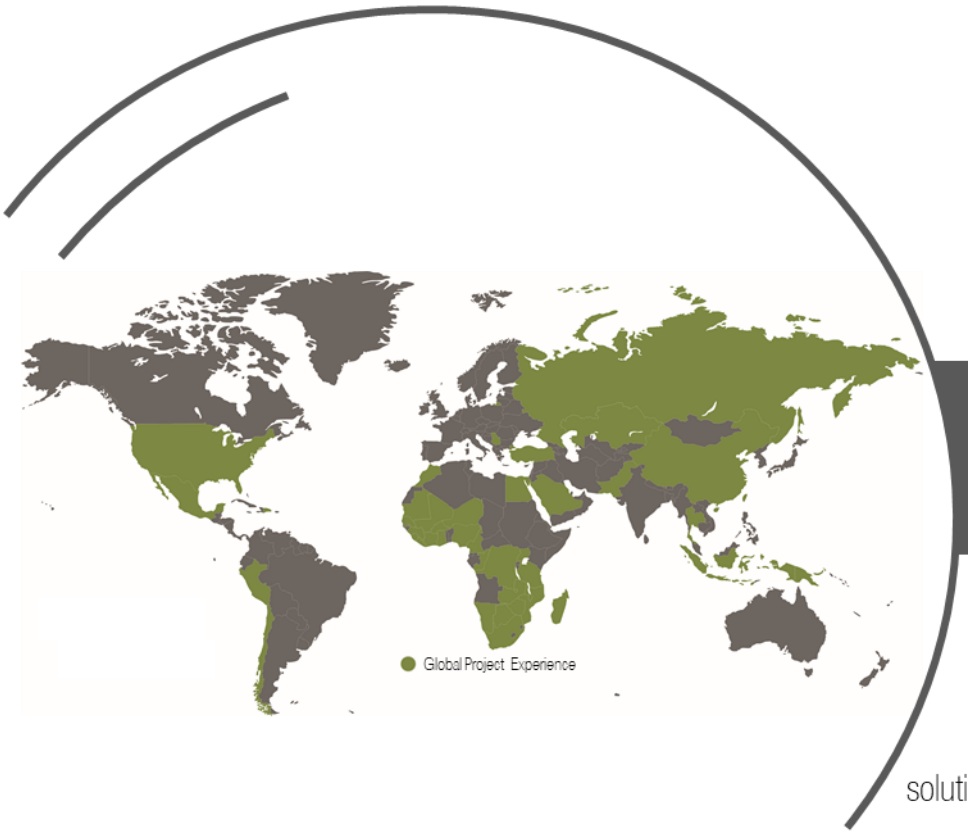

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Basic Assessment Process for the Closure of the Cooke Underground Operations

Social Impact Assessment

Prepared for:
Sibanye Gold Limited

Project Number:
SIB6297

October 2020

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Project Name:	Basic Assessment Process for the Closure of the Cooke Underground Operations
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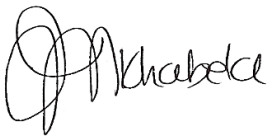
Name	Responsibility	Signature	Date
Janet Mkhabela	Report Compiler		06.10.2020
Nonka Byker	Report Reviewer		06.10.2020

DETAILS AND DECLARATION OF THE SPECIALIST

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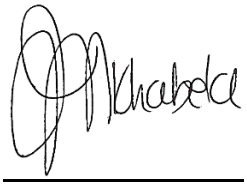
Experience (years):	14 years
Registration(s):	N/A

I, Janet Mkhabela, declare that: –

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

- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



06.10.2020

Signature of the Specialist *Date*

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EXECUTIVE SUMMARY

This Social Impact Assessment (SIA) has been prepared for Sibanye Gold Ltd, a subsidiary of Sibanye-Stillwater Ltd (hereinafter Sibanye), owners of Rand Uranium (Pty) Ltd (Rand Uranium), to undertake the closure and rehabilitation studies in support of the environmental regulatory process to authorise the decommissioning, rehabilitation and ultimate closure of the Cooke 3, 2 and 1 Shafts. Underground mining activities associated with these shafts are authorised under Mining Right (GP) 30/5/1/2/2 (07) MR (hereinafter referred to as the Cooke Underground Operations).

Cooke Underground Operations are located approximately 10 kilometres (km) south-east of Randfontein, in the West Rand District Municipality and within the Gauteng Province of South Africa.

This SIA considers the potential socio-economic impacts for the final decommissioning, rehabilitation and closure activities being undertaken. Sibanye-Stillwater has also commissioned Digby Wells to conduct a stand-alone Social Closure Plan (SCP) for the Cooke Operations. The study was designed to comply with the relevant national legislative requirements, such as those stipulated in NEMA EIA regulations Appendix 6 (Specialist Studies).

The activities undertaken as part of the study included the definition of study areas and the collection of publicly available secondary data and a review of Sibanye's internal documentation and reports. Primary information through, interviews, on the socio-economic characteristics of the primary study area will be gathered as part of the Social Closure Planning Study

The assessment of the socio-economic impacts identified for the proposed Project is based on an impact rating process designed to provide a numerical rating of the significance of each impact. The significance rating process follows the established impact / risk assessment formula where significance is a function of the consequence of an event multiplied by the probability of its occurrence. Several potential socio-economic impacts were identified for each phase of the Project and realistic measures were developed for mitigating, and if possible, avoiding the negative socio-economic impacts, and enhancing the benefits of positive socio-economic impacts.

Socio-economic environment of the primary study areas

The socio-economic environment is geographically defined as Gauteng Province (regional study area), West Rand District Municipality (WRDM) (secondary study area), Rand West City Local Municipality (RWCLM), Mogale City Local municipality (MCLM) and ward 53 and 135 of the City of Johannesburg (CoJ). In instances where relevant socio-economic data for wards 53 ad 135 was not available, the study reverted to using data for the entire CoJ. An overview of socio-economic characteristics of both the regional and secondary study areas has been provided; while a detailed description of the socio-economic characteristics of the primary study area was included.

Mogale City has the largest share of the population compared to Rand West City. The predominant ethnic groups across the primary study area are Black African, followed by White, Coloured and least are Indian. Overall, there are slightly more males than females, except in Ward 53 of the CoJ where there are more females compared to males.

The majority of the population are of economically active age groups, with the average age of 30 years across the primary study area. Only less than a third of the population was born within the Gauteng Province and an average of 90% are South African citizens.

An average of 36% of the population across the primary study area has completed Grade 12 level education; while an average of three percent (3%) across the primary study area have no schooling.

Mining is the predominant economic activity and contributor to the Gross Domestic Product (GDP) of the RWCLM compared to the other municipalities in the primary study area (i.e., trade is the leading economic activity in MCLM, financial services in the CoJ) and in WRDM. However, the mining is not the predominant employer - the finance, manufacturing, trade and government services are the largest employers of the population, these sectors also act as support to the mining industries.

Forty-six percent (46%) of households in the RWCLM reportedly have no income, which is higher than the provincial and district levels and surrounding municipalities which signifies that a large portion of households are living within the low bound and upper bound poverty line; which refers to the food poverty line plus the average amount derived from non-food items of households whose total expenditure is equal to the food poverty line.

A third of the households across the primary study area are female headed. Research indicates that female headed households tend to face greater social and economic challenges and are vulnerable to lower household incomes and higher rates of poverty[1].

Households within the primary study area generally have adequate availability and access to various basic services. However, there are some households who do not have access to grid electricity especially in RWCLM and MCLM (20% and 11% respectively). In the CoJ, 20% of households are without toilets; while both MCLM and CoJ still have households, whose refuse is not collected regularly (four percent (4%) respectively).

Potential Socio-Economic Impacts

A total of eight (8) socio-economic impacts were identified for the proposed Project, of which eight (7) positive and five (5) negative.

The positive impacts associated with the proposed Project include:

- Creation of temporary economic opportunities during the decommission phase;

[1] https://www.econrsa.org/system/files/publications/working_papers/working_paper_761.pdf

- Creation of temporary economic opportunities during the rehabilitation and closure phase;
- Reduction in illegal mining activities through the removal of viable mine infrastructure and capping of mine shafts;
- Improvement to the ambient environmental health due to the removal, rehabilitation and closure of Cooke 1, 2, and 3;
- Value-add through the sale of salvageable goods;
- Community development as part of social closure planning; and
- Freeing up of land and resources for alternative uses.

The successful implementation of the enhancement measures listed for each of these positive impacts in Section 7 will enhance their significance from minor-positive to major-positive.

The potential negative impacts associated with the proposed Project include:

- Loss of economic opportunities due to mine the closure Cooke 1, 2, and 3;
- Workforce health, safety and security risks due to the handling and management of contaminants and possible encounters with illegal miners underground, during the process of decommissioning and rehabilitation;
- Community unrest due to a perceived and potential lack of economic opportunities related to decommissioning, rehabilitation and closure of Cooke 1, 2 and 3;
- Decreased community health and safety due to inappropriate disposal of hazardous waste if not implemented by registered accredited persons or business; and
- Increased illegal mining activities in surrounding mines due to the loss of economic opportunities associated with Cooke 1, 2, and 3.

Most of the negative impacts can be avoided, except for the impact associated with decreased community health and safety due to inappropriate disposal of hazardous waste if not implemented by registered accredited persons or business; if the Project goes ahead; their intensity, duration and significance can be reduced if the mitigation measures listed for each impact are successfully implemented.

A summary of the socio-economic impacts and the pre-mitigation and post-mitigation significance is presented in Table 1-1.

Table 1-1: Summary of Socio-economic Impacts and Pre- and Post-Mitigation Significance

Impact	Project Phase	Significance (Pre-mitigation)	Significance (Post-Mitigation)
Loss of economic opportunities associated with Cooke 1, 2, and 3	Decommissioning, rehabilitation and closure	Major - negative (-126)	Moderate - negative (-90)
Creation of temporary Economic Opportunities	Decommissioning	Minor - positive (45)	Minor - positive (60)
Creation of temporary economic opportunities	Rehabilitation and Closure	Minor - positive (45)	Minor - positive (60)
Community development as part of social closure planning	Decommissioning, rehabilitation and closure	Minor - positive (70)	Moderate - positive (96)
Value-Add associated with the sale of salvageable goods	Decommissioning	Minor - positive (36)	Minor - positive (52)
Community Unrest due to a perceived and potential lack of economic opportunities as it relates to decommissioning, rehabilitation and closure of Cooke 1, 2 and 3	Decommissioning	Minor - negative (-60)	Minor - negative (-40)
Improvement to the ambient environmental health due to the removal, rehabilitation and closure of Cooke 1, 2, and 3	Decommissioning, rehabilitation and closure	Moderate - positive (90)	Moderate - positive (90)
Freeing-up of land and resources for alternative uses	Rehabilitation and closure	Major - positive (119)	Major - positive (119)
Workforce health, safety and security risks due to the handling and management of contaminants and possible encounters with illegal miners underground	Decommissioning, rehabilitation and closure	Negligible - negative (-32)	Negligible - negative (21)

Impact	Project Phase	Significance (Pre-mitigation)	Significance (Post-Mitigation)
Increased illegal mining activities in surrounding mines due to the loss of economic opportunities	Decommissioning, rehabilitation and closure	Moderate - negative (-96)	Moderate - negative (-96)
Reduction in illegal mining activities through the removal of viable mine infrastructure and capping of mine shafts	Decommissioning	Moderate - positive (96)	Moderate - positive (96)
Decreased Community Health and safety due to inadequate disposal of hazardous waste if not implemented by registered accredited persons	Decommissioning	Minor - negative (-44)	Negligible - negative (-32)

From a socio-economic perspective, it is recommended that the proposed Project proceed based on a prudent approach through Sibanye-Stillwater's implementation of the mitigation and enhancement measures listed for each potential socio-economic impact, negative and positive, and that a social management and social monitoring plan be developed to manage and monitor the implementation of these measures. The plans should be geared toward the enhancement of plans already implemented at Sibanye-Stillwater as part of the current and future Social Labour Plans as well as Social Closure Plans for the operation.

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ACRONYMS, ABBREVIATIONS AND DEFINITION

CoJ	City of Johannesburg
CEF	Community Engagement Forum
COVID-19	Novel Coronavirus of 2019
EH&S	Environment, Health and Safety
FWRDWA	Far West Rand Dolomitic Water Association
GDP	Gross Domestic Product
HRD	Human Resources Development Framework
IDP	Integrated Development Plan
LoM	Life of Mine
MCLM	Mogale City Local Municipality
MPRDA	Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
MQA	Mining Qualifications Authority
MRA	Mining Rights Area
MTIS	Mineable tonnes in-situ
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
PPE	Personal Protective Equipment
SETA	Sector Education and Training Authority
SGA	Sibanye Gold Academy
SIA	Social Impact Assessment
SLP	Social and Labour Plan
RWCLM	Rand West City Local Municipality
WRDM	West Rand District Municipality

Legal Requirement		Section in Report
(1)	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;	Page ii Appendix B
(b)	a declaration that the specialist is independent in a form as may be specified by the competent authority;	Page ii
(c)	an indication of the scope of, and the purpose for which, the report was prepared;	?
cA	And indication of the quality and age of the base data used for the specialist report;	Section 4
cB	A description of existing impacts on site, cumulative impacts of the proposed development and levels of acceptable change;	Section 7.2
(d)	The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	Section 8
(e)	a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of the equipment and modelling used;	Section 5
(f)	Details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure inclusive of a site plan identifying site alternative;	Section 7
(g)	an identification of any areas to be avoided, including buffers;	
(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
(i)	a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 4
(j)	a description of the findings and potential implications of such findings on the impact of the proposed activity or activities;	Section 6 & 7
(k)	any mitigation measures for inclusion in the EMPr;	Section 8
(l)	any conditions/aspects for inclusion in the environmental authorisation;	
(m)	any monitoring requirements for inclusion in the EMPr or environmental authorisation;	Section 8
(n)	a reasoned opinion (Environmental Impact Statement) -	Section 12

Legal Requirement		Section in Report
	whether the proposed activity, activities or portions thereof should be authorised; and	
	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 & 11
(o)	a description of any consultation process that was undertaken during the course of preparing the specialist report;	Section 5
(p)	a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	-
(q)	any other information requested by the competent authority.	-

1 Introduction

Digby Wells Environmental (hereafter Digby Wells) was appointed by Sibanye Gold Ltd (a subsidiary of Sibanye-Stillwater Ltd., hereinafter Sibanye), owners of Rand Uranium (Pty) Ltd (hereafter Rand Uranium), to undertake the closure and rehabilitation studies in support of the environmental regulatory process to authorise the decommissioning, rehabilitation and ultimate closure of the Cooke 3, 2 and 1 Shafts. Underground mining activities associated with these shafts are authorised under Mining Right (GP) 30/5/1/2/2 (07) MR (hereinafter referred to as the Cooke Underground Operations).

A Basic Assessment Process has been undertaken in terms of the EIA Regulations, 2014 (GN R326 of 7 April 2017), as amended, promulgated under the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). It is noted that the environmental regulatory process also includes an application for a Water Use Licence (WUL) in terms of the National Water Act, 1998 (Act No. 36 of 1998) (NWA).

This report constitutes the Social Basic Assessment Report to identify and quantify positive- and negative impacts on the social environment as a result of decommissioning and rehabilitation activities to be undertaken at the Cooke 3, 2 and 1 Shafts, as well as the ultimate closure state of the shafts.

2 Project Description

Rand Uranium is the holder of a converted Mining Right for the Cooke Underground Operations located approximately 10 kilometres (km) south-east of Randfontein, in the Rand West City Local Municipality of the West Rand District.

The operations comprise three underground mine shaft complexes, namely: Cooke No. 1, No. 2 and No. 3 Shafts. The underground workings are accessible through vertical shafts at each of these complexes. Infrastructure in the underground workings includes water pumping and treatment systems including clarifiers, attenuation and settling dams as well as storage areas, underground walkways and conveyors. Ancillary surface infrastructure including administrative and workshop buildings water management structures (e.g. water storage infrastructure, trenches, berms etc.) are also in place at each of the complexes.

Underground mining at all three shafts ceased in May 2018. Sibanye has maintained an extensive groundwater pumping and treatment scheme to keep the underground workings dry in case of the recommencement of mining in future. Following extensive investigations, no sustainable mining plans were found to be feasible and as such, a permanent closure solution is now being sought out.

The scope of final decommissioning, rehabilitation and closure activities being applied for by Rand Uranium are described below.

2.1 Cessation of Underground Water Pumping- and Discharge Remine

During this time, Rand Uranium maintained an extensive groundwater pumping and treatment scheme to continue access to the underground mine workings through the prevention of the flooding of mining areas due to groundwater ingress. Extraneous water collected from underground is treated in a series of settlers after which it is transported to surface for further settlement, evaporation and discharge to the environment.

An overview of the process is described in Table 2-1 and depicted in Figure 2-1 below.

Table 2-1: Water Management Process at Cooke 3, 2 and 1 Shafts

Process step	Cooke 1 Shaft	Cooke 2 and 3 Shafts
Collection and treatment of extraneous underground water	Underground water from Cooke 1 Shaft is pumped to and treated through a series of settlers and stored in underground dams located at Cooke 1 Shaft.	Underground water from Cooke 3 Shaft is pumped and gravitated to Cooke 2 Shaft. The underground water is treated through a series of settlers and stored in underground dams located at Cooke 2 Shaft.
Surface treatment	From the underground dams, water is pumped to surface for settling of suspended solids as well as for attenuation purposes.	From the underground dams, water is pumped to surface for settling of suspended solids as well as for attenuation purposes.
Transport and end-destination	Water is discharged by means of a concrete canal into the Wonderfonteinspruit - a discharge point located below Cooke 1 Shaft.	Water is discharged through a short pipeline and a concrete channel into the Magazine Pan, an artificial depression wetland where evaporation and recharge to underground aquifers.
Sediment disposal	The settled solids are disposed of in paddocks on surface at the shaft.	The settled solids are disposed of in paddocks on surface at the shaft.

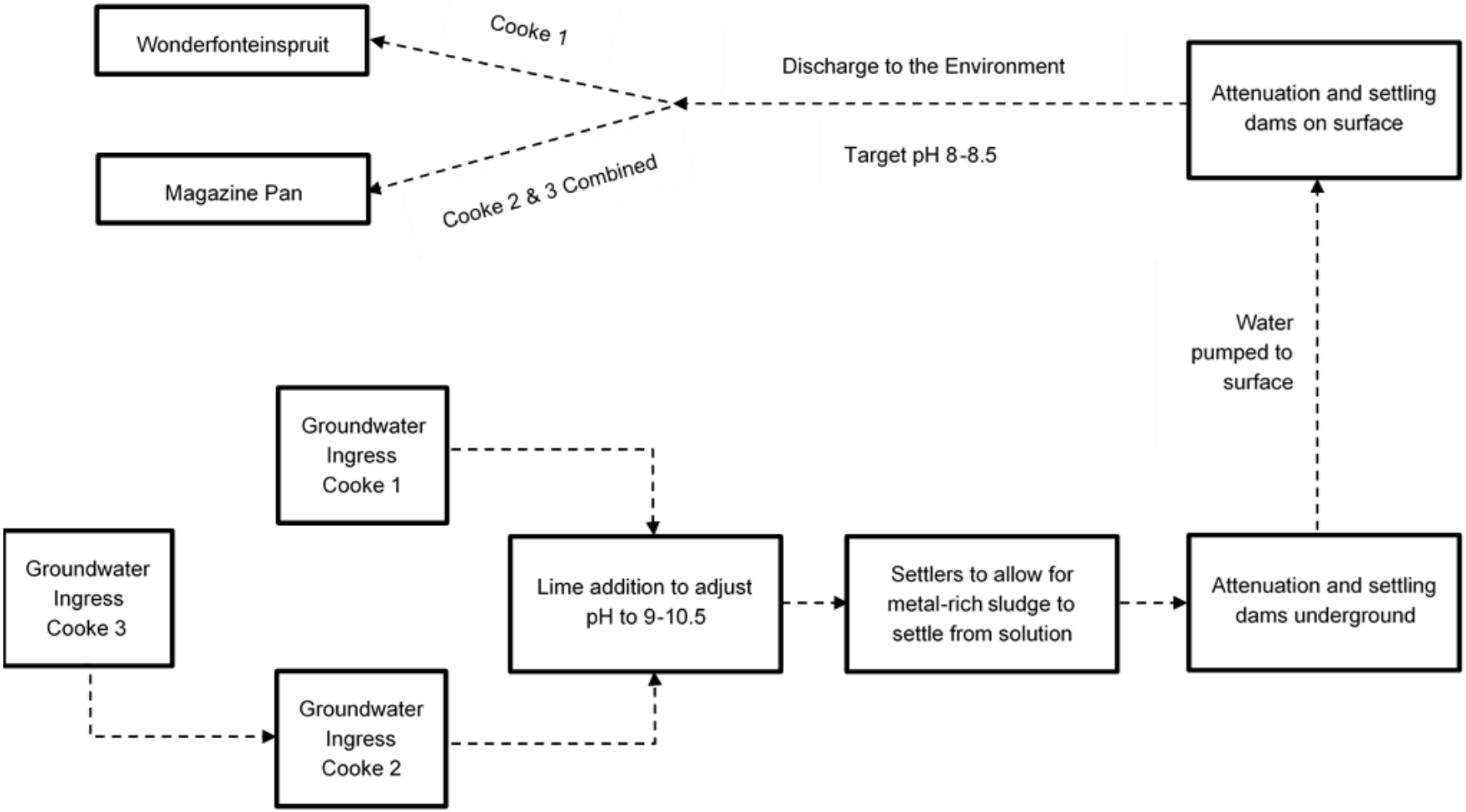


Figure 2-1: Water Management Process

The scope of decommissioning, rehabilitation and closure activities to be undertaken as a result of the cessation of underground water pumping- and discharge regime include:

- Removal and decontamination of underground infrastructure containing hydrocarbons and other contaminants from the Cooke 3, 2 and 1 underground workings;
- Refurbishment of plugs between Cooke 3 and Cooke 4 Shafts, as well as between Cooke 1 and Doornkop Mine;
- Rewatering of underground workings;
- Potential capping of the shaft barrel below the dolomitic aquifer, dependent on specialist studies regarding the groundwater quality;
- Decommissioning of surface dams and rehabilitation of dam footprints;
- Removal of settled solids from surface paddocks and mud ponds for processing through the Plant and/or disposal into the Pits;
- Rehabilitation of surface paddocks and mud ponds;
- Decommissioning and rehabilitation of concrete channels; and
- Rehabilitation of Magazine Pan, a pan used for water management.

2.2 Removal of Shaft Infrastructure

The scope of decommissioning, rehabilitation and closure activities for shaft infrastructure at Cooke 3, 2 and 1 Shafts include:

- Decommissioning of shaft headgear and surface infrastructure;
- Capping of shafts;
- Sale of salvageable items;
- Disposal of waste; and
- Rehabilitation of infrastructure footprints.

It is proposed to remove all surface infrastructure to reduce the risk of vandalization and theft by illegal activities prevalent in the area. The shafts will be capped, and potentially backfilled (tailings, rock and/or rubble, to make the area safe and prevent access to underground workings, which will be rewatered at closure.

2.3 Wetland Rehabilitation

In addition to the activities proposed for the permanent closure of the Cooke Underground Operation, Sibanye also intends to undertake closure evaluation and planning rehabilitation activities of wetlands located at its Cooke Surface Operations, under (GP) 30/5/1/2/5 (173) MR), which have been affected by current and historic legal and illegal mining activities. These activities are not necessarily associated with the Sibanye-Stillwater activities.

2.4 Alternatives Considered

As indicated above, Rand Uranium has maintained an extensive groundwater pumping, treating and discharge regime at the Cooke Underground Operations while investigating alternatives for the continuation of the operation. No sustainable mining plans, including sale to other parties, were found to be feasible and as such, a permanent closure solution is now being sought. The decommissioning, rehabilitation and closure activities discussed above are the only way to achieve sustainable closure. The following provides more detail behind the decision taken to at first cease mining at the Rand Uranium underground operations and then thereafter apply for decommissioning and closure of these shafts:

- Prior to the decision to undertake a Section 52 process as per the Mineral and Petroleum Resource Development Act No. 28 of 2002 a detailed consideration of the profitability of the underground mining operations was undertaken. Despite higher than average gold prices at the time of assessment and used in the projections the current and future underground mining operations were still found to be significantly loss making, with an expected loss of thousands of millions.
- The above considerations around profitability are also essential to understand how Sibanye-Stillwater responsibly undertakes peripheral support services which also require significant resources. A profitable mine will influence the ability of the mine to deliver essential services including health, safety, social and environmental obligations. The ongoing losses inevitably result in our inability to continue to support these imperatives, as has been demonstrated in the numerous, more than 6000, ownerless and derelict mining sites across South Africa. This then becomes the States responsibility and invariably burden on you and I as tax payers
- In an attempt to address the issues above numerous additional undertakings were made in order to find a sustainable way forward for mining these areas:
    - Task team to ensure a reduction in expenditure to focus only on absolutely necessary expenditure and reduce all other costs;
    - Extensive consultation with organised labour;
    - Off-set against other operations, including the surface operations, which in turn resulted in the impact on the profitability and sustainability of these operations;
    - Various projects were investigated in terms of engineering, mining and cost reduction improvements so as to ensure productivity improvements, however the production levels remained below the required plans in order to ensure a sustainable and profitable mining operation;
    - Intensified efforts in curbing the impact of illegal mining, such as through the implementation of food bans;
    - Restructuring processes to consolidate management across operations as well as reduction in contracted labour were implemented to reduce costs; and

- Restructuring at other operations, such as Kloof and Driefontein, was also implemented as a strategy to support the continuation of mining at Rand Uranium.

Despite the significant attempts to drive sustainability of the Cooke operations, the profitability of the operations was further influenced by illegal strike actions, despite the extensive engagement performed as part of eight future forum meetings.

Unfortunately, the above-mentioned considerations and efforts could not drive underground sustainability and resulted in the cessation of the underground mining operations however this did result in the surface operations being able to continue.

Sibanye-Stillwater has committed significant resources including making financial closure provisions to provide for concurrent rehabilitation and sustainable closure planning such as the Bokomosa Ba Rona initiative which looks to provide a sustainable socio-economic post mining economy.

Overall, the above considerations and efforts still resulted in the surface operations being able to continue, and in turn the cessation of the underground mining operations. The portability of the operations was further influenced by illegal strike actions, despite the extensive engagement performed as part of eight future forum meetings.

Health and Safety: Sibanye-Stillwater has adopted health and safety as core to its mandate to ensure responsible mining continues, with safety forming part of its C.A.R.E.S values. Due to the age on of the mining operations significant focus and investment is required to ensure these factors are addressed, and despite the focus on reduced cost at no time were projects aimed at maintaining a workplace that is safe deferred, even when the operations were loss making. The health and safety factors however extend beyond active mining areas and also take into consideration the monitoring and implementation of mitigation measures to address potential risks to surrounding communities as required in various legislative requirements in terms of air quality, water quality and radiation risks.

Environmental: Sibanye- Stillwater addresses the environmental concerns and the potential impact on the surrounding stakeholders through various compliance requirements as well as continual investigation into improved management measures beyond compliance, these include:

- Compliance to NEMA and NWA legislative requirements, including rehabilitation, financial provisioning, specialist assessments, routine inspections, audits, monitoring of air emissions including dust, water quality, noise, visual, waste and land management factors. Regular reviews are done of these processes to ensure best practice implementation and continual improvement.
- Development, review and implementation of environmental procedures based on both national and international best practice and informed by science-based principles.
- Involvement and support of research initiatives and non-profit organisations.

- Support of and involvement in environmental awareness creation initiatives internally and by external non-governmental organisations allowing for site visits for numerous communities, regulatory, industry, media and regulatory groups to better inform their understanding of the challenges faced within the South African Gold Mining Sector.
- Support of and contribution towards government driven initiatives, such as Catchment Forums, treatment of acid mine drainage and providing case studies to inform decision-making around responsible mine-closure in terms of complex issues for environmental rehabilitation and concurrent environmental impact mitigation and management.
- Radiation and ground stability issues are included in the consideration around environmental management but also form core components to the management of potential social risks, with Sibanye-Stillwater working closely with the National Nuclear Regulator (NNR) and Council of Geoscience to ensure compliance.

Social: Sibanye-Stillwater has managed its social responsibilities towards its stakeholders in a multifaceted approach bearing in mind that the stakeholders form a core part of the success of Sibanye-Stillwater's operations, these approaches include:

- Transparent disclosures in annual reports;
- Compliance with legislative requirements in terms of Social Labour Plans, and where these have fallen short evaluation of mechanisms to address shortcomings;
- Regular consultation with regulators, including local municipalities to identify social economic projects during and after mining;
- Community engagement as part of regulatory processes but also addressing additional initiatives to bridge communication gaps such as through participatory Community Engagement Forums, using enabling technology etc.;
- Transparent advertising of tender and employment opportunities on the Sibanye-Stillwater website, as well as dissemination of these opportunities through stakeholder communication groups with affected communities;
- Focus of transformation requirements to address gender and racial inequities as disclosed in public plans and documents.

As a final consideration Sibanye-Stillwater did investigate the sale of the underground operations, however no viable investors or purchasers were found that could support the responsible continuation of mining.

Therefore the closure of the underground operations did not merely take into consideration the economic profitability of the operations as a function of the production of gold from the underground operations, but rather as an integrated detailed understanding of the complex requirements associated with the responsible execution of mining taking into consideration all aspects of the safe mining environment and life-cycle. These factors cannot be excluded as this may lead to the risk of unscheduled and poorly planned mine closure, which ultimately this process of closure of the underground mining right aims to mitigate. Mining by its very

definition as an extractive process of non-renewable resources is a finite process and therefore an activity that must reach an end, it is therefore imperative that the social impact mitigation and planning processes consider this and work towards viable and sustainable post closure solutions. Sibanye-Stillwater has acknowledged the need for this and will not only conduct the requirements as stipulated in the legislative considerations but will further conduct a Social Closure Planning process to enhance upon the legislative requirements; which in turn is in support of numerous research that has been conducted to prevent the repetition of the adverse landscapes created due to ownerless and derelict mining landscapes.

3 Relevant Legislation, Standards and Guidelines

The Social Basic Assessment has been completed in terms of NEMA Environmental Impact Assessment (EIA) Regulations, 2014 (as amended) Appendix 6: Specialist Reports. As part of the SCP Study, the specialist will adopt the report to international standards such as the International Finance Corporation (IFC) and International Council on Mining and Metals (ICMM).

4 Assumptions, Limitations and Exclusions

The constraints and limitations to the Social Basic Assessment is presented in Table 4-1 below:

Table 4-1: Applicable Constraints and Limitations and Their Consequences

Constraint or Limitation	Consequence
To ensure a consolidated comprehensive process is followed no primary data collection will take place for this study. It is envisioned that primary data will be collected as part of additional of the Social Closure Planning process as commissioned by Sibanye-Stillwater, thereby reducing duplication and/or the missing of information provided in one process and not the other,	Impact assessment based on secondary data collected via online resources.
Given the scope of the assessment (i.e. a basic assessment), a socio-economic survey was not conducted with households located in primary study area. Instead the socio-economic indicators were derived from official census data, on ward level, where available (2011; 2016).	Some of the data may be outdated owing to the last official census conducted in 2016. The issue of outdated information will be addressed through the collection of primary information during the Social Closure Planning Study.

5 Methodology

This Section provides a description of the study terms of reference and methodology.

5.1 Terms of Reference

The Terms of Reference (ToR) for the study are to:

- Describe the baseline socio-economic characteristics of the proposed Project site and surrounding area;
- Identify, describe and assess the expected significance of potential socio-economic impacts that may arise as a result of the proposed Project.; and
- Recommend appropriate mitigation measures and management actions to avoid or minimise potential negative impacts, and to enhance the positive impacts associated with the proposed Project.

5.2 Definition of Study Areas

The international finance corporation (IFC) defines a study area as “an area that is likely to experience impacts arising from, or exert influence on, the Project or activity being assessed”. Three interdependent study areas were identified for the purposes of this study and correspond, where relevant, to the existing administrative boundaries. The study areas were derived through a mapping exercise considering settlements in relation with Project footprint and its associated buffer areas. Subsequently, areas of that are likely to experience Project impacts were identified and categorised as:

- Direct area of impact – will experience the most Project effects (positive and negative) due to their proximity to the Project footprint;
- In-direct area of impacts - will experience some Project impacts including economic pull exerted by the Project; and
- Induced areas of impact – which will experience Project impacts regardless of their geographical proximity to the Project site; such impacts may be triggered by directly and in-directly affected people’s decreased spending in the economy thus decreased demand for goods and services; therefore some industries needing to employ more people in order to meet the demand for services and goods.

Based on the abovementioned exercises, the following study areas have been identified:

- The regional study area – the area likely to experience the in-direct or induced impacts of the proposed Project. This area encompasses the entire Gauteng Province inclusive of its two district municipalities and four (4) metropolitan areas as shown in Figure 5-1;
- The secondary study area – the area likely to experience impacts related to the economic pull exerted by the Project; and it is comprised of West Rand District Municipality (or WRDM) and City of Johannesburg as depicted in Figure 5-2; and

- The primary study area – the area likely to experience Project related impacts. This study area is defined as the extent of the land areas that fall within or are immediately adjacent to the Project footprint (see Figure 5-3). The area encompasses the entire Rand West City Local Municipality (RWCLM), Mogale City Local Municipality (MCLM) and Ward 53 and Ward 153 from the City of Johannesburg (CoJ). Cooke 1, 2 and 3 traverses through 31 wards in two (2) local municipalities and one metropolitan area.

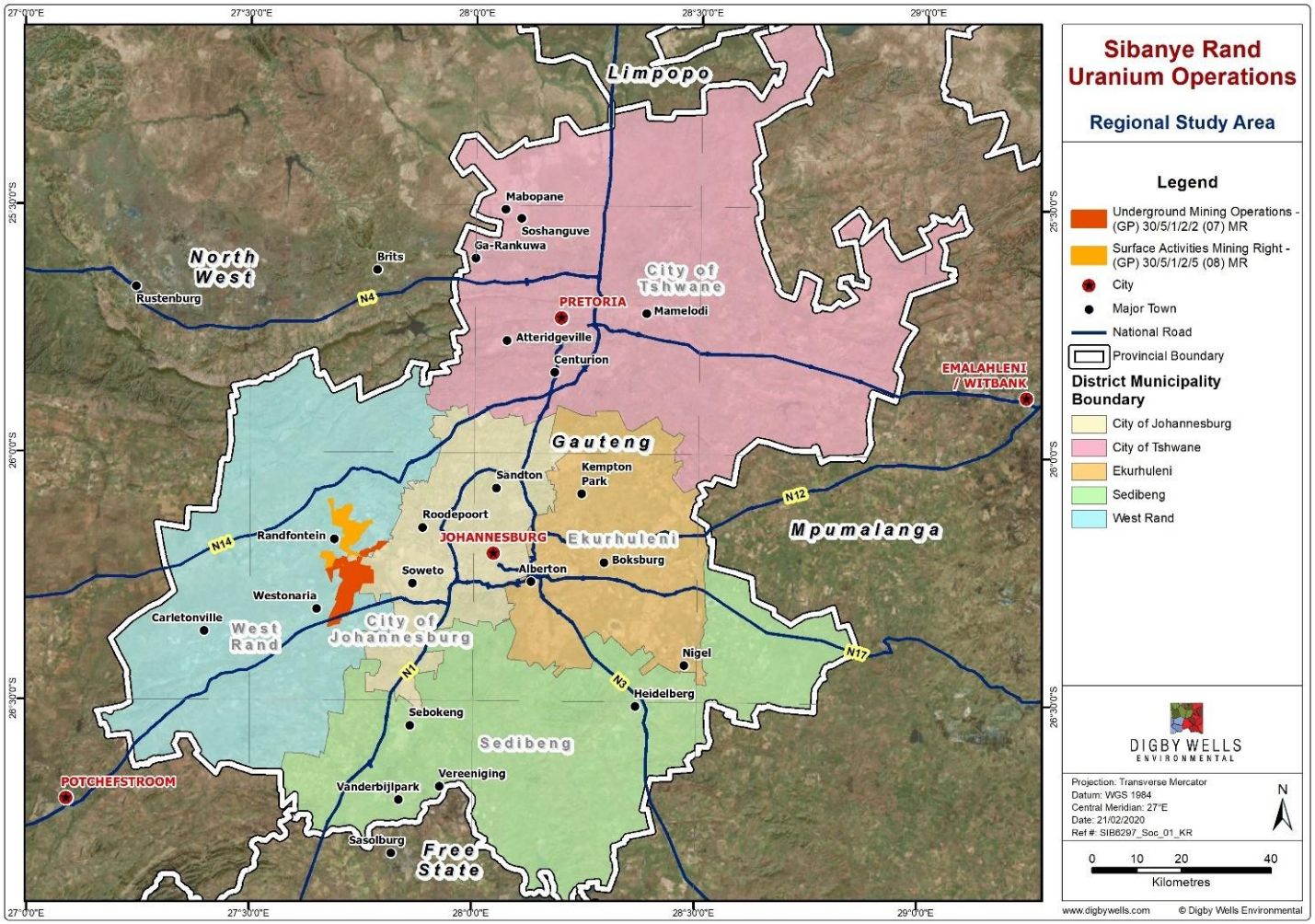


Figure 5-1: Regional Study Area

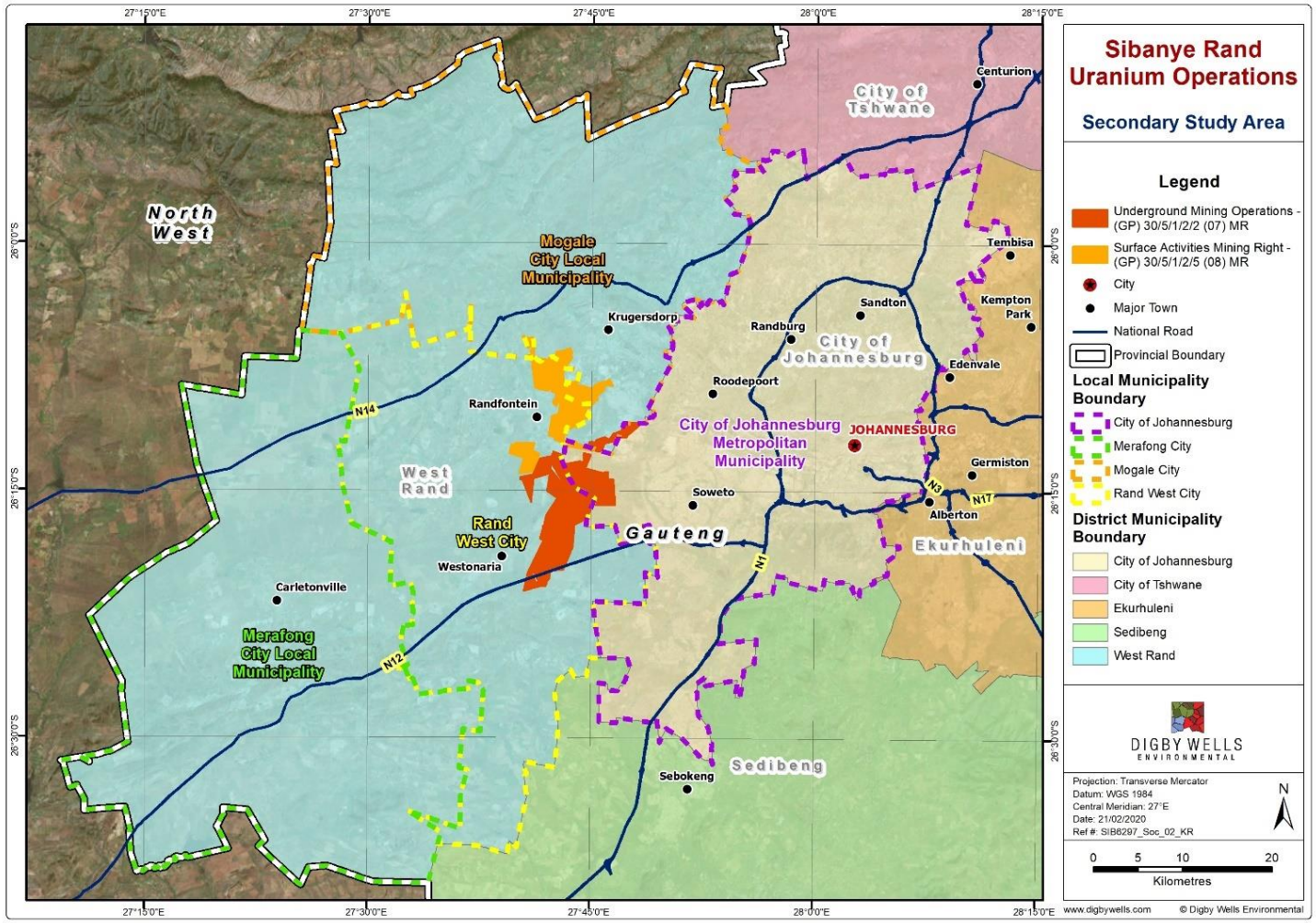


Figure 5-2: Secondary Study Area

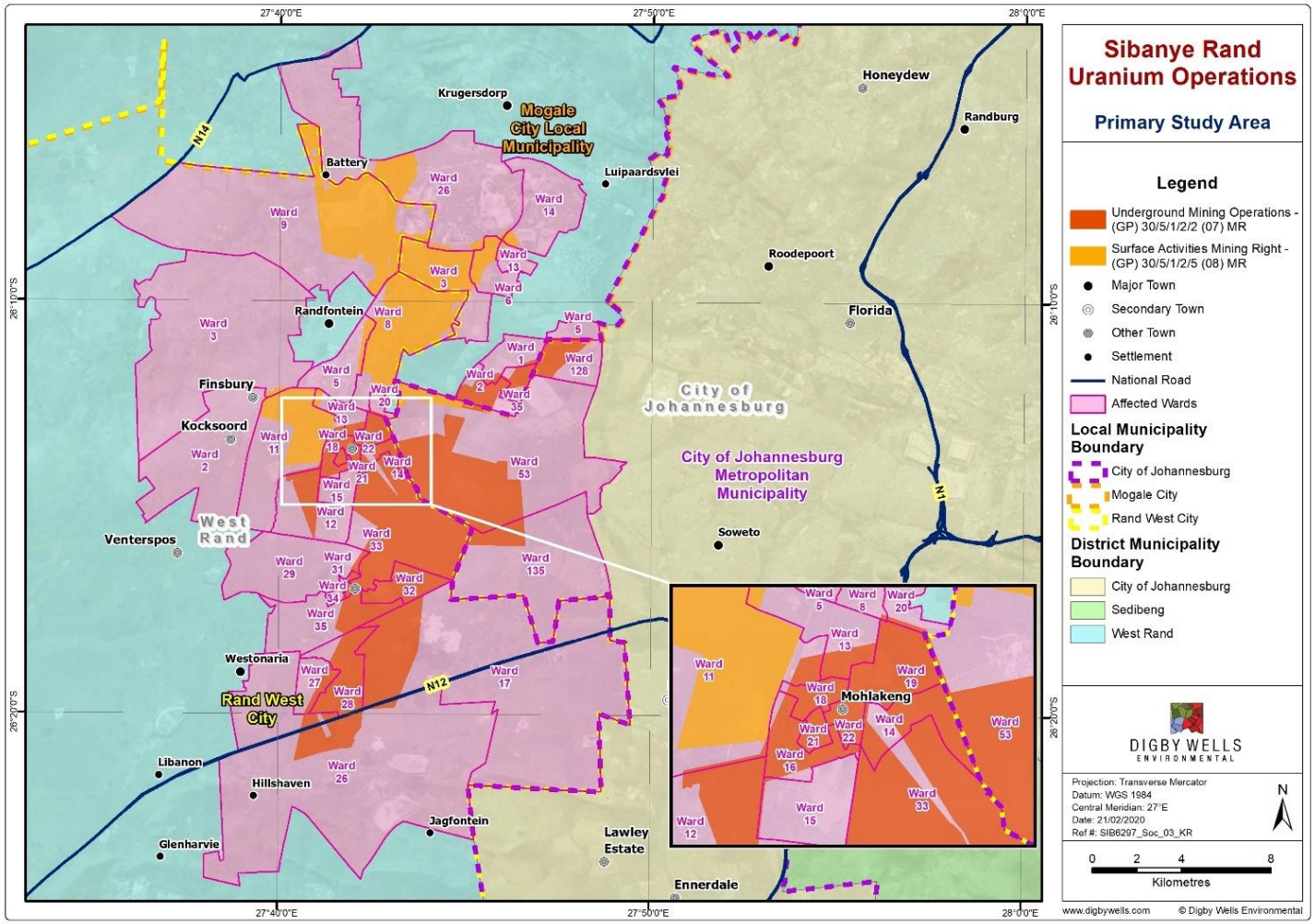


Figure 5-3: Primary Study Area

5.3 Data Collection

The information presented in this report was obtained through a desktop review of readily available documents to obtain relevant socio-economic baseline information on the defined study areas. Documents reviewed include:

- Provincial, district and local municipal reports; such as:
  - Provincial Gauteng provincial profile: Community Survey 2016,
  - Gauteng Socio-Economic Review and Outlook 2016
  - Poverty and Inequality in the Gauteng City-Region, 2018; and
  - Integrated Development Plans for West Rand District, Rand West City, Mogale City and City of Johannesburg;
- StatsSA census data from Wazimap[2];
  - Sibanye policy statements and reports such as Social and Labour Plans (SLPs); annual sustainability reports amongst others; and
  - Maps and satellite imagery released by the Client.
- Internal Sibanye reports and documents including the Annual Integrated Report of 2019.

5.4 Compilation of the Report

5.4.1 Socio-Economic Baseline Profile

On the basis of the information collected through the desktop review a socio-economic baseline profile was compiled for the primary study area considered as part of this profile include (but are not limited to) the following:

- An overview of the socio-economic characteristics of the regional and secondary study areas;
- Description of the socio-economic characteristics of the primary study area including:
  - Demographic characteristics;
  - Education levels;

[2] Wazimap data is supported by the South African government, specifically through the Department of Public Service and Administration's (DPSA's) initiative to develop www.data.gov.za as a central point for accessing public government data. Wazimap is a featured app on the website (South Africa National Data Portal) and provides Census 2011 socio-economic data adjusted to 2016 ward boundaries. The latter dataset was used as it allowed comparisons across the province, district and local municipality, and the ward in which the Project was located. More recent estimates of socio-economic status of the population are available in the Community Survey 2016 dataset for the first three levels of government but not at ward level

- Economic and livelihoods characteristics (including economic sectors, employment status and income profiles);
- Household characteristics;
- Household access to public services and infrastructure; and
- An overview of Cooke 1, 2 and 3 Socio-economic indicators.

5.4.2 Analysis and Reporting

The assessment of the socio-economic impacts identified for the proposed Project is based on an impact rating process designed to provide a numerical rating of the significance of each impact. The significance rating process follows the established impact / risk assessment formula where significance is a function of the consequence of an event multiplied by the probability of its occurrence. A detailed description of the impact assessment methodology used is presented in Appendix A.

The following steps were undertaken as part of the impact assessment:

- Impact identification and assessment: Based on the anticipated interaction between specific and / or collective Project activities and baseline socio-economic conditions, several potential impacts were identified for each phase of the Project; and
- Impact mitigation: realistic measures were developed aimed at mitigating, and if possible, avoiding the negative social impacts, and enhancing the benefits of positive social impacts.

6 Findings and Discussion

6.1 Socio-economic Environment

This Section provides the socio-economic descriptions of the regional, secondary and primary study areas. Only an overview of the regional and secondary study areas has been provided; in turn, a detailed description of the socio-economic description of the primary study area is provided. Where information was not readily available for the affected wards in the CoJ, the entire metropolitan areas' data has been used.

6.1.1 An overview of the Socio-economic Characteristics of the Regional Study Area

Gauteng is the most populous province in South Africa with a population of 13,339,724 (or 26%) of the total population of the country. The population is comprised of more males compared to females (50.4% and 49.6% respectively). Over two thirds of the population are of economically active ages [3]. The predominantly spoken languages in the province are IsiZulu

[3] Economically active population refers to people from 18 to 64 years of age who are either employed or unemployed and seeking employment.

at 23%; followed by English (13.3%) and 12.7% of the population speaks Sesotho. The province is comprised of 3,9 million households with an average household size of three (3) people per household.

Only 7.8% of the provincial population was reported as having no schooling, while the majority (72%) had some or completed secondary schooling and 11% completed higher education. Over half of the Gauteng provincial population were reportedly employed (51%) and 18% were unemployed. The remaining 31% were part of the not economically active population. Of the total employed population, 71% were employed within the informal economic sector.

The predominant economic sectors are financial, manufacturing, transport, technology, and telecommunications sectors, among others. The same sectors were reported as the main sectors of employment for the population employed in the formal economic sector.

Overall, the provincial population has adequate access to public services and infrastructure with 97% of household having access to piped water, while 89% use flush and / chemical toilets, 85% had their refuse collected frequently and 89% had access to grid electricity.

6.1.2 An Overview of the Socio-economic Characteristics of the Secondary Study Area

The WRDM had a population 820,995 residing in 330,573 households. The majority of the population (66%) was reported to be of economically active age groups. Fifty two percent (52%) of the population were males. The predominantly spoken languages in the district were Setswana (32%), followed by 17% of the population that spoke Afrikaans, 14% isiXhosa and 10% spoke Sesotho. Most people in the district (72%) have some or completed secondary schooling; while four percent (4%) have no schooling and seven percent (7%) have attained higher education. Half of the population in the district were reportedly employed and 18% were unemployed. Of those employed 75% worked in the informal sector.

The mining is the most dominant economic sector in the district, followed by government services, manufacturing, finance and trade, among others. Even though mining is the predominant economic sector, however, it employs the least number of people while trade, finance, manufacturing, and government services employ the most people.

Households in the district with access to piped water equate to 92%, while 76% have access to grid electricity, 87% have access to flush or chemical toilets and 83% have their refuse collected regularly by a service provider – households whose waste is not collected is disposed of in open spaces or burnt.

6.1.3 Description of the Socio-economic Characteristics of the Primary Study Area

6.1.4 Demographic Characteristics

Mogale City has the largest share of the population compared to Rand West City. The predominant ethnic groups across the primary study area are Black African, followed by White,

Coloured and least are Indian. Overall, there are slightly more males than females, except in Ward 53 of the City of Johannesburg where there are more females compared to males. The majority of the population are of economically active age groups with an average age of 30 across the primary study area. Nearly a third of the population was born within the Gauteng province and with an average of 90% being South African citizens. Figure 6-1 provides a summary of the population characteristics.

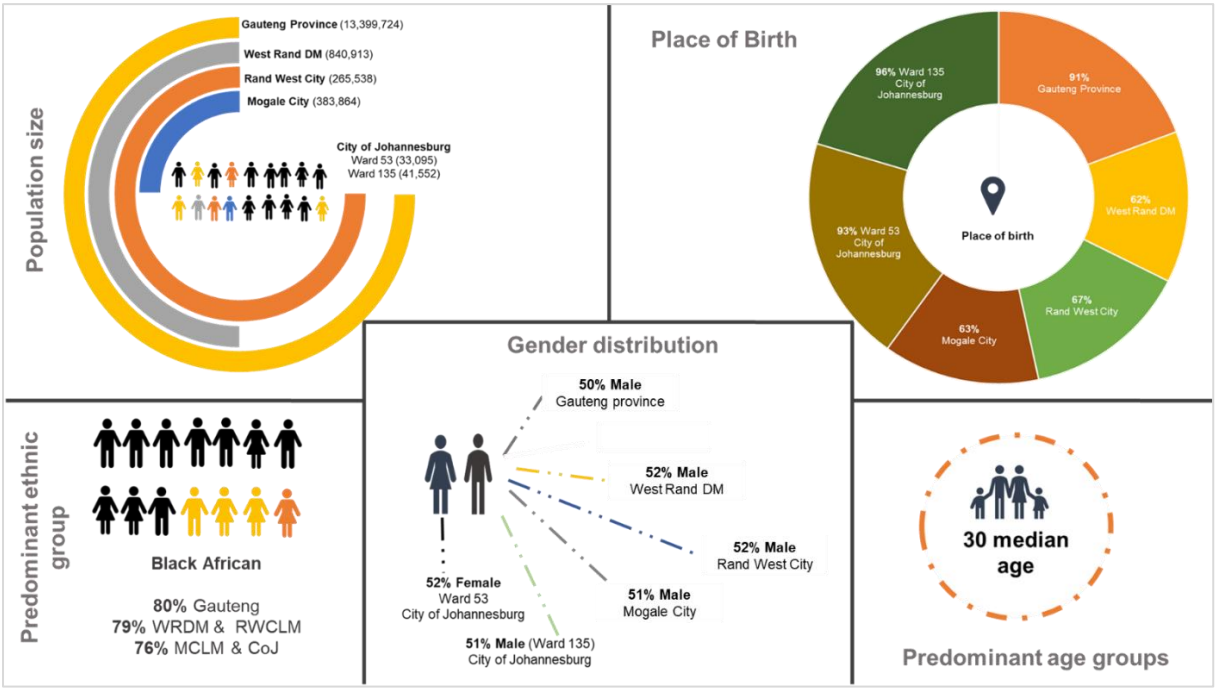


Figure 6-1: Summary of the Population Characteristics

6.1.5 Education Levels

A third of the population aged 20 and above in the primary study area has attained Grade 12. The percentage of the population with no schooling was reportedly low averaging three percent (3%) across the primary study area which is lower than the provincial level. In turn, Mogale City has the highest percentage of people who have attained higher education, compared to the other primary study area as shown in Figure 6-2.

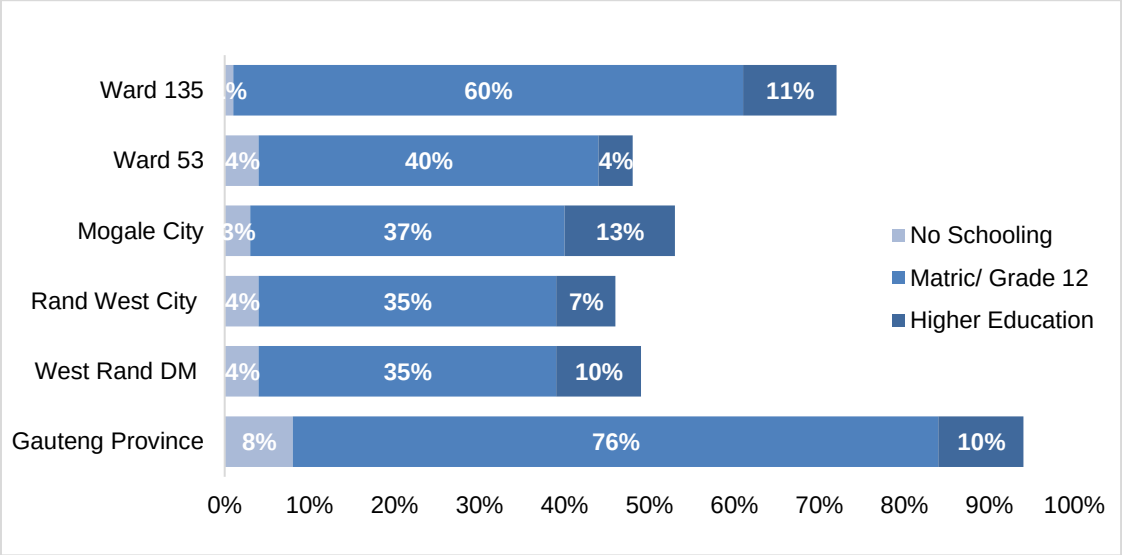


Figure 6-2: Education levels of the population in the Primary Study Area

6.1.5.1 *Annual Household Income*

Forty-six percent (46%) of households in the RWCLM reportedly have no income, which is higher than the provincial and district levels and surrounding municipalities. Overall, household annual earnings were reportedly concentrated between R 5,000 and R 290,000 per year. This also signifies that a large portion of households are living within the low bound and upper bound poverty line; which refers to the food poverty line plus the average amount derived from non-food items of households whose total expenditure is equal to the food poverty line. Less than 10% of the households in the RWCLM reported middle- and high-income households compared to the other parts of the primary study areas which was also in line with its high percentages of households without income. Information regarding distribution of earning by gender are not readily available at provincial, district or local municipality levels. The Census 2011, however, reports that in South Africa, women are more likely than men to be found in the lower earning categories. For instance, 24% of women and 21% of men earn between R 1,000 and R 2,000 per month. It was also reported that, men were more likely than women to be found in the top earning categories[4].

[4] StatsSA, 2011

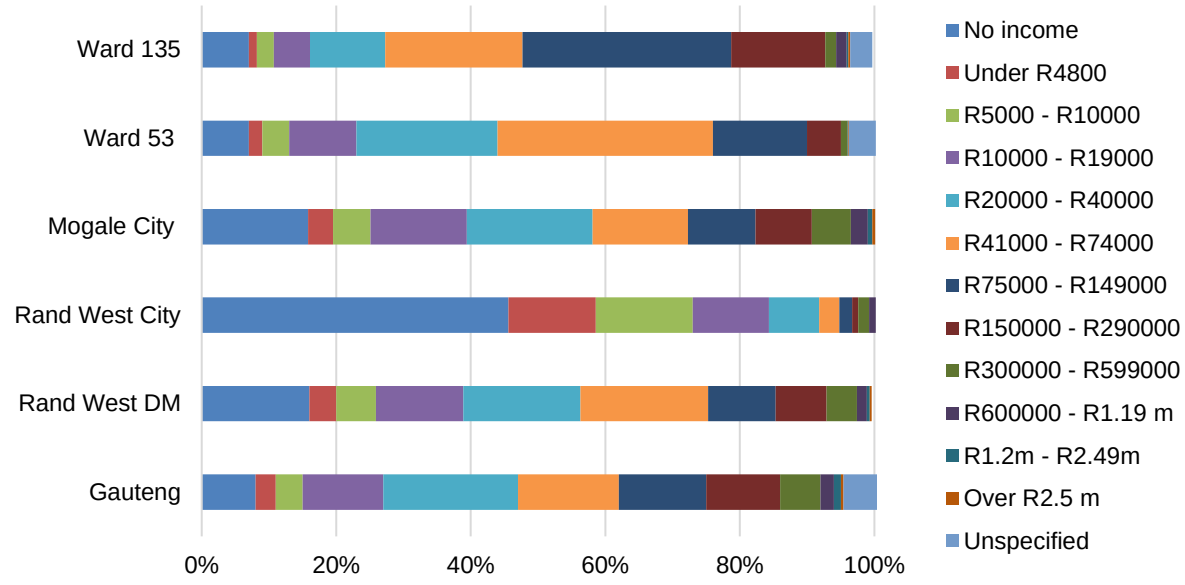


Figure 6-3: Annual Household Income

6.1.6 Household Characteristics

A summary of the households' characteristics within the primary study area is provided in Table 6-1. The households in the primary study area on average are comprised of three members or less. RWCLM has the highest effective dependency ratio[5] compared to the households in MCLM and CoJ which is evident in the high youth unemployment rates within RWCLM. It is also higher than the provincial and district's effective dependency ratios. A third of the households are female headed. Research indicates that female headed households tend to face greater social and economic challenges and are vulnerable to lower household incomes and higher rates of poverty[6].

Table 6-1: Summary of Household indicators

Indicator	Gauteng Province	WRDM	RWCLM	MCLM	CoJ
Household size	2.7	2.5	2.6	2.8	2.7
Female headed households	39%	32%	33%	32%	38%
Effective dependency ratio[7]	39	39	74	39	37

[5] The effective dependency ratio calculates the ratio of economically active workers to inactive persons, where activity is defined in relation to paid work to indicate the burden on the current workforce.

[6] https://www.econrsa.org/system/files/publications/working_papers/working_paper_761.pdf

[7] Sourced from the Census 2011

In line with Section 6.1.5.1 above, 15% the households of WRDM, are said to be living below the food poverty line[8] which is linked to the high-income inequalities in the population. The food poverty line is measured in terms of the number of people or households living below R561 per month or R18.70 per person per day.[9] This is lower than that of the CoJ and provincial level at 20% and 29% respectively. The district reports attributed its high poverty levels to in-migration of people into the region in search of economic opportunities within the mining sector[10].

6.1.7 Economic and Livelihood Characteristics

Mining is the predominant economic activity and contributor to the gross domestic product of the RWCLM compared to the other municipalities in the study area and at WRDM[11]. Some of the prominent mining companies in the area are Anglo Gold Ashanti, Sibanye-Stillwater, Harmony Gold, Gold Fields and Pan African Resources. In turn, trade is the leading economic activity in MCLM, financial services in the CoJ as well as the provincial level.

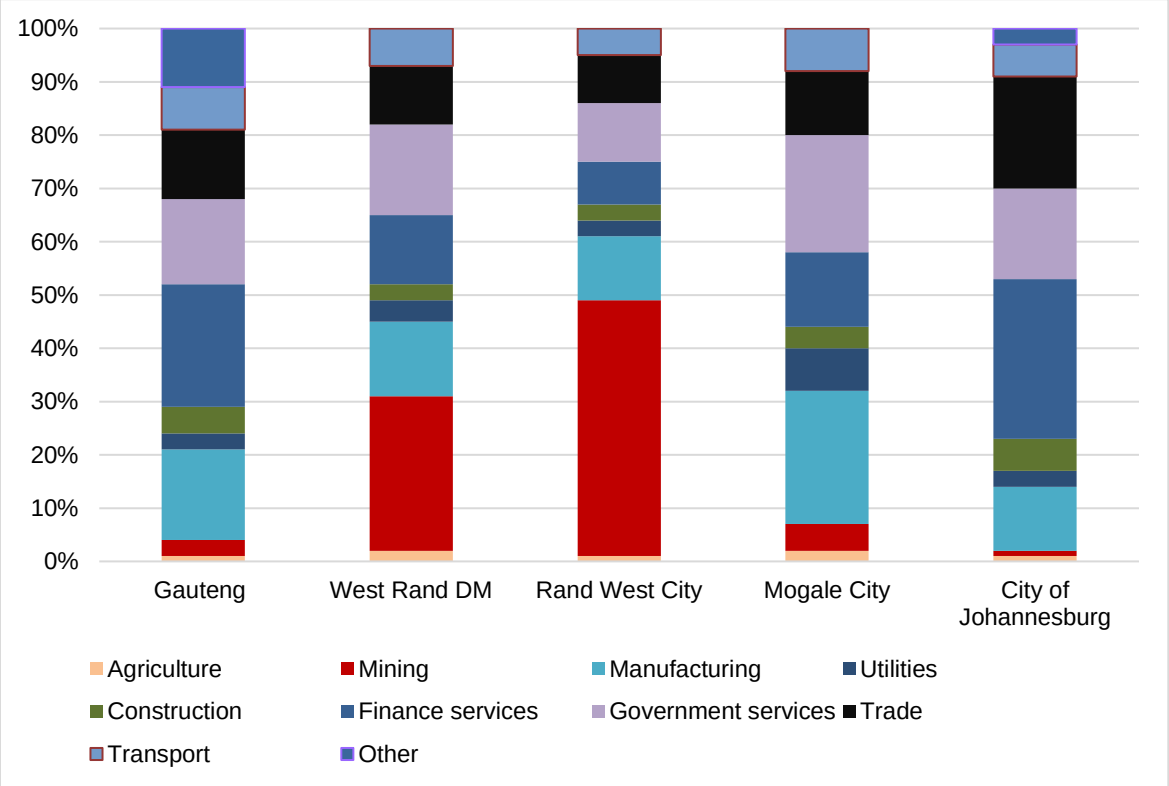


Figure 6-4: Economic Sectors

[8] Food poverty line refers to the amount of money that an individual will need to afford the minimum required daily energy intake of 2,100 calories per day.

[9] StatsSA, 2019

[10] West Rand City IDP, 2019/2020

[11] Ibid

Even though mining is predominant economic sector in the West Rand, it is not the predominant employer - the finance, manufacturing, trade and government services are the largest employers of the population; and these sectors also act as support to the mining sector.

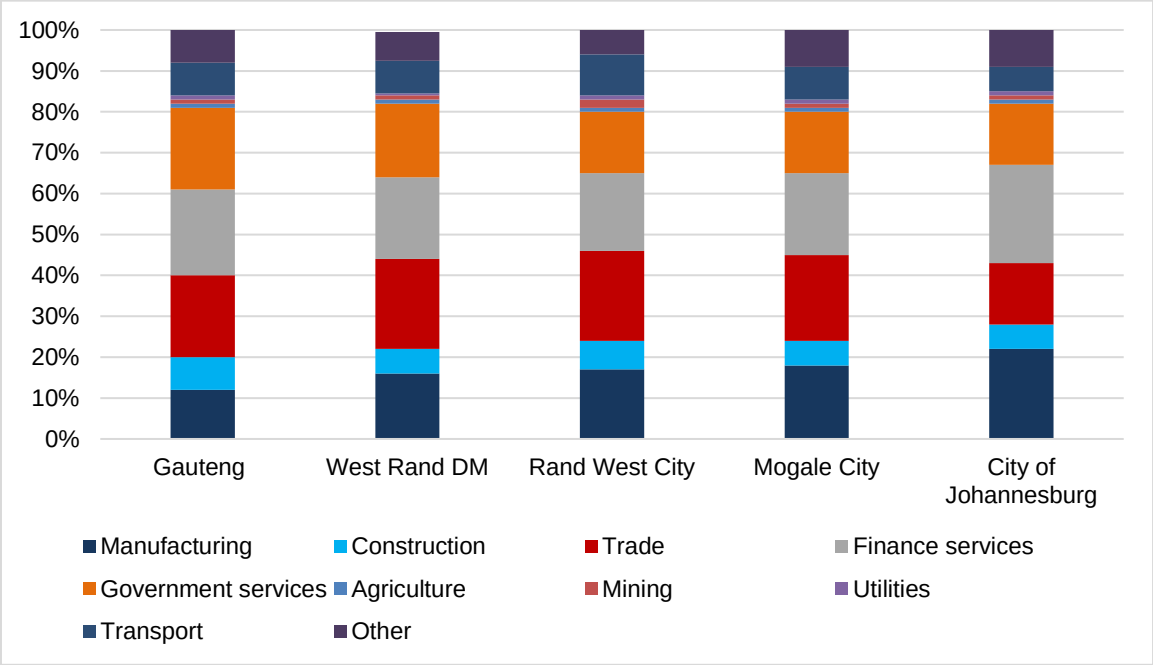


Figure 6-5: Sectors of Employment in the Study Area

6.1.7.1 *Unemployment rates*

The percentage of the population of economically active age reported as unemployed and / or youth unemployed was high in RWCLM compared to the other primary study areas. This also correlates with the low-income levels and household poverty information for the various study areas. These were also slightly higher than the provincial level.

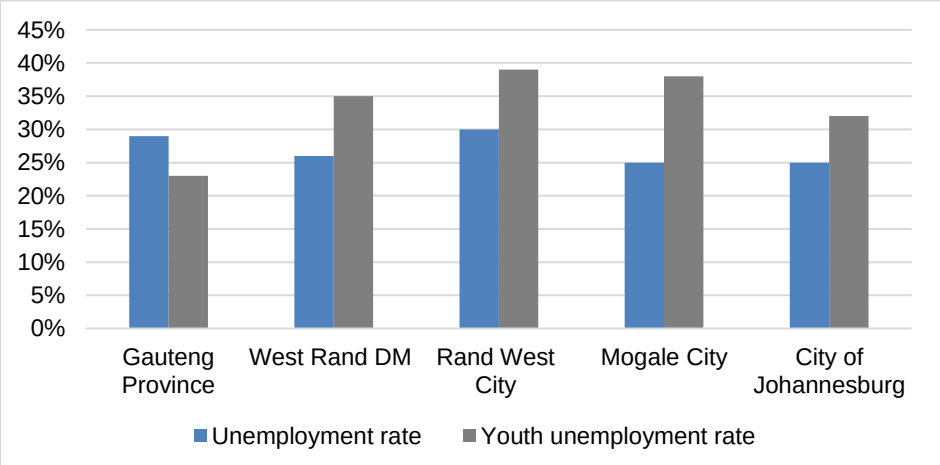


Figure 6-6: Employment and Youth Unemployment Rates

6.1.7.1 Household Access to Public Services and Infrastructure

The availability and access to various basic services by the population is depicted in Figure 6-7 and displays the households' access to formal and informal housing, water sources, sanitation, electricity, as well as refuse collection. Notably, there are some households who do not have access to grid electricity especially in RWCLM and MCLM (20% and 11% respectively). In the CoJ, 20% of households are without toilets; while in both MCLM and CoJ still have households, whose refuse is not collected regular (four percent (4%) respectively).

Figure 6-7: Summary of Household access to Public Services and Infrastructure

6.2 An Overview of Socio-economic Indicators of Cooke 1, 2 and 3

This provides a high level description of the socio-economic indicators of Cooke 1, 2 and 3; detailed information will be provided in the Social Closure Planning Study.

6.2.1 Employees

Sibanye acquired the Cooke Operations from Gold One International in 2013. It reached peak employment numbers in 2016 with 5,246 employees, of whom 33% were indirectly employed through the supply chain by contractors. The majority (92%) of the workforce were Black African and 76% were South African citizens. Over a quarter of employees were from the Gauteng province, followed by those from the Eastern Cape and remainder from other provinces. Over half (57%) of employees were recorded as unskilled, followed by 27% of semi-skilled employees, 15% skilled technicians and one percent (1%) in middle management. Furthermore, 13% of the total employees were women and less than one percent (>1%) of women were in senior / middle management occupations.

Throughout the Life of Mine (LoM) employees received training and development in line with the Human Resources Development (HRD) Framework of the Sibanye Gold Group, Social and Labour Plans (SLPs), the South African National Development Plan and the United Nations Global Goals for Sustainable Development of:

Figure 6-8: Relevant UN Goals for Sustainable Development

Employees also had access to the Sibanye Gold Academy (SGA), which is fully accredited by the Mining Qualifications Authority (MQA) and offered programmes approval in other Sector Education and Training Authority (SETA).

6.2.2 Financial Wellness Programs

Employees were also offered financial wellness through the *Care for iMali* program which provided financial literacy and awareness. In 2015, another programme termed *Wellness Gateway* was introduced encompassing affordable home, vehicle finance and enforcing clear affordability rules for credit providers. The Wellness Gateway also offers savings products, including *TruSave Account* (helps to start a savings plan) and *target save account* (facilitates saving towards a specific goal).

The Care for iMali program was extended to the host communities within Westonaria and in the labour sending areas including Mozambique.

6.2.3 Supply Chain Development

Supply chain development initiatives undertaken include:

- In 2019, in collaboration with the Local Economic Development Department of Rand West City Municipality, Gauteng Enterprise Propeller, Small Enterprise Finance Agency

and Phakamani Impact Capital and have held multiple workshops aimed at capacity building and presentation of availability of procurement opportunities with locally based SMMEs.

- Appointment of Phakamani Capital, an enterprise development service provider to assist in coaching and developing the skills required to support local suppliers and drive sustainability thereof. In addition, Phakamani Capital also manages and disburses Sibanye loans to suppliers to assist them in meeting their business commitments to Sibanye. The positive impacts of this strategy[12] are summarised in Figure 6-9 below.

Figure 6-9: Summary of Impacts on the Supply Chain

6.2.4 Stakeholder Engagement

As part of Sibanye-Stillwater's efforts to improve stakeholder relations and engagement; it has developed and implemented a grievance management protocols and the set-up of Community Engagement Forums (CEFs).

Figure 6-10: summary of Stakeholder Engagement Headway

To support the CEFs, Sibanye have implemented capacity building programmes to empower the communities in engaging on issues concerning themselves. Additional initiatives are being investigated as part of the closure process, in order to consider the potential gaps presented as a result of the COVID-19 situation.

6.2.5 Social Development and Social Corporate Investment

Throughout the Life of Mine (LoM), Sibanye-Stillwater has been implementing community development programs through its Social and Labour Plans (SLPs). Community development initiatives have been aligned with the integrated development plans of the local municipalities and focused on social infrastructure, health, economic development and capacity building.

[12] Sibanye-Stillwater: Integrated Report, 2019: Social Upliftment and Community Development

In the West Rand District, Sibanye has been supporting three (3) homes for elderly and disabled people with an investment of R1.2 million in monthly food parcels over two and a half years. Sibanye also provided the same group of people with skills development to cultivate self-sustainable food gardens for their own consumption and generation income.

6.2.6 Social Closure Planning

In 2018, Sibanye-Stillwater developed a conceptual social closure framework. The framework and its accompanying plans go beyond the LoM. It also calls for social development planning that is sustainable and inclusive to prevent the creation of ghost towns at the end of LoM. Sibanye envision that the social closure plans will be aligned with the regional integrated development plans (IDPs) as Projects established as part of social closure planning will be driven and owned by the local municipalities.

The first post-mine closure Project by Sibanye-Stillwater was introduced in 2018 and it is called Bokamoso Ba Rona Agricultural-Industrial Initiative. The programme will facilitate the development of a large-scale agriculture and bio-energy Hub with the greater West Rand District Municipality. The initiative is being undertaken in partnership between Sibanye, Far West Rand Dolomitic Water Association (FWRDWA), Gauteng Infrastructure Financing Agency and West Rand Development Agency. A second Project, Rand West Industrial Park has also been initiated and will see the development of a Smart Bus Manufacturing Hub in Westonaria; which will create jobs in the area.

In 2020, Sibanye-Stillwater has commissioned Digby Wells Environmental to undertake a stand-alone social closure planning process for Cooke 1, 2 and 3 operations. The aim of the project will be to address gaps in previous commitments, action plans to bridge these gaps but most importantly identifying projects to allow for a sustainable post-mining landscape.

6.2.7 Stakeholder Issues as Identified by Sibanye-Stillwater

Over the years, Sibanye-Stillwater has commissioned several studies in aimed at gaining insights into why it has strained relationship with its stakeholders. Presented in Table 6-2 are the top five (5) issues raised by stakeholders and actions taken by Sibanye-Stillwater to remedy the issues.

Table 6-2: Issues Identified by Stakeholders and Actions Employed to Redress Issues

Issues	Description	Sibanye's Response
Perceived lack of engagement	The belief that mine does not respond to community grievances, particularly in relation to CSI, procurement and employment.	• Implementation of a complaints/ grievance procedure; • Formation of Community Engagement Forums; • Support CSI and environmental programmes identified by the communities; and • Focus on local employment.
Employment	Limited number of jobs being offered to local community members due to most applicants not able to pass the medical fitness tests, criminal and credit record checks.	• Inviting community leaders to bear witness of occupational health testing so that they can better understand health reasons for job applicants failing to secure employment opportunities with the mine. Explaining that these checks are also essential to ensure projects are executed in a responsible manner in order to adhere to all legal requirements.
Legacy issues from acquired assets	On-going tensions between Sibanye and communities related to unresolved historic issues with the previous owners of current assets.	• Continuous engagement with the communities regarding the legacy issues, and collaborations to resolve some of these issues.
Lack of local procurement opportunities	Limited access to supply chain opportunities awarded to locally based businesses.	• Small, medium and micro enterprise (SMME) workshops; and • Establishment of enterprise and supplier development (ESD) centres across all operations.
Life after mining and avoiding the creation of ghost towns	A lack of forward planning to address socio-economic impacts related to mine closure.	• Collaborate and strategize with municipalities, district and local, to identify economic activities that will endure post-mining. The plans, aligned with regional IDPs, will be driven and owned by the municipalities. Commissioning of the Social Closure Planning Projects.

7 Impact Assessment

Impacts are rated prior to mitigation or enhancement and again after consideration of the proposed mitigation or enhancement measures. Mitigation measures are formulated to avoid or mitigate negative impacts and enhancement measures to enhance positive impacts.

The post- mitigation / enhancement rating provides an indication of the significance of residual impacts, while the difference between pre- and post-mitigation / enhancement ratings represents the degree to which the recommended measures are expected to be effective in mitigating or enhancing an impact. This assessment assesses impacts associated with the decommissioning, rehabilitation and closure phases.

The methodology used to quantify the identified impacts is included as Appendix A.

7.1 Decommissioning Phase

Project activities planned as part of the Decommissioning Phase are summarised in Table 7-1.

Table 7-1: Interactions and Impacts of Activity

Project activities	Potential Impacts
Removal and decontamination of underground infrastructure containing hydrocarbons and other contaminants from the Cooke 3, 2 and 1 underground workings	• Loss of economic opportunities due to mine the closure Cooke 1, 2, and 3; • Creation of temporary economic opportunities; • Workforce health, safety and security risks due to the handling and management of contaminants and possible encounters with illegal miners underground; • Community unrest due to a perceived and potential lack of economic opportunities as it relates to decommissioning, rehabilitation and closure of Cooke 1, 2 and 3; • Removal of pollution sources and potentially hazardous infrastructure thus reducing environmental impacts potentially impacting surrounding communities; • Removing opportunities for illegal activities.
Refurbishment of plugs between Cooke 3 and Cooke 4 Shafts, as well as between Cooke 1 and Doornkop Mine	
Potential capping of the shaft barrel below the dolomitic aquifer, dependent on specialist studies regarding the groundwater quality	
Decommissioning of surface dams and rehabilitation of dam footprints	
Removal of settled solids from surface paddocks and mud ponds for processing through the Plant and/or disposal into the Pits	
Decommissioning and rehabilitation of concrete channels	
Decommissioning of shaft headgear and surface infrastructure	

Project activities	Potential Impacts
Capping of shafts	• Reduction in illegal mining activities through the removal of viable mine infrastructure and capping of mine shafts
Sale of salvageable items (goods)	• Value-Add in the Sale of Salvageable Goods
Disposal of waste	• Decreased Community Health and Safety due to Inappropriate Disposal of Hazardous Waste if not Implemented by Registered Accredited Person • Opportunity for local contractors to provide services if appropriately registered.
Rehabilitation of wetlands associated with the Cooke Mining Right Areas (including removal of gold bearing material and alien plant species, ripping of soils where necessary possible revegetation of indigenous wetland species)	• Improvement in the surrounding environment and subsequent environmental good and services available to the community

7.1.1 Impact Description: Loss of Economic Opportunities due to the Closure Cooke 1, 2, and 3

The closure of Cooke 1, 2 and 3 will result in the loss of economic opportunities associated with the Mine such as direct, in-direct and induced employment and supply chain contracts.

At the end of 2017 Sibanye-Stillwater ceased all underground mining activities at Cooke 1, 2 and 3 shafts and retrenched ~98% of its workforce (inclusive of Contractor workforce) following the process for downscaling and retrenchment as committed to in the operation's SLP . The remaining two percent (2%) of the workforce either remained at the Mine for maintenance and care or were redeployed to other Sibanye-Stillwater operations. It has been reported that some of the Mine's workforce remained in the broader primary study area in anticipation of redeployment to their old jobs once Sibanye-Stillwater had competed its investigations on future Cooke 1, 2 and 3's economic viability. Unfortunately, mining will not resume at Cooke and all economic benefits associated with the mine will be permanently lost.

In addition, 41 contractors who were part of the Cooke 1, 2 and 3's upply chain had their contract terminated as part of the cessation of mining works.

In some instances, downstream employment opportunities (a result from increased spending power created through employment), such as household services, were possibly also in jeopardy. This impact is likely to increase household vulnerability in terms of food and income poverty due to decreased economic activity, and oversupply of labour in the area. This will be

further exacerbated by the COVID-19 epidemic linked economic impacts, which included widespread job losses

Economic activities in the broader municipal area are dominated by the mining sector, which creates a much larger number of jobs than any other sector. In general, mine workers tend to earn better salaries than those employed in other sectors and therefore it is fair to deduce that the local economy is heavily dependent on the mines. Because all mines have a finite lifespan, it is inevitable that mining operations in the area will at some point in the future begin to scale down and close. Unless significant investment is made into economic diversification, the area is destined for a considerable economic slump once this process begins.

7.1.1.1 Management Objectives

- To minimise economic impacts associated with the permanent closure of Cooke 1, 2 and 3.

7.1.1.2 Management Actions

- Implementation of social closure plans described in Section 7.2.4 in partnership with other mines in greater West Rand region and government to enhance non-mining based economic activities.

7.1.1.3 Impact Ratings

The assessment and rating of impact associated with the loss of economic opportunities associated with Cooke 1, 2 and 3 are described in Table 7-2.

Table 7-2: Loss of economic opportunities associated with Cooke 1, 2 and 3

Loss of economic opportunities associated with Cooke 1, 2 and 3				
Project Phase			Decommissioning	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Permanent (7)	Long term economic opportunities associated with Cooke 1, 2 and 3 will permanently cease. The impact will be experienced the most by the former mine employees, its Contractors and local government who generated an income from the project through the provision of public services.	Extremely detrimental (-18)	Major - negative (-126)
Extent	Regional (5)	The impact will be experienced on a regional level as the mine		

		beneficiaries came from across the region and country.		
Intensity	Very high - negative (-6)	The impact will mostly affect individuals who were dependent on the mine for economic benefits within the primary and regional study areas.		
Likelihood	Certain (7)	The loss of economic opportunities was inevitable.		
Post-Mitigation				
Duration	Long term (4)	The effects of economic opportunities lost will be felt for a long time, especially if those affected cannot secure economic opportunities elsewhere. This impact will further be exacerbated by the overall shortage of economic opportunities in South Africa.	Moderately detrimental (-12)	Moderate - negative (-90)
Extent	Regional (5)	The impact will mostly affect individuals who benefitted from the economic activities provided by the mine within the primary and regional study areas.		
Intensity	High - negative (-5)	Implementation of mitigation measure will reduce the severity of the impact on those affected.		
Probability	Highly probable (6)	The loss of economic opportunities was inevitable.		

7.1.2 Impact Description: Creation of Temporary Economic Opportunities

Economic activities in the primary study area are generally scarce and there is a high dependency on the all sectors to produce economic opportunities, though the focus is often on mining. The existing economic and socio-political challenges have resulted in:

- High levels of unemployment especially amongst the youths;
- Low household income levels and high household poverty;
- High dependency on those currently employed; and
- High in-migration levels of people from other provinces and elsewhere in Africa in search of economic opportunities within the mining sector.

Based on the above, the Project is likely to draw a lot of attention from the locally based employment and business seekers. However, most of the work programs associated with the decommissioning phase are unlikely to generate widespread economic benefits for the communities of the primary study area. This will be attributed to highly specialised nature of the work programs; i.e. experience and knowledge of how to remove, handle and dispose of contaminants. As such, Sibanye-Stillwater is likely to appoint specialised Contractors from across the region or country to complete the work program and the Contractors are likely to be responsible for the recruitment of the workforce. Due to the specialised nature of the work program and the stringent environment, health and safety (EH&S) requirements of Sibanye and the legal framework within which it operates; it is unlikely that locally based businesses and employment seekers will be able to secure any Project associated economic opportunities. Linked to the likely low or limited economic opportunities for the communities in the primary study area; there is likely to be disappointment and anger towards Sibanye-Stillwater which may be displaced in a form of unrests and protest actions, refer to Section 7.1.8 for detailed assessment of community dissatisfaction.

7.1.2.1 Management Objectives

- To enhance the economic benefits associated with the Project.

7.1.2.2 Management Actions

- Ensure that local communities understand the Project's procurement and employment requirements in terms of skills and type of contracts and employment. This will be achieved using existing stakeholder communication channels and through the Sibanye-Stillwater's Stakeholder Relations office.
- Sibanye-Stillwater to set targets for local employment regardless of the size the work program and continue to report on these as part of the active 2017 to 2021 SLP. Targets must include employment of youths and women from historically disadvantaged backgrounds; and continuously monitored.
- Consider unbundling of contracts into small work programs to ensure that small and locally based businesses are able to benefit.
- Propose and promote joint ventures between large and small Contractors to ensure equitable sharing of economic benefits and skills development.
- All tender process must follow existing Sibanye-Stillwater's SMME development strategies and programs.
- Identifying projects which can involve community groups and ring-fencing of procurement opportunities where applicable.

7.1.2.3 Impact Ratings

The assessment and rating of impact associated with the creation of temporary economic opportunities is described in Table 7-3.

Table 7-3: Creation of temporary Economic Opportunities

Creation of temporary Economic Opportunities				
Project Phase			Decommissioning	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Medium term (3)	Equal to the duration of decommissioning	Slightly beneficial (9)	Minor - positive (45)
Extent	Regional (5)	Decommissioning activities will be specialised and require highly skilled personnel. Therefore, Sibanye-Stillwater is likely to appoint Contractors (and their workforce) from elsewhere in the region or country.		
Intensity	Very low - positive (1)	Economic opportunities linked to this phase of work will be limited and only specialised businesses and individuals will be able to take up opportunities.		
Likelihood	Likely (5)	Without appropriate mitigation local procurement and employment will be very limited.		
Post-Mitigation				
Duration	Medium term (3)	As for pre-mitigation	Moderately beneficial (10)	Minor - positive (60)
Extent	Regional (5)	As for pre-mitigation		
Intensity	Low - positive (2)	Measures will ensure and potentially increase employment from primary study area, which will intensify positive change, especially among economically depressed households.		

Probability	Highly probable (6)	Mitigation will maximise probability, through monitoring, that local employment is maximised, and benefits optimised.	

7.1.3 Impact Description: Workforce Health, Safety and Security Risks due to the Handling and Management of Contaminants and Possible Encounters with Illegal Miners Underground

The decommissioning work programs will involve the handling of hazardous waste and contaminants such as hydrocarbons; and therefore, potentially posing health and safety hazards to the Contractors and workforce. Sibanye has stringent EH&S rules in place aimed at aiding the identification of hazardous situations and risks. All Contractors and the workforce will be required to comply with these rules. Sibanye will also ensure full complies with the EH&S rules and ensure the provision of personal protection equipment and EH&S training.

In addition, the primary study area is rampant with illegal miners who are often heavily armed and often invade underground mine shafts of active mines (refer to Section 7.1.4). This often results in compromised health and safety of workers underground. Sibanye has in-house security personnel employed to ensure the health, safety and security of its Contractors and workforce. To this end, Sibanye's security personnel will be made available to the workforce undertaking decommissioning, rehabilitation and closure of the mine activities.

South Africa and the world are currently dealing with the novel coronavirus (COVID-19); government regulations for workplace prevention of the spread of the disease have been issued and all businesses and citizens need to adhere to these. Sibanye has established protocols for COVID-19 prevention and management. All Contractors and workforce for the Project will be expected to adhere to these.

7.1.3.1 Management Objectives

- To avoid and minimise workforce and Contractor health and safety incidences; and
- To ensure compliance with health and safety policies and procedures.

7.1.3.2 Management Actions

- All appointed Contractors and their employees should undergo Sibanye EH&S induction and training.
- All appointed Contractors should comply with Sibanye's EH&S policies and procedures. Failure to comply, a Contractor should be terminated or retake EH&S induction.
- Ensure that the all workforce should have adequate PPE (inclusive of COVID-19 PPE).
- Hydrocarbon spill kits must be available during decommissioning activities at all locations where hydrocarbon spills could take place.
- Access control to all Project elements, including fencing where necessary.

- Storage and disposal of hazardous materials to adhere to prescribed regulation.
- Ensure that all employees including Contractor workforce should have access to onsite medical facilities available to the Sibanye workforce.
- Ensure presence and easy access to the security services in case of encounters with illegal miners.

7.1.3.3 *Impact Ratings*

The assessment and rating of impacts related to workforce health, safety and security risks are described in Table 7-4.

Table 7-4: Workforce Health, Safety and Security Risks

Workforce health, safety and security risks				
Project Phase			Decommissioning, rehabilitation and closure	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance:**
Pre-Mitigation				
Duration	Medium term (3)	Health, safety and security risks will be remaining throughout the decommissioning, rehabilitation and closure phases.	Slightly detrimental (-8)	Negligible - negative (-32)
Extent	Project footprint and immediate surrounds (2)	Application of mitigation measures will reduce the health, safety and security risks as long as all Contractors and workforce adhere to them.		
Intensity	Moderate - negative (-3)	Could place the lives of employees, community members and family members at risk.		
Likelihood	Probable (4)	Health, safety and security risks will remain inherent due to the nature of the Project and existing issues of violence associated with illegal miners.		
Post-Mitigation				
Duration	Medium term (3)	As for pre-mitigation	Slightly beneficial (7)	Negligible - positive (21)

Extent	Project footprint and immediate surrounds (2)	As for pre-mitigation		
Intensity	Low - positive (2)	Impacts likely still occur, albeit not to the degree it was initially expected.		
Probability	Unlikely (3)	Appropriate mitigation will reduce the risks of the impact		

7.1.4 Impact Description: Reduction in Illegal Mining Activities through the Removal of Viable Mine Infrastructure and Capping of Mine Shafts

The West Rand region has multiple operational and abandoned mines which attract both business and job seekers from across the country and elsewhere in the African continent. Not everyone who migrates to the area is able to secure employment and/ or business opportunities. This has resulted in a large proportion of the economically active population being unemployment, increased crime levels, household poverty and notably rampant illegal mining activities. It has been reported that some of the illegal miners are retrenched former mineworkers with the knowledge of some of the mines' underground shaft networks. Illegal mining activities pose threats to community health, safety and security as the miners use explosives which result in earth tremors that compromise the integrity of support pillars in decommissioned and active mines. The tremors also:

- Increased incidences of surface subsidence and sinkholes;
- Damage of surface-based physical structures such as houses and roads;
- Endangers mineworkers in locally based active mines; and
- Affect municipal and other services pipelines in the area.

Across its operations in South Africa, Sibanye continues to deal with illegal miners. In 2018, about 1,404 Sibanye employees were charged with aiding and abetting illegal miners. To this end, Sibanye has adopted several control measures including (among others) closed-circuit television systems with thermal capability, unmanned aerial vehicles, intensified stop-and-search procedures, reward systems, saturation patrols and armed guarding.

As part of decommissioning and mine closure, Sibanye-Stillwater plans to remove all viable mining infrastructure; and to cap the Cooke shafts to reduce or eliminated the interference of illegal miners accessing the surface infrastructure and underground shafts causing health, safety and security risks to local communities.

The capping of the shafts may, however, be inadequate as preventative measure as illegal miners in the West Rand have been known to blow-up (using explosives) cement-plugged

shafts to gain underground access[13]. Thus Sibanye-Stillwater may need to investigate alternatives to capping mechanisms apart from the use of cement / concrete plugs.

7.1.4.1 Management Objectives

- To secure the mine shafts and prevent illegal mining on the decommissioned mine shafts.

7.1.4.2 Management Actions

- On-going implementation of existing security controls and measures and controls.
- Collaborate with local police services in managing the security of the capped mine shafts.
- Where possible, improve security measures in and around the capped mine shafts including installation of closed-circuit television systems with thermal capability.
- On-going monitoring and mending of boundary fencing whenever affected.
- Working with Engineers, investigate alternative mine shafts capping solutions that may not be less affected by explosives.
- Ensure availability of contingency funds for unplanned events such as damage to shaft caps.

7.1.4.3 Impact Ratings

The assessment and rating of impacts associated with the reduction in illegal mining activities through the removal of viable mine infrastructure and capping of mine shafts are described in Table 7-5.

Table 7-5: Reduction in illegal mining activities through the removal of viable mine infrastructure and capping of mine shafts

Reduction in illegal mining activities through the removal of viable mine infrastructure and capping of mine shafts				
Project Phase			Decommissioning	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Permanent (7)	The capping of the shafts and removal of viable mining infrastructure will permanently reduce/ prevent access to the mine resources.	Highly beneficial (16)	Moderate - positive (96)

[13] https://www.mineralscouncil.org.za/special-features/85-illegal-mining-on-the-rise

Extent	Project footprint and immediate surrounds (2)	The impact will be applicable to the Cooke 1,2 and 3 mine site.		
Intensity	Extremely high - positive (7)	Illegal miners do not only pose danger to themselves but also to surrounding communities. As such, limiting their access to the mine site and its associated infrastructure will significantly reduce the community health and safety risks associated with illegal mining activities.		
Likelihood	Highly probable (6)	Illegal miners have been known to be creative in their driven to access closed mines, as such Sibanye-Stillwater will need to remain vigilant in their security of the area.		
Post-Mitigation				
Duration	Permanent (7)	As for pre-mitigation	Highly beneficial (16)	Moderate - positive (96)
Extent	Project footprint and immediate surrounds (2)	As for pre-mitigation		
Intensity	Extremely high - positive (7)	As for pre-mitigation		
Probability	Highly probable (6)	As for pre-mitigation		

7.1.5 Impact Description: Value-Add through the Sale of Salvageable Goods

As part of decommissioning phase of the Project, Sibanye-Stillwater has compiled a list of salvageable goods surface infrastructure which have been auctioned. These included:

- Main shaft conveyor systems;
- Workshop buildings;
- Car-port parking;
- Corrugated roof walkways; and
- Multiple stores/ storages.

As the decommissioning process continues, Sibanye-Stillwater will identify additional on-site infrastructure and equipment which can be salvaged and resold. Should Sibanye-Stillwater

choose to sell-off additional on-site infrastructure and equipment in the future, considerations may need to include local businesses and communities.

7.1.5.1 Management Objectives

- To support emerging miners through the sale of mining infrastructure and equipment.

7.1.5.2 Management Actions

- Revisit infrastructure and equipment on site and identify the ones that are no longer critical for the operations and can be sold.
- Ensure local businesses and other potential buyers are notified timeously of the planned auctions.

7.1.5.3 Impact Ratings

The assessment and rating of impact related to value-add through the sale of salvageable goods in Table 7-6.

Table 7-6: Value-Add associated with the Sale of Salvageable Goods

Value-Add through the sale of salvageable goods				
Project Phase			Decommissioning	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Immediate (1)	Long term empowerment of local businesses.	Slightly beneficial (9)	Minor - positive (36)
Extent	National (6)	The focus should be placed on selling these to local businesses; however, buyers from other parts of the country will be able to benefit.		
Intensity	Low - positive (2)	Improved access to critical infrastructure, equipment or goods may assist in increased production for locally based businesses.		
Likelihood	Probable (4)	Details of other salvageable goods to be sold is not available.		
Post-Mitigation				
Duration	Long term (4)	As for pre-mitigation	Moderately beneficial (13)	Minor - positive (52)
Extent	National (6)	As for pre-mitigation		

Intensity	Moderate - positive (3)	Mitigation measures should be effective in addressing infrastructure and equipment needs of local and possibly national businesses.		
Probability	Probable (4)	Details of other salvageable goods to be sold is not available.		

7.1.6 Impact Description: Increased Illegal Mining Activities in Surrounding Mines due to the Loss of Economic Opportunities associated with Cooke 1,2, and 3

In the absence of formal employment, illegal mining creates an avenue for people to earn money. A presentation prepared by the Chamber of Mines (2017) states that illegal mining activities are directly linked to lucrative illicit trade – not only in precious metals, but also wildlife, weaponry and drug trade at a global level. The illegal mining trade consists of a complex syndicate, as illustrated below:

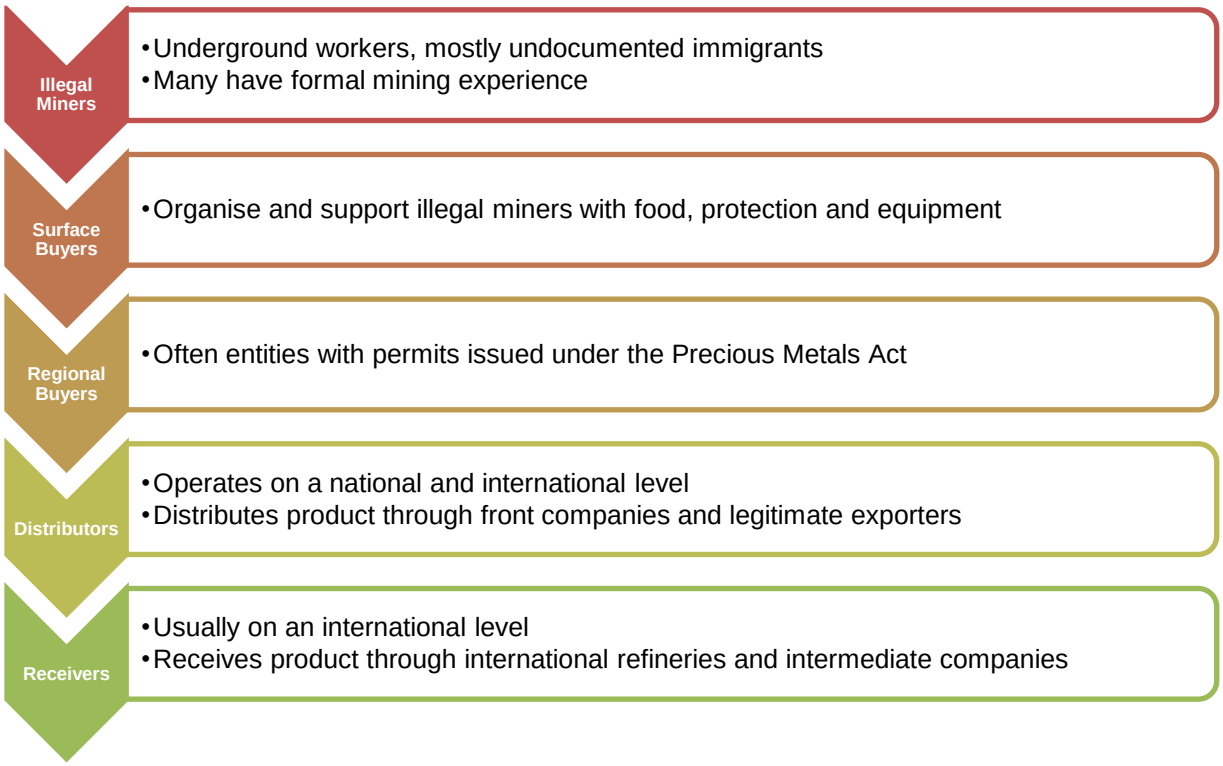


Figure 7-1: Value chain in illegal mining

The Chamber of Mines (2017) estimates that illegal mining costs the industry and fiscus more than R 20 bn per year in lost sales, taxes and royalties. It is further estimated that up to 90% of illegal miners are undocumented immigrants and that the presence of illegal miners has led to an increase in crime and illegal trade such as explosives, diesel, copper cables and other

equipment from the mine. It also erodes the social fabric of mining communities as fear, coercion, human rights abuses, prostitution and substance abuse become commonplace.

All the afore mentioned are present in the area, which supports the Chamber of Mines' assessment of the impact of illegal mining. It can therefore be expected that as mines in the area scale down and eventually close, it would attract an influx of illegal miners to the area, which would negatively affect the safety and security of local communities. Unfortunately, issues of illegal miners' interference cannot be addressed by Sibanye-Stillwater alone but requires the drive and support from the government, police services and the neighbouring mines still active in the region.

7.1.6.1 Management Objectives

- To increase security measures geared towards restricting access to mine infrastructure and shafts by illegal miners.

7.1.6.2 Management Actions

- Inform neighbouring miners and authorities of the Cooke 1, 2 and 3 closure.

7.1.6.3 Impact Ratings

The assessment and rating of impacts associated with an increased illegal mining activities in surrounding mines due to the loss of economic opportunities associated with Cooke 1,2, and 3 are described in Table 7-7.

Table 7-7: Increased illegal mining activities in surrounding mines due to the loss of economic opportunities associated with Cooke 1,2, and 3

Increased illegal mining activities in surrounding mines due to the loss of economic opportunities associated with Cooke 1,2, and 3				
Project phase:			Decommissioning, rehabilitation and closure	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Beyond Project life (6)	The risks associated with illegal miners will be ever present due to income poverty.	Highly detrimental (-16)	Moderate - negative (-96)
Extent	Sub-regional (4)	Illegal miners are found across the West Rand region and operate in both active and inactive mines.		
Intensity	Very high - negative (-6)	Once illegal miners receive information about the		

		decommissioning and closure of Cooke 1, 2 and 3; they will target other mines in the area. Therefore, all mines in the area must remain vigilant for an unforeseen future.		
Likelihood	Highly probable (6)	Illegal miners are found across the West Rand region and operate in both active and inactive mines.		
Post-Mitigation				
Duration	Beyond Project life (6)	As for pre-mitigation	Highly detrimental (-15)	Moderate - negative (-75)
Extent	Sub-regional (4)	As for pre-mitigation		
Intensity	High - negative (-5)	Impacts likely still occur, albeit not to the degree it was initially expected.		
Probability	Likely (5)	Appropriate mitigation will reduce the risk of this impact		

7.1.7 Impact Description: Community Unrest due to a Perceived and Potential Lack of Economic Opportunities as it relates to Decommissioning, Rehabilitation and Closure of Cooke 1, 2 and 3

Community unrest and protests are common in the greater West Rand area due to perceived lack of economic opportunities being offered to local people and businesses as well as community development. As part of the Section 37 Environmental Management Plan Amendment study for Cooke, stakeholders raised concerns related to:

- Lack of upskilling of employees prior to closure of the mine;
- No visible implementation of corporate social investment programs;
- Sibanye has been accused of informing the communities that the Cooke mine will be reopened in the future. It has been reported that some of the former Cooke employees remain in the area in anticipation of the mine's reopening;
- Lack of opportunities targeted to local small businesses; and
- A need to evaluate the implementation of SLP Projects and programs.

Given the above stakeholder perceptions; the limited number of economic opportunities likely to be generated through the decommissioning, rehabilitation and closure of Cooke 1, 2, and 3; and the socio-economic challenges brought on by COVID-19 - potential for unrest

and protest action exists. Sibanye will need to implement measures to limit or avoid such situations through active stakeholder engagement.

As indicated in Section 6.2 below, Sibanye-Stillwater has commissioned a Social Closure Plan for Cooke 1, 2 and 3 aimed at limiting the impacts of the mine's closure. If implemented appropriately, this will go a long way to easing the frustrations of the communities.

7.1.7.1 Management Objectives

- To minimise incidences of community unrest; and
- To promote on-going and transparent stakeholder engagement.

7.1.7.2 Management Actions

- Undertake ongoing consultation with local communities (including local authorities and traditional leadership) and clearly communicate Project needs and schedule.
- Encourage communities to utilise the existing grievance procedure to communicate their issues and ensure timeous response to all lodged complaints and grievances.
- Utilise existing procurement and employment plans that promote transparent and fair recruitment and procurement.
- Ensure the development and implementation of the social closure plan.

7.1.7.3 Impact Ratings

The assessment and rating of impacts associated with community unrest due to a perceived and potential lack of economic opportunities as it relates to decommissioning, rehabilitation and closure of Cooke 1, 2 and 3 are described in Table 7-8.

Table 7-8: Community Unrest due to Perceived Lack Economic Opportunities as it relates to the Decommissioning, Rehabilitation and Closure of Cooke 1, 2 and 3

Community unrest due to a perceived and potential lack of economic opportunities as it relates to decommissioning, rehabilitation and closure of Cooke 1, 2 and 3				
Project Phase			Decommissioning	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance:**
Pre-Mitigation				
Duration	Project Life (5)	The risks are on-going and has been experienced in the past.	Moderately detrimental (-12)	Minor - negative (-60)
Extent	Local (3)	Communities surrounding the mine often resort to unrest and protests whenever dissatisfied with the mine.		

Intensity	Moderately high - negative (-4)	Unrest and protest often lead to destruction of property and infrastructure; as well as loss of work hours and business and reputational risks for the mine.		
Likelihood	Likely (5)	Dissatisfaction with the mine relating to economic opportunities is often expressed through unrest and protests in the area. In addition, former Cooke employees have lingered around the area in anticipation that mining will be resumed in the future; once they are aware that the mine is being decommissioned and plans are underway for its closure - they are likely to resort to protest action to disrupt the closure process.		
Post-Mitigation				
Duration	Long term (4)	As for pre-mitigation	Moderately detrimental (-10)	Minor - negative (-40)
Extent	Local (3)	As for pre-mitigation		
Intensity	Moderate - negative (-3)	Application of mitigation measures should reduce the severity of the impact but not avoid the impact.		
Probability	Probable (4)	Mitigation will reduce the likelihood of this impact occurring to the extent predicted		

7.1.8 Impact Description: Decreased Community Health and Safety due to Inappropriate Disposal of Hazardous Waste if not Implemented by Registered Accredited Persons

Waste to be generated as part of the decommissioning activities both underground and on surface will be hazardous in nature and therefore, it will need to be disposed of in compliance of with the waste management legislation. Possible impacts to communities' health and safety due to inadequate waste management may include:

- Poor health outcomes to persons exposed to the hazardous waste – especially waste pickers who are found across all South African landfill sites; and

Contamination of soils; air or/ and surface and ground water resources. As a result of uncontrolled transport and disposal of demolition and hazardous wastes, it is possible that there will be unwanted environmental impacts and regulatory non-conformance, which could lead to an increased rehabilitation financial liability, reputational risks and legal penalties.

7.1.8.1 Management Objectives

To limit or avoid ensure that all hazardous waste generated from decommissioning activities is disposed of in accordance to the regulatory standards.

7.1.8.2 Management Actions

- Adhere to the regulatory standards for disposal of hazardous waste generated from the decommissioning activities.
- Ensure appointment of reputable Contractors to undertake the decommissioning and disposal of waste.
- Ensure all certification for hazardous waste disposal facilities used are all up to date.
- The mine's Environmental representative must inspect waste areas, disposal and storage practices regularly (at least monthly).
- Waste must be stored in a demarcated secured area until collection. The area should be clearly marked to warn off trespassers.

7.1.8.3 Impact Ratings

The assessment and rating of potential impacts associated with community health and safety due to inappropriate disposal of hazardous waste if not implemented by registered accredited persons are described in Table 7-9.

Table 7-9: Decreased Community Health and Safety Due to Inappropriate Disposal of Hazardous Waste if not Implemented by Registered Accredited Persons

Decreased community health and safety due to inadequate disposal of hazardous waste if not implemented by registered accredited persons				
Project Phase			Decommissioning	
Dimension	**Rating**	**Motivation**	**Consequence:**	**Significance**
Pre-Mitigation				
Duration	Medium term (3)	Dependent on the levels of exposure to hazardous waste and the type of waste. For instance, exposure to uranium will have permanent impacts which may become inheritable.	Moderately detrimental (-11)	Minor - negative (-44)
Extent	Sub-regional (4)	This is likely to affect communities closest to the mine and areas where waste is disposed.		

Intensity	Moderately high - negative (-4)	Impact will result in long term reputational and business risks.		
Likelihood	Probable (4)	The impact will probable occur if Sibanye does not ensure adequate disposal of hazardous waste generated from decommissioning activities.		
Post-Mitigation				
Duration	Short term (2)	As for pre-mitigation	Slightly detrimental (-8)	Negligible - negative (-32)
Extent	Sub-regional (4)	As for pre-mitigation		
Intensity	Low - negative (-2)	Mitigation measures will reduce the risk of impact occurring		
Probability	Probable (4)	Appropriate mitigation will reduce the risk of this impact		

7.2 Final Rehabilitation and Closure Phase

Activities during the Rehabilitation and Closure Phase that may have potential impacts summarised in Table 7-10.

Table 7-10: Interactions and Impacts of Activity

Interaction	Impact
Rewatering of underground workings	Creation of temporary economic opportunities associated with rehabilitation Workforce health and safety risks Inadequate handling and disposal of waste materials Improvement in the ambient natural environment due to the rehabilitation and closure of the mine Social closure planning as part of community development
Rehabilitation of surface paddocks, rock dumps and mud ponds	
Rehabilitation of Magazine Pan and as required other wetlands potentially impacted,	
Rehabilitation of infrastructure footprints	

Impacts discussed, assessed and rated in Section 7.1 above as they relate to workforce health and safety; and handling and disposal of waste materials remain unchanged during the rehabilitation and closure phases. Therefore, have not been discussed in this section.

7.2.1 Impact Description: Improvement to the Ambient Environmental Health due to the Removal, Rehabilitation and Closure of the Mine

The removal of pollution sources and potentially hazardous infrastructure as well as the rehabilitation of the environment to pre-mine operations will, in time, result in improved environmental health in the surrounding natural environment. The anticipated positive impacts of decommissioning and rehabilitation activities will result in further improvements to (this based on stakeholder issues raised not because of no compliance with the EMP):

- Noise pollution due to the movement of people and vehicles as well as noise generated by on-site equipment;
- Ambient air quality through the decreased generation of dust and other pollutants associated with Cooke 1, 2 and 3;
- Changes to the local landscape and sense of place due to the removal of mine infrastructure and cessation of night-time lighting;
- Reduction in hazardous waste generation; and
- Improvements to water quality associated with groundwater aquifers, neighbouring wetlands and streams; amongst others.

This positive impact is assessed and rated as it relates to the environmental impacts associated with the decommissioning, rehabilitation and closure of Cooke 1, 2, and 3 and not cumulative impacts associated with other mines operating in the area.

7.2.1.1 Management Objectives

- To enhance the environmental benefits associate with mine closure.

7.2.1.2 Management Actions

- Implement mitigation and recommendations of the Environmental Specialist Studies outline in the BA Report.
- Implement mitigation and recommendations of outlined in the Section 37 Regulations process undertaken as part of Cooke 1,2 and 3 closure.

7.2.1.3 Impact Ratings

The assessment and rating of impacts associated with improvement to ambient environmental health due to the removal, rehabilitation and closure of Cooke 1, 2 and 3 are described in Table 7-12.

Table 7-11: Improvement to ambient environmental health due to the removal, rehabilitation and closure of Cooke 1, 2 and 3

Improvement to the ambient environmental health due to the removal, rehabilitation and closure of Cooke 1, 2 and 3				
Project Phase:			**Decommissioning**	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Beyond project life (6)	The improvements to the environment as it relates to this Project will be permanent.	Highly beneficial (15)	Moderate - positive (90)
Extent	Local (3)	The impact will be experienced by surrounding landowners and communities.		
Intensity	Very high - positive (6)	Impact is likely to result in improved health outcomes for the landowners and communities. residing next to the mine.		
Likelihood	Highly probable (6)	The impact is likely to reduce the community concerns as they relate to unsafe environmental health.		
Post-Mitigation				
Duration	Beyond project life (6)	As for pre-mitigation	Highly beneficial (15)	Moderate - positive (90)
Extent	Local (3)	As for pre-mitigation		
Intensity	Very high - positive (6)	As for pre-mitigation		
Probability	Highly probable (6)	As for pre-mitigation		

7.2.2 Impact Description: Creation of Temporary Economic Opportunities

Rehabilitation work programs will create additional economic opportunities for businesses and job seekers. Activities such as rewatering of underground workings will require highly specialised contractors and workforce. This will result in contracts and employment opportunities linked to such works being awarded to companies from outside the area.

However, work programs for rehabilitation of infrastructure footprints will combine specialised and general skills, therefore, providing potential for the extension of contracts and employment opportunities to local businesses and people. The overall employment and contract numbers will remain low during this phase of work but may be long term but seasonal depending on the rehabilitation activities required. Sibanye can possibly extend the benefits by unbundling work programs into small contracts and setting employment targets for local employment for appointed Contractors.

7.2.2.1 Management Objectives

- To enhance the economic benefits associated with the Project.

7.2.2.2 Management Actions

- Implement mitigation outlined in Section 7.1.1 for maximisation of local employment and procurement.

7.2.2.3 Impact Ratings

The assessment and rating of impacts of creation of temporary employment during the rehabilitation and closure phase are described in Table 7-12.

Table 7-12: Creation of temporary Economic Opportunities

Creation of temporary Economic Opportunities				
Project Phase			Rehabilitation and Closure	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Long term (4)	Equal to the duration of the rehabilitation and closure.	Moderately beneficial (12)	Minor - positive (48)
Extent	Regional (5)	Some procurement contracts and employment positions will be filled by companies and persons living in secondary and regional study areas.		
Intensity	Moderate - positive (3)	Limited employment opportunities will be available for unskilled individuals but likely to short-term contracts due to some seasonality of rehabilitation work programs.		
Likelihood	Probable (4)	Without appropriate mitigation, forecasts of majority local procurement and recruitment might not be achieved		
Post-Mitigation				

Duration	Long term (4)	Equal to the duration of the rehabilitation and final closure.	Moderately beneficial (13)	Minor - positive (65)
Extent	Local (3)	Mitigation will increase employment from the primary study area, decreasing the extent as it relates to employment but extends to the regional study area as it relates to procurement contracts.		
Intensity	Very high - positive (6)	Mitigation will maximise the uptake of economic opportunities in the primary study area as it relates to non-technical work.		
Probability	Likely (5)	Mitigation will maximise probability that local recruitment targets are achieved, and local benefits optimised		

7.2.3 Impact Description: Freeing-up of Land and Resources for Alternative Uses

The decommissioning, rehabilitation and closure of the Cooke mine will free land currently occupied by the mine infrastructure for alternative socio-economic land uses. The rehabilitation work programs have already commenced, and they will be executed over a number of years, the rehabilitation will be monitored and plans and timelines will be updated as per the concurrent rehabilitation plans so as to ensure any emerging issues are addressed and improved management methods are utilised as the project progresses. Once completed, Sibanye-Stillwater plan to avail the mine land to the local government and communities for alternative socio-economic land uses.

As part of mine closure planning, Sibanye-Stillwater has commissioned internal long-term rehabilitation and closure strategy for Cooke operations (2018). The study depicted multiple scenarios for future land uses options per Cooke 1, 2 and 3 infrastructure sites (including Robinson Lake, all pits, Millsite TSF, Dump 20, etc.) a high-level investigation into the municipal future land requirements and uses. To further inform future land use post mine rehabilitation and closure; Sibanye-Stillwater has commissioned a social closure planning study which will further explore future land uses through stakeholder consultation and experts advise. The outcomes of stakeholder consultations and experts' opinions on future land uses will be detailed in the Social Closure Planning Report.

7.2.3.1 Management Objectives

- Ensure completion of the rehabilitation activities in a manner that allows for socio-economic land use.

7.2.3.2 Management Actions

- Consult with all relevant stakeholder including government and local communities regarding future land uses.
- All stakeholder inputs regarding future land uses must be considered against the previous land uses during mining in order to ensure that communities do not access land parcels which are not safe for human presence.

7.2.3.3 Impact Ratings

The assessment and rating of impacts of freeing-up of land and resources for alternative uses are described in Table 7-13.

Table 7-13: Freeing-up of Land and Resources for Alternative Uses

Freeing-up of land and resources for alternative uses				
Project phase			Decommissioning	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Permanent (7)	The impact will be permanent as Sibanye-Stillwater does not intend to take back the land after mine closure.	Highly beneficial (17)	Major - positive (119)
Extent	Local (3)	The impact will be experienced by landowners and communities within the primary study area who will have access to the land to use for various socio-economic purposes.		
Intensity	Extremely high - positive (7)	The greater West Rand area has a shortage of land as such Sibanye-Stillwater's freeing-up of land for community use will added advantage.		
Likelihood	Certain (7)	This impact will happen, and Sibanye-Stillwater is already in discussions with local government regarding future land use and local communities will also be engaged regarding this.		
Post-Mitigation				
Duration	Permanent (7)	As for pre-mitigation		

Extent	Local (3)	As for pre-mitigation	Highly beneficial (17)	Major - positive (119)
Intensity	Extremely high - positive (7)	As for pre-mitigation		
Probability	Certain (7)	As for pre-mitigation		

7.2.4 Impact Description: Community Development as part of Social Closure Planning

Sibanye has commissioned Digby Wells to undertake social closure planning studies on its behalf. The aim of the study will be to investigate the following:

- Evaluation of Sibanye's social delivery on social commitments and identification of the backlog;
- Identification and development of an action plan for the fulfilment of commitments backlog;
- Identification of closure social programs to be implemented in order to avoid and minimise adverse socio-economic impacts on the mine and host communities;
- Identification of potential partners for the sustainable implementation of social closure programs;
- To develop and hand-over strategy of community development programs to government and other relevant partners; and
- Set-forth the impact evaluation indicators for monitoring of implemented social closure programs.

This process is envisioned to involve an array of stakeholders including community members, government departments, civil society and academia.

At present (July 2020), Sibanye and its partners are continuing with the planning for the Bokamoso Ba Rona Agricultural-Industrial Initiative and Manufacturing Hub which are envisioned to form part of the long-term socio-economic development with the greater West Rand area.

The development and implementation of social closure programs are expected to have long term positive effects (such reduction in unemployment, household poverty, amongst others) on the beneficiaries.

7.2.4.1 Management Objectives

- To engage and involve communities in the development of post mine closure economic development programs; and
- To develop and implement sustainable economic development programs in line with the National Development Goals and UN Sustainable Development Goals.

7.2.4.2 Management Actions

- Sibanye should ensure full participation of communities in the development of post closure socio-economic planning. This should include the following:
- Development of the stakeholder engagement plan for social closure planning to be shared with stakeholders;
- Where applicable, Sibanye should engage communities through existing Community Engagement Forums;
- Full participation of Sibanye personnel) in stakeholder consultation process (including attendance of consultation meetings;
- Sibanye should ensure full transparency and sharing of information with stakeholders.
- Sibanye to provide stakeholders with well researched feedback to unfeasible programs and Projects proposed by community members (including the use of locally based case studies).
- Early formation of joint ventures and partnerships with stakeholders who will assist in the implementation of social closure programs.

7.2.4.3 Impact Ratings

The assessment and rating of social closure planning as part of community development are described in Table 7-14.

Table 7-14: Social Closure Planning as part of Community Development

Social Closure Planning as part of Community Development				
Project Phase			Decommissioning, Rehabilitation and Closure	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Beyond Project life (6)	If sustainably developed and managed, benefits could extend beyond the life of the mine.	Highly beneficial (14)	Minor - positive (70)
Extent	Local (3)	Long term positive economic benefits.		
Intensity	High - positive (5)	Community currently suffers from high levels of unemployment, income poverty and inadequate access to public services and infrastructure.		

Likelihood	Likely (5)	Without adequate stakeholder involvement, development initiatives are unlikely to be sustainable.		
Post-Mitigation				
Duration	Permanent (7)	As for pre-mitigation	Highly beneficial (16)	Moderate - positive (96)
Extent	Local (3)	As for pre-mitigation		
Intensity	Very high - positive (6)	Recommended measures will enhance stakeholder buy-in and positive impact on beneficiaries		
Probability	Highly probable (6)	Recommended measures and implementation thereof will improve likelihood of Projects' sustainability		

7.3 Cumulative Impacts

Cumulative impacts are those impacts that result from the incremental impact, on areas or resources used or directly impacted by the Project, from other existing, planned or reasonably defined developments (including third-party developments) at the time that the risks and impacts identification process is conducted (IFC PS 1, 2012). Potential cumulative impacts are presented in Table 7-15.

Table 7-15: Cumulative Impacts

Cumulative	Mitigation Measures
• Increased noise levels associated with surface infrastructure decommissioning activities resulting in a nuisance impact to nearby receptors.	• Decommissioning and waste collection activities should be limited to the daytime; and • Any machinery used for decommissioning activities must be
• Decreased ambient air quality due to activities associated with the removal of surface infrastructure.	• Dust fallout monitoring must continue to assess the effectiveness of mitigation measures in place. • Furthermore, heavy machinery and vehicles must be maintained and serviced regularly and, if possible, a silencing system must be fitted.
• Increased income poverty, unemployment and illegal mining activities due to closure of mines in the greater West Rand area.	• Development and implementation of sustainable social closure programs and collaboration between the different mining companies and with Government initiatives to ensure that the West Rand region is not left as a ghost town after mine closure

7.4 Unplanned and Low Risk Events

Unplanned events are episodes that are not expected to occur during the Project's normal activities, such as spillages among others. These are presented in Table 7-16.

Table 7-16: Unplanned Events and Associated Mitigation Measures

Unplanned Risk	Mitigation Measures
• Seepage of contaminants from waste to groundwater resources if waste is not correctly disposed of.	• All waste must be stored in bunded areas and not on bare soil surfaces; • Records of waste removed and appropriately disposed of must be kept on site; • The mine's Environmental representative must inspect waste areas, disposal and storage practices regularly (at least monthly); • Hydrocarbon spill kits must be available on site and used in the event of spillage of waste containing hydrocarbon; and • If a considerable amount of discarded fluid is accidentally spilled, the contaminated soil must be scraped off and disposed of appropriately. The excavation must be backfilled with uncontaminated soil.

8 Environmental Management Plan

Table 8-1 below summarises the outcomes of the social impact assessment process that must be included in the Environmental Management Plan (EMP).

Table 8-1: Environmental Management Plan

Activity (-ies)	Potential Impacts	Aspects Affected	Phase	Mitigation Measure	Mitigation Type	Time period for implementation
• Removal and decontamination of underground infrastructure • Refurbishment of plugs • Potential capping of the shaft barrel • Decommissioning of surface dams and rehabilitation of dam footprints • Removal of settled solids from surface paddocks and mud ponds • Decommissioning and rehabilitation of concrete channels • Decommissioning of shaft headgear and surface infrastructure	Loss of economic opportunities due to mine the closure Cooke 1, 2, and 3	Economic benefits	Decommissioning	• Implementation of social closure plans described in Section 7.2.4 in partnership with other mines in greater West Rand region and government to enhance non-mining based economic activities.	*Developmental*	During decommissioning, rehabilitation and closure
	Creation of temporary economic opportunities	Employment Procurement	Decommissioning	• Ensure that local communities understand the Project's procurement and employment requirements in terms of skills and type of contracts and employment. This will be achieved using existing stakeholder communication channels and through the Sibanye's Stakeholder Relations office. • Sibanye to set targets for local employment regardless of the size the work program. Targets must include employment of youths and women from historically disadvantaged backgrounds; and continuously monitored. • Consider unbundling of contracts into small work programs to ensure that small and locally based businesses are able to benefit. • Propose and promote joint ventures between large and small Contractors to ensure equitable sharing of economic benefits and skills development. • All tender process must follow existing Sibanye's SMME development strategies and programs.	*Developmental*	During decommissioning, rehabilitation and closure
	Workforce health, safety and security risks due to the handling and management of contaminants and possible encounters with illegal miners underground	Risks	Decommissioning and rehabilitation	• All appointed Contractors and their employees should undergo Sibanye EH&S induction and training. • All appointed Contractors should comply with Sibanye's EH&S policies and procedures. Failure to comply, a Contractor should be terminated or retake EH&S induction. • Ensure that the all workforce should have adequate PPE (inclusive of COVID-19 PPE). • Hydrocarbon spill kits must be available during decommissioning activities at all locations where hydrocarbon spills could take place. • Access control to all Project elements, including fencing where necessary. • Storage and disposal of hazardous materials to adhere to prescribed regulation. • Ensure that all employees including Contractor workforce should have access to onsite medical facilities available to the Sibanye workforce. • Ensure presence and easy access to the security services in case of encounters with illegal miners.	*Preventative and Management*	Decommissioning, rehabilitation, and final closure

Activity (-ies)	Potential Impacts	Aspects Affected	Phase	Mitigation Measure	Mitigation Type	Time period for implementation
	Decreased community health and safety due to inappropriate handling and disposal of hazardous waste if not implemented by registered accredited persons	Waste management	Decommissioning	• Adhere to the regulatory standards for disposal of hazardous waste generated from the decommissioning activities. • Ensure appointment of reputable Contractors to undertake the decommissioning and disposal of waste. • Ensure all certification for hazardous waste disposal facilities used are all up to date. • The mine's Environmental representative must inspect waste areas, disposal and storage practices regularly (at least monthly). • Waste must be stored in a demarcated secured area until collection. • Security personnel must remain present at all time until all waste is cleared.	*Preventative Management*	Decommissioning
• Capping of shafts	Reduction in illegal mining activities through the removal of viable mine infrastructure and capping of mine shafts	Security	Decommissioning	• On-going implementation of existing security controls and measures and controls; • Collaborate with local police services in managing the security of the capped mine shafts. • Where possible, improve security measures in and around the capped mine shafts including installation of closed-circuit television systems with thermal capability. • On-going monitoring and mending of boundary fencing whenever affected. • Investigate alternative mine shafts capping solutions that may be less affected by explosives. • Ensure availability of contingency funds for unplanned events such as damage to shaft caps.	*Preventative and contingency*	Decommissioning, rehabilitation, and final closure
• Capping of shafts	Increased illegal mining activities in surrounding mines due to the loss of economic opportunities associated with Cooke 1,2, and 3	Security	Decommissioning	• Inform neighbouring miners and authorities of the Cooke 1, 2 and 3 closure and likely peak of illegal mining activities.	*Preventative*	Decommissioning, rehabilitation, and final closure
• Sale of salvageable items (goods)	Sale of salvageable goods	Salvageable items	Decommissioning	• Revisit infrastructure and equipment on site and identify the ones that are no longer critical for the operations and can be sold. • Ensure local businesses and other potential buyers are notified timeously of the planned auctions.	*Developmental*	Decommissioning
• Rehabilitation and closure activities	Improvement to ambient environmental health due to the removal, rehabilitation and closure of Cooke 1, 2 and 3	Environmental health	Final rehabilitation and closure	• Implement mitigation and recommendations of the Environmental Specialist Studies outline in the BA Report. • Implement mitigation and recommendations of outlined in the Section 37 Regulations process undertaken as part of Cooke 1, 2 and 3 closure.	*Preventative Management*	

Activity (-ies)	Potential Impacts	Aspects Affected	Phase	Mitigation Measure	Mitigation Type	Time period for implementation
• Rehabilitation and closure activities	Freeing-up of land and resources for alternative uses	Land use	Final rehabilitation and closure	• Consult with all relevant stakeholder including government and local communities regarding future land uses. • All stakeholder inputs regarding future land uses must be considered against the previous land uses during mining in order to ensure that communities do not access land parcels which are not safe for human presence.	*Developmental*	Decommissioning, rehabilitation, and final closure

• Rehabilitation and closure activities	Community development as part of social closure planning	Community development	Decommissioning	• Sibanye should ensure full participation of communities in the development of post closure socio-economic planning. This should include the following:
				  • Development of the stakeholder engagement plan for social closure planning to be shared with stakeholders;
				  • Where applicable, Sibanye should engage communities through existing Community Engagement Forums;
				  • Full participation of Sibanye personnel) in stakeholder consultation process (including attendance of consultation meetings; and
				  • Sibanye should ensure full transparency and sharing of information with stakeholders;
				• Sibanye to provide stakeholders with well researched feedback to unfeasible programs and Projects proposed by community members (including the use of locally based case studies).
				• Early formation of joint ventures and partnerships with stakeholders who will assist in the implementation of social closure programs.
					Developmental	Decommissioning, rehabilitation and closure

• All Project activities	Community unrest due to perceived lack economic opportunities as it relates to the decommissioning, rehabilitation and closure of Cooke 1, 2 and 3	Communities	Decommissioning, rehabilitation and closure	• Undertake ongoing consultation with local communities (including local authorities and traditional leadership) and clearly communicate Project needs and schedule. • Encourage communities to utilise the existing grievance procedure to communicate their issues and ensure timeous response to all lodged complaints and grievances. • Utilise existing procurement and employment plans that promote transparent and fair recruitment and procurement. • Ensure the development and implementation of the social closure plan.	*Preventative management*	Decommissioning, rehabilitation and closure

9 Monitoring Programme

Sibanye has an existing comprehensive monitoring programme for the Cooke Operations. The key social aspects which form the monitoring programme are:

- Employment targets;
- Local procurement targets;
- Safety around the capped shafts;
- Complaints and grievance received and redressed; and
- Health and safety of the workforce and communities.

A summary of the aspects of monitoring are provided in the Table 9-1 below.

Table 9-1: Summary of Aspects to be Monitored

Monitoring Element	Comment	Frequency	Responsible Departments
Local employment targets	Review against set local employment targets	Quarterly	Departments: Human Resources Community Development
Local procurement targets	Review the numbers of local businesses engaged in decommissioning, rehabilitation and closure programs either individuals or through joint ventures	Quarterly	Human Resources Community Development Team
Safety around the capped shafts	On-going security checks of sealed mine shafts	Daily	Security Services
Stakeholder complaints and grievances received and redressed	Active engagement of stakeholders and redress of stakeholder issues	Weekly	Stakeholder Engagement Team Community Development Team
Health and safety of the workforce and communities	Hold toolbox talks, ensure presence of health and safety representatives for each work shift; ensure presence of security personnel in close proximity of workforce	Daily	Health and Safety Representative Security Services

10 Stakeholder Engagement Comments Received

Stakeholder engagement as it relates to the BAR process has not commenced. Once the draft BAR has been released for public comment, the specialist will incorporate relevant comments into the report.

11 Recommendations

From a socio-economic perspective, it is recommended that the proposed Project proceed.

This recommendation is however subject to the following conditions:

- The implementation mitigation and enhancement measures listed for each impact, negative and positive; and
- A social management plan and social monitoring plan must be developed to manage and monitor the implementation of these measures and recommend corrective measures, where necessary.

12 Reasoned Opinion Whether Project Should Proceed

Digby Wells does not object to the Project provided the recommendations detailed above are implemented.

13 Conclusion

The aims of the Social impact assessment were to comply with NEMA EIA Regulations 2014 as they relate to Appendix 6 (Part 1) specialist studies through the following:

- A description of the methodology adopted in preparing the report;
- A description of study limitations and constraints;
- A description of the findings and potential implications of such findings on the impacts of the proposed Project;
- Consideration of socio-economic benefits associated with the Project;
- The provision of implementable mitigation and enhancement measures; and
- monitoring requirements for inclusion in the EMPr or environmental authorisation.

To this end, the objectives of the study have been met in Sections 5 through to 12 of this Report. Based on the findings of the study, Digby Wells has no objects to the Project proceeding as long as all mitigation and enhancement measures provided are implemented.

14 References

City of Johannesburg, 2020. Final Integrated Development Plan Review 2020/21. https://www.joburg.org.za/Pages/A-Z.aspx?filter=I

D Mushongera, D Tseng, P Kwenda, M Benhura, P Zikhali and P Ngwenya, 2018. Poverty and Inequality in the Gauteng City-Region. GCRO Research Report # No. 09. https://www.gcro.ac.za/m/documents/GCRO_Research_Report_9_Understanding_poverty_and_inequality_June_2018.pdf

Gauteng Provincial Government, 2016. Socio-economic Review and Outlook. http://www.treasury.gov.za/documents/provincial%20budget/2016/3.%20Provincial%20Appropriation%20Acts/5.%20Guide%20to%20the%20Budget/GT/Gauteng%20-%20Social-Economic%20Review%20and%20Outlook.pdf

International Finance Corporation (IFC), 2012. Performance Standards on Environmental and Social Sustainability. https://www.ifc.org/wps/wcm/connect/24e6bfc3-5de3-444d-be9b-226188c95454/PS_English_2012_Full-Document.pdf?MOD=AJPERES&CVID=jkV-X6h

Mogale City Local Municipality, 2020/21. Integrated Development Plan Review, 2016-21. https://www.mogalecity.gov.za/idp/

O Chijioke, N and C Ndinda, August 2018. Female household headship and poverty in South Africa: an employment-based analysis. ERSA working paper 761.

https://www.econrsa.org/system/files/publications/working_papers/working_paper_761.pdf

Rand West City Local Municipality, 2020/21. Integrated Development Plan 2016/17 to 2020/21. http://www.randwestcity.gov.za/docs/key-docs/2016-2021%20IDP.pdf

Sibanye -Stillwater, August 2017. Health and Safety: Policy Statement. https://thevault.exchange/?get_group_doc=245/1564000994-SS-policy-statement-health-safety.pdf

Sibanye -Stillwater, no date. Stakeholder Relations Policy Statement.

Sibanye -Stillwater; 2019. Mineral Resources and Mineral Reserves Report (2019). https://www.sibanyestillwater.com/sustainability/community/

Sibanye -Stillwater, 2019. Social Upliftment and Community Development. https://www.sibanyestillwater.com/sustainability/community/

Sibanye -Stillwater, 2019. Combatting Illegal Mining: Moving Towards 'Zero Zama': Fact Sheet 2019. https://www.sibanyestillwater.com/sustainability/community/

Sibanye -Stillwater, December 2018. Care For iMali Taking Care of Personal Finance: Fact Sheet 2018. https://www.sibanyestillwater.com/sustainability/community/

Sibanye -Stillwater; 2018, Bokamoso Ba Rona Initiative, West Rand Agri-Industrial Programme. https://www.sibanyestillwater.com/sustainability/community/

Sibanye-Stillwater, June 2017. Cooke 1, 2, and 3 Gold Mine (Rand Uranium) Operations: Social and Labour Plan 2017-2021.

Sibanye Stillwater, July 2014. Cooke 1, 2, and 3 Gold Mine (Rand Uranium) Operations: Social and Labour Plan 2012-2016.

Statistics South Africa (Stats SA), 23 June 2020. Quarterly Labour Force Survey: Quarter 1: 2020. http://www.statssa.gov.za/publications/P0211/P02111stQuarter2020.pdf

Statistics South Africa (Stats SA), Labour market dynamics in South Africa, 2018. Report No. 02-11-02 (2018). http://www.statssa.gov.za/?s=Labour%20Market%20Dynamics&sitem=statistics%20by%20theme

Statistics South Africa (Stats SA), 2018. Provincial profile: Gauteng: Community Survey 2016. Report number 03-01-09. http://cs2016.statssa.gov.za/?portfolio_page=community-survey-2016-provincial-profile-gauteng-2016

Statistics South Africa (Stats SA), 2011. Gender statistics in South Africa 2011. http://www.statssa.gov.za/publications/Report-03-10-05/Report-03-10-052011.pdf

Statistics South Africa (Stats SA), 2018. National Poverty Lines. http://www.statssa.gov.za/publications/P03101/P031012018.pdf

West Rand District Municipality, 2018/19. Integrated Development Plan Draft 2016/17 to 2020/21 As Revised In 2018/19. http://www.wrdm.gov.za/idp/

West Rand District Municipality, 2019/20. Integrated Development Plan 2016/17 to 2020/21, as Revised in 2019/20. http://www.randwestcity.gov.za/

Appendix A: Impact Rating Methodology

The impact assessment methodology is based on a rating process that is designed to provide a numerical rating of the various social impacts identified. The significance rating process follows the established impact / risk assessment formula, as shown below:

***Significance** = **consequence** of an event x **probability** of the event occurring*

where

Consequence** = Type of impact **x (Intensity + Spatial Scale + Duration)

and

Probability** = **Likelihood of an impact occurring

In the formula for calculating **consequence**:

Type of impact **= +1** (for positive impacts) ***or* -1** (for negative impacts)

The weight assigned to the various parameters for positive and negative impacts in the formula is presented in Table 14-1.

Table 14-1: Impact Rating Options

Rating	Criteria and definitions	
	Negative impacts **(Type of impact = -1)**	**Positive impact (Type of impact = +1)**
Intensity		
7	Irreversible damage to highly valued items of great sociocultural significance or complete breakdown of social order	Noticeable, on-going social benefits which have improved the livelihoods and living standards of the local community in general
6	Irreparable damage to highly valued items of sociocultural significance or breakdown of social order	Great improvement to livelihoods and living standards of a large percentage of population
5	Very serious widespread social impacts. Irreparable damage to highly valued socio-cultural items	On-going and widespread positive benefits to local communities which improves livelihoods
4	On-going serious social issues. Significant damage to structures / items of sociocultural significance	Average to intense social benefits to some people
3	On-going social issues. Damage to items of sociocultural significance	Average, on-going positive benefits, not widespread but felt by some

Rating	Criteria and definitions	
	Negative impacts **(Type of impact = -1)**	**Positive impact (Type of impact = +1)**
2	Minor medium-term social impacts on local population. Mostly repairable. Cultural functions and processes not affected	Low positive impacts experience by very few of population
1	Minimal social impacts, low-level repairable damage to commonplace structures	Some low-level social benefits felt by very few of the population
Spatial scale		
7	International: The effect will occur across international borders	
6	National: Will affect the entire country	
5	Province/ Region: Will affect the regional study area and potentially the Mpumalanga Province	
4	Municipal Area: Affect will be limited to the local study area	
3	Local: Extending across the site and to nearby settlements within the local study area	
2	Limited: Limited to the site and its immediate surroundings (i.e. site-specific study area)	
1	Very limited: Limited to specific isolated parts of the site	
Duration		
7	Permanent: The impact will remain long after the life of the project	
6	Beyond project life: The impact will remain for some time after the life of the project	
5	Project Life: The impact will cease after the operational life span of the Project (20 years)	
4	Long term: 6-15 years	
3	Medium term: 1-5 years	
2	Short term: Less than one year	
1	Immediate: Less than one month	
Probability		
7	Certain/ Definite: There are sound scientific reasons to expect that the impact will definitely occur	
6	Almost certain/Highly probable: It is most likely that the impact will occur	
5	Likely: The impact may occur	
4	Probable: Has occurred here or elsewhere and could therefore occur	

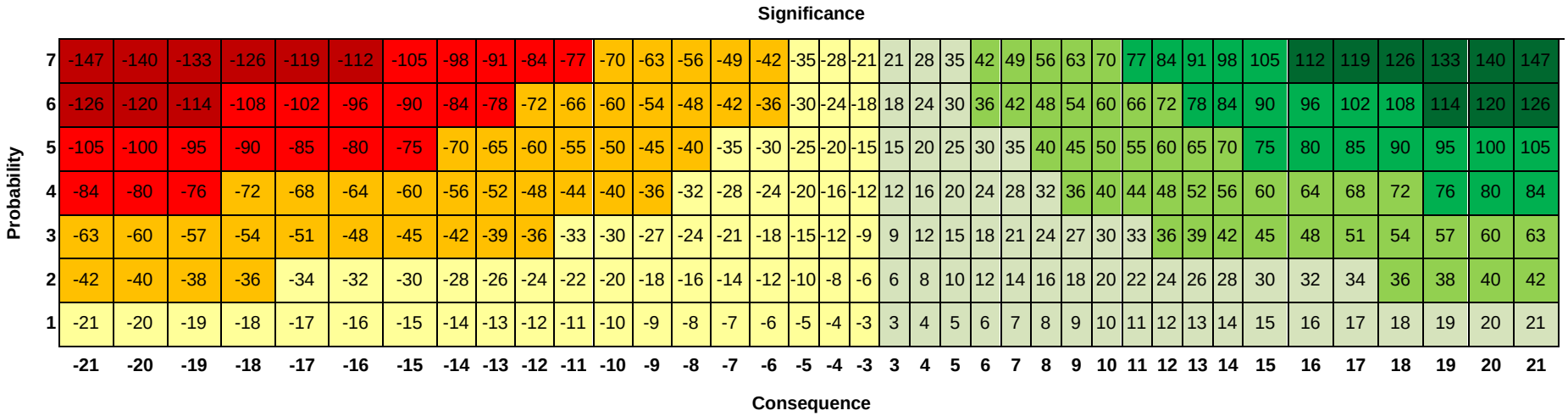
Rating	Criteria and definitions	
	Negative impacts **(Type of impact = -1)**	**Positive impact (Type of impact = +1)**
3	Unlikely: Has not happened yet but could happen once in the lifetime of the project, therefore there is a possibility that the impact will occur	
2	Rare/ improbable: Conceivable, but only in extreme circumstances and/ or has not happened during lifetime of the Project but has happened elsewhere. The possibility of the impact materialising is very low as a result of design, historic experience or implementation of adequate mitigation measures	
1	Highly unlikely/None: Expected never to happen.	

Impacts are rated prior to mitigation or enhancement and again after consideration of the proposed mitigation or enhancement measures. The impact is then determined and categorised into one of eight significance categories, as indicated in the Table 14-1. The relationship between consequence, probability and significance ratings is graphically depicted in Table 14-2.

Table 14-2: Significance Ratings

Score	Description	Rating
109 to 147	A very beneficial impact that may be sufficient by itself to justify implementation of the project. The impact may result in permanent positive change	Major (positive) (+)
73 to 108	A beneficial impact which may help to justify the implementation of the project. These impacts would be considered by society as constituting a major and usually a long-term positive change to the (natural and / or social) environment	Moderate (positive) (+)
36 to 72	A positive impact. These impacts will usually result in positive medium to long-term effect on the natural and / or social environment	Minor (positive) (+)
3 to 35	A small positive impact. The impact will result in medium to short term effects on the natural and / or social environment	Negligible (positive) (+)

Score	Description	Rating
-3 to -35	An acceptable negative impact for which mitigation is desirable. The impact by itself is insufficient even in combination with other low impacts to prevent the development being approved. These impacts will result in negative medium to short term effects on the natural and / or social environment	Negligible (negative) (-)
-36 to -72	A minor negative impact requires mitigation. The impact is insufficient by itself to prevent the implementation of the project but which in conjunction with other impacts may prevent its implementation. These impacts will usually result in negative medium to long-term effect on the natural and / or social environment	Minor (negative) (-)
-73 to -108	A moderate negative impact may prevent the implementation of the project. These impacts would be considered as constituting a major and usually a long-term change to the (natural and / or social) environment and result in severe changes.	Moderate (negative) (-)
-109 to -147	A major negative impact may be sufficient by itself to prevent implementation of the project. The impact may result in permanent change. Very often these impacts are immitigable and usually result in very severe effects. The impacts are likely to be irreversible and/or irreplaceable.	Major (negative) (-)



Probability \ Significance	-21	-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
7	-147	-140	-133	-126	-119	-112	-105	-98	-91	-84	-77	-70	-63	-56	-49	-42	-35	-28	-21	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140	147
6	-126	-120	-114	-108	-102	-96	-90	-84	-78	-72	-66	-60	-54	-48	-42	-36	-30	-24	-18	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	126
5	-105	-100	-95	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105
4	-84	-80	-76	-72	-68	-64	-60	-56	-52	-48	-44	-40	-36	-32	-28	-24	-20	-16	-12	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84
3	-63	-60	-57	-54	-51	-48	-45	-42	-39	-36	-33	-30	-27	-24	-21	-18	-15	-12	-9	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63
2	-42	-40	-38	-36	-34	-32	-30	-28	-26	-24	-22	-20	-18	-16	-14	-12	-10	-8	-6	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
1	-21	-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

Consequence

Figure 14-1: Relationship Between Consequence, Probability and Significance Ratings

DIGBY WELLS
ENVIRONMENTAL

Appendix B: Curriculum Vitae

Ms. Janet Mkhabela

Social and Stakeholder Engagement Consultant

Social and Heritage Services

Digby Wells Environmental

1 Education

Date	Degree(s) or Diploma(s) obtained	Institution
2005	Master's Degree in Policy and Development Studies	University of KwaZulu/Natal
2004	Honours Degree in Policy and Development Studies	University of Natal
2003	Undergraduate Degree in Industrial, Organisational and Labour Studies	University of Cape Town
12 – 16 October 2015	NQF Level 7 Introduction to Programme Evaluation (Basic Concepts)	University of Stellenbosch
1998	Matric/ Grade 12 with honours	Mtwalume High School

2 Language Skills

Language	Written	Spoken
English	Excellent	Excellent
Zulu	Excellent	Excellent
isiXhosa, isiSwati	Low	Good

3 Employment

Period	Company	Title/position
2018 to present	Digby Wells Environmental	Social and Stakeholder Engagement consultant
2017 to 2018	AMSCO / GreaterImpact	Senior Project Manager
2007 to 2017	Environmental Resource Management (ERM)	Senior Social Consultant
2007 (1 year)	City of Cape Town Metropolitan: Department of Environmental Resource Management	Junior Environmental Officer
2006 to 2007	Western Cape Provincial Department of Environmental Affairs and Development Planning: Strategic Environmental Management	Intern
1-month June/ July 2003 programme	Woodrow Wilson National Foundation: Public Policy Partnership: University of Natal	Cohort Mentor
2002 (1 year)	Western Cape Provincial Department of Health: Policy & Planning	Intern

4 Experience

Janet Mkhabela has 14 years of experience working as a Social Specialist with a focus on Social Impact Assessments, Resettlement Planning, Monitoring and Evaluation, as well as Stakeholder Engagement and Consultation.

She has experience in diverse industry sectors across sub-Saharan Africa including mining (coal, iron ore and manganese ore), renewable energy (wind, hydropower and solar), oil and gas, and transport (passenger trains, airports and freight rail).

Janet has field experience in South Africa, Angola, Ethiopia, Democratic Republic of Congo, Uganda, Ghana, Tanzania, Zambia, and São Tomé & Príncipe.

She is a skilled communicator and fully conversant with the cultural complexities and sensitivities of running effective and inclusive participatory engagement and facilitated processes in rural Africa.

Janet has experience in global resettlement practice and in delivery of and reviews of projects against the requirements of the IFC Performance Standards, specifically Performance Standard 5 Land Acquisition and Involuntary Resettlement. Janet has recently worked in

teams advising both mining and power sector clients on resettlement related issues (local and international clients).

5 Project Experience

Please see the following table for relevant Project experience:

PROJECT	LOCATION	DATES		PROJECT TYPE	CLIENT
Resettlement Planning					
Resettlement planning process for an oil and gas pipeline	Tanzania	2018	2019	Resettlement Planning	EACOP
Resettlement Policy Framework for 2 hydropower plants and associated infrastructure	Zambia	2014	2016	Resettlement Policy Framework (RFP)	LHPC
Resettlement Policy Framework for a Mining Complex	Angola	2014	2015	Resettlement Policy Framework (RPF)	Confidential
Resettlement planning (economic displacement) for the establishment of a mine	South Africa	2016	2017	Livelihoods restoration planning	Confidential
Resettlement training in accordance to international standards and local legislative process for the internal mine personnel responsible for RAP implementation	South Africa	2016	2016	Training facilitation	Confidential
Resettlement Planning for a road expansion project	Mozambique	2015	2015	Resettlement Planning	ENI
Monitoring and Evaluation of the implementation of a Resettlement Action Plan (RAP)	South Africa	2016	2017	Evaluation of RAP implementation process	Anglo American
Project Monitoring & Evaluation					

PROJECT	LOCATION	DATES		PROJECT TYPE	CLIENT
Summative Project Evaluation for low cost housing investors and developers	South Africa	2017	2018	Lead Consultant: Summative Project Evaluation	Confidential
End of Project Evaluation to determine the performance against anticipated outcomes of investment to the entities supported	South Africa	2017	2018	End of Project Evaluation	Confidential
Developing a monitoring and evaluation framework incl. measurable indicators for community development projects supported.	South Africa and Zambia	2017	2017	Monitoring and evaluation framework	Confidential
Evaluation of Socio-economic Development Projects implemented by a renewable energy company, Eastern and Northern Cape	South Africa	2017	2017	Formative Evaluation	Confidential
Social Baseline, Risk Assessment and Stakeholder Engagement Strategy for a Thermal Coal Mine	Botswana	2009	2010	Social Baseline, Risk Assessment and Stakeholder Engagement Strategy	Confidential
Strategic Environmental and Social Overview of Rail Network Development	South Africa	2007	2008	Strategic Environmental and Social Overview of Rail Network Development, South Africa	Confidential
Integrated: Social Impact Assessment and Stakeholder Engagement					
ESIA for an off-shore oil and gas project	Ghana	2015	2015	Social Impact Assessment, Stakeholder	Tullow Oil

PROJECT	LOCATION	DATES		PROJECT TYPE	CLIENT
				engagement and Social Management Plans (*consulted 25 communities in 2 weeks and awarded a service excellence award).*	
ESIA for the establishment of a hydropower plant and associated infrastructure (roads, tunnels, camps and dam)	Zambia	2014	2016	Social Impact Assessment, Stakeholder engagement and Social Management Plans	LHPC
EIA for the railway upgrade from the Hotazel to the Port of Ngqura	South Africa	2014	2016	Social Impact Assessments, Stakeholder Engagement and Social Management Plans	Transnet
EIAs for wind and solar power plants, in Western and Northern Cape	South Africa	2012	2014	Social Impact Assessments, Stakeholder Engagement and Social Management Plans for 12 wind power facilities	Mainstream G7 Renewable Intikon
ESIA for dam construction, and support infrastructure (Dam, Road, and Transmission Line)	Lesotho	2016	2017	Stakeholder Engagement Strategy and Consultation process (*consulted 72 communities in 6 weeks)*.	LHDA
Social Mine Closure planning for a diamond mine	South Africa	2016	2016	Social mine closure planning	Confidential
Strategic stakeholder engagement for mine closure planning	South Africa	2012	2012	Stakeholder engagement	Confidential
SESIA for the development of a New Town as Project	Democratic Republic of Congo (DRC)	2013	2013	Social Impact Assessment, Stakeholder	TFM

PROJECT	LOCATION	DATES		PROJECT TYPE	CLIENT
induced in-migration mitigation measure				Engagement Strategy and Consultation	
ESHIA for the establishment of a potash mine	Ethiopia	2015	2016	Social Impact Assessment, Stakeholder Engagement and Social Management Plans	Yara Dallol BV
ESHIA for an iron ore mine including port and railway infrastructure	Angola	2014	2015	Social Impact Assessment, Stakeholder Engagement and Social Management Plans	AEMR
Land use mapping exercise for resettlement planning and livelihoods restoration	Ghana	2016	2016	Land use mapping	ENI
ESIA for the airport expansion project	Republic of Sao Tome and Principe	2014	2014	Social Impact Assessment, Stakeholder Engagement and Social Management Plans	HBD
ESIA for the rehabilitation of hydropower plant and associated infrastructure (dam and tunnels)	Zambia	2015	2015	Social Impact Assessment, Stakeholder Engagement and Social Management Plans	LHPC
Unregulated stakeholder engagement processes:					
Facilitation of Site Selection Workshops, South Africa.	South Africa	2009	2009	Meeting facilitation	Confidential
Cape Town Station Revitalisation Project	South Africa	2008	2009	Stakeholder engagement	PRASSA
Implementation of the Integrated Road Transit (IRT) system in Cape Town	South Africa	2009	2010	Stakeholder engagement	City of Cape Town