



## **Economic assessment report for a proposed glass bottle manufacturing plant**

prepared for SLR Consulting (South Africa) (Pty) Ltd in support of the  
environmental impact assessment for the proposed development for

**South African Breweries (Pty) Ltd**

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**South African Breweries (Pty) Ltd -  
Economic assessment report for a proposed glass bottle  
manufacturing plant**

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# SOUTH AFRICAN BREWERIES (PTY) LTD - ECONOMIC ASSESSMENT REPORT FOR A PROPOSED GLASS BOTTLE MANUFACTURING PLANT

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## DECLARATION OF INDEPENDENCE

Mercury Financial Consultants (Pty) Ltd (Mercury) was established in 2013 and primarily undertakes economic impact assessments in support of environmental impact assessments. The company also provides business development and support services to SMMEs (Small, Medium and Micro-sized Enterprises). Mercury comprises of a small team of professionals, which focusses on delivering strategic and sustainable solutions to its clients. Mercury, in its dynamic approach to an ever-changing business environment has established strategic partnerships with key environmental and social consultants.

Werner Neethling is a senior consultant at Mercury and is a qualified management accountant with over 15 years experience. Werner Neethling, the primary author of this report, hereby declares that he is an independent economic assessment specialist. Werner Neethling's CV is attached as Annexure A.

Mercury compiled the Economic Assessment report for a proposed glass bottle manufacturing plant based on independent research and analysis. I hereby confirm that I have no business, financial, personal or other interest in the activity proceeding other than remuneration for work performed as defined under "independent" in Chapter 1 of the Environmental Impact Assessment Regulations, 2014.

**WERNER NEETHLING (ACMA)**  
**(Author)**

**19 July 2018**

## ACRONYMS AND ABBREVIATIONS

Below a list of acronyms, abbreviations and definitions used in this report.

ACRONYMS / ABBREVIATIONS	DEFINITION
EIA	Environmental impact assessment
ELM	Emfuleni Local Municipality
EMPr	Environmental Management Programme
GDP	Gross Domestic Product is defined by the Organisation for Economic Co-operation and Development (OECD) as an aggregate measure of production equal to the sum of the gross values added of all resident, institutional units engaged in production (plus any taxes, and minus any subsidies, on products not included in the value of their outputs).
IDP	Integrated Development Plan
IRR	Internal Rate Of Return is the discount rate often used in capital budgeting that makes the net present value of all cash flows from a particular project equal to zero. Generally speaking, the higher a project's internal rate of return, the more desirable it is to undertake the project.
LED	Local economic development
Mercury	Mercury Financial Consultants (Pty) Ltd
NEMA	National Environmental Management Act 108 of 1998
NPV	Net present value is difference between the present value of cash inflows and the present value of cash outflows. NPV is used in capital budgeting to analyse the profitability of an investment or project.
PV	Present value
SAB	South African Breweries (Pty) Limited (SAB)
SDM	Sedibeng District Municipality
SLR	SLR Consulting (South Africa) (Pty) Ltd

# SOUTH AFRICAN BREWERIES (PTY) LTD - ECONOMIC ASSESSMENT REPORT FOR A PROPOSED GLASS BOTTLE MANUFACTURING PLANT

## 1 INTRODUCTION

SLR Consulting (South Africa) (Pty) Ltd (SLR), has been appointed by South African Breweries (Pty) Limited (SAB) as the independent environmental consultant responsible for facilitating the environmental impact assessment (EIA) process in terms of the National Environmental Management Act (NEMA) (No. 107 of 1998) in support of a glass bottle manufacturing plant. SLR has appointed Mercury Financial Consultants (Pty) Ltd (Mercury) to undertake the Economic Impact Assessment for the proposed project.

### 1.1 Project overview

The proposed glass bottle manufacturing plant will be located on Portion 238 (a portion of Portion 149) of the Farm Leeuwkuil 596 IQ. The property is owned by SAB and borders Lager Avenue, the R59 and R28 roads. The site is located within the Emfuleni Local Municipality in Vereeniging, Gauteng Province.

SAB utilises large volumes of glass bottles for beer production and distribution. Together with their Black Owned partner(s), SAB is proposing to enter the glass bottle manufacturing industry in order to transform its glass bottle procurement spend, whilst providing a unique opportunity for new Black economic entrant(s). The intention is for the facility to be majority Black Owned which will furthermore contribute towards the conditions imposed on Anheuser-Busch InBev SA/NV in its merger with SABMiller. SAB is likely to only be a minority shareholder in the future business.

The proposed glass bottle manufacturing plant would produce green and amber coloured bottles. The facility would comprise a batch plant, main manufacturing building with gas fired furnaces and a warehouse. The annual glass bottles production target would be approximately 290 000 tonnes.

Glass is a non-crystalline amorphous solid made of the fusion of a diverse range of non-organic oxides found in sand, soda ash, limestone and other raw materials. Recycled glass, known as cullet,

will also be utilised as a raw material. The proposed glass bottle manufacturing plant will comprise a batch plant, main manufacturing building and warehouse.

## 1.2 Corporate structures update

The South African Breweries (Pty) Limited is a sponsor of the project and has been involved in the initial phases of the project development. SAB is fully owned by Anheuser-Busch InBev. Anheuser-Busch InBev is a publicly traded company headquartered in Leuven, Belgium, with a primary listing on the Euronext Brussels exchange and secondary listings on the Mexican and South African stock exchanges and with American Depositary Receipts on the New York Stock Exchange. In October 2016, Anheuser-Busch InBev announced it would be acquiring SABMiller. The equity in the future facility is anticipated to comprise 51% BEE Sponsor, 29% O&M, and 20% Corporate Investors.

## 2 STUDY OBJECTIVES AND METHODOLOGY

Various direct and indirect factors may influence the macro and micro economic environment because of the current land use as well as proposed manufacturing activities. The extent, to which these factors are influenced, will depend on the nature and scale of current and proposed land use activities. It is therefore important to understand and assess the economic footprint of the proposed development in comparison to the alternative land use. Factors considered during an economic assessment, include various economic, social and environmental indicators, broadly illustrated in Figure 1. These factors may have a potential impact, in various degrees of significance, on the local, regional, provincial or national environment during the various phases of the project life cycle.

It is however not possible to assign an economic value to all of these aspects, in particular external factors. External factors or externalities refer to the impact (positive or negative) of economic activity associated with the proposed development that are not incurred directly by those participating in the activity, but are instead borne by society.

Typical external factors (externalities) associated with the establishment of new developments will include social aspects such as additional pressures on infrastructure (housing, road network) and basic services (education, health care, transport, security, municipal services) due to an influx of people and additional demand to meet the basic services requirements to sustain the manufacturing process. In addition, there is the potential for an increase in social ills (crime, HIV/AIDS); health related impacts as a result of environmental pollution; and the general degradation of an area.



External environmental factors include pollution; cost of environmental management and rehabilitation; increase in water demand; and the change in post closure land use potential. Depending on the nature and scale of the proposed development, additional pressures may be placed on existing manufacturers to secure and sustain a cost effective share in the market.

The potential social and environmental impacts, which may result from the proposed development, will be investigated and assessed by various specialists as part of the environmental impact assessment process.

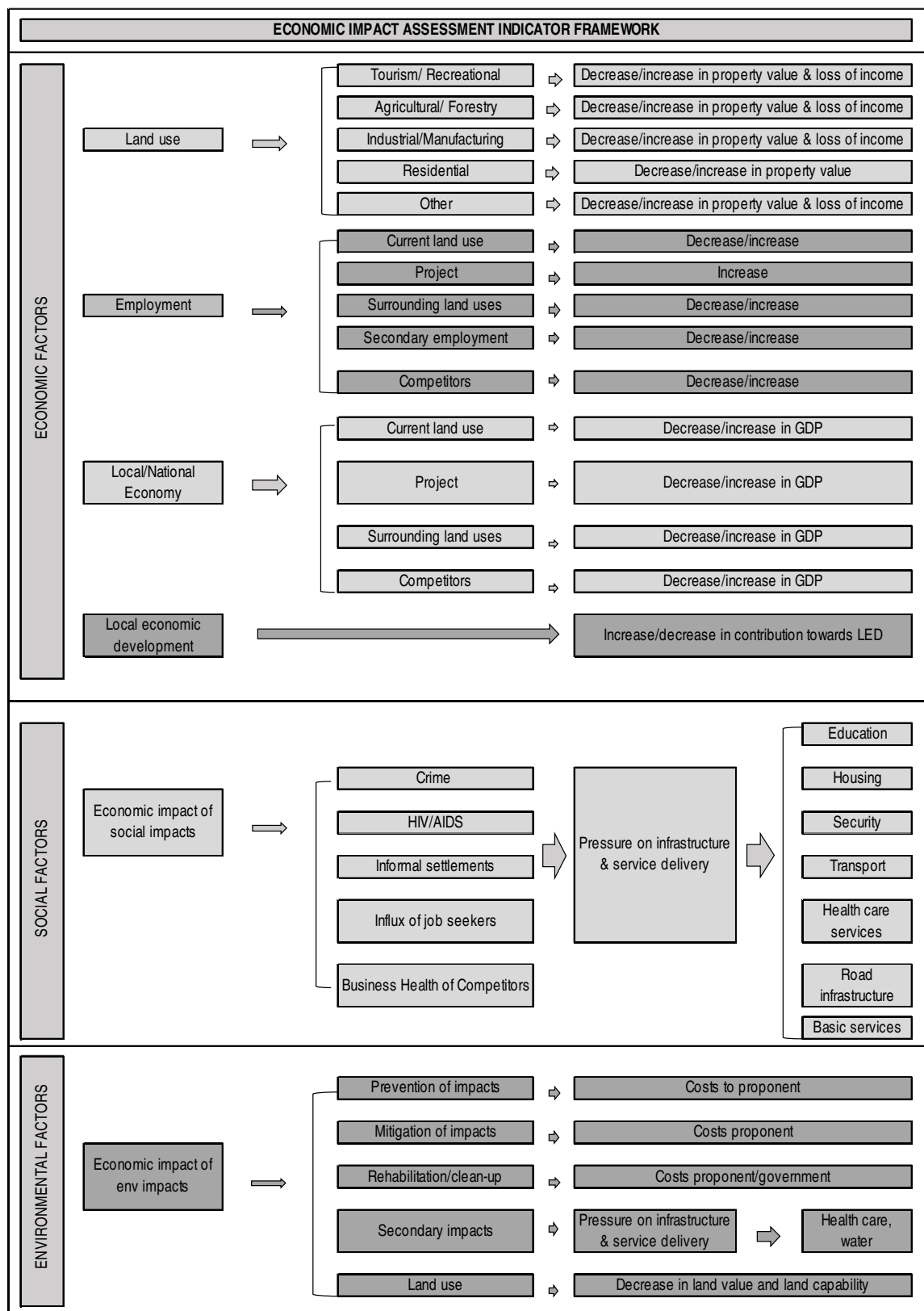


FIGURE 1: ECONOMIC IMPACT FRAMEWORK

## 2.1 Objective of this report

The objectives of this specialist investigation were to determine the following in support of undertaking the EIA and the compilation of the Environmental Management Programme (EMPr)

- undertake a baseline assessment to quantify property value or infrastructure assets, to determine current commercial and economic contributions of potentially directly affected persons and to identify and quantify potential alternative land use activities;
- quantify the impact on economic conditions of directly affected persons by determining the potential impact, in financial terms, of the loss in property value or infrastructure assets and determining the economic loss, in terms of net present value, of commercial, economic or as a result of the proposed mining activity; and
- undertake a comparative assessment of the identified land use and development alternatives and their potential on the environment, social and cultural impacts in view of generally accepted sustainable development principles which considers the costs and benefits of social, environmental and economic factors.

## 2.2 Proposed Approach and Methodology

The following approach and methodologies were applied in the process of identifying and evaluating potential economic impacts:

- As part of the project initiation and scoping process, Mercury undertook a preliminary analysis to identify and prioritise economic impact considerations and to identify the information requirements.
- Profiling baseline conditions focused on the gathering of information about the economic environment and context of the proposed development.
- Predicting impacts, quantifying impacts and model development: This step involved the analysis of the information which were collected from the scoping phase, baseline profiling and past experiences to predict possible economic impacts. Trade-offs between the adverse and beneficial impacts of a proposed development are part of this analysis were determined. Where applicable, issues raised by interested and affected parties were taken into consideration in the process of identifying and evaluating potential economic impacts.
- By using various assumptions and financial modelling techniques the possible outcomes was quantified in financial terms, incorporating economic risk factors.

- The impact assessment methodology as prescribed by SLR and outlined in Section **Error! Reference source not found.** was be utilised.
- Mitigation plan and recommendations were defined to ensure potential risks are adequately mitigated.

### 2.3 NEMA Appendix 6 requirements for specialist reports

This economic impact assessment report was compiled in compliance with the requirements specified in Appendix 6 of the Environmental Impact Assessment Regulations (R982 of 2014, as amended) published in terms of the National Environmental Management Act, 107 of 1998 as outlined in **Error! Reference source not found.**

**TABLE 1: APPENDIX 6 REQUIREMENTS**

REQUIREMENT	REFERENCE IN BASELINE REPORT, IF APPLICABLE
1.(1) A specialist report 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;	A declaration of independence is included in the beginning of the report.  Curriculum vitae included as Appendix A
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;	Section 2
(cA) an indication of the quality and age of base data used for the specialist report;	Section <b>Error! Reference source not found.</b> , <b>Error! Reference source not found.</b> and <b>Error! Reference source not found.</b>
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change	Sections <b>Error! Reference source not found.</b> and <b>Error! Reference source not found.</b>
(d) the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	No site visit was undertaken
(e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	Section 2
(f) details of an assessment of the specific identified sensitivities of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Not applicable
(g) an identification of any areas to be avoided, including buffers;	Not applicable
(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;	Not applicable
(i) a description of any assumptions made and any uncertainties or gaps in knowledge;	Section <b>Error! Reference source not found.</b>
(j) a description of the findings and potential implications of such findings	Sections <b>Error! Reference</b>

REQUIREMENT	REFERENCE IN BASELINE REPORT, IF APPLICABLE
1.(1) A specialist report must contain: on the impact of the proposed activity or activities;	source not found., Error! Reference source not found. and 9
(k) any mitigation measures for inclusion in the EMPr;	Section Error! Reference source not found.
(l) any conditions for inclusion in the environmental authorisation;	None identified
(m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	None identified
(n) a reasoned opinion- (i) as to whether the proposed activity or portions thereof should be authorised; (iA) regarding the acceptability of the proposed activity or activities; And (ii) if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	Sections 9
(o) a description of any consultation process that was undertaken during the course of preparing the specialist report;	Section 2.4
(p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	Section 2.4
(q) any other information requested by the competent authority.	None requested

## 2.4 Issues raised during public consultation

SLR is undertaking a public consultation process. The consultation process has included interested and affected parties. Limited socio-economic issues were raised by interested and affected parties.

To date, interested and affected parties have raised issues relating to:

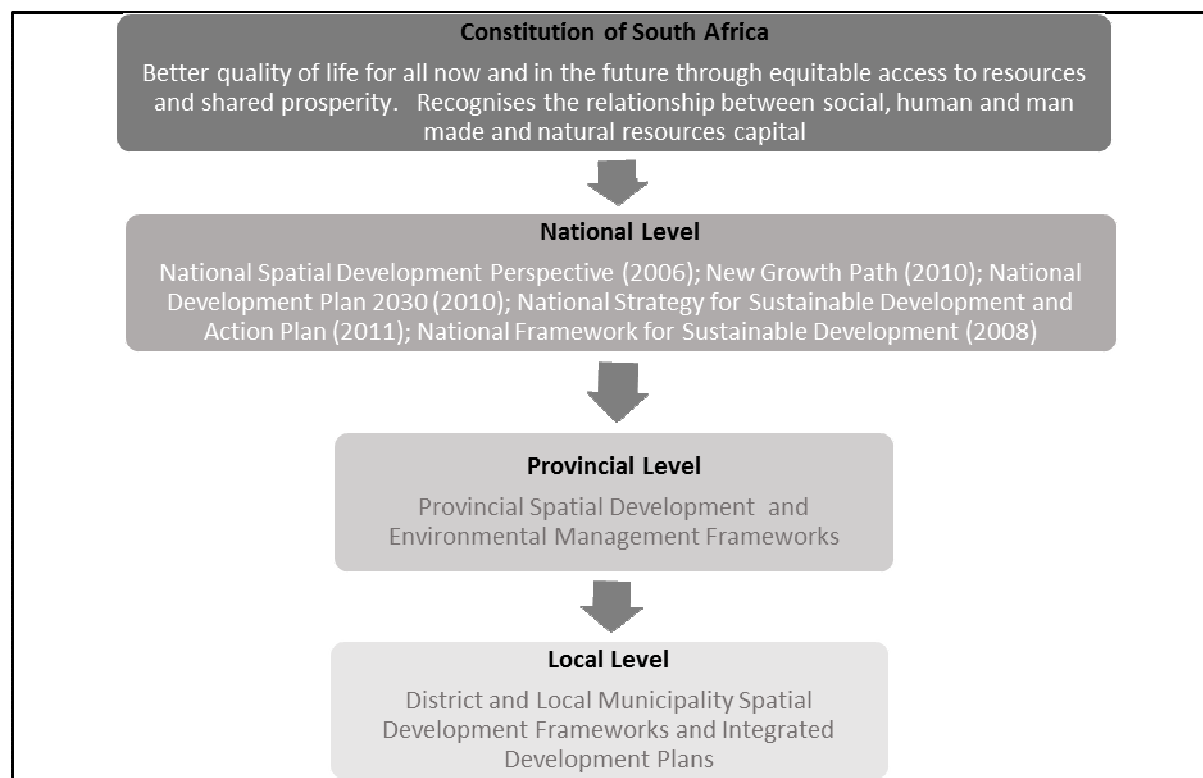
- employment opportunities for locals;
- training and skills development for locals;
- participation in the BEE ownership as a local community;
- mechanisms for recruitment and procurement;
- mechanisms for local businesses to supply services to the facility; and
- the loss of on-site grazing to livestock.

## 3 PROVINCIAL, REGIONAL AND LOCAL SOCIO-ECONOMIC PROFILE

South Africa faces the challenge of simultaneously meeting the following two imperatives:

- developing the economy to meet the needs of all South Africans; and
- ensuring that the productivity and viability of the underlying ecosystems and ecosystem services are maintained at healthy levels over time.

Essentially, these imperatives are embedded in the concept of sustainable development, which is commonly defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. Several national, provincial and local policies, strategies and plans have been developed in view of sustainable development in South Africa, of which the most pertinent ones are outlined in Figure 1 and discussed in the sections below.



**FIGURE 2: NATIONAL, PROVINCIAL AND LOCAL CONSIDERATIONS**

### 3.1 National policies and strategies

The Constitution guarantees South African citizens a better quality of life for all now and in the future through equitable access to resources and shared prosperity and recognises the relationship between social, human and man-made and natural resources capital.

#### 3.1.1 National Strategy for Sustainable Development and Action Plan (2011)

The Strategy for Sustainable Development and Action Plan (NSSD1) is a proactive strategy that regards sustainable development as a long-term commitment, which combines environmental protection, social equity and economic efficiency with the vision and values of the country. It is a milestone in an ongoing process of developing support, and initiating and up-scaling actions to achieve sustainable development in South Africa (DEA, 2011) and has outlined the following strategic objectives:

- enhance systems for integrated planning and implementation;
- sustain ecosystems and use natural resources efficiently;
- move towards a green economy;
- build sustainable communities; and
- respond effectively to climate change.

### 3.1.2 National Development Plan 2030 (2010)

The National Development Plan aims to ensure that all South Africans attain a decent standard of living through the elimination of poverty and reduction of inequality by 2030. The core elements of a decent standard of living identified in the plan are:

- housing, water, electricity and sanitation;
- safe and reliable public transport;
- quality education and skills development;
- safety and security;
- quality health care;
- social protection;
- employment;
- recreation and leisure;
- clean environment; and
- adequate nutrition.

### 3.1.3 New Growth Path (2010)

South Africa has embarked on a new economic growth path in a bid to create 5million jobs and reduce unemployment from 25% to 15% over the next ten (10) years. The plan aims to address unemployment, inequality and poverty by unlocking employment opportunities in South Africa's private sector and identifies seven job drivers. These job drivers have the responsibility to create jobs on a large scale. The seven key economic sectors or “job drivers” for job creation are listed below:

- infrastructure development and extension: Public works and housing projects;
- agricultural development with a focus on rural development and specifically
- “Agro-Processing”;
- mining value chains;
- manufacturing and industrial development (IPAP);
- knowledge and green economy;

- tourism and services; and
- informal sector of economy.

#### 3.1.4 National Framework for Sustainable Development (2008)

The purpose of the National Framework on Sustainable Development is to enunciate South Africa's national vision for sustainable development and indicate strategic interventions to re-orientate South Africa's development path in a more sustainable direction. It proposes a national vision, principles and areas for strategic intervention that will enable and guide the development of the national strategy and action plan.

The National Framework on Sustainable Development seeks to build on existing programmes and strategies that have emerged in the first 14 years of democracy. It aims to identify key, short, medium and long-term challenges in our sustainable development efforts, sets the framework for a common understanding and vision of sustainable development; and defines strategic focus areas for intervention (DEAT, 2008).

#### 3.1.5 Industrial Policy Action Plan (IPAP2) (DTI)

The overall focus of the Industrial Policy Action Plan is to create jobs in the manufacturing sector and has three focus areas:

- to promote labour intensive industries,
- to broaden participation in economic transformation,
- and to raise competitiveness in manufacturing.

IPAP focus areas are exports, industrial capacity, technology, skills development, and employment.

#### 3.1.6 National Spatial Development Perspective (2006)

The NSDP 2006 provides a framework for a focused intervention by the State in equitable and sustainable development. It represents a key instrument in the State's drive towards ensuring greater economic growth, buoyant and sustained job creation and the eradication of poverty. It provides:

- a set of principles and mechanisms for guiding infrastructure investment and development decisions;



- a description of the spatial manifestations of the main social, economic and environmental trends that should form the basis for a shared understanding of the national space economy; and
- an interpretation of the spatial realities and the implications for government intervention.

### **3.2 Provincial and local strategies**

#### **3.2.1 Gauteng Employment and Growth Strategy (GEGDS) (2009 to 2014)**

The strategy was formulated by the Department Economic Development. The strategy is based on innovation, green growth and an inclusive economy. The five strategic pillars are:

- Improved economic efficiency: logistics, electricity supply, ICT, sectoral focus on automotive industry, tourism, clothing, textile, footwear, heavy metals, furniture, construction, mining, agriculture, petro-chemicals, services and transport.
- Employment creation: Prevent job losses in distressed sectors, utilize the CWP with a focus on food security, youth development, environmental quality, housing upgrades, partnerships with schools, utilize the EPWP in collaboration with the private sector, promotion of youth employment and entrepreneurship, focus on labour intensive sectors such as construction, transport, tourism, agriculture, food, manufacturing, green economy.
- Increased economic equity and ownership: SMME development, access to quality education, support cooperatives, procurement support.
- Putting people first, invest in local people: Safety nets, basic needs, education, health care, social security.
- Sustainable communities and social cohesion: Rural and agricultural development, food security, safe communities, mobility.

#### **3.2.2 Sedibeng District Municipality**

The Sedibeng District Municipality's Growth and Development Strategy reaffirms the National Development Plan and the Gauteng Provincial strategies through the following seven pillars:

- Reinventing the Economy from an old to a new by consolidating existing sectors and exploring new sectors of growth and in this way build local economies to create more employment and sustainable livelihoods.
- Renewing communities through the provision of basic services, improving local public services and broadening access to them, and regenerating property development to improve the quality of living.

- Reviving a sustainable environment from waste dumps to a green region, by increasing the focus on improving air, water and soil quality and moving from being a producer and receiver of waste to a green city.
- Reintegrating the region with the rest of Gauteng, South and Southern Africa to move from an edge to a frontier region, through improving connectivity and transport links.
- Releasing human potential from low to high skills and build social capital through building united, non-racial, integrated and safer communities.
- Good and financially sustainable governance through building accountable, effective and clean government, with sound financial management, functional and effective Councils, and strong, visionary leadership. It is about compliance and competence.
- Vibrant democracy through enabling all South Africans to progressively exercise their constitutional rights and enjoy the full dignity of freedom. To promote more active community participation in local government, including further strengthening the voice of communities and making sure that community based structures such as ward committees, police forums and school bodies.

### 3.2.3 Emfuleni Local Municipality

The vision for the Emfuleni region is as follows: *“The creation of a diversified local economy, which is focused on the creation of jobs and improved quality of life. All economic initiatives should include pro-development and pro-poor programmes which are balanced and integrated. We strive to be the Golden Vaal River region, providing opportunities to all its residents”.*

The ELM Local Economic Development Strategy as contained in a report compiled by AppLED in 2015 is based on the following pillars for economic development:

- Support local economic sectoral development: Sectors that need to be supported include manufacturing, tourism, transport, and housing. These sectors need to focus on growth and maximisation of forward and backward linkages.
- Job creation initiatives: All strategies need to be focused on job creation. Aspects of importance include skills development, governmental initiatives such as the EPWP and the setting-up of a massive interns programme.
- Small Business Development: The development and strengthening of incubators, training centres, job creation centres, mentor programmes, entrepreneurship development and informal sector development support.

- Service delivery: Improved capacity, good governance, partnership building, infrastructure development and the creation of an enabling environment.
- Improved quality of life: Reduction of poverty, provision of basic needs, improved safety nets and food security.

The following approaches and principles form the basis for the local LED strategies:

- A balance must be achieved between “pro-poor” and “pro-growth” initiatives.
- The implementation of strategies must lead to improvement in quality of life for all, especially the poor.
- The strategies must alleviate poverty and a total onslaught on poverty is required, focussing on all the components of poverty.
- Poverty should be reduced by means of business development, SMME support and providing a safety net for the poor by means of a basic needs approach. Entrepreneurial development will eventually lead to the creation of jobs, which is the ultimate goal of the LED strategy.
- The strategy must focus on the economic, physical and social components of the local environment.
- Local uniqueness, knowledge and resources must be optimized
- The creation and improvement of diversity, stability, sustainability, specialist clusters and partnerships are of key importance.
- The strategies need to be implemented by means of projects, which in turn must be implementable, with clearly defined and measurable deliverables. The projects must be outcome-based.
- Projects and programmes must have short, medium and long term outcomes, but short term “quick wins” are of key importance to create interest, support and confidence in the process.

### **3.3 Conclusion**

Therefore, although the growth of the South African, Sedibeng District Municipality and Emfuleni Local Municipality economies are of strategic importance, consideration should be given to social and natural resources when considering proposed developments. In view of the concept of sustainability, the proposed project would have to contribute towards achieving sustainable development whilst contributing towards achieving these higher-level national, provincial and regional objectives.

## 4 PROVINCIAL, REGIONAL AND LOCAL SOCIO-ECONOMIC PROFILE

### 4.1 Overview

The Sedibeng District Municipality (SDM) is classified as a Category C municipality and is situated on the southern tip of the Gauteng Province. It is located on the border the Free State, North West and Mpumalanga Provinces. The municipality is the only area in the province that is situated on the banks of the Vaal River and Vaal Dam, covering the area formerly known as the Vaal Triangle. The municipality comprises of the Emfuleni, Lesedi and Midvaal local municipalities.

Emfuleni Local Municipality (ELM) is the western-most local municipality of the district, which covers the entire southern area of the Gauteng Province extending along a 120 kilometres axis from east to west. It covers an area of approximately 990 km<sup>2</sup>. The Vaal River forms the southern boundary of ELM and its strategic location affords it many opportunities for tourism and other forms of economic development. ELM shares boundaries with Metsimaholo Local Municipality in the Free State to the south, Midvaal Local Municipality to the east, the City of Johannesburg metropolitan area to the north and Westonaria and Tlokwe Local Municipalities to the west. It has two main city/town centres, namely, Vereeniging and Vanderbijlpark and has access to well maintained road networks.

A summary of the socio-economic profile of the Gauteng Province, Sedibeng District Municipality (SDM) and Emfuleni Local Municipality (ELM) is provided in Table 2.

**TABLE 2: SUMMARY OF THE PROVINCIAL AND LOCAL SOCIO-ECONOMIC PROFILE**

INDIACTOR	PROVINCIAL LEVEL – GAUTENG	DISTRICT LEVEL - SEDIBENG	LOCAL LEVEL -EMFULENI
Population	2016: 13 399 725* 2011: 12 272 263*	2016: 957 528* 2011: 916 484*	2016: 733 445* 2011: 721 663*
Main Economic Sectors:	Gauteng responsible for over 34.8% of the country's GDP. The most important sectors contributing to GDP are finance (22.8%), wholesale (14.2%), manufacturing (13.5%); and government services (17%)**	Manufacturing (30.8%), government (17.8%), business services (17.8%), trade (13.7%)*	Manufacturing (40.8%), community services (22.3%), finance (16%), trade (7.4%), transport (4.4%), construction (3.5%), electricity (3.3%)*
Unemployment*		2011: 31.9%*; Youth unemployment: 41.7%*	2011 34.7%*; Youth unemployment: 45%*
Employment	In 2015 Gauteng accounted for 32% of total employment in		

INDIACTOR	PROVINCIAL LEVEL – GAUTENG	DISTRICT LEVEL - SEDIBENG	LOCAL LEVEL -EMFULENI
	South Africa. Gauteng accounted for 37% of South African manufacturing employment.		
Education	4% (2016) of the adult population have had no schooling.* 41% (2016) of the population have matric.* 14% (2016) of adult population have a higher education.*	4.3% (2016) of the adult population have had no schooling.* 36% (2016) of the population have matric.* 12% (2016) of adult population have a higher education.*	4.1% (2016) of the adult population have had no schooling.* 36.1% (2016) of the population have matric.* 11.9% (2016) of adult population have a higher education.*
Basic Services	63% (2016) of households have access to piped water inside dwellings.* 88% (2016) has access to flush toilet connected to sewage.* 96.6% (2016) has access to electricity for lighting.* 88.1% has access to refuse removal*	69.9% (2016) of households have access to piped water inside dwellings.* 86.6% (2016) has access to flush toilet connected to sewage.* 93.3% (2016) has access to electricity for lighting.* 86.8% has access to refuse removal*	70.3% (2016) of households have access to piped water inside dwellings.* 90.6% (2016) has access to flush toilet connected to sewage.* 95% (2016) has access to electricity for lighting.* 88.1% has access to refuse removal*
Housing	Gauteng consists of approximately 82.3% formal housing.* 54.6% are home owners.*	SDM consists of approximately 86.7% formal housing.* 63.6% are home owners.*	ELM consists of approximately 87% formal housing.* 65.7% are home owners.*

\* StatsSA: 2011 and 2016 census data as indicated (Sources: <https://wazimap.co.za/profiles/province-GT-gauteng/>; <https://municipalities.co.za/demographic/1060/emfuleni-local-municipality>)

\*\* Real economic bulletin, 2016 (Source: <http://www.tips.org.za/manufacturing-data/the-real-economy-bulletin/provincial-review/item/3172-the-real-economy-bulletin-provincial-review-2016>)

## 4.2 Economic profile

The Gauteng Province is the economic hub of South Africa, contributing approximately 35% towards the South African GDP. This results in the Gauteng economy being highly integrated with that of South Africa. Thus, the economic challenges that have adversely affected the national growth rate have had a similar impact on the province. Gauteng faces a number of economic challenges, including high poverty levels, inequalities in terms of incomes and opportunities as well as youth unemployment.

Vereeniging is currently one of the most important industrial manufacturing centres in South Africa, with its main products being iron, steel, pipes, bricks, tiles and processed lime. Vereeniging furthermore has several Eskom thermal power plants.

ELM's historical economic development is closely linked to the steel industry due to the original establishment of ISCOR in Vanderbijlpark and Vereeniging. The area still plays an important role in the steel industry and the steel value chain. The steel industry has been shrinking and has grown only 1% over the last 30 years (AppLED, 2015). The steel production capacity in South Africa is 12 million tonnes per annum, but in 2015 only 6 million tonnes were produced. In 2015, the steel manufacturing industry provided 13 000 jobs in South Africa while the converting and fabrication industry added 85 000 jobs. Arcelor Mittal is the largest steel manufacturer in South Africa and has a plant in Vereeniging. The end users of steel are the construction industry, automotive industry, machinery, mining and agriculture. The steel manufacturing industry is at risk due to lack of new technology, quality of local steel and labour action. The growth of the industry is dependent on growth of downstream industries such as construction, global supply and demand, production factors cost poor levels of economies of scale, exchange rates. (AppLED, 2015)

#### 4.2.1 Gross domestic product

This section provides an analysis of the GDP based on information provided in the ELM Local Economic Development Strategy Report (AppLED, 2015).

According to the information provided in Table 3 below, the GDP of the ELM and Gauteng Province shows a nominal increase 2001 to 2013. In 2000 ELM contributed 3% towards the Gauteng GDP and 81.2% towards the SDM. This declined for 2013 to 2.7% towards the Gauteng GDP and 76.6% towards the SDM. The SDM contribution towards the Gauteng GDP declined from 3.7% in 2000 to 3.5% in 2013.

**TABLE 3: GROSS DOMESTIC PRODUCT (R MILLION) AND PERCENTAGE REAL GROWTH IN GDP BY REGION (2014 PRICES)**

Area	2000		2 005		2010		2013	
	GDP	%	GDP	%	GDP	%	GDP	%
<b>Gauteng</b>	R319 702m	5,7	R550 442m	5,4	R924 938m	3,4	R1 209 042m	2,2
<b>Sedibeng</b>	R11 869m	-0,1	R20 549m	4,6	R35 111m	5,1	R42 703m	-0,3
<b>Emfuleni</b>	R9 638m	-0,5	R16 566m	4,2	R27 343m	4,8	R32 705m	-0,5

The real growth rate declined from early 2000's to present. South Africa and Gauteng experienced sustainable growth until the international financial crisis of 2007/2008. Since then, regardless of stimulus policies of government, the real growth rate performed poorly. Various factors contributed

to this poor performance, for example lack of coordination of policies, labour strikes and unrest which caused a decline in productivity as well as an increase in production cost, increase in inflation, increase in imports relative to exports which caused an increase in the current account deficit which caused a depreciating currency as well as exchange rate volatility.

SDM absorbed the decline in national growth poorly with a negative 0.3 % annual growth of in 2013. ELM absorbed the decline in national growth also poorly with declining growth rates and a negative 0.5% growth rate in 2013.

As indicated in Table 4, Gauteng and South Africa experienced a lower real growth since the international financial crisis of 2007/2008, which is reflected in the lower growth as indicated in 2006-2011 period relative to the previous period. SDM experienced a lower real growth since the international financial crisis of 2007/2008, which is reflected in the lower growth as indicated in 2006- 2011 period relative to the previous period. The growth performance for the period 1996-2013 is relatively low if compared to the province. ELM experienced a lower real growth since the international financial crisis of 2007/2008, which is reflected in the lower growth as indicated in 2006-2011 period relative to the previous period. The growth performance for the period 1996-2013 is lower as the provincial and district growth rates at only 1.2 percent growth rate.

**TABLE 4: PERCENTAGE ANNUAL REAL GROWTH IN GROSS DOMESTIC PRODUCT BY REGION**

Area	1996-2001	2001-2006	2006-2011	1996-2013
Gauteng	2.9	4.9	3.2	3.5
Sedibeng DM	-2.9	5.0	3.3	1.5
Emfuleni LM	-3.1	4.8	2.7	1.2

The increase in GDP per capita for Gauteng between 2000 and 2013 is 170% as shown in Table 5. The increase in GDP per capita for SDM between 2000 and 2013 is 196%. The increase in GDP per capita for the ELM between 2000 and 2013 is 197%

**TABLE 5: GROSS DOMESTIC PRODUCT BY REGION (GDP RAND PER CAPITA)**

Area	2000	2005	2010	2013
Gauteng	35 232	53 580	78 901	95 104
Sedibeng	15 290	25 015	39 216	45 310
Emfuleni LM	15 046	24 896	38 759	44 682

#### 4.2.2 Labour and employment

According to the 2015 Local Economic Development (LED) Strategy Report (AppLED, 2015) compiled for ELM, the overall number of people living in poverty has increased from 2001 to 2013 and the number of people living in poverty has increased by 21.8% from 2001 to 2013. There has also been an increase in the number of people living in poverty in the Gauteng Province, SDM and the neighbouring Metsimaholo local municipal area. The ELM rate is the lowest when compared to the Gauteng province (65.3%), SDM (26.3%) and Metsimaholo Municipal area (35.5%).

#### 4.2.3 Human Development Index and Poverty Gap

Human Development Index (HDI) is an index for measuring human development on the basis of four indicators covering life expectancy, adult literacy, education enrolment ratios and gross domestic product per capita as calculated by the UN. A score of 1 indicates high levels of human development, while a score or close to 0 indicates low levels of human development.

The Emfuleni Municipal area has the lowest level of human development (HDI=0.66) compared to the Sedibeng district area (HDI=0.67) and Gauteng province (HDI=0.70). However, the Emfuleni Municipal area has a better human development index (HDI=0.66) if compared to the Metsimaholo Municipal area (HDI=0.64).

The HDI values for ELM have increased from 2001 to 2013 in all areas and across all races. It has increased by 8.2%, from 0.61 to 0.66, 9.8% (0.61 to 0.67) in SDM and 6.1% (0.67 to 7.0) in Gauteng over this same period. The Emfuleni area has therefore shown higher levels of increase over the period if compared to the province.

According to the LED (AppLED, 2015) the poverty gap has increased in the ELM from 2001 to 2013. The poverty gap in the ELM has increased by 204.2% over the period from 2001 to 2013, which denotes that poor people get poorer and poverty get deeper. The Emfuleni area does not present a unique case as the situation is worse in Gauteng where the poverty gap increased by 318.3%. In the SDM the poverty gap increased by 207.7%.



### 4.3 Conclusion

The region in which the proposed project would be located faces many economic challenges. These include a poor performing economic growth rate, high poverty levels, inequalities in terms of incomes, limited employment opportunities as well as youth unemployment.

## 5 QUANTIFICATION OF POTENTIAL ECONOMIC IMPACT

### 5.1 Current land use activities

The proposed plant will be located on Portion 238 (a portion of Portion 149) of the Farm Leeuwkuil 596 IQ. The property is owned by SAB and borders Lager Avenue, the R59 and R28 roads. A town planning application was submitted to the Emfuleni Local Municipality for the subdivision of Portion 238 of the Farm Leeuwkuil 596 IQ to create Portion 295 of the Farm Leeuwkuil 596 IQ. The site is earmarked for industrial and commercial use according to the municipalities' spatial development framework. A town planning application for the rezoning to industrial use was submitted to the Emfuleni Local Municipality.

The site is currently open land, covered with secondary indigenous vegetation. Part of the study area has historically been utilised for cultivation purposes but is currently utilised for livestock grazing by subsistence farmers.

Adjacent land use includes vacant land, the SAB Vereeniging Depot, the Vereeniging Fresh Produce Market, the R28 and R 59 roads and the Leeuwkuil Water Care Works. Nearby receptors include the Wise Owl Pre-school, a Telkom facility, a Department of Roads and Transport facility, a Department of Correctional Services facility, informal residences and livestock kraals and the Leeuhof suburb.

The soil in the area can be classified as Sterkspruit Form 1200, Bethulie Family. The soils are of the Sterkspruit Form 1200 Bethulie Family. Such soils are considered to have a low agricultural potential and require careful management to limit erosion. No evidence of contamination was noted in test pit samples and concentrations are considered to represent baseline conditions.

#### 5.1.1 Current land value

To understand the current land value of the site, a number of land value scenarios have been considered below.

According to the municipal records, Portion 238 (a portion of Portion 149) of the Farm Leeuwkuil 596 IQ is zoned for agricultural purposes and the land is currently vacant. Portion 295 of the Farm Leeuwkuil 596 IQ, once the subdivision has been approved, will be 29.23 hectares in extent. For the purposes of this study, 29 hectares will be utilised in all calculations.

Portion 237 of the farm Leeuwkuil 596 IQ (151 689m<sup>2</sup> in extent) is vacant land zoned for agricultural purposes that is valued at R3.65 million according to 2016/2017 municipal valuation records. This equates to a value of R24/m<sup>2</sup> of land. Portion 238, also vacant land was valued at R9.75million and is 674 735m<sup>2</sup> in extent, which equates to R14.50/m<sup>2</sup>. Applying these rates to the extent of the project area, which is 29 ha or 290 000 m<sup>2</sup> in size, this equates to a property value of between R4.2 million and R6.96 million.

As a portion of the study area was historically utilised for cultivation purposes and due to the fact that the site is currently utilised for livestock grazing by subsistence farmers, the land was also evaluated on agricultural terms. For this, it was assumed that the land has medium (4 to 6 tonnes maize per hectare) agricultural potential, which is conservative given the low agricultural potential of the soil. Based on information obtained from ABSA, agricultural land with medium potential is valued between R15 000 and R25 000 per hectare. For the purposes of this report, the higher value was applied which equates to R725 000 for the 29 hectares of the project. This value is substantially lower than the municipal valuation of the properties in the area.

A nearby property, Portion 239, which is 368 846m<sup>2</sup> in extent, was valued at R27.8 million based on municipal land valuation records. This property is zoned as agricultural, but contains infrastructure. This equates to R75.37/m<sup>2</sup>, which is significantly higher than that of vacant land; an indication that the establishment of infrastructure is likely to significantly increase the value of the land. Applying this rate to the 29 ha property equates to a potential minimum property value of approximately R21.9 million. A summary of the various land value scenarios discussed in this report is outlined in Table 6 below:

**TABLE 6: SUMMARY OF LAND VALUE ESTIMATION SCENARIOS**

METHODOLOGY UTILISED	Valuation Rate	APPROXIMATE LAND VALUE (29ha)
Utilising ABSA valuation information for agricultural land with medium agricultural potential.	Maximum of R25 000 per hectare	R430 000

Utilising available municipal valuation values for vacant land zoned for agricultural purposes.	Between R14.50/m <sup>2</sup> and R24/m <sup>2</sup>	R4.2 million - R6.96 million
Utilising available municipal valuation values for land zoned as agricultural, but which contains infrastructure.	R75.37/m <sup>2</sup>	R21.9 million.

### 5.1.2 Agricultural - employment

In order to determine an employment value associated with the current land use, the agricultural land use potential was assumed instead of subsistence farming. As the site is relatively small (29 ha) it will only have potential to provide employment to one individual, whether cattle, maize or sunflower farming is considered. This will equate to an employment net present value of approximately R2 162 171 over a life of operation of 32 years (2 years construction and 30 years operational life), using the current minimum wage for farmworkers (Department of Labour, 2018) of R3169.19/month for 5 workers (this is an over estimation for such a small area) and a discount rate of 8.97%.

### 5.1.3 Agricultural - economic contribution

In order to determine the current economic contribution associated with the current land use, the agricultural land use potential was assumed instead of subsistence farming for an area of 29 ha. Potential farming activities considered includes crops (maize and sunflowers) and cattle.

In order to calculate the revenue in net present value, a life of operation of 32 years (2 years construction and 30 years operational life) and discount rate of 8.97% was utilised. Furthermore a maximum annual yield was assumed for each crop type, which is a conservative approach. The economic contribution is presented in Table 7 below.

**TABLE 7: REVENUE FROM POTENTIAL AGRICULTURAL ACTIVITIES**

	PRICE	YIELD ASSUMPTION	NPV REVENUE (32 YEARS)
Sunflowers	R4850/tonne*	Assumed a yield of 1.1 tonnes/ha	R1.8 million
Soya	R4864/tonne*	Assumed a yield of 1.52 tonnes/ha	R2.4 million
Maize	R2348/tonne*	Assumed a yield of 6 tonnes/ha	R4.7 million

Cattle	R6460/calf	Calf ratio of 82%	R350 000
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\* South African Futures Exchange (SAFEX) (May, 2018)

## 5.2 Potential economic impact from the proposed project

The anticipated capital to establish the proposed glass bottle manufacturing operations is approximately R3 billion, of which R1.8 billion will be foreign investment.

Should environmental authorisation be granted it is anticipated that construction of the facility would take approximately two years, after which the plant will become fully operational. The planned life of the operations is at least 30 years. Up to 800 construction phase employment opportunities would be created over the period. Operation of the facility would create up to 289 employment opportunities. Employees would be sourced, as much as is possible, from the greater Vereeniging area. No housing would be provided on-site during the construction or operational phases.

### 5.2.1 Land value

With reference to the discussion in Section 5.1.1, the current value of the project site (open land) is between approximately R430 000 (based on information obtained from ABSA for agricultural land with medium potential) and R 22 million (based on 2016/2017 municipal valuations for agricultural land with infrastructure). The proposed development (with a capital input of approximately R3 billion) is expected to increase the value of the current vacant land to well above the rate of R75.37/m<sup>2</sup> or R21.9 million for the 29 ha.

### 5.2.2 Direct employment

During the construction phase, the number of employment opportunities will be approximately 800. Based on the average wage of R19.65/hour (Department of Labour, 2018) for a 45 hour work week for construction workers, the labour force value will peak at an annual value of R36.8 million. This may be an over or under estimation, as a profile of the labour numbers was not available at the time of compilation of this report. The duration of this labour demand is however not known.

The operation of the facility will create 289 employment opportunities. Based on a current annual labour value of R128.6 million per annum, this equates to a present value of R1.4 billion over the 30 years of operational life using a discount factor of 8.97%.

Employees will be sourced from the greater Vereeniging area, as much as is possible.

### 5.2.3 Economic Impact

The annual revenue is expected to be R1.7 billion (annual revenue for the project, after the plant reaches optimal efficiency in 2018 terms), which equates to R18.6 billion over the 30 years life of operation using a discount rate of 8.97%.

The economic contribution as a result of the proposed development will have a positive impact on direct, indirect and induced effects on the local, regional and national economy. It is furthermore envisaged that a significant financial contribution over the 30 year life will be made towards the national economy. Even though the economic benefit was considered for 30 years, the facility may be operational for much longer.

Even when excluding the capital financial contribution, this project contributes significantly more to the national and local economy in comparison to current as well as potential alternative land uses.

The local and regional economy will benefit from the employment value created during the construction period and operational period. It can be assumed that at least 30% of capital expenditure, excluding labour, will also be spent locally or regionally.

#### **Direct impacts**

Direct effects are the results of the money initially spent in the study region by the development. This includes money spent to pay for salaries, supplies, raw materials, and operating expenses.

#### **Indirect effects**

The direct effects from the initial and operational spending will create additional activity within the local and regional economy, as businesses and individuals benefiting directly from the proposed development will subsequently increase spending at other local businesses (indirect effect) as well as hiring additional staff members.

## **Induced Effects**

Induced effects are the results of increased personal income as a result of the proposed project, including indirect effects. Businesses experiencing increased revenue from the direct and indirect effects will subsequently increase payroll expenditures (by hiring more employees, increasing payroll hours, raising salaries, etc.). Households will in return, increase spending at local businesses. The induced effect is therefore a measure of this increase in household-to-business activity.

### **5.2.4 Contribution towards socio-economic development**

In addition to the direct and indirect economic impacts discussed above, the operation will through its corporate social investments plans, likely contribute towards the local economic development in the area. The operation of the proposed glass bottle manufacturing plant may have the following positive socio-economic benefits to its employees and surrounding communities:

- development of skills through a skills development plan;
- learnership programs to provide learners with an occupational qualification; and
- investment in infrastructure development through local economic development and integrated development programmes.

### **5.2.5 Impact on competitors**

This study did not include a marketing study and the potential impact this project may have on the economic viability of competitors, and subsequent impacts on current employment opportunities was therefore not assessed.

## **5.3 Potential economic impact from maintaining status quo/"no go" alternative**

The assessment of this option requires a comparison between the options of proceeding with the project with that of not proceeding with the project. Proceeding with the project attracts potential economic benefits and potential negative environmental and social impacts. Not proceeding with the project leaves the status quo, but with potential loss in employment opportunities and revenue generation. Based on information provided, it is however not possible to assign any economic values to any of the indicators.

## 6 ECONOMIC IMPACT ASSESSMENT

### 6.1 Impact assessment methodology

The impact assessment methodology was prescribed by SLR and is based on the Hacking method of determination of significance of impacts as tabulated in Table 8 below and complies with the method provided in the EIA guideline document. Part A provides the approach for determining impact consequence (combining severity / nature, spatial scale and duration) and impact significance (the overall rating of the impact). Impact consequence and significance are determined from Part B and C. The interpretation of the impact significance is given in Part D. The unmitigated scenario is considered for each impact.

**TABLE 8: CRITERIA FOR ASSESSING IMPACTS (PROVIDED BY SLR)**

PART A: DEFINITIONS AND CRITERIA*		
Definition of SIGNIFICANCE		Significance = consequence x probability
Definition of CONSEQUENCE		Consequence is a function of intensity, spatial extent and duration
Criteria for ranking of the INTENSITY of environmental impacts	VH	Severe change, disturbance or degradation. Associated with severe consequences. May result in severe illness, injury or death. Targets, limits and thresholds of concern continually exceeded. Substantial intervention will be required. Vigorous/widespread community mobilization against project can be expected. May result in legal action if impact occurs.
	H	Prominent change, disturbance or degradation. Associated with real and substantial consequences. May result in illness or injury. Targets, limits and thresholds of concern regularly exceeded. Will definitely require intervention. Threats of community action. Regular complaints can be expected when the impact takes place.
	M	Moderate change, disturbance or discomfort. Associated with real but not substantial consequences. Targets, limits and thresholds of concern may occasionally be exceeded. Likely to require some intervention. Occasional complaints can be expected.
	L	Minor (Slight) change, disturbance or nuisance. Associated with minor consequences or deterioration. Targets, limits and thresholds of concern rarely exceeded. Require only minor interventions or clean-up actions. Sporadic complaints could be expected.
	VL	Negligible change, disturbance or nuisance. Associated with very minor consequences or deterioration. Targets, limits and thresholds of concern never exceeded. No interventions or clean-up actions required. No complaints anticipated.
	VL+	Negligible change or improvement. Almost no benefits. Change not measurable/will remain in the current range.
	L+	Minor change or improvement. Minor benefits. Change not measurable/will remain in the current range. Few people will experience benefits.
	M+	Moderate change or improvement. Real but not substantial benefits. Will be within or marginally better than the current conditions. Small number of people will experience benefits.
	H+	Prominent change or improvement. Real and substantial benefits. Will be better than current conditions. Many people will experience benefits. General community support.

	<b>VH+</b>	Substantial, large-scale change or improvement. Considerable and widespread benefit. Will be much better than the current conditions. Favourable publicity and/or widespread support expected.
<b>Criteria for ranking the DURATION of impacts</b>	<b>VL</b>	Very short, always less than a year. Quickly reversible
	<b>L</b>	Short-term, occurs for more than 1 but less than 5 years. Reversible over time.
	<b>M</b>	Medium-term, 5 to 10 years.
	<b>H</b>	Long term, between 10 and 20 years. (Likely to cease at the end of the operational life of the activity)
	<b>VH</b>	Very long, permanent, +20 years (Irreversible. Beyond closure)
<b>Criteria for ranking the EXTENT of impacts</b>	<b>VL</b>	A part of the site/property.
	<b>L</b>	Whole site.
	<b>M</b>	Beyond the site boundary, affecting immediate neighbours
	<b>H</b>	Local area, extending far beyond site boundary.
	<b>VH</b>	Regional/National

<b>PART B: DETERMINING CONSEQUENCE</b>							
			<b>EXTENT</b>				
			A part of the site/property	Whole site	Beyond the site, affecting neighbours	Local area, extending far beyond site.	Regional/National
			<b>VL</b>	<b>L</b>	<b>M</b>	<b>H</b>	<b>VH</b>
<b>INTENSITY = VL</b>							
<b>DURATION</b>	Very long	<b>VH</b>	<b>Low</b>	<b>Low</b>	Medium	Medium	<b>High</b>
	Long term	<b>H</b>	<b>Low</b>	<b>Low</b>	<b>Low</b>	Medium	Medium
	Medium term	<b>M</b>	<b>Very Low</b>	<b>Low</b>	<b>Low</b>	<b>Low</b>	Medium
	Short term	<b>L</b>	<b>Very low</b>	<b>Very Low</b>	<b>Low</b>	<b>Low</b>	<b>Low</b>
	Very short	<b>VL</b>	<b>Very low</b>	<b>Very Low</b>	<b>Very Low</b>	<b>Low</b>	<b>Low</b>
<b>INTENSITY = L</b>							
<b>DURATION</b>	Very long	<b>VH</b>	Medium	Medium	Medium	<b>High</b>	<b>High</b>
	Long term	<b>H</b>	<b>Low</b>	Medium	Medium	Medium	<b>High</b>
	Medium term	<b>M</b>	<b>Low</b>	<b>Low</b>	Medium	Medium	Medium
	Short term	<b>L</b>	<b>Low</b>	<b>Low</b>	<b>Low</b>	Medium	Medium
	Very short	<b>VL</b>	<b>Very low</b>	<b>Low</b>	<b>Low</b>	<b>Low</b>	Medium
<b>INTENSITY = M</b>							
<b>DURATION</b>	Very long	<b>VH</b>	Medium	<b>High</b>	<b>High</b>	<b>High</b>	<b>Very High</b>
	Long term	<b>H</b>	Medium	Medium	Medium	<b>High</b>	<b>High</b>
	Medium term	<b>M</b>	Medium	Medium	Medium	<b>High</b>	<b>High</b>
	Short term	<b>L</b>	<b>Low</b>	Medium	Medium	Medium	<b>High</b>
	Very short	<b>VL</b>	<b>Low</b>	<b>Low</b>	<b>Low</b>	Medium	Medium
<b>INTENSITY = H</b>							
<b>DURATION</b>	Very long	<b>VH</b>	<b>High</b>	<b>High</b>	<b>High</b>	<b>Very High</b>	<b>Very High</b>
	Long term	<b>H</b>	Medium	<b>High</b>	<b>High</b>	<b>High</b>	<b>Very High</b>
	Medium term	<b>M</b>	Medium	Medium	<b>High</b>	<b>High</b>	<b>High</b>
	Short term	<b>L</b>	Medium	Medium	Medium	<b>High</b>	<b>High</b>
	Very short	<b>VL</b>	<b>Low</b>	Medium	Medium	Medium	<b>High</b>
<b>INTENSITY = VH</b>							
<b>DURATION</b>	Very long	<b>VH</b>	<b>High</b>	<b>High</b>	<b>Very High</b>	<b>Very High</b>	<b>Very High</b>



	Long term	H	High	High	High	Very High	Very High
	Medium term	M	Medium	High	High	High	Very High
	Short term	L	Medium	Medium	High	High	High
	Very short	VL	Low	Medium	Medium	High	High
			VL	L	M	H	VH
			A part of the site/property	Whole site	Beyond the site, affecting neighbours	Local area, extending far beyond site.	Regional/National
<b>EXTENT</b>							

PART C: DETERMINING SIGNIFICANCE							
<b>PROBABILITY (of exposure to impacts)</b>	Definite/Continuous	VH	Very Low	Low	Medium	High	Very High
	Probable	H	Very Low	Low	Medium	High	Very High
	Possible/frequent	M	Very Low	Very Low	Low	Medium	High
	Conceivable	L	Insignificant	Very Low	Low	Medium	High
	Unlikely/improbable	VL	Insignificant	Insignificant	Very Low	Low	Medium
			VL	L	M	H	VH
<b>CONSEQUENCE</b>							

PART D: INTERPRETATION OF SIGNIFICANCE	
<b>Significance</b>	<b>Decision guideline</b>
Very High	Potential fatal flaw unless mitigated to lower significance.
High	It must have an influence on the decision. Substantial mitigation will be required.
Medium	It should have an influence on the decision. Mitigation will be required.
Low	Unlikely that it will have a real influence on the decision. Limited mitigation is likely to be required.
Very Low	It will not have an influence on the decision. Does not require any mitigation
Insignificant	Inconsequential, not requiring any consideration.

\*VH = very high, H = high, M= medium, L= low and VL= very low and + denotes a positive impact.

## 6.2 Economic Impact Assessment

The economic indicators have been discussed in Section 5 and are assessed in Table 9 below. It should be noted that the assessment only considered the construction and operational phases as

the life of the operations is expected to continue well beyond the current anticipated life of 30 years. The decommissioning and closure phases were therefore not assessed

**TABLE 9: ECONOMIC IMPACT ASSESSMENT ANALYSIS**

ASPECT	POTENTIAL IMPACT	PROJECT PHASE	BEFORE MITIGATION						AFTER MITIGATION					
			INTENSITY	DURATION	SPATIAL EXTENT	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	INTENSITY	DURATION	SPATIAL EXTENT	CONSEQUENCE	PROBABILITY	SIGNIFICANCE
Land value	<p>The impact on land values could be affected both positively and negatively. Positive impacts are observed where the project site value is expected to increase due to the capital investment and the fact that land zoned for industrial purposes in the project locality is valued higher than agricultural land. Negative impacts are observed when the value of land surrounding operations is compromised by unacceptable negative environmental and social impacts</p> <p>In the unmanaged scenario it is possible that land surrounding the project will experience some degree of negative social and environmental impact. This is however unlikely to cause a loss in related land values as the plant will be located in an area already zoned for industrial activities. In the scenario where the project successfully implements the stipulated environmental and social management measures, these impacts can be managed to acceptable levels which should not reduce surrounding land value. In the management scenario, there is a possibility for the proposed project to increase the value of the property.</p> <p>The life of the operations is however expected to continue well beyond the current anticipated life of 30 years. The decommissioning and closure phases were therefore not assessed. The duration of the potential impact was however only considered for the 30 years operational life, in the mitigated scenario this could possibly be extended.</p>	Construction Operational	M	H	M	M	VL	VL	H+	VH	M	H	H	H+

ASPECT	POTENTIAL IMPACT	PROJECT PHASE	BEFORE MITIGATION						AFTER MITIGATION					
			INTENSITY	DURATION	SPATIAL EXTENT	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	INTENSITY	DURATION	SPATIAL EXTENT	CONSEQUENCE	PROBABILITY	SIGNIFICANCE
Employment	<p>The project will to create job opportunities in the local and regional area.</p> <p>In its current state, the property does not create any formal employment opportunities. The alternative land use comprising commercial farming could potentially sustain a single employment opportunity due to small nature of the property. No other alternative industrial activities were assessed as the glass bottle manufacturing plant is considered a profitable business opportunity, which will be supported by a large organisation with regards to a secure off-take agreement. This plant will furthermore employ a large number of employees in comparison with other manufacturing operations. Other industrial/manufacturing alternatives may not employ as many individuals.</p> <p>From a local and regional perspective, the plant will contribute towards creating much needed employment opportunities, resulting in a positive impact, which could further be enhanced with mitigation measures. The proposed development will create approximately 800 construction employment opportunities at a peak annual value of R36.8 million for the construction phase.</p> <p>The operation of the facility will create 289 employment opportunities. Based on a current annual labour value of R128.57 million per annum, this equates to a present value of R1.4 billion over the 30 years of operational life.</p>	<p>Construction</p> <p>Operational</p>	H+	H	H	H	H	H+	VH+	VH	H	VH	H	VH+

ASPECT	POTENTIAL IMPACT	PROJECT PHASE	BEFORE MITIGATION						AFTER MITIGATION					
			INTENSITY	DURATION	SPATIAL EXTENT	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	INTENSITY	DURATION	SPATIAL EXTENT	CONSEQUENCE	PROBABILITY	SIGNIFICANCE
	The life of the operations is however expected to continue well beyond the current anticipated life of 30 years. The impact of decommissioning and closure phases were therefore not assessed. The duration of the potential impact was however only considered for the 30 years operational life, in the mitigated scenario this could possibly be extended.													
Impact on the economy	<p>The project has the potential to provide a cash injection to the local, regional and national economy.</p> <p>It was assumed that the entire project area could be utilised for a range of farming activities. Calculations indicated that maize farming will yield the best economic results. Based on this assumption the maximum present value that could potentially be generated from commercial maize farming is R4.7 million over a period of 32 years. The establishment of the glass bottle manufacturing plant would prevent this activity to take place for the duration of the operation.</p> <p>In comparison, the project will generate a present value revenue of R18.6 billion over the life of project, which will significantly contribute towards the local, regional and national economy and outweighs the contribution from current land and potential alternative land uses.</p> <p>The local and regional economy will benefit from the employment value created during the construction period and operational period. Mitigating measures must be implemented to ensure optimal operational efficiency to</p>	Construction Operational	H+	H	H	H	H	H+	VH+	VH	VH	VH	H	VH+

ASPECT	POTENTIAL IMPACT	PROJECT PHASE	BEFORE MITIGATION						AFTER MITIGATION					
			INTENSITY	DURATION	SPATIAL EXTENT	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	INTENSITY	DURATION	SPATIAL EXTENT	CONSEQUENCE	PROBABILITY	SIGNIFICANCE
	<p>secure maximum economic benefit. Even without mitigation, the local and regional economy will benefit from the operation but to a lesser degree. With mitigation through local economic development and social investment plans, it will be possible to enhance the contribution the operations will have on a local and regional economic scale. With mitigation some initiatives will be able to be sustained post closure</p> <p>The life of the operations is however expected to continue well beyond the current anticipated life of 30 years. The impact of decommissioning and closure phases were therefore not assessed. The duration of the potential impact was however only considered for the 30 years operational life, in the mitigated scenario this could possibly be extended.</p>													
Socio-economic development	<p>In addition to the direct and indirect economic impacts discussed above, the project through its corporate social investment, could contribute towards the local economic development in the area. The operation of the proposed plant may have the following positive socio-economic benefits to its employees and surrounding communities:</p> <ul style="list-style-type: none"> <li>• development of skills through a skills development plan;</li> <li>• learnership programmes to provide learners with an occupational qualification; and</li> <li>• investment in infrastructure development through local economic development and integrated development programmes.</li> </ul>	Construction Operational	M+	H	M	M	M	M+	H+	VH	H	VH	H	VH+

ASPECT	POTENTIAL IMPACT	PROJECT PHASE	BEFORE MITIGATION						AFTER MITIGATION					
			INTENSITY	DURATION	SPATIAL EXTENT	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	INTENSITY	DURATION	SPATIAL EXTENT	CONSEQUENCE	PROBABILITY	SIGNIFICANCE
	<ul style="list-style-type: none"> <li>SMME development</li> </ul> <p>The duration of the potential impact was however only considered for the 30 years operational life, in the mitigated scenario this could possibly be extended.</p>													
“No-go” alternative	<p>The assessment of this option requires a comparison between the options of proceeding with the project with that of not proceeding with the project. Proceeding with the project attracts potential economic benefits and potential negative environmental and social impacts. Not proceeding with the project leaves the status quo, but with potential loss in employment opportunities and revenue generation, which could potentially be generated by the development.</p> <p>The land in question is however earmarked for industrial development and it is possible for another development to be established should the glass bottle manufacturing project not proceed. An alternative development may however employ less people and generate less revenue, depending on the nature of alternative.</p> <p>There is no mitigation option available to the proponent to avoid the “no-go” alternative, as proceeding with the development is at the discretion of the decision-makers.</p> <p>From an economic perspective, the project will contribute positively towards the local, regional and national economy through its capital investment, creation of employment opportunities and revenue generation potential. This</p>		VL+	H	L	L	H	L+	VH+	VH	VH	VH	H	VH+

ASPECT	POTENTIAL IMPACT	PROJECT PHASE	BEFORE MITIGATION						AFTER MITIGATION					
			INTENSITY	DURATION	SPATIAL EXTENT	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	INTENSITY	DURATION	SPATIAL EXTENT	CONSEQUENCE	PROBABILITY	SIGNIFICANCE
	<p>contribution will be far greater than the current status qua. The project furthermore as the potential to create opportunities for SMME. Implementing management measures and commitments as outlined in the EMP will ensure that the project is executed within the framework of sustainable development, which will ensure that potential negative impacts are minimised and positive impacts enhanced.</p> <p>For the purpose of this assessment, the status quo was considered in the unmitigated scenario in comparison to establishing the proposed development in the mitigated scenario.</p>													



## 7 MITIGATION MEASURES

It is assumed that the glass bottle manufacturing operation will implement the commitments detailed in the EMP to avoid/mitigate/manage all environmental, social and economic impacts. In so doing the potential negative impacts on surrounding land values will be limited.

More specifically, during all project phases, the operation must ensure the following mitigation measure are implemented to minimise potential negative economic impacts and to optimise positive economic impact that may result from the proposed project:

- hire people from the greater Vereeniging area as far as is possible;
- introduce formal bursary and skills development programmes to the closest communities to increase the number of local skilled people and thereby increase the potential local employee base;
- where possible, procure local goods and services from the closest communities;
- facilitate local involvement in indirect business and service opportunities;
- implement a procurement mentorship programme which provides support to local and black owned businesses during the construction and operational phases;
- identify and develop sustainable business opportunities and skills, independent from the project for members of the local communities to ensure continued economic prosperity beyond the life of project.

## 8 ASSUMPTIONS AND LIMITATIONS

The following assumptions and limitations apply to the economic impact assessment:

- the information supplied by the client in relation to employment opportunities, income generation, life of operation and operational wage costs was assumed to be an accurate reflection;
- to determine the capital value of the total wages, the average salary of a construction worker as supplied by the Department of Labour was utilised;
- the value of the construction employment determined in the reports was based on an annualised number for the employment of approximately 800.
- a discount factor (a financial factor which, when multiplied by a predicted future cash flow from a loan or some other form of debt, gives its present value) of 8.97% as advised by the client was used to calculate the net present value calculations;

- present value calculations were applied over a period of 32 years, (2 years construction and 30 operational years);
- information used in some of the agricultural calculations was sourced from third parties. Errors with this information could possibly effect the results of the calculations and therefore the assessment;
- land values were based on available information as indicated in the report, however the true value of the land is determined by a range of factors and can therefore be higher or lower than the value used in this report.
- available municipal land valuation records were utilised to determine valuation rates for vacant land as well as land containing infrastructure;
- Portion 295 of the Farm Leeuwkuil 596 IQ, once the subdivision has been approved will be 29 hectares in extent. For the purposes of this study, 29 hectares was utilised in all calculations;
- maximum annual yields were assumed for each crop type, which is a conservative approach; and
- this study did not include a marketing study and the potential impact this project may have on the economic viability of competitors, and subsequent impacts on current employment opportunities was therefore not assessed.

## 9 CONCLUSION

From an economic perspective, the project will contribute positively towards the local, regional and national economy through its capital investment, creation of employment opportunities and revenue generation potential. The project furthermore has the potential to create opportunities for SMMEs. Implementing management measures and commitments as outlined in the EMPr will ensure that the project is executed within the framework of sustainable development, which will ensure that potential negative impacts are minimised and positive impacts enhanced.

On a national level, the project will support amongst others, the following South Africa's strategies and initiatives:

- Elimination of poverty and reduction of inequality by 2030 as outlined in the National Development Plan
- Creation of five million jobs and reduce unemployment from 25% to 15% over the next ten (10) years as outlined on the New Growth Path (2010), which aims to address

unemployment, inequality and poverty by unlocking employment opportunities in South Africa's private sector.

- Create jobs in the manufacturing sector as outlined in the Industrial Policy
- State's drive towards ensuring greater economic growth, buoyant and sustained job creation and the eradication of poverty.

The project will furthermore be aligned with the Gauteng Employment and Growth Strategy which incorporates sustainable job creation, SMME development and procurement support. On a local level, the proposed project will support the ELM Local Economic Development Strategy, which includes sustainable job creation within the manufacturing industry, SMME development and an aim to reduce poverty levels. Benefits and opportunities should be directed to local communities, where possible.

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