during peak traffic hours.

6.3.2 Operational Phase

This section delves into the potential socio-economic impacts that may arise during the operational phase of the facility. The operational phase, which is the active lifespan of the facility, is expected to last for several decades. During this time, the Soufflet Malt Production Facility will potentially impact the surrounding socio-economic environment in various ways.

The operational phase of the project is characterised by a more stable and predictable set of activities compared to the construction phase. However, it is still crucial to consider the potential socio-economic impacts that may arise during this phase. These impacts are largely influenced by the facility's ongoing activities, including the maintenance and management of the facility, and the interaction with the local community and environment.

The potential socio-economic impacts during the operational phase are generally less immediate and less visible than those during the construction phase, but they can be equally significant. They can also be more long-lasting, given the extended duration of the operational phase. Therefore, it is essential to manage these impacts effectively to ensure the long-term socio-economic acceptability and sustainability of the project.

The potential positive and negative socio-economic impacts identified and assessed for the operational phase include:

- Direct and indirect employment opportunities.
- Economic multiplier effects.
- Waste management and emissions.
- Occupational health and safety.

The detailed assessment of these impacts, including their extent, severity, and potential benefits, will be further elaborated upon in the subsequent sections of this report. This will include the identification of appropriate mitigation measures to minimise negative impacts and enhance positive ones, ensuring that the facility operates in a manner that is socio-economically responsible and beneficial to the local community.

Table 20: Potential Impacts during Operational Phase for the Soufflet Malt Production Facility

Impact: Direct and Indirect Employment Opportunities:		
Nature: During the operation, it is anticipated that the malt project will create direct job opportunities during its first and second phases i.e. ~80 and ~100 respectively, and ~4517 indirect job opportunities. Employment opportunities include safety and security staff, operation and monitoring staff, maintenance crew as well as informal service providers. Employment figures are estimated as follows: Direct Employment Opportunities: • Managerial and Skilled workers: ~40 people • Semi-professionals and Unskilled workers: ~20 people • Daily labourers: ~20 people Indirect Employment Opportunities: • Farm workers: ~695 people • Transport workers: ~3788 people • Silo workers: ~20 people • Factory workers: ~14 people		
	Without Mitigation	With Mitigation
Scale	Regional (3)	Regional (3)
Duration	Long-Term (4)	Long-Term (4)
Magnitude	Moderate (6)	High (8)
Probability	Medium Probability (3)	Highly Probable (4)
Significance	Moderate (39)	Moderate (60)
Status	Positive	Positive
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Enhanced - Yes	Enhanced - Yes
Enhancement measures: • Local Hiring: Prioritise hiring from the local community for all available positions. This will ensure that the benefits of employment are directly felt within the local community. • Skills Transfer: In cases where highly skilled expertise is required, provide provisions for skills transfer. This will facilitate knowledge sharing within the local workforce and enhance the overall skill level of the community. • Support for Local Businesses: Encourage the involvement of local businesses in providing materials, goods, and services during the operational phase of the project. This can stimulate entrepreneurial growth and create indirect job opportunities.		

- Community Engagement: Maintain open lines of communication with the local community through the development's existing community liaison officer. This will ensure that job opportunities are communicated effectively and that local residents are given fair consideration in the hiring process.
- Fair Labour Practices: Align the project with the development's social labour plan to ensure fair labour practices and safe working conditions for all workers.

Cumulative impact:

The sustained employment opportunities during the operational phase will lead to long-term economic stability and growth in the region. The direct and indirect job opportunities will not only benefit the immediate families of the employed but will also have a ripple effect on the local economy. As more individuals gain employment, there will be an increase in disposable income, leading to higher consumer spending, which can stimulate other sectors of the local economy.

Residual opportunities:

- Economic Upliftment: The consistent employment opportunities during the operational phase will lead to an upliftment in the overall economic status of the region.
- Skills Development: The emphasis on skills transfer and training will ensure that the local workforce is better equipped for future job opportunities, even beyond the lifespan of the project. This can lead to a more skilled and competitive workforce in the region.
- Entrepreneurial Growth: With the support for local businesses and the increase in consumer spending, there's potential for entrepreneurial growth. Local entrepreneurs can capitalize on the increased demand for goods and services, leading to the establishment of new businesses and further job creation.

Impact: Economic Multiplier Effects

Nature: Economic multiplier effects from the sustained operation and maintenance of the facility present numerous opportunities. These include, but are not limited to, the provision of maintenance materials and equipment, ongoing workforce essentials such as services, safety equipment, ablution, accommodation, transportation, and other operational goods. The consistent demand for goods and services can bolster local businesses and foster local economic development. However, the sourcing of local materials and services might face constraints due to availability. There will likely be a direct boost in the renewable energy sector and an indirect upliftment in ancillary businesses.

	Without Mitigation	With Mitigation
Scale	Regional (3)	Regional (3)
Duration	Long-Term (4)	Long-Term (4)
Magnitude	Low (4)	Moderate (6)
Probability	Medium Probability (3)	Highly Probable (4)
Significance	Moderate (33)	Moderate (52)
Status	Positive	Positive

Reversibility	Yes – Loss of economic benefits	Yes – Loss of economic benefits
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Enhanced - Yes	Enhanced - Yes

Enhancement measures:

- Preference is given to suppliers that are local to the operation where the service will be consumed.
- Liaise with the local governmental structures and municipal authorities in the labour- sending communities to ensure that group development initiatives are integrated into the economic and development plans of those areas.
- The continuous review of the economic development of the project during the implementation process will ensure that the project does not become static but is revised in terms of changing needs and to ensure sustainability.
- It is recommended that a local procurement policy be adopted by the developer to maximise the benefit to the local economy, where feasible.
- Create job opportunities, boost local economies by supporting business activities, and contribute to government tax revenues through the development of the proposes project.
- Prior to the start of the construction contractor procurement, a database of local companies, specifically Historically Disadvantaged (HD) companies, that qualify as potential service providers (e.g. waste collection companies, security companies, etc) should be identified and informed about the tender process and invited to bid on project-related work, if applicable.
- Engage with local authorities and business organisations to investigate the feasibility of obtaining goods and products from local suppliers, where possible.

Cumulative impact:

The project's economic multiplier effects, combined with the enhancement measures, will lead to a sustained boost in the local economy. The increased demand for local goods and services will not only benefit primary suppliers but will also have a ripple effect, benefiting secondary businesses and service providers. Over time, this will lead to a more robust and diversified local economy, with increased resilience and capacity for growth.

Residual opportunities:

- Improved local service sector, growth in local business.
- Community development and stimulation of the local economy.
- Growth in the local markets.

Impact: Waste Management and Emissions.

Nature: The operational phase will generate waste and emissions that need to be managed to minimise environmental impacts. Proper waste management practices and emission controls are essential to ensure the facility operates sustainably and in compliance with environmental regulations. This includes managing solid waste, wastewater, and emissions from the production process.

	Without Mitigation	With Mitigation
Scale	Local (2)	Local (2)
Duration	Long-Term (4)	Long-Term (4)
Magnitude	Moderate (6)	Low (4)
Probability	Highly Probable (4)	Medium Probability (3)
Significance	Moderate (48)	Moderate (30)
Status	Negative	Negative
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Enhanced - Yes	Enhanced - Yes

Mitigation measures:

- Implement a comprehensive waste management plan, including recycling, reuse, and proper disposal of waste materials.
- Install and maintain emission control technologies to minimize air pollutants.
- Monitor and manage wastewater to ensure it meets regulatory standards before discharge.
- Conduct regular environmental audits and inspections to ensure compliance with environmental regulations.
- Engage with local environmental authorities and stakeholders to address any concerns and continuously improve waste management practices.

Cumulative impact:

Effective waste management and emission controls will minimize the environmental footprint of the facility. Over time, this will contribute to a cleaner and healthier environment, reduce the risk of pollution, and ensure the facility operates sustainably.

Residual opportunities:

- Potential for occasional non-compliance incidents due to operational challenges.
- Ongoing need for monitoring and maintenance to ensure continuous compliance. Positioning for Future Growth: As global trends move towards sustainability and renewable energy; the region will be well-positioned to attract future investments and partnerships in the green energy sector.

Impact: Occupational Health and Safety.

Nature: The operational phase involves various activities that could pose health and safety risks to employees and contractors. Ensuring a safe working environment is crucial to prevent accidents, injuries, and occupational illnesses. This includes implementing safety protocols, training programs, and health monitoring systems.

	Without Mitigation	With Mitigation

Scale	Local (2)	Local (2)
Duration	Long-Term (4)	Long-Term (4)
Magnitude	Moderate (6)	Low (4)
Probability	Highly Probable (4)	Medium Probability (3)
Significance	Moderate (48)	Moderate (30)
Status	Negative	Negative
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Enhanced - Yes	Enhanced - Yes
Mitigation measures: • Develop and implement a comprehensive occupational health and safety (OHS) management system. • Conduct regular safety training and drills for all employees and contractors. • Provide personal protective equipment (PPE) and ensure its proper use. • Establish health monitoring programs to detect and manage occupational illnesses. • Implement safety protocols and emergency response plans. • Foster a safety culture through continuous education and awareness programs.		
Cumulative impact: A strong focus on occupational health and safety will lead to a safer working environment, reducing the risk of accidents and improving employee well-being. Over time, this will contribute to a more productive and motivated workforce, enhancing the overall performance of the facility.		
Residual opportunities: • Potential for occasional accidents or incidents despite robust safety measures. • Need for continuous improvement and adaptation of safety practices to address emerging risks.		

6.3.3 Decommissioning Phase

The project life of the proposed Soufflet Malt Production Facility is ~50 years, after which it is anticipated to be decommissioned. The decommissioning phase of the Soufflet Malt Production Facility will bring about significant social and economic impacts. The facility, which has provided direct and indirect employment opportunities and contributed to local economic development, will see the cessation of these benefits once decommissioning begins. However, with appropriate mitigation strategies, the adverse impacts can be minimised.

One of the primary impacts of the decommissioning phase will be the loss of employment for those directly and indirectly employed by the facility. The local workforce, which has relied on the facility for jobs ranging from skilled managerial positions to unskilled labour, will need to seek alternative employment opportunities. This could lead to a temporary increase in unemployment

rates and a corresponding decrease in household incomes. To mitigate this, it is essential to develop a comprehensive workforce transition plan. This plan should include retraining programs, support for job placement, and collaboration with local businesses to absorb some of the displaced workers.

In addition to the direct employment impact, the decommissioning will also affect local businesses and suppliers who have been part of the facility's supply chain. The reduction in demand for goods and services related to the facility's operations will likely result in decreased revenues for these businesses. It is crucial to engage with these stakeholders early in the decommissioning planning process to discuss potential support measures and opportunities for diversification to sustain their operations.

Another critical aspect of the decommissioning phase is the cessation of community projects and benefits funded by the facility. These initiatives, which may have included infrastructure development, educational programs, and healthcare services, have been instrumental in uplifting the local community. To address this, the proponent should engage with community leaders and stakeholders well in advance of the decommissioning to discuss the future of these projects. Strategies should be developed to either transition these projects to alternative funding sources or to conclude them in a manner that ensures their benefits are preserved as much as possible.

Effective communication with stakeholders and the wider community is vital during the decommissioning phase. The proponent should develop a detailed communication plan that outlines the timeline for decommissioning, the expected impacts, and the mitigation measures that will be implemented. This plan should ensure that all relevant parties are informed and given ample time to prepare for the changes. Regular updates and open forums for discussion can help to address concerns and foster a sense of collaboration and transparency.

Finally, the decommissioning process must include a robust plan for the rehabilitation of the land. This plan should outline the steps to be taken to restore the site to a condition that is safe and suitable for future use. Consideration should be given to potential environmental impacts, and measures should be implemented to mitigate any adverse effects. The rehabilitation plan should also explore opportunities for repurposing the site in a way that benefits the local community, such as converting it into a public space or developing new industrial or commercial facilities.

In conclusion, while the decommissioning of the Soufflet Malt Production Facility will undoubtedly bring about significant socio-economic impacts, proactive planning and engagement with stakeholders can mitigate these effects. By addressing employment concerns, supporting local businesses, maintaining community benefits, and ensuring effective communication and land rehabilitation, the negative impacts can be minimised, paving the way for a smooth transition and sustained community well-being.

6.3.4 Cumulative Assessment

The establishment of the facility will have transformative effects on the community and local municipality, resulting in various impacts to different degrees:

- People:
  - Skills development and training opportunities.
  - Employment opportunities.
  - Renewed sense of hope.
  - Improved socio-economic outcomes due to investments in socio-economic and economic development (SED):
    - Health improvements.
    - Education enhancements; and
    - Increased economic participation.
  - Socio-economic cohesion among community beneficiaries; and
  - Increased sense of prestige for the community and town.
- Planet:
  - Effective waste management and pollution prevention to minimize environmental degradation.
  - Sustainable water usage and conservation practices to protect local water resources.
  - Implementation of green practices to reduce the overall environmental footprint..
- Profit:
  - Increased revenue for the local municipality.
  - Increased economic activity in the local community and broader municipality; and
  - Investment in socio-economic and commercial infrastructure to stimulate economic growth.

The cumulative impacts of this facility, especially the installation of several facilities in the local municipality, offer socio-economic prospects for the area, resulting in positive socio-economic benefits. The cumulative effects include job creation, skill development, and downstream business opportunities. If a critical mass is achieved, local enterprises can develop capabilities to support construction and maintenance activities and manufacture malting facility components in South Africa. The cumulative impact at the municipal level can be positive, encouraging operations and maintenance (O&M) companies to focus on education and training initiatives.

Table 21: Potential Cumulative Impacts for the Soufflet Malt Production Facility

Impact: An Increase in Employment Opportunities and Skills Development		
Nature: The establishment of the Soufflet Malt Production Facility is expected to increase employment opportunities, enhance skills development, and create business opportunities in the region. This will include roles in operation, maintenance, and ancillary services.		
	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Extent	Local (2)	Regional (3)
Duration	Long-Term (4)	Long-Term (4)
Magnitude	Moderate (6)	High (8)
Probability	Highly Probable (4)	Highly Probable (4)
Significance	Moderate (48)	Medium (60)
Status	Positive	Positive
Reversibility	N/A	N/A
Irreplaceable loss of resources?	N/A	N/A
Can impacts be mitigated?	Yes	Yes
Confidence in findings: High		
Enhancement Measures: The establishment of a number of malting facilities in the area does have the potential to have a positive cumulative impact on the area in the form of employment opportunities, skills development and business opportunities. The positive benefits will be enhanced if local employment policies are adopted, and local services providers are utilised by the developers to maximise the project opportunities available to the local community.		

Impact: Influx of Jobseekers and Change in Population		
Nature: Negative impacts and change to the local economy with an in-migration of labourers, businesses, and jobseekers to the area.		
	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Extent	Local (2)	Regional (3)
Duration	Long-Term (4)	Long-Term (4)
Magnitude	Low (4)	Low (4)
Probability	Probable (3)	Probable (3)
Significance	Moderate (30)	Medium (33)

Status	Negative	Negative
Reversibility	Yes	Yes
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	Yes
Confidence in findings: High		
Mitigation Measures: • Develop a recruitment policy/process (to be implemented by contractors), which will ensure the sourcing of labour locally, where available. • Work together with government agencies to ensure that service provision is in line with the development needs of the local area. • Form joint ventures with community organisations, through Trusts, which can provide local communities with benefits, such as employment opportunities and services. • Develop and implement a recruitment protocol in consultation with the municipality and local community leaders. Ensure that the procedures for applications for employment are clearly communicated.		

The cumulative impacts of the Soufflet Malt Production Facility, when considered alongside other industrial developments in the region, offer significant socio-economic benefits but also pose challenges that require careful management. By implementing robust mitigation and enhancement measures, the facility can maximise its positive contributions while minimising potential negative impacts.

7 Environmental Management Programme (EMPr)

The Applicant will be responsible for the implementation of all monitoring of mitigation and management measures, as well as compliance with the EMP. The Applicant will keep a record of all environmental monitoring taken on site.

7.1 Construction Phase

Table 22: EMPr – Construction Phase

OBJECTIVE: Maximise local employment and skills opportunities associated with the construction phase		
Project component/s	Construction of the proposed Soufflet Malt Production Facility and associated infrastructure	
Potential Impact	The opportunities and benefits associated with the creation of local employment and skills development to be maximised.	
Activity/risk source	Construction procurement practice employed by the Contractor. Developers' investment plan.	
Mitigation Target/Objective	The developer should aim to employ as many low-skilled and semi-skilled workers from the local area as possible. This should also be made a requirement for all contractors.	
Enhancement Action/control	Responsibility	Timeframe
The developers be committed to involving and benefiting the communities surrounding the development, contributing to their development and growth.	The Proponent & EPC Contractors	Pre-construction & construction phase
It is recommended to conduct structured and proactive engagement sessions within the municipal district, to expose local small, micro, and medium enterprises which will benefit from the proposed development.	The Proponent & EPC Contractors	Pre-construction & construction phase
Training and skills development programmes should be offered to employees of the development prior to the commencement of the construction phase.	The Proponent & EPC Contractors	Pre-construction & construction phase
The communities which are most in need of employment on a local level should be considered for employment before outsourcing.	The Proponent & EPC Contractors	Pre-construction & construction phase
Engage proactively with local stakeholders and implement transparent hiring practices to ensure equitable distribution of employment opportunities.	The Proponent & EPC Contractors	Pre-construction & construction phase

Performance Indicator	Employment and business policy document that sets out local employment and targets completed before construction phase commences. Employ as many semi- and unskilled labour from the local area or local municipality as possible. Training and skills development programme undertaken prior to the commencement of construction phase.
Monitoring	The developer and EPC contractor must keep a record of local recruitments and information on local labour to be shared with the ECO for reporting purposes.

OBJECTIVE: Maximise local economic multiplier effect during construction phase		
Project component/s	Construction of the proposed Soufflet Malt Production Facility and associated infrastructure	
Potential Impact	Potential local economic benefits.	
Activity/risk source	Developer's procurement plan.	
Mitigation Target/Objective	Increase the procurement of goods and services especially within the local economy.	
Enhancement Action/control	Responsibility	Timeframe
Preference is given to suppliers that are local to the operation where the service will be consumed.	The Proponent & EPC Contractors	Pre-construction & construction phase
Liaise with the local governmental structures and municipal authorities in the labour- sending communities to ensure that group development initiatives are integrated into the economic and development plans of those areas.	The Proponent & EPC Contractors	Pre-construction & construction phase
It is recommended that a local procurement policy be adopted by the developer to maximise the benefit to the local economy, where feasible.	The Proponent & EPC Contractors	Pre-construction & construction phase
Prior to the start of the construction contractor procurement, a database of local companies, specifically Historically Disadvantaged (HD) companies, that qualify as potential service providers (e.g., construction companies, catering companies, waste collection companies, security companies, etc) should be identified and informed about the tender process and invited to bid on project-related work, if applicable.	The Proponent & EPC Contractors	Pre-construction & construction phase

Engage with local authorities and business organisations to investigate the feasibility of obtaining construction materials, goods, and products from local suppliers, where possible	The Proponent & EPC Contractors	Pre-construction & construction phase
Performance Indicator	Local procurement policy is adopted. Local goods and services are purchased from local suppliers where feasible (Metropolitan Municipality)	
Monitoring	The developer must monitor indicators listed above to ensure that they have been met for the construction phase.	

OBJECTIVE: To avoid or reduce the possibility of the increase in crime and safety and security issues during the construction phase		
Project component/s	Construction of the proposed Soufflet Malt Production Facility and associated infrastructure	
Potential Impact	Increase in crime due to influx of non-local workforce and job seekers into the area.	
Activity/risk source	Safety and security risks associated with construction activities.	
Mitigation Target/Objective	To avoid or minimise the potential impact on local communities and their livelihoods.	
Enhancement Action/control	Responsibility	Timeframe
Safety awareness and training as well as positive behaviour reinforcement.	The Proponent & EPC Contractors	Construction phase
Improving system monitoring and analysis to improve risk management.	The Proponent & EPC Contractors	Construction phase
Making the surrounding landowners aware of the dangers associated with the influx of workers during the construction period.	The Proponent & EPC Contractors	Construction phase
Identifying abandoned buildings and utilising them or ensuring they cannot be used for malicious activities.	The Proponent & EPC Contractors	Construction phase
Ensuring that access cannot be gained to surrounding properties.	The Proponent & EPC Contractors	Construction phase
Encourage employees to stop working when a workplace is considered unsafe and/or to prevent unsafe actions.	The Proponent & EPC Contractors	Construction phase
Access in and out of the construction area should be strictly controlled.	The Proponent & EPC Contractors	Construction phase

The contractor must provide adequate firefighting equipment on site and provide firefighting training to selected construction staff.	The Proponent & EPC Contractors	Construction phase
Have clear rules and regulations for access to the proposed site to control loitering.	The Proponent & EPC Contractors	Construction phase
A comprehensive employee induction programme would cover land access protocols, fire management and road safety must be prepared.	The Proponent & EPC Contractors	Construction phase
A Community Liaison Officer should be appointed.	The Proponent & EPC Contractors	Construction phase
A method of communication should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process.	The Proponent & EPC Contractors	Construction phase
Performance Indicator	Employee induction programme, covering land access protocols, fire management and road safety. The construction site is appropriately secured with a controlled access system. Security company appointed and security procedures implemented.	
Monitoring	The developer and EPC contractor must monitor the indicators listed above to ensure that they have been met for the construction phase.	

OBJECTIVE: To avoid or minimise the potential impacts of noise and dust from construction activities during the construction phase		
Project component/s	Construction of the proposed Soufflet Malt Production Facility and associated infrastructure	
Potential Impact	Heavy vehicles and construction activities can generate noise and dust impacts.	
Activity/risk source	Construction activities resulting in noise and dust.	
Mitigation Target/Objective	To avoid and or minimise the potential noise and dust impacts associated with construction activities.	
Enhancement Action/control	Responsibility	Timeframe
Plant equipment such as generators, compressors, concrete mixers, and vehicles should be kept in good working order and, where possible, equipped with effective exhaust mufflers.	EPC Contractors	Construction phase

The movement of construction vehicles on the site should be confined to agreed access road/s.	EPC Contractors	Construction phase
Heavy vehicle movement during the construction phase should be timed (where possible) to avoid times of the week, such as weekends, when the volume of traffic on the access roads may be higher.	EPC Contractors	Construction phase
Dust suppression measures should be implemented on a regular basis and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers.	EPC Contractor	Construction phase
A Community Liaison Officer should be appointed. A method of communication should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process.	The Proponent & EPC contractor	Pre-construction & construction phase
Performance Indicator	Dust suppression measures implemented for all heavy vehicles that require such measures during the construction phase. Enforcement of strict speeding limits Road worthy certificates in place for all vehicles Community liaison officer available for community grievances and communication channel	
Monitoring	The developer and EPC contractor must monitor the indicators listed above to ensure that they have been met for the construction phase.	

7.2 Operational Phase

Table 23: EMPr – Operational Phase

OBJECTIVE: Maximise local employment and skills opportunities associated with the construction phase.		
Project component/s	Operation and maintenance of the proposed Soufflet Malt Production Facility and associated infrastructure	
Potential Impact	Loss of opportunities to stimulate production and employment of the local economy.	
Activity/risk source	Labour practices employed during operations.	
Mitigation Target/Objective	Maximise local community employment benefits in the local economy.	
Enhancement Action/control	Responsibility	Timeframe

Prioritise hiring from the local community for all available positions. This will ensure that the benefits of employment are directly felt within the local community.	The Proponent & EPC Contractors	Operation phase
In cases where highly skilled expertise is required, provide provisions for skills transfer. This will facilitate knowledge sharing within the local workforce and enhance the overall skill level of the community.	The Proponent & EPC Contractors	Operation phase
Encourage the involvement of local businesses in providing materials, goods, and services during the operational phase of the project. This can stimulate entrepreneurial growth and create indirect job opportunities.	The Proponent & EPC Contractors	Operation phase
Maintain open lines of communication with the local community through the development's existing community liaison officer. This will ensure that job opportunities are communicated effectively and that local residents are given fair consideration in the hiring process.	The Proponent & EPC Contractors	Operation phase
Performance Indicator	Percentage of workers that were employed from local communities. Number of people attending vocational training throughout the operation phase	
Monitoring	The developer must keep a record of local recruitments and information on local labour to be shared with the ECO for reporting purposes.	

OBJECTIVE: Maximise local economic multiplier effect during the operational phase.		
Project component/s	Operation and maintenance of the proposed Soufflet Malt Production Facility and associated infrastructure.	
Potential Impact	Loss of opportunities to stimulate production and employment of the local economy.	
Activity/risk source	Labour practices employed during operations.	
Mitigation Target/Objective	Maximise local community employment benefits in the local economy.	
Enhancement Action/control	Responsibility	Timeframe
Preference is given to suppliers that are local to the operation where the service will be consumed.	The Proponent & EPC Contractors	Operation phase

Liaise with the local governmental structures and municipal authorities in the labour- sending communities to ensure that group development initiatives are integrated into the economic and development plans of those areas.	The Proponent & EPC Contractors	Operation phase
It is recommended that a local procurement policy be adopted by the developer to maximise the benefit to the local economy, where feasible.	The Proponent & EPC Contractors	Operation phase
Create job opportunities, boost local economies by supporting business activities, and contribute to government tax revenues through the development of the proposes project.	The Proponent & EPC Contractors	Operation phase
Prior to the start of the construction contractor procurement, a database of local companies, specifically Historically Disadvantaged (HD) companies, that qualify as potential service providers (e.g. waste collection companies, security companies, etc) should be identified and informed about the tender process and invited to bid on project-related work, if applicable.	The Proponent & EPC Contractors	Operation phase
Engage with local authorities and business organisations to investigate the feasibility of obtaining goods and products from local suppliers, where possible.	The Proponent & EPC Contractors	Operation Phase
Performance Indicator	Percentage of workers that were employed from local communities (Metropolitan Municipality). Number of people attending vocational training throughout the operation phase	
Monitoring	The developer must keep a record of local recruitments and information on local labour to be shared with the ECO for reporting purposes.	

OBJECTIVE: To avoid or reduce the possibility of occupational health and safety hazards	
Project component/s	Operation and maintenance of the proposed Soufflet Malt Production Facility and associated infrastructure.
Potential Impact	Health and safety risks to employees and contractors
Activity/risk source	Labour practices employed during operations.
Mitigation Target/Objective	Ensuring a safe working environment is crucial to prevent accidents, injuries, and occupational illnesses.

Enhancement Action/control	Responsibility	Timeframe
Develop and implement a comprehensive occupational health and safety (OHS) management system.	The Proponent & EPC Contractors	Operation phase
Conduct regular safety training and drills for all employees and contractors.	The Proponent & EPC Contractors	Operation phase
Provide personal protective equipment (PPE) and ensure its proper use.	The Proponent & EPC Contractors	Operation phase
Establish health monitoring programs to detect and manage occupational illnesses.	The Proponent & EPC Contractors	Operation phase
Implement safety protocols and emergency response plans.	The Proponent & EPC Contractors	Operation phase
Foster a safety culture through continuous education and awareness programs.	The Proponent & EPC Contractors	Operation phase
Performance Indicator	Regular safety audits, incident reports, and health monitoring records showing compliance with OHS standards.	
Monitoring	Continuous monitoring through inspections, audits, and employee feedback mechanisms. Regular reporting to ensure adherence to the OHS management system and effectiveness of implemented measures.	

8 Environmental Impact Statement and Conclusion

8.1 Key Findings

The SEIA for the proposed Soufflet Malt Production Facility has identified several key findings:

- **Economic Growth:** The project is expected to significantly stimulate both local and regional economic growth. During construction, the influx of workers and increased demand for materials and services will inject capital into the local economy. Operationally, the facility will generate sustained economic activity through the production and distribution of malt, thereby supporting local businesses and contributing to the GDP of the Sedibeng District Municipality.
- **Employment Opportunities:** The facility will create numerous job opportunities. During the construction phase, approximately 265 jobs will be created, prioritising local labour to enhance community benefits. Once operational, the facility is expected to employ around 180 permanent staff, ranging from unskilled to highly skilled positions, thus providing long-term employment and promoting skills development within the local community.
- **Sustainability and Efficiency:** The facility will incorporate advanced technologies to ensure efficient use of resources. Key sustainable practices include the use of Combined Heat and Power (CHP) systems to optimise energy consumption, water recycling systems to minimise water usage, and potential future integration of solar PV systems to enhance renewable energy use. These measures align with South Africa's sustainability goals and contribute to reducing the facility's environmental footprint.
- **Community Engagement:** Active engagement with local communities and stakeholders has been integral to the SEIA process. Multiple stakeholder meetings and public consultations have been conducted to understand community concerns and expectations. This ongoing dialogue has ensured that local perspectives are considered in project planning, thereby fostering a sense of ownership and support for the project.
- **Minimal Environmental Impact:** The strategic location of the facility within the Graceview Industrial Park, an area already designated for industrial use, minimises environmental disruption. The project design includes comprehensive mitigation measures such as dust and noise control during construction, efficient waste management systems, and green buffer zones to reduce visual impact. These measures ensure that environmental impacts are kept to a minimum.

8.2 Recommendations

The following recommendations are made based on the SEIA and a thorough review of the concerns and suggestions raised by stakeholders and interested and affected parties during the stakeholder engagement process. The proposed mitigation measures should be implemented to limit the negative impacts and enhance the positive impacts. Based on the socio-economic assessment, the following recommendations are made:

- **Local Employment:** Prioritise the hiring of local labour, particularly for unskilled and semi-skilled positions, to maximise economic benefits for the community. Establish partnerships with local recruitment agencies and community organisations to facilitate this process.
- **Training Programs:** Collaborate with local educational institutions, such as technical colleges and universities, to develop training programs tailored to the facility's needs. These programs should focus on both immediate skills required for construction and long-term skills for operational roles, ensuring a continuous supply of skilled labour.
- **Local Suppliers:** Develop a comprehensive list of local suppliers and service providers and prioritise them in procurement processes. This approach will stimulate local businesses and create additional economic opportunities within the community.
- **Construction Mitigation:** Implement robust measures to address potential disruptions during construction. These measures should include dust suppression techniques, noise barriers, and traffic management plans to minimise inconvenience to the local community.
- **Safety and Security:** Develop and implement a comprehensive safety and security plan for both construction and operational phases. This plan should address potential risks, provide clear protocols for emergency situations, and ensure the well-being of both workers and the local community.
- **Community Engagement:** Maintain open communication with the local community through a dedicated liaison officer. This officer should provide regular updates on project progress, facilitate feedback sessions, and address grievances promptly to ensure community concerns are addressed.
- **Infrastructure Improvements:** Collaborate with local authorities to address infrastructure needs arising from the project. This includes enhancements to local roads, utilities, and other essential services to support the increased activity associated with the facility.
- **Socio-Economic Best Practices:** Ensure equitable distribution of benefits, promote gender equality, and support vulnerable groups within the community. Implement programs that specifically target disadvantaged populations to ensure inclusive development.

By implementing these recommendations, the facility can ensure that it contributes positively to the local community and economy, while minimising any potential negative impacts.

8.3 Conclusion

The proposed Soufflet Malt Production Facility is well-positioned to contribute to the sustainable development of the Sedibeng District Municipality. The facility's focus on employment creation, economic stimulation, sustainable practices, and community engagement ensures that it will provide long-term benefits to both the local community and the broader economy.

The SEIA has identified potential challenges and provided robust mitigation strategies to address them, ensuring that the project aligns with South Africa's broader developmental goals. With the implementation of the recommended measures, there are no socio-economic objections to the development proceeding, and no fatal flaws have been identified. The project stands as a promising model for industrial development that balances economic growth with social and environmental stewardship. By addressing the needs and concerns of the local community and adhering to best practices in socio-economic development, the proposed Soufflet Malt Production Facility is poised to make a lasting positive impact, contributing to the region's prosperity and sustainability for years to come.

The facility's successful implementation will serve as a catalyst for further development in the region, attracting additional investments and fostering a thriving economic environment. This, in turn, will enhance the quality of life for local residents, ensuring that the benefits of the project are shared broadly and equitably.

9 References

9.1 Source

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