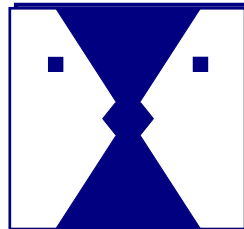


Proposed Vlakvarkfontein Mine Extension Project

Social Impact Assessment



Prepared by:

Equispectives Research & Consulting Services

Contact person: Dr Ilse Aucamp

Prepared for:
EIMS

November 2017



Executive Summary

The purpose of this document is to provide a baseline description of the receiving socio-economic environment and to identify social impacts for the proposed Vlakvarkfontein Extension project.

Ntshovelo Mining Resources (Pty) Ltd, a subsidiary of Mbuyelo Coal (Pty) Ltd), wishes to extend the mining operations at their Vlakvarkfontein Coal Mine. The proposed mining extension area is located 23 km east north east of Delmas and approximately 15 km west of Ogies within the Victor Khanye Local Municipality. The proposed extension will include open cast mining operations, using the roll-over method on portion 5 of the farm Vlakvarkfontein 213R. The new proposed mining operations is likely to necessitate the relocation and re-establishment of the existing ancillary infrastructure associated with the current mining operations, including the pollution control dam and the administrative structures. Ntshovelo also wishes to establish a new coal processing plant (wash plant) to decontaminate the run-of-mine coal. The proposed extension of the mine and new coal processing plant will be located within the Mining Right boundary.

The geographical area where the Vlakvarkfontein mine is situated has been exposed to intensive agricultural, mining and industrial development in recent years. The stakeholder groups for this project are also stakeholders in other developments, and there are significant cumulative impacts to consider. The following key stakeholder groups were identified:

- The Arbor community
- Commercial farmers
- Industries
- Government
- Vlakvarkfontein mine



The closest community to the mine, the Arbor community, is situated adjacent to the Vlakvarkfontein mine and currently consists of approximately 300 houses. The community is volatile and divided. Some people are vehemently against the mine, whilst others recognise and rely on it as a source of livelihoods, despite the negative impacts. It is situated in an area that bears the brunt of many impacts from the surrounding industries, and the conditions in the community cannot be solely attributed to the Vlakvarkfontein mine. Although the mine does contribute directly to the circumstances, other contributing factors must also be considered. The socio-political context in South Africa, high unemployment levels, government policies related to land ownership, lack of municipality to provide essential services and other polluting industries in the area all played a role. The relationship with the Vlakvarkfontein mine is tense, and the bulk of the frustration that the community experience is directed at the mine.

The following impacts has been identified and assessed in the SIA study:

- Existing and cumulative impacts
 - Environmental impacts with social dimensions;
 - Economic impacts;
 - Impacts on infrastructure; and
 - Community-based impacts.
- Social impacts specific to the expansion of the Vlakvarkfontein mine
 - Community expectations;
 - Dust from a social and health perspective;
 - Blasting and vibrations from a social perspective;
 - Safety;
 - Water from a social perspective; and



- Economic impacts from a social perspective.

Mitigation and management measures have been suggested for each impact, and are detailed in the report. Based on the findings of this study, the following key recommendations are made:

- Development and implementation of community relations strategy;
- Development and implementation of policies to deal with community conflict and blasting;
- Development and implantation of a grievance mechanism;
- Implementation and monitoring of other social mitigation and management measures.

The environmental and health impact of coal is undeniable, and some of the negative impacts can be seen in the area around the mine. In the case of the expansion of the Vlakvarkfontein, the social considerations that were taken into account was whether the community will be worse or better of without the mine for the next eight years. Despite the resistance to the mine, the conclusion is that without the mine, the socio-economic conditions in the Arbor community will deteriorate further. Therefore the recommendation is that the expansion of the mine should be approved on the condition that the mine put certain social processes such as a grievance mechanism in place, and that the current issues between the mine and the community must be attended to. This will take an effort and the investment of time and resources of the mine, but without active and specific effort, the community may not allow the mine to continue with operation, even if it receives environmental authorisation.



Declaration of Independence

Equispectives Research and Consulting Services declare that:

- All work undertaken relating to the proposed project was done as independent consultants;
- They have the necessary required expertise to conduct social impact assessments, including the required knowledge and understanding of any guidelines or policies that are relevant to the proposed activity;
- They have undertaken all the work and associated studies in an objective manner, even if the findings of these studies were not favourable to the project proponent;
- They have no vested interest, financial or otherwise, in the proposed project or the outcome thereof, apart from remuneration for the work undertaken under the auspices of the above-mentioned regulations;
- They have no vested interest, including any conflicts of interest, in either the proposed project or the studies conducted in respect of the proposed project, other than complying with the relevant required regulations; and
- They have disclosed any material factors that may have the potential to influence the competent authority's decision and/or objectivity in terms of any reports, plans or documents related to the proposed project as required by the regulations.



Record of Experience

Ilse Aucamp and San-Marié Aucamp compiled this report.

Ilse Aucamp holds a D Phil degree in Social Work obtained from the University of Pretoria in 2015. She also has Masters degree in Environmental Management (Cum Laude) from the Potchefstroom University for Christian Higher Education, which she obtained in 2004. Prior to that she completed a BA degree in Social Work at the University of Pretoria. She is frequently a guest lecturer in pre- as well as post-graduate programmes at various tertiary institutions. Her expertise includes social impact assessments, social management plans, social and labour plans, social auditing, training as well as public participation. She is the past international chairperson of the Social Impact Assessment section of the International Association of Impact Assessment (IAIA) as well as a past member of the National Executive Council of IAIA South Africa. She advises the Centre for Environmental Rights on social issues, and is also on the advisory panel of the SIAhub, an international website aimed at SIA practitioners. She is a co-author of the newly published *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects* document published by the International Association for Impact Assessment.

San-Marié Aucamp is a registered Research Psychologist with extensive experience in both the practical and theoretical aspects of social research. She has more than 10 years' experience in social research and she occasionally presents guest lectures on social impact assessment. Her experience includes social impact assessments, social and labour plans, training, group facilitation as well as social research. She is a past council member of the Southern African Marketing Research Association (SAMRA).



Table of Contents

1	INTRODUCTION	5
2	SCOPE OF WORK	7
2.1	EIA/EMPr Level Assessment	7
3	METHODOLOGY	9
3.1	Information base	9
3.2	Assumptions and limitations	9
3.3	Methodology	11
3.4	Defining of concepts	11
3.5	Literature study	13
3.6	Research approach.....	14
3.7	Ethical issues	14
4	LEGISLATIVE AND POLICY FRAMEWORK.....	15
4.1	The Constitution of the Republic of South Africa 1996.....	15
4.1.1	The National Environmental Management Act 107 of 1998	16
4.1.2	The National Water Act 36 of 1998	18
4.1.3	The Mineral and Petroleum Resources Development Act 28 of 2002	19
4.1.4	The National Heritage Resources Act 25 of 1999	21
4.1.5	Promotion of Administrative Justice Act 3 of 2000	22
4.2	Additional governance tools.....	23
4.2.1	Integrated Development Plans	23
4.2.2	Provincial Growth and Development Strategies.....	24
4.2.3	National Development Plan	24
4.2.4	Sustainable Development Goals	26
4.3	National and international standards	27
4.3.1	ISO 26000:2010/SANS 26000:2010.....	27
4.3.2	International Social Performance Standards/Initiatives	28
4.3.3	International Principles for SIA	30
5	RECEIVING ENVIRONMENT.....	32
5.1	Description of the area.....	33
5.1.1	Mpumalanga Province	34
5.1.2	Nkangala District Municipality	35



5.1.3	Victor Khanye Local Municipality	35
5.2	Description of the population.....	36
5.2.1	Community structure	37
5.2.2	Livelihoods	44
5.2.3	Community Infrastructure	47
6	STAKEHOLDER IDENTIFICATION AND ANALYSIS	56
6.1	Stakeholder groups	57
6.1.1	The Arbor community	57
6.1.2	Commercial farmers.....	61
6.1.3	Industries	62
6.1.4	Government	63
6.1.5	Vlakvarkfontein Mine.....	64
6.2	Human Rights	65
6.3	Social licence to operate	67
7	SOCIAL IMPACT ASSESSMENT.....	69
7.1	Impact Assessment Criteria	69
7.2	Description of potential impacts.....	72
7.2.1	Existing and cumulative impacts.....	72
7.2.2	Social impacts specific to the expansion of the Vlakvarkfontein mine.....	76
7.2.3	Impact Ratings.....	92
7.3	Social Action Plan.....	97
8	ANALYSIS OF ALTERNATIVES	99
9	STAKEHOLDER ENGAGEMENT PLAN.....	101
10	PROPOSED GRIEVANCE MECHANISM.....	103
11	CONCLUSION AND RECOMMENDATIONS.....	105
12	REFERENCES	107



List of Figures

Figure 1: Locality of proposed Vlakvarkfontein Extension project.	5
Figure 2: Location of the proposed Vlakvarkfontein Coal Mine Extension.	33
Figure 3: Household size (shown in percentage, source: Census 2011)	39
Figure 4: Population distribution (shown in percentage, source: Census 2011)	40
Figure 5: Age distribution (shown in percentage, source: Census 2011).....	41
Figure 6: Gender distribution (shown in percentage, source: Census 2011).....	42
Figure 7: Language distribution (shown in percentage, source: Census 2011).....	43
Figure 8: Education profiles (those aged 20 years or older, shown in percentage, source: Census 2011)	44
Figure 9: Labour status (those aged between 15 - 65 years, shown in percentage, source: Census 2011)	45
Figure 10: Employment sector (those aged between 15 - 65 years, shown in percentage, source: Census 2011).....	46
Figure 11: Annual household income (shown in percentage, source: Census 2011)	47
Figure 12: Enumeration area types (persons, shown in percentage, source: Census 2011) ..	48
Figure 13: Dwelling types (shown in percentage, source: Census 2011)	49
Figure 14: Tenure status (shown in percentage, source: Census 2011).....	50
Figure 15: Water source (shown in percentage, source: Census 2011).....	51
Figure 16: Piped water (shown in percentage, source: Census 2011)	52
Figure 17: Sanitation (shown in percentage, source: Census 2011)	53
Figure 18: Energy source for lighting (shown in percentage, source: Census 2011)	54
Figure 19: Refuse removal (shown in percentage, source: Census 2011)	55

List of Tables

Table 1: Census 2011 Population, growth and household estimates	37
Table 2: Criteria for determination of impact consequence.	70
Table 3: Probability scoring.	71
Table 4: Significance classes.	71



Table 5: Criteria for the determination of prioritisation.	71
Table 6: Determination of prioritisation factor.	72
Table 7: Environmental significance rating.	72
Table 8: Types of cost to company as a result of community conflict.	77
Table 9: Mitigation measures for impacts relating to community relations.	79
Table 10: Mitigation measures for dust relating to dust from a social and health perspective.	82
Table 11: Mitigation measures for impacts relating to blasting from a social perspective. ...	84
Table 12: Mitigation measures for impacts relating to safety.	87
Table 13: Mitigation measures for impacts relating to water from a social perspective.	89
Table 14: Mitigation measures for economic community impacts.	91
Table 15: Impacts in the Planning Phase	93
Table 16: Impacts in the Construction Phase	94
Table 17: Impacts in the Operation Phase	94
Table 18: Impacts in the Decommissioning Phase	95
Table 19: Impacts in the Rehab and Closure Phase	96

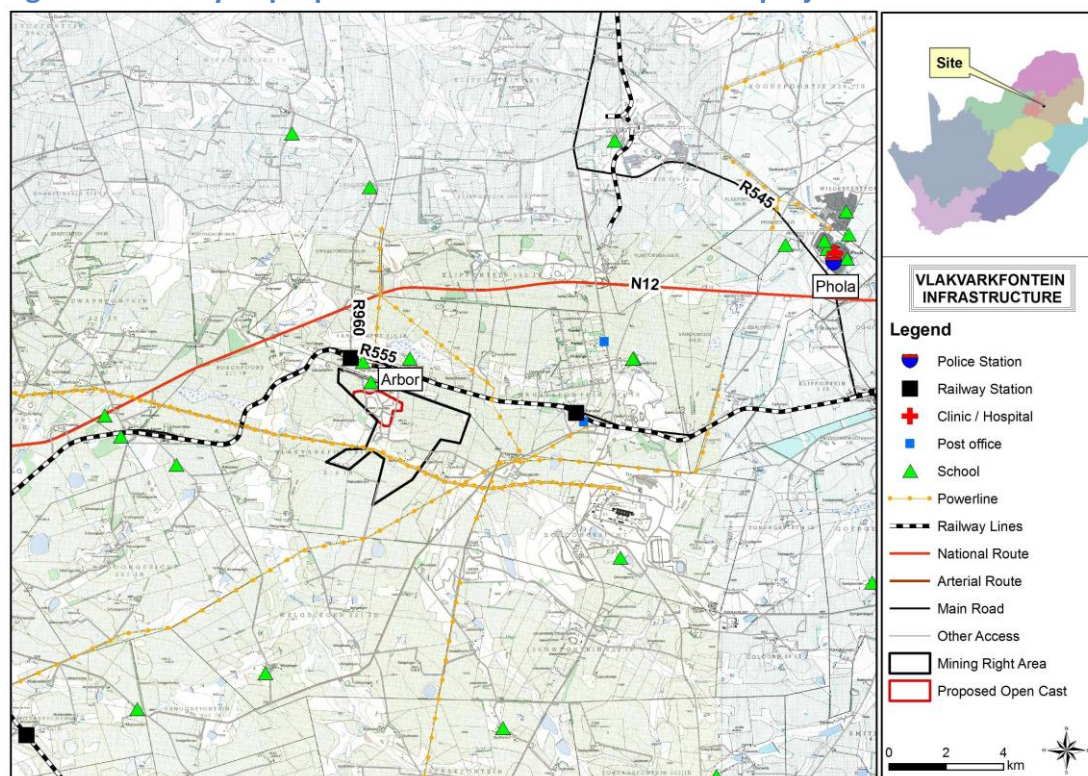


1 Introduction

Ntshovelo Mining Resources (Pty) Ltd, a subsidiary of Mbuyelo Coal (Pty) Ltd), wishes to extend the mining operations at their Vlakvarkfontein Coal Mine. The proposed mining extension area is located 23 km east north east of Delmas and approximately 15 km west of Ogies within the Victor Khanye Local Municipality. The proposed extension will include open cast mining operations, using the roll-over method on portion 5 of the farm Vlakvarkfontein 213R. The new proposed mining operations is likely to necessitate the relocation and re-establishment of the existing ancillary infrastructure associated with the current mining operations, including the pollution control dam and the administrative structures. Ntshovelo also wishes to establish a new coal processing plant (wash plant) to decontaminate the run-of-mine coal. The proposed extension of the mine and new coal processing plant will be located within the Mining Right boundary (Vlakvarkfontein BID).

Figure 1 shows the proposed location for the project within municipal context.

Figure 1: Locality of proposed Vlakvarkfontein Extension project.





The purpose of this report is to provide baseline information regarding the socio-economic environment, to identify possible social and socio-economic impacts and to suggest ways in which these impacts can be mitigated. This will assist decision-makers on the project in making informed decisions by providing information on the potential or actual consequences of their proposed activities. The process entailed the following:

- A baseline socio-economic description of the affected environment;
- Identification of potential social and economic change processes that may occur as a result of the project; and
- Identification of potential social and economic impacts.

One of the ways in which social risk can be managed is by conducting a social impact assessment (SIA). Such an assessment can assist with identifying possible social impacts and risks. Disregarding social impacts can alter the cost-benefit equation of development and in some cases even undermine the overall viability of a project. A proper social impact assessment can have many benefits for a proposed development (UNEP, 2002) such as:

- Reduced impacts on communities of individuals;
- Enhanced benefits to those affected;
- Avoiding delays and obstruction – helps to gain development approval (social license);
- Lowered costs;
- Better community and stakeholder relations; and
- Improved proposals.

More detail on the scope of this study is included in the section below.



2 Scope of Work

The purpose of the SIA is to provide input in the Environmental Impact Assessment (EIA)/ Environmental Management Programme (EMPr) Report for the proposed expansion of the Vlakvarkfontein Mine.

2.1 EIA/EMPr Level Assessment

The EIA level assessment included the following:

- Baseline description of the project area;
- A detailed social impact assessment based on the proposed activities and the alternatives identified during scoping; Impacts were calculated for each phase of the project and these phases were classified as:
 - Planning and Design;
 - Construction;
 - Operation;
 - Decommissioning; and
 - Rehabilitation and Closure.
- Identification and description of site sensitivities;
- Identification and description of site constraints;
- Identified potential impacts were evaluated in accordance with the agreed upon methodology to determine significance. Identified potential impacts (cumulative, direct and indirect) were quantified (where possible) and fully described for each feasible alternative utilising the EIMS Impact Assessment template;



- Residual and latent impacts after mitigation were evaluated (in accordance with the assessment methodology described above) such that actual implemented results can be measured against those predicted;
- Comparative assessment of the identified alternatives;
- Contribution to the preparation of a detailed site specific EMP relating to the specific field of expertise and impacts identified;
- Providing detailed mitigation / management measures for the management of the identified impacts for inclusion in the EMP. The mitigation / management measures are presented in a tabulated format for each phase of the project and include;
 - Detailed description of mitigation measures or management options;
 - Roles and Responsibilities for Implementation;
 - Timeframes for implementation; and
 - Means of measuring successful implementation (Targets & Performance Indicators).
- Compilation of an Action Plan for Implementation of the recommended mitigation measures. This plan will include the following:
 - Management Actions for Implementation;
 - Responsibilities for Implementation, monitoring and review; and
 - Timeframes for Implementation.
- Any other Recommendations;
- Identifying any gaps in knowledge, data or information;
 - Report on the adequacy of predictive methods utilised;



- Report on the adequacy of underlying assumptions; and
 - Report on uncertainties in the information provided.
- Anticipated costs to implement mitigation measures and recommendations suggested.

3 Methodology

3.1 Information base

The information used in this report was based on the following:

- A literature review (see list provided in the References);
- Data from Statistics South Africa;
- The public participation records provided by EIMS;
- Professional judgement based on experience gained with similar projects; and
- Consultation with affected stakeholders in July 2017 and November 2017.

3.2 Assumptions and limitations

The following assumptions and limitations were relevant:

1. Not every individual in the community could be interviewed therefore only key people in the community were approached for discussion. These key people include all the directly affected landowners. Additional information was obtained using existing data.
2. The social environment constantly changes and adapts to change, and external factors outside the scope of the project can offset social changes, for example changes in local political leadership, droughts or economic conditions. It is therefore difficult to predict all impacts to a high level of accuracy, although care has been taken to identify and address the most



likely impacts in the most appropriate way for the current local context within the limitations. In addition, it is also important to manage social impacts for the life of the project, especially in the light of the changing social environment.

3. Social impacts can be felt on an actual or perceptual level, and therefore it is not always straightforward to measure the impacts in a quantitative manner.
4. Social impacts commence when the project enters the public domain. Some of these impacts will occur irrespective of whether the project continues or not, and other impacts have already started. These impacts are difficult to mitigate and some would require immediate action to minimise the risk.
5. There are different groups with different interests in the community, and what one group may experience as a positive social impact, another group may experience as a negative impact. This duality will be pointed out in the impact assessment phase of the report.
6. Social impacts are not site-specific, but take place in the communities surrounding the proposed development.



3.3 Methodology

Scientific social research methods were used for this assessment. In order to clarify the process to the reader, this section will start with a brief explanation of the processes that have been used in this study.

3.4 Defining of concepts

The theoretical model used for this impact assessment was developed by Sloodweg, Vanclay and Van Schooten and presented in the *International Handbook of Social Impact Assessment* (Vanclay & Becker, 2003). This model identifies pathways by which social impacts may result from proposed projects. The model differentiates between social change processes and social impacts, where the social change process is the pathway leading to the social impact. Detail of how the model works is not relevant to this study, but it is important to understand the key concepts, which will be explained in the following paragraphs.

Social change processes are set in motion by project activities or policies. A social change process is a discreet, observable and describable process that changes the characteristics of a society, taking place regardless of the societal context (that is, independent of specific groups, religions etc.) These processes may, in certain circumstances and depending on the context, lead to the experience of social impacts (Vanclay, 2003). If managed properly, however, these changes may not create impacts. Whether impacts are caused will depend on the characteristics and history of the host community, and the extent of mitigation measures that are put in place (Vanclay, 2003). Social change processes can be measured objectively, independent of the local context. Examples of social change processes are an increase in the population, relocation, or the presence of temporary workers.

For the purpose of this report, the following social change process categories were considered:

- Demographic processes;
- Economic processes;
- Geographic processes;



- Institutional and legal processes;
- Emancipatory and empowerment processes;
- Socio-cultural processes; and
- Other relevant processes.

The *International Association for Impact Assessment* (2003) states that Social Impact Assessment includes the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by these interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment.

A social impact is something that is experienced or felt by humans. It can be positive or negative. Social impacts can be experienced in a physical or perceptual sense. Therefore, two types of social impacts can be distinguished:

- **Objective social impacts** – i.e. impacts that can be quantified and verified by independent observers in the local context, such as changes in employment patterns, in standard of living or in health and safety.
- **Subjective social impacts** – i.e. impacts that occur “in the heads” or emotions of people, such as negative public attitudes, psychological stress or reduced quality of life.

It is important to include subjective social impacts, as these can have far-reaching consequences in the form of opposition to, and social mobilisation against the project (Du Preez & Perold, 2005).

For the purpose of this SIA, the following Social Impact Assessment categories were investigated:

- Health and social well-being;
- Quality of the living environment;
- Economic impacts and material well-being;



- Cultural impacts;
- Family and community impacts;
- Institutional, legal, political and equity impacts; and
- Gender impacts.

Relevant criteria for selecting significant social impacts included the following:

- Probability of the event occurring;
- Number of people that will be affected;
- Duration of the impact;
- Value of the benefits or costs to the impacted group;
- Extent to which identified social impacts are reversible or can be mitigated;
- Likelihood that an identified impact will lead to secondary or cumulative impacts;
- Relevance for present and future policy decisions;
- Uncertainty over possible effects; and
- Presence or absence of controversy over the issue.

For the purpose of this study, the model was adapted to fit the South African context, and where processes and impacts were not relevant to the study, it was omitted. Each category has a number of sub-categories, which also have been investigated. The Equator Principles, International Finance Corporation Performance Standards and World Bank Environmental, Health and Safety guidelines were consulted in the writing of this report and the mitigation suggested adheres to these requirements.

3.5 Literature study

A detailed literature search was undertaken to obtain secondary data for the baseline description of the socio-economic environment. The information in this report was acquired via statistical data obtained from Statistics South Africa, SIA literature (see References) as well as information from reputable online sources



3.6 Research approach

Traditionally there are two approaches to SIA, a technical approach and a participatory approach. A technical approach entails that a scientist remains a neutral observer of social phenomena. The role of the scientist is to identify indicators, obtain objective measures relevant to the situation and provide an expert assessment on how the system will change (Becker, Harris, Nielsen & McLaughlin, 2004). A participatory approach uses the knowledge and experiences of individuals most affected by the proposed changes as the basis for projecting impacts. In this case the role of the scientist is facilitator of knowledge sharing, interpretation and reporting of impacts (Becker et al, 2004). A combination of these approaches was used for this study.

The findings presented in this report are based on secondary and primary research. A qualitative approach was followed for the primary research, while qualitative and quantitative data were used for the secondary research.

3.7 Ethical issues

The fact that human beings are the objects of study in the social sciences brings unique ethical problems to the fore. Every individual has a right to privacy which is the individual's right to decide when, where, to whom, and to what extent his or her attitude, beliefs and behaviour will be revealed (Strydom, 2002). Every person interviewed for the purposes of this report has been ensured that although the information disclosed will be used, their names will not be disclosed without their permission, even the people who had no objection if their names were disclosed. Therefore, to protect those consulted and to maintain confidentiality, the people interviewed for this report will not be named in the report. Records of the interviews have been kept. Where participants requested, the records pertaining to them have been shared with them. This is in line with international as well as national research practice such as the World Association for Market, Social and Opinion Researchers (ESOMAR) and Southern African Marketing Research Association (SAMRA) codes of conduct.



4 Legislative and Policy Framework

Although there are no explicit acts referring directly to SIA, there are many acts and policies that require specific social outcomes that can be related to this project, and these are discussed in the section below.

4.1 The Constitution of the Republic of South Africa 1996

The current Constitution of the Republic of South Africa 1996 can be regarded as one of the most progressive constitutions in the world. Human rights are enshrined in the South African Constitution, which forms the basis of all the country's legislation. Chapter 2 consists of a Bill of Rights, which explicitly spells out the rights of every South African citizen. Human rights and dignity are fundamental to SIA and it recognises fundamental human rights and the prerogative to protect those rights as core values (Vanclay, 2003). The human rights relevant to the environmental management field that are safeguarded by the Constitution of the Republic of South Africa 1996 in the Bill of Rights, include:

- Right to a healthy environment;
- Right of access to land and to security of tenure; and
- Right to adequate housing and protection against evictions and demolitions.

The right to a protected biophysical environment, the promotion of social development and trans-generational equity is explicitly included in the Constitution of the Republic of South Africa 1996, which states:

“Everyone has the right -

1. To an environment that is not harmful to their health and wellbeing, and
2. To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:

1. *Prevent pollution*



2. *Promote conservation, and*
3. *Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”*

When considering an environment that is not harmful to peoples' health and wellbeing, it is important to reflect on the interconnectedness of biophysical, economic and social aspects. The impact of development on people, and the true cost of development, as well as the consideration of “who pays the price?” versus “who reaps the benefits?” cannot be ignored in a discussion about human rights and the environment.

The right to a generally satisfactory environment is increasingly seen as a human right in Africa (Du Plessis, 2011), and South Africa's environmental legislation supports this.

4.1.1 The National Environmental Management Act 107 of 1998

The National Environmental Management Act (NEMA) 107 of 1998 states that the State must respect, protect, promote and fulfil the **social**, economic and environmental rights of everyone and strive to meet the needs of previously disadvantaged communities. It states further that sustainable development requires the integration of **social**, economic and environmental factors in the planning, evaluation and implementation of decisions to ensure that development serves present and future generations.

Chapter 1 of NEMA contains a list of principles and states clearly that environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests (NEMA, 1998). It states further that negative impacts on the environment and on peoples' environmental rights must be anticipated and prevented, and if they cannot be prevented, they should be minimised and remedied. It elaborates further on the equity of impacts, and the fact that vulnerable communities should be protected from negative environmental impacts. It refers to the principle that everyone should



have equal access to environmental resources, benefits and services to meet their basic human needs (NEMA, 1998). Therefore there is a clear mandate for environmental and restorative justice in the act, something that must be considered in this project.

Another important aspect of NEMA is the principle of public participation. It states that people should be empowered to participate in the environmental governance processes, and that their capacity to do so should be developed if it does not exist. All decisions regarding the environment should take the needs, interest and values of the public into account, including traditional and ordinary knowledge (NEMA, 1998). There are also specific environmental management acts that fall under NEMA, such as the National Environmental Management, Air Quality Act 39 of 2004 (NEMA: AQA), and the National Environmental Management, Waste Act 59 of 2008 (NEMA: WA). These acts require similar public participation processes to NEMA and the principles of NEMA also apply to them (Department of Environmental Affairs & Development Planning [DEA&DP], Provincial Government of the Western Cape, 2010).

Chapter 6 of NEMA elaborates on the public participation requirements. This is supplemented by the EIA regulations published in GN 982 of 4 December 2014, which contained requirements for public participation (GN 982 in GG 38282 of 4 December 2014). It provides requirements for the public participation, the minimum legal requirements for public participation processes, the generic steps of a public participation process, requirements for planning a public participation process and a description of the roles and responsibilities of the various role players. A compulsory Public Participation Guideline that was published in 2012 (GN 807 of 10 October 2012) in terms of section J of NEMA (NEMA, 1998) complements these requirements. According to the guidelines, public participation can be seen as one of the most important aspects of the environmental authorisation process. Public participation is the only requirement of the environmental impact assessment process for which exemption cannot be given, unless no rights are affected by an application. This stems from the requirement in NEMA that people have a right to be informed about



potential decisions that may affect them and that they must be given an opportunity to influence those decisions.

The principles of the National Environmental Management Act 107 of 1998 declare further that community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, sharing of environmental knowledge and experience and any other appropriate means. It states that the social, environmental and economic impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions taken must be appropriate given the assessment and evaluation. NEMA 107 of 1998 recognises that the environment is held in public trust for the people, and therefore the beneficial use of environmental resources must serve the peoples' interest and protect the environment as the peoples' common heritage.

NEMA takes a holistic view of the environment, and promotes the consideration of social, economic and biophysical factors to obtain sustainable development and achieve effective management of the biophysical environment.

4.1.2 The National Water Act 36 of 1998

Chapter 1 of the National Water Act (NWA) 36 of 1998 states that sustainability and equity are identified as central guiding principles in the protection, use, development, conservation, management and control of water resources. It affirms that the guiding principles recognise the basic human needs of present and future generations and the need to promote social and economic development using water. Chapter 2 of the NWA states amongst others that the purpose of the act is to ensure that everyone has equitable access to water, and that the results of past racial and gender discrimination are redressed. It aims to promote the efficient, sustainable, and beneficial use of water in the public interest, and to facilitate social and economic development. The NWA recognises that the nations' water resources are held in public trust for the people, and therefore the sustainable, equitable and beneficial use of water resources must serve the peoples' interest.



4.1.3 The Mineral and Petroleum Resources Development Act 28 of 2002

The Mineral and Petroleum Resources Development Act (MPRDA) 28 of 2002 is the only environmental act that explicitly requires a social development output, in addition to a public participation process, in the form of a Social and Labour Plan (SLP). In the preamble to the Act it recognises the need to promote local and rural development and the social upliftment of communities affected by resource development. In Section 2 it states that some of the objectives of the act are:

- To substantially and meaningfully expand opportunities for historically disadvantaged persons, including women, to enter the mineral and petroleum industries and to benefit from the exploitation of the nations' mineral and petroleum resources;
- To promote economic growth and mineral and petroleum resources development in the Republic;
- To promote employment and advance the social and economic welfare of all South Africans, and
- To ensure that holders of mining and production rights contribute towards the socio-economic development of the areas in which they are operating.

The MPRDA acknowledges that mineral and petroleum resources are the common heritage of all the people of South Africa and that the State is the custodian thereof for the benefit of all. It states that the Minister of Mineral Resources must ensure the sustainable development of South Africa's mineral and petroleum resources within a framework of national environmental policy, norms and standards while promoting economic and social development (MPRDA, 2002).

In Section 37 of the Mineral and Petroleum Resources Development Act 28 of 2002 it endorses the principles set out in Chapter 1 of the National Environmental Management Act 107 of 1998. In Section 39 of the MPRDA the act explicitly requires a social impact assessment as well as an environmental impact assessment when it states that applicants must:



“...investigate, assess and evaluate the impact of his or her proposed prospecting or mining operations on:

- (i) The environment;
- (ii) The **socio-economic conditions of any person** who might be directly affected by the prospecting or mining operation...”

Section 3, Chapter 2, Part I, of the regulations (Government Notice 527, 23 April 2004) published under the MPRDA refers to the public participation process, which must be followed according to the Act. It includes advertising and an invitation to comment on the process.

Sections 40 to 46, Chapter 2, Part II, of the regulations published under the MPRDA deal with the Social and Labour Plan (SLP) requirements (Government Notice 527, 23 April 2004). The Department of Mineral Resources provided guidelines for the development of the SLP (Department of Mineral Resources, 2010). The guidelines specify the objectives of the SLP as:

- Promote economic growth and mineral and petroleum resources development in the Republic;
- Promoting employment and advancing the social and economic welfare of all South Africans;
- Ensuring that holders of mining or production rights contribute towards the socio-economic development of the areas in which they are operating as well as the areas from which the majority of the workforce is sourced, and
- To utilise and expand the existing skills base for the empowerment of Historically Disadvantaged South Africans and to serve the community (Department of Mineral Resources, 2010).

The crux of this section is that the SLP requires applicants for mining and production rights to develop and implement comprehensive Human Resources Development Programmes including Employment Equity Plans, Local Economic Development



Programmes and processes to save jobs and manage downscaling and/or closure (MPRDA 28 of 2002). According to the regulations, the above programmes are aimed at promoting employment and advancement of the social and economic welfare of all South Africans whilst ensuring economic growth and socio-economic development. The management of downscaling and/or closure is aimed at minimising the impact of commodity cyclical volatility, economic turbulence and physical depletion of the mineral or production resources on individuals, regions or local economies. All mines in South Africa are required to compile an SLP, and they must report compliance on a yearly basis (MPRDA, 2002). Compiling an SLP must be done in a participatory manner, and local economic development initiatives must be aligned with the municipal integrated development planning processes. An SLP is not a social impact management plan per se, although it does aim to manage some negative social impacts. The guideline is very clear about the fact that measures put in place for the mitigation of impacts cannot be seen as mine community development projects (Department of Mineral Resources, 2010).

4.1.4 The National Heritage Resources Act 25 of 1999

Although the National Heritage Resources Act (NHRA) 25 of 1999 is not an environmental act per se, it is relevant in the field of environmental management. The NHRA affirms that every generation has a moral responsibility to act as trustee of the national heritage for later generations and that the State is obliged to manage heritage resources in the interest of all South Africans. The general principles for heritage management in Chapter 5 of the Act state that in order to ensure that heritage resources are effectively managed, the skills and capacities of persons and communities involved in heritage resources management must be developed. The Act further elaborates on the fact that heritage resources form an important part of the history and beliefs of communities and must be managed in a way that acknowledges the right of affected communities to be consulted and to participate in their management.

The general principles (Chapter 5) state that the identification, assessment and management of the heritage resources of South Africa must:



- Take account of all relevant cultural values and indigenous knowledge systems;
- Take account of material or cultural heritage value and involve the least possible alteration or loss of it;
- Promote the use and enjoyment of and access to heritage resources, in a way consistent with their cultural significance and conservation needs;
- Contribute to social and economic development, and
- Safeguard the options of present and future generations.

The National Heritage Resources Act 25 of 1999 therefore protects the cultural rights and heritage of the people of South Africa. It does not require explicit public participation, or give any guidelines on how the public should participate. It does refer, like the National Environmental Management Act 107 of 1998 and the National Water Act 36 of 1998, to social and economic development. Public participation processes may be requested by the South African Heritage Resources Agency if it deems it necessary for a specific project.

4.1.5 Promotion of Administrative Justice Act 3 of 2000

The Bill of Rights in the Constitution of the Republic of South Africa 1996 states that everyone has the right to administrative action that is legally recognised, reasonable and procedurally just. The Promotion of Administrative Justice Act (PAJA) 3 of 2000 gives effect to this right. The PAJA applies to all decisions of all State organisations exercising public power or performing a public function in terms of any legislation that negatively affects the rights of any person. The Act prescribes what procedures an organ of State must follow when it takes decisions. If an organ of State implements a decision that impacts on an individual or community without giving them an opportunity to comment, the final decision will be illegal and may be set aside. The Promotion of Administrative Justice Act 3 of 2000 also forces State organisations to explain and give reasons for the manner in which they have arrived



at their decisions and, if social issues were involved, and how these issues were considered in the decision-making process.

The Promotion of Administrative Justice Act 3 of 2000 therefore protects the rights of communities and individuals to participate in decision-making processes, especially if these processes affect their daily lives.

4.2 Additional governance tools

Legislation is not the only tool that authorities can use to achieve sustainable development and social development outcomes. There are a number of tools, policies and strategic planning instruments that can contribute to this.

4.2.1 Integrated Development Plans

For the purpose of this project, Integrated Development Plan (IDP) documents of two municipalities need to be considered, namely the Nkangala District Municipality and the Victor Khanye Local Municipality. The Vlakvarkfontein Extension aligns with some of the priorities emphasized in both documents, as can be seen from the discussion below.

The Nkangala District Municipality (Nkangala District Municipality IDP 2017/18-2021/22) has identified seven strategic goals that are aligned with the National Development Plan, namely integrated regionalised planning; sustainable infrastructure and service provisioning; inclusive economic growth, sound financial management; sound electronic governance; competent, innovate and accountable team; and healthy social environment. The Vlakvarkfontein Extension aligns with the goal of inclusive economic growth.

The Victor Khanye Local Municipality (Victor Khanye Local Municipality IDP 2017-2021) has identified the following strategic goals: improved provision of basic services to the residents of VKLM; improved social protection and education incomes; improved compliance to MFMA and VKLM policy framework; improved efficiency and effectiveness of the municipal administration; improve community confidence in the system of local government; increase regularisation of built



environment; and increased economic activity and job creation. The goal of increased economic activity and job creation is where the Vlakvarkfontein Extension aligns with the goal of inclusive economic growth.

On a ward level, Ward 9 has identified the following needs: need for land to build human settlements; need for additional boreholes; the water tanker does not reach all areas; need for mobile clinic to reach all areas; some children are not accommodated in the school bus; and there is a need for clearing land to accommodate recreational areas for children.

4.2.2 Provincial Growth and Development Strategies

The primary objective of the Mpumalanga Economic Growth and Development Path (MEGDP, 2011) is to foster economic growth that creates jobs, reduce poverty and inequality in the Province. The main economic sectors that have been identified as key to spur economic growth and employment creation are agriculture and forestry; mining and energy; manufacturing and beneficiation; and tourism and cultural industries. Opportunities in the mining industry that have been identified are strategic procurement; corporate social investment activities; beneficiation; retreatment of sub-economic deposits and dumps; and the mining of dimension stone.

The Vlakvarkfontein Expansion aligns with the objectives for mining identified in the MPGEDP.

4.2.3 National Development Plan

On 11 November 2011 the National Planning Commission released the National Development Plan: Vision for 2030 (NPC, 2012) for South Africa and it was adopted as government policy in August 2012. The National Development Plan (NDP) was undertaken to envision what South Africa should look like in 2030 and what action steps should be taken to achieve this (RSA, 2013). The aim of the NDP is to eliminate poverty and reduce inequality by 2030. The report identifies nine central challenges to development in South Africa:



1. Too few people work.
2. The standard of education for most Black learners is of poor quality.
3. Infrastructure is poorly located, under-maintained and insufficient to foster higher growth.
4. Spatial patterns exclude the poor from the fruits of development.
5. The economy is overly and unsustainably resource intensive.
6. A widespread disease burden is compounded by a failing public health system.
7. Public services are uneven and often of poor quality.
8. Corruption is widespread.
9. South Africa remains a divided society (NPC, 2012).

The plan focuses on creating an enabling environment for development and wants to shift from a paradigm of entitlement to a paradigm of development that promotes the development of capabilities, the creation of opportunities and the involvement of all citizens (NPC, 2012). The National Development Plan (NPC, 2012) wants to achieve the following:

1. An economy that will create more jobs.
2. Improving infrastructure.
3. Transition to a low-carbon economy.
4. An inclusive and integrated rural economy.
5. Reversing the spatial effects of apartheid.
6. Improving the quality of education, training and innovation.
7. Quality healthcare for all.



8. Social protection.
9. Building safer communities.
10. Reforming the public service.
11. Fighting corruption.
12. Transforming society and uniting the country.

Each of the points above is a chapter in the plan, and contains a range of targets and proposals. Some are general statements of policy intent, while others are specific policy proposals, actions or processes that should take place (NPC, 2012). Through its contribution to the economy, the Vlakvarkfontein extension will assist with achieving the goal of creating an economy that will create more jobs.

4.2.4 Sustainable Development Goals

All 189 Members States of the United Nations, including South Africa, adopted the United Nations Millennium Declaration in September 2000 (UN, 2000). The commitments made by the Millennium Declaration are known as the Millennium Development Goals (MDGs), and 2015 was targeted as the year to achieve these goals. The United Nations Open Working Group of the General Assembly identified seventeen sustainable development goals, built on the foundation of the MDGs as the next global development target (UN, 2014). The sustainable development goals include aspects such as ending poverty, addressing food security, promoting health, wellbeing and education, gender equality, water and sanitation, economic growth and employment creation, sustainable infrastructure, reducing inequality, creating sustainable cities and human settlements, and addressing challenges in the physical environment such as climate change and environmental resources (UN, 2014). These aspects are included in the NPD, and it can therefore be assumed that South Africa's development path is aligned with the international development agenda. Vlakvarkfontein can assist with contributing to achieving goals such as economic growth and employment creation and promoting health, wellbeing and education through their SLP.



4.3 National and international standards

National and international industry standards aimed at sustainable development and social justice specifically have become abundant in the last decade. Many industries use these standards as indicators for best practice. The discussion below highlights only a few of these standards.

4.3.1 ISO 26000:2010/SANS 26000:2010

Performance standards have long been a voluntary tool used by industry to achieve certain outcomes. The first standard on social responsibility, ISO 26000 was published on 1 November 2010 (ISO, 2010). It was developed using a multi-stakeholder approach involving experts from more than 90 countries and 40 international or broadly based regional organisations involved in different aspects of social responsibility (ISO, 2010).

The South African Bureau of Standards (SABS), a statutory body that is mandated to develop, promote and maintain South African National Standards (SABS, [sa]) adopted the ISO 26000 Standard as a South African National Standard (SANS) 26000:2010.

Social responsibility is defined in the standard as the responsibility of an organisation for the impacts of its decisions and activities on society and the environment, through transparent and ethical behaviour that contributes to sustainable development, including health and welfare of society; takes into account the expectations of the stakeholders; complies with applicable law and is consistent with international behaviour norms, and is integrated throughout the organisation and practiced in its relationships (ISO, 2010).

The document identifies seven principles for social responsibility and seven core subjects that should be addressed by organisations. The seven principles for social responsibility are accountability, transparency, ethical behaviour, respect for stakeholder interests, respect for the rule of law, respect for international norms of behaviour and respect for human rights (ISO, 2010). The core subjects that should be addressed include organisational governance, human rights, labour practices,



environment, fair operating practices, consumer issues and community involvement and development (ISO, 2010). Economic aspects, health and safety and the value chain are dealt with throughout the seven core subjects, and gender issues are considered.

ISO 26000 is a good introduction to what social responsibility is and what measures should be taken to move towards being a more socially responsible company. It deals with equity issues and can encourage social development initiatives by companies through activities such as social investment projects, employment creation, skills development and income creation. Any company operating in area where people are affected by their activities has a social responsibility towards the affected community, and as such it would be in the interest of Vlakvarkfontein to address the core subjects as suggested by ISO 26000:2010.

4.3.2 International Social Performance Standards/Initiatives

There is a profusion of global initiatives aiming at assisting companies to make their operations more sustainable. Human rights, environmental protection and social justice are gaining support from industry. The social agenda forms an important part of this trend. Only a few relevant initiatives will be mentioned in this section.

The Global Reporting Initiative (GRI) is a leading organisation in the sustainability field that promotes sustainability reporting as a way for companies to become more sustainable and contribute to sustainable development. A company publishes a sustainability report to report the economic, social and environmental impacts of its everyday activities, present its values and governance model and explain the link between its strategy and its commitment to sustainable development (GRI, [sa]). The GRI have strategic partnerships with the United Nations Environment Programme, the United Nations Global Compact, the Organisation for Economic Co-operation and Development and the International Organisation for Standardisation, amongst others (GRI, [sa]). The social category relates to the impact of the company on the social systems in which it operates. The social category consists of four subcategories namely labour practices and decent work; human rights; society; and product



responsibility. Each of the categories is unpacked by using a number of aspects that should be considered (GRI, [sa]). GRI Focal Points are national offices that drive the initiatives in particular countries and regions. On 26 February 2013 the GRI Focal Point South Africa was launched. South Africa is one of the countries with the largest number of GRI reporters in the world. The GRI Focal Point South Africa aims to work with multi-national companies to expand and share best practices across the continent (GRI, [sa]).

Many of the multi-lateral funding agencies such as the World Bank have social standards that they must uphold. The most frequently used in the EIA industry is the International Finance Corporation's (IFC) principles (IFC, 2012). The IFC is a member of the World Bank group, and as a part of their sustainability framework they created performance standards on environmental and social sustainability (IFC, 2012). The standards relevant to the social environment are the following:

1. Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts
2. Performance Standard 2: Labour and Working Conditions
3. Performance Standard 4: Community Health, Safety, and Security
4. Performance Standard 5: Land Acquisition and Involuntary Resettlement
5. Performance Standard 7: Indigenous Peoples
6. Performance Standard 8: Cultural Heritage (IFC, 2012)

Issues such as gender, climate change, water and human rights are addressed across the standards. A guidance note accompanies each standard (IFC, 2012:4). Environmental and social risks and impacts must be managed by using an Environmental and Social Management System. The standard applies to all the activities funded by the IFC for the duration of the loan period. A number of private banks adopted most of the IFC standards in an initiative known as the Equator Principles (Esteves, Franks & Vanclay, 2012).



4.3.3 International Principles for SIA

The practice of SIA is guided by a set of *International Principles* that defines the core values, fundamental principles for development and principles specific to SIA practice (Vanclay, 2003). When the *International Principles* are considered, it is clear that SIA aspires to more than just assessing the impact of development on people, and includes sustainable outcomes. The following specific principles refer to these sustainable outcomes (Vanclay, 2003):

1. Development projects should be broadly acceptable to the members of those communities likely to benefit from, or be affected by, the planned intervention.
2. The primary focus of all developments should be positive outcomes, such as capacity building, empowerment, and the realisation of human and social capital.
3. The term “environment” should be defined broadly to include social and human dimensions, and in such inclusion, care must be taken to ensure that adequate attention is given to the realm of the social.
4. Equity considerations should be a fundamental element of impact assessment and of development planning.
5. There should be a focus on socially sustainable development, with the SIA contributing to the determination of best development alternative(s) – SIA (and EIA) has more to offer than just being an arbiter between economic benefit and social cost.
6. In all planned interventions and their assessments, avenues should be developed to build the social and human capital of local communities and to strengthen democratic processes.
7. Local knowledge, experience and acknowledgement of different cultural values should be incorporated in any assessment.



8. Development processes that infringe the human rights of any section of society should not be accepted.

In addition to the *International Principles*, the international SIA community produced a document titled: *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects* (Vanclay, Esteves, Aucamp & Franks, 2015) in April 2015. The purpose of this document is to provide advice to various stakeholders (including proponents) about good practice SIA and social impact management (Vanclay et al., 2015). This document aspires to provide a much-needed benchmark for SIA practice across the globe.



5 Receiving environment

According to the National Environmental Management Act (NEMA, 1998) environment refers to the surroundings in which humans exist. When viewing the environment from a socio-economic perspective the question can be asked what exactly the social environment is. Different definitions for social environment exist, but a clear and comprehensive definition that is widely accepted remains elusive. Barnett & Casper (2001) offers the following definition of human social environment:

“Human social environments encompass the immediate physical surroundings, social relationships, and cultural milieus within which defined groups of people function and interact. Components of the social environment include built infrastructure; industrial and occupational structure; labour markets; social and economic processes; wealth; social, human, and health services; power relations; government; race relations; social inequality; cultural practices; the arts; religious institutions and practices; and beliefs about place and community. The social environment subsumes many aspects of the physical environment, given that contemporary landscapes, water resources, and other natural resources have been at least partially configured by human social processes. Embedded within contemporary social environments are historical social and power relations that have become institutionalized over time. Social environments can be experienced at multiple scales, often simultaneously, including households, kin networks, neighbourhoods, towns and cities, and regions. Social environments are dynamic and change over time as the result of both internal and external forces. There are relationships of dependency among the social environments of different local areas, because these areas are connected through larger regional, national, and international social and economic processes and power relations.”

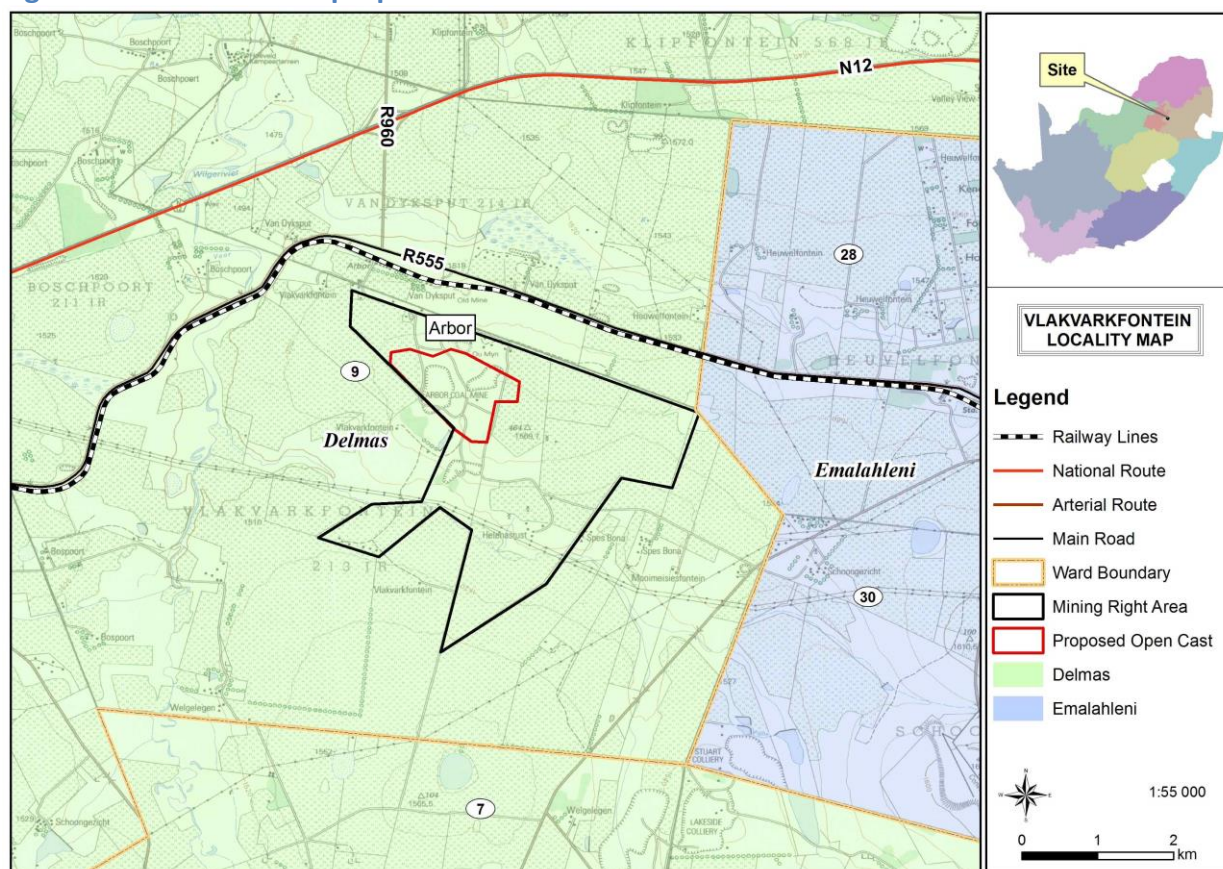


Environment-behaviour relationships are interrelationships (Bell, Fisher, Baum & Greene, 1996). The environment influences and constrains the behaviour of people, but behaviour also leads to changes in the environment. The impacts of a project on people can only be truly understood if their environmental context is understood. The baseline description of the social environment will include a description of the area within a provincial, district and local context that will focus on the identity and history of the area as well as a description of the population of the area based on a number of demographic, social and economic variables.

5.1 Description of the area

The proposed expansion of the Vlakvarkfontein Coal Mine is located in Ward 9 of the Victor Khanye Local Municipality that falls under the Nkangala District Municipality in the Mpumalanga Province. Figure 2 shows the location of the expansion in a municipal context.

Figure 2: Location of the proposed Vlakvarkfontein Coal Mine Extension.





5.1.1 Mpumalanga Province

The Mpumalanga Province is located in the north eastern part of South Africa and covers an area of approximately 76 495 km² (www.mpumalanga.gov.za). It borders the Limpopo Province, Gauteng, the Free State, Kwa-Zulu Natal and internationally Swaziland and Mozambique. The word Mpumalanga means “place where the sun rises”.

The province consists of three district municipalities, namely Gert Sibande, Nkangala and Ehlanzeni. Mbombela (formerly Nelspruit) is the provincial capital and other major towns include Barberton, Delmas, Ermelo, Hazyview, Komatipoort, Malelane, Mashishing (Lydenburg), Middelburg, Piet Retief, Sabie, Secunda, Standerton, Volksrust, White River and Emalahleni (Witbank).

The sectors that have been identified in the Mpumalanga Growth and Development Path (MPGDP, 2011) for support in terms of employment creation are infrastructure development; climate change and the green economy; agriculture and agro-processing and rural development; minerals and beneficiation; manufacturing; knowledge based sectors; tourism and business services; the social economy (NGO's, stokvels, burial societies, union and investment funds); the public sector and the regional economy.

The main economic sectors in the province are agriculture, forestry, mining, energy, manufacturing and beneficiation, and tourism and cultural industries. In the Lowveld area (mainly the Ehlanzeni district) the main crops are sugarcane, nuts, vegetables, citrus and sub-tropical fruits, while in the Highveld area (which includes the Gert Sibande and Nkangala districts) the main crops are summer grains, oilseeds and deciduous fruits. Livestock farming include cattle, sheep, pigs and chicken. The province is one of the country's major areas in forestry production and accounts for 40% of the forestry income of the country. Mineral resources in Mpumalanga includes gold, coal, ferrochrome, granite, gabbro, marble, verdite and platinum. The province represents 76.6% of coal production in South Africa and is the third largest coal exporting region in the world. The majority of the currently operational coal-fired power stations in the country is situated in Mpumalanga and contribute



approximately 76% of the total electricity generated in South Africa. The use of coal for energy production results in both the primary environmental impacts associated with the mining and removal of coal for use in coal fired power stations in the province and the secondary impacts resulting from the burning of coal for energy production. Coal intensive activities contribute to large-scale water and air pollution, including significant carbon dioxide emissions, which contribute to global warming.

5.1.2 Nkangala District Municipality

The Nkangala District Municipality (NDM) is one of three district municipalities in the Mpumalanga Province. Local municipalities forming part of the Nkangala DM are Victor Khanye, Dr JS Moroka, Emalahleni, Emakhazeni, Steve Tshwete, and Thembisile Hani.

The district is approximately 16 892 km² in size with Emalahleni and Middelburg being the primary towns. According to the municipality's website (www.nkangaladm.gov.za), the Nkangala DM is at the economic hub of Mpumalanga and is rich in minerals and natural resources. The district's economy is dominated by mining, electricity generation and manufacturing. Community services, trade, finance, transport, agriculture and construction (www.nkangaladm.org.za) are also important sectors.

Another important economic activity in Nkangala is agriculture. The southern regions of the municipality are suitable for crop farming, specifically for fresh produce such as maize and vegetables, while cattle and game farming occur in the northern regions.

5.1.3 Victor Khanye Local Municipality

The Victor Khanye Local Municipality is situated on the western Highveld of the Mpumalanga Province and covers a geographic area of approximately 1 567 km². Towns and settlements in the municipality include Abor, Argent, Botleng, Delmas, Eloff, Sundra, Delpark and Lionelton.

The area is characterised by an increase in the coal mining and related activities and the mining of silica sand is also done on a large scale. Other important sectors in the



area include agriculture, agricultural product processing, industrial and manufacturing (www.victokhanyelm.gov.za).

5.2 Description of the population

The baseline description of the population will take place on three levels, namely provincial, district and local. Impacts can only truly be comprehended by understanding the differences and similarities between the different levels. The baseline description will focus on the Victor Khanye Local Municipality (VKLM) in the Nkangala District Municipality (NDM) in the Mpumalanga Province (referred to in the text as the study area). Where possible, the data will be reviewed on a ward level – Ward 9 of the VKLM. The data used for the socio-economic description was sourced from Census 2011, but grouped according to the 2016 Ward boundaries. Census 2011 was a *de facto* census (a census in which people are enumerated according to where they stay on census night) where the reference night was 9-10 October 2011. The results should be viewed as indicative of the population characteristics in the area and should not be interpreted as absolute.

The following points regarding Census 2011 must be kept in mind (www.statssa.co.za):

- Comparisons of the results of labour market indicators in the post-apartheid population censuses over time have been a cause for concern. Improvements to key questions over the years mean that the labour market outcomes based on the post-apartheid censuses have to be analysed with caution. The differences in the results over the years may be partly attributable to improvements in the questionnaire since 1996 rather than to actual developments in the labour market. The numbers published for the 1996, 2001, and 2011 censuses are therefore not comparable over time and are different from those published by Statistics South Africa in the surveys designed specifically for capturing official labour market results.



- For purposes of comparison over the period 1996–2011, certain categories of answers to questions in the censuses of 1996, 2001 and 2011, have either been merged or separated.
- The tenure status question for 1996 has been dropped since the question asked was totally unrelated to that asked thereafter. Comparisons for 2001 and 2011 do however remain.
- All household variables are controlled for housing units only and hence exclude all collective living arrangements as well as transient populations.
- When making comparisons of any indicator it must be taken into account that the time period between the first two censuses is five years and that between the second and third census is ten years. Although Census captures information at one given point in time, the period available for an indicator to change is different.

5.2.1 Community structure

5.2.1.1 Population and household sizes

According to the Census 2011, the population of South Africa is approximately 51.8 million and has shown an increase of about 15.5% since 2001. The household density for the country is estimated at approximately 3.58 people per household, indicating an average household size of 3-4 people (leaning towards 4) for most households, which is down from the 2001 average household size of 4 people per household. Smaller household sizes are in general associated with higher levels of urbanisation.

Table 1: Census 2011 Population, growth and household estimates

	Mpumalanga Province	Nkangala DM	Victor Khanye LM
Approximate population size	4 039 939	1 308 129	75 452
Approximate number of households	1 075 488	356 911	20 548
Average population density (number of people per km ²)	52.81	78.06	48.12
Average household density (number of people per household)	3.76	3.67	3.67
Estimated growth in population size since 2001	20.04	28.45	33.93



	Mpumalanga Province	Nkangala DM	Victor Khanye LM
(in %)			
Estimated growth in number of households since 2001 (in %)	36.93	45.42	53.02
Estimated change in household sizes since 2001 (in %)	-12.34	-11.67	-12.47
Total dependency ratio (youth (aged 0 – 14 years) and aged (65 years or older) to economically active population (aged 15 - 64 years))	56.01	50.37	49.10 (Ward 9 – 46.89)
Youth dependency ratio	48.68	42.85	42.06 (Ward 9 – 39.45)
Aged dependency ratio	7.33	7.52	7.04 (Ward 9 – 7.44)
Employed dependency ratio	76.00	72.83	71.05 (Ward 9 – 65.69)

The population showed an increase on all three levels since 2001 ([Table 1](#)), with the population in the VKLM increasing by about a third. The number of households on all three levels have increased, with the greatest increase on local level. The number of households showed a greater increase than the increase in the number of people, indicating less people per households, which is confirmed by a decrease in average household size.

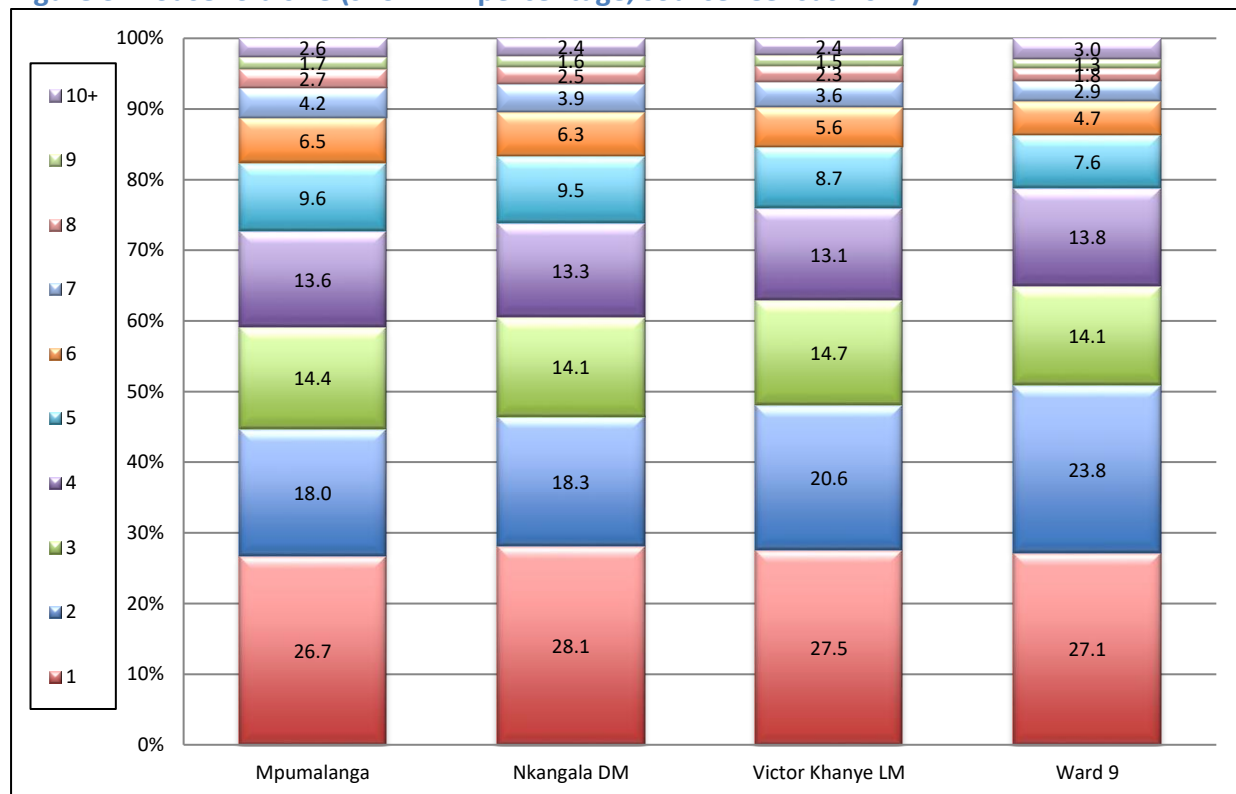
The total dependency ratio is used to measure the pressure on the productive population and refer to the proportion of dependents per 100 working-age population. As the ratio increases, there may be an increased burden on the productive part of the population to maintain the upbringing and pensions of the economically dependent. A high dependency ratio can cause serious problems for a country as the largest proportion of a government's expenditure is on health, social grants and education that are most used by the old and young population. The dependency ratios in the VKLM is lower than on district and provincial level, indicating a lesser burden on the productive part of the population. The dependency ratios on ward level is lower than on local level, except for the aged dependency ratio that is higher.



5.2.1.2 Household Size

Household sizes on a ward level tend to be smaller than on local, district or provincial level (Figure 3), with just over 50% of households on ward level consisting of one or two people.

Figure 3: Household size (shown in percentage, source: Census 2011)



5.2.1.3 Population composition

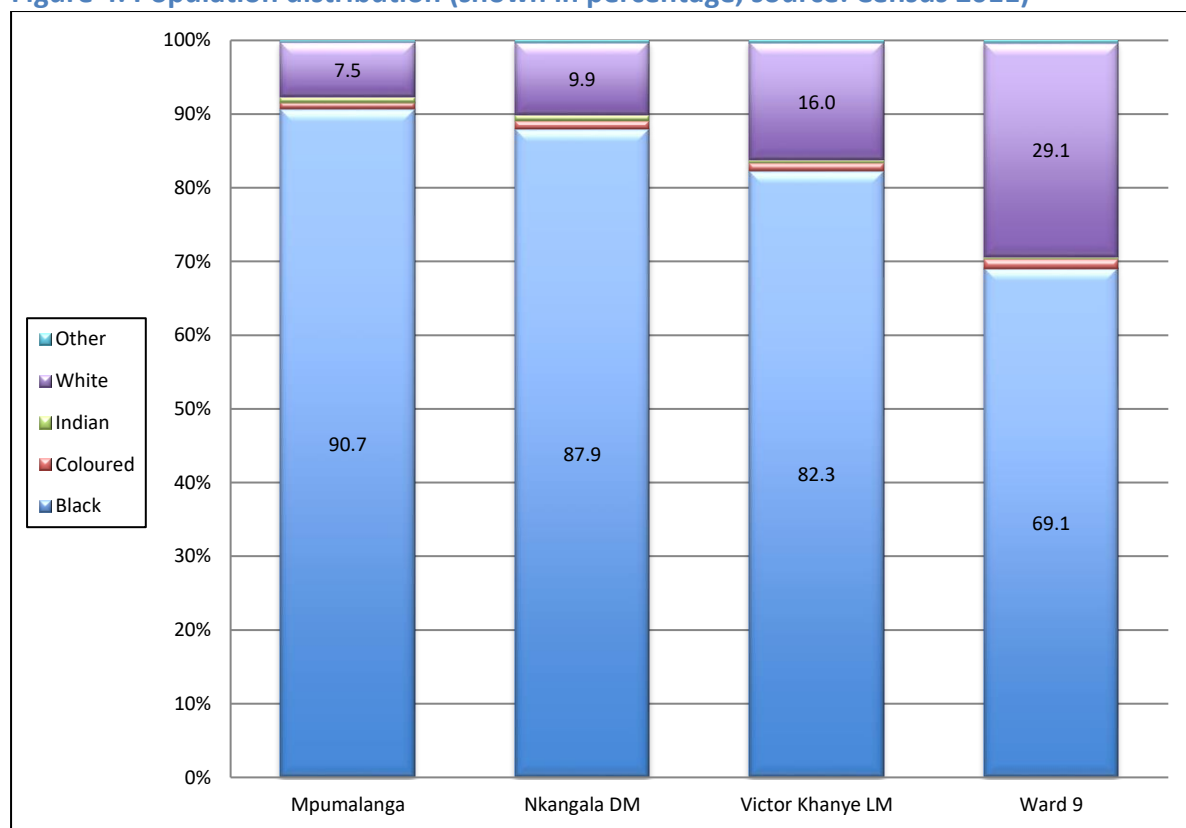
In all the areas under investigation, the majority of the population belongs to the Black population group (



Figure 4), but the proportions differ. Just over two thirds of the population of Ward 9 belongs to the Black population group, a lower proportion than on provincial, district of local level. The highest proportion of people belonging to the White population group is found on ward level.



Figure 4: Population distribution (shown in percentage, source: Census 2011)



5.2.1.4 Age

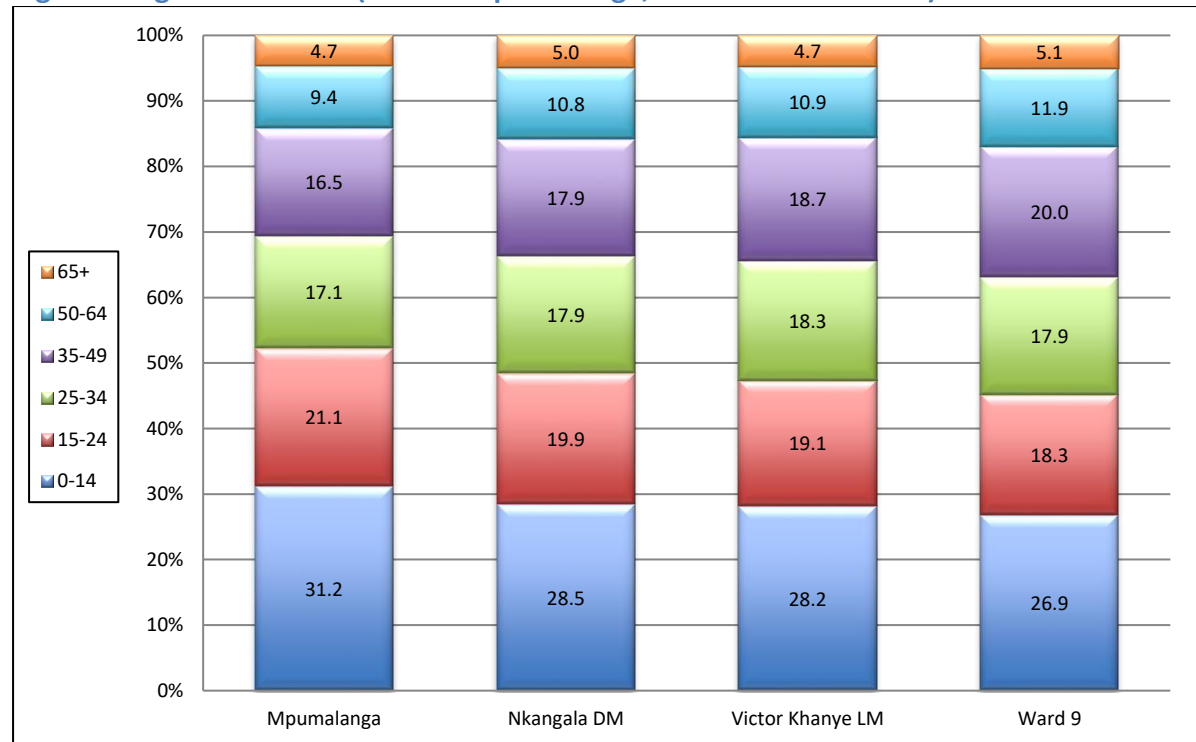
The age distribution of the areas under investigation shows that the population in Ward 9 tends to be slightly older than on local, district or provincial level, with a smaller proportion of people in the age category 0 – 14 years (



Figure 5). The approximate average age of the population in Ward 9 is 28.4 years, compared to 28,3 years on local level, 28.2 years on district level and 26.8 years on provincial level. Ward 9 has the highest proportion of people in the age category 35 – 49 years.



Figure 5: Age distribution (shown in percentage, source: Census 2011)



5.2.1.5 Gender

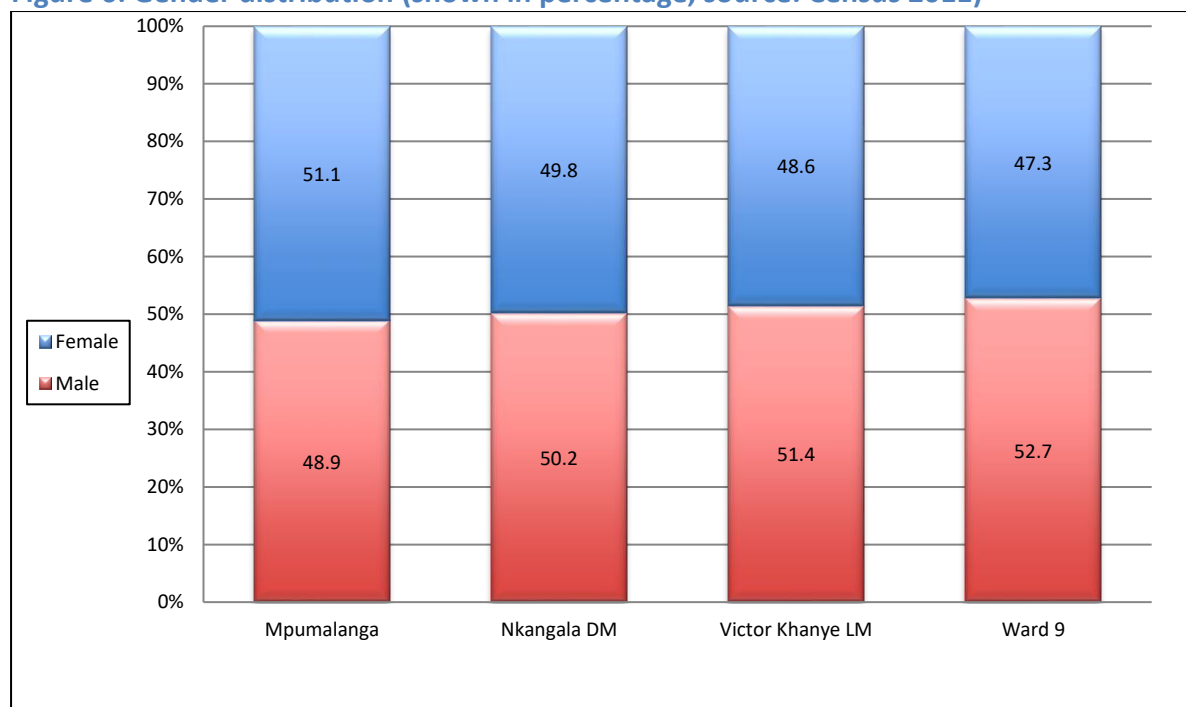
The gender distribution on provincial, district and local level is balanced (



Figure 6), but in Ward 9 there is a bias towards males. This can most likely be ascribed to the presence of mines and commercial farms in the surrounding areas which tend to have a bias towards employing males.



Figure 6: Gender distribution (shown in percentage, source: Census 2011)

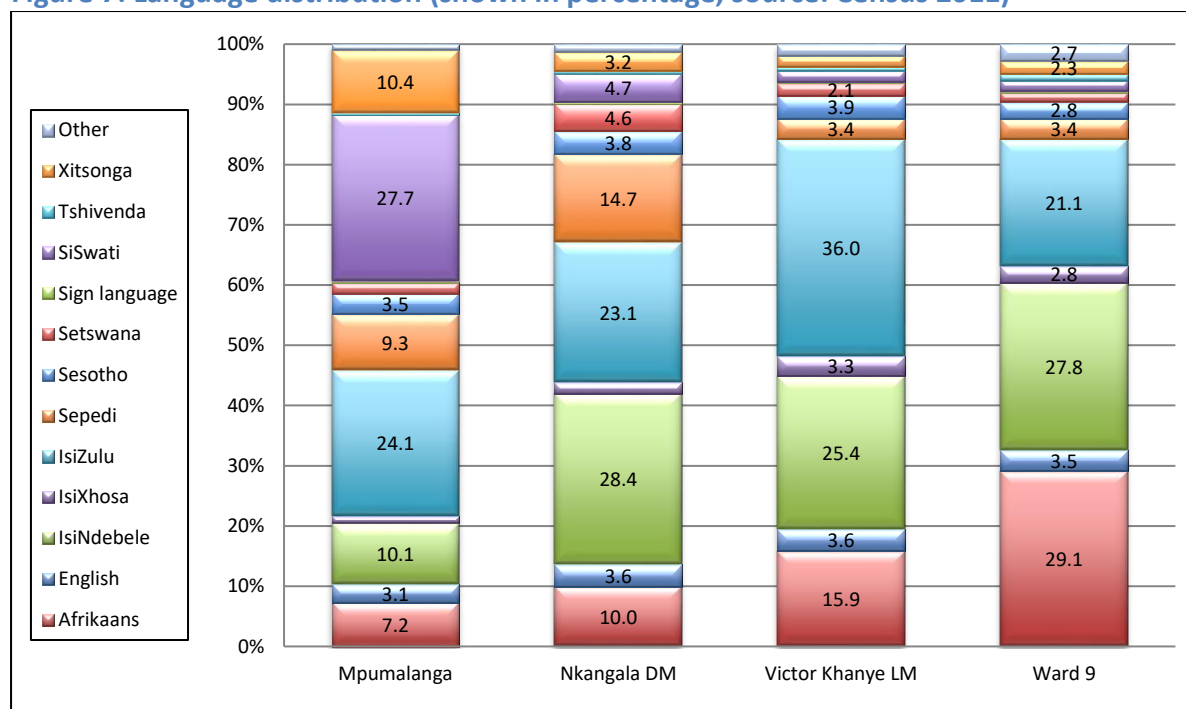


5.2.1.6 Language

The language profiles on provincial, district, local and ward level differ (Figure 7). The most common home languages in Ward 9 are Afrikaans, IsiNdebele and IsiZulu. Home language should be taken into consideration when communicating with the local communities and based on the profile of the area communication should take place in Afrikaans, IsiNdebele, IsiZulu and English.



Figure 7: Language distribution (shown in percentage, source: Census 2011)

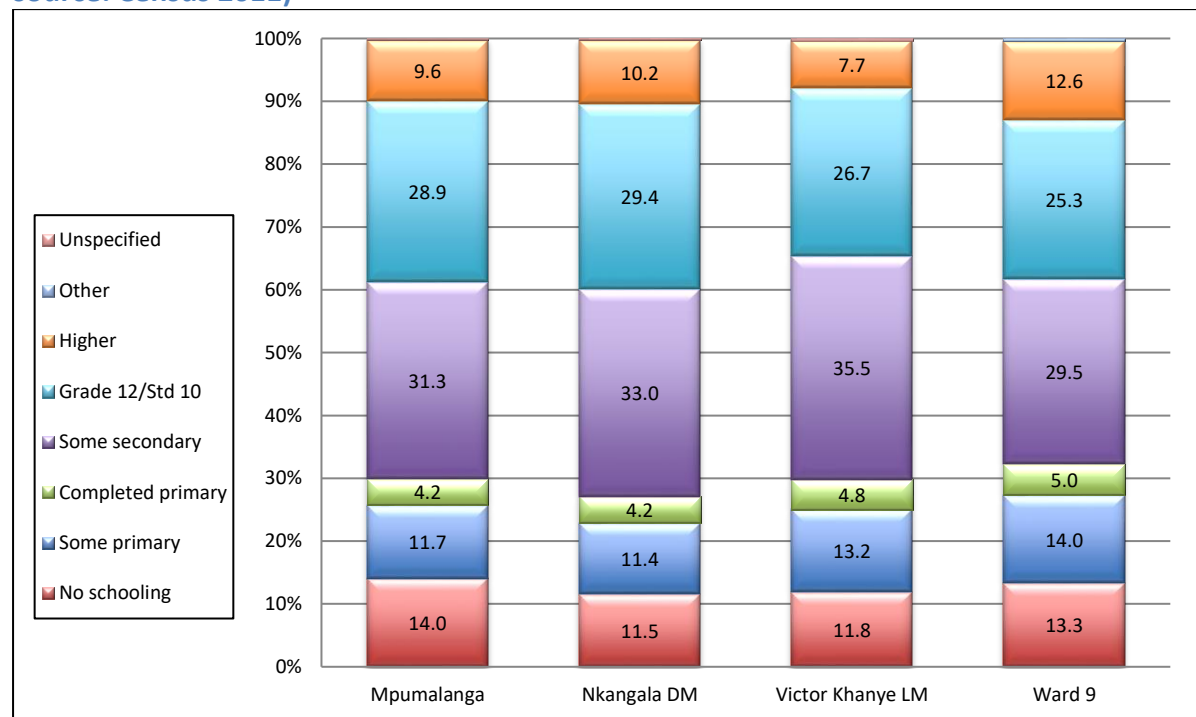


5.2.1.7 Education

Figure 8 shows the education profiles for the areas under investigation for those aged 20 years or older. Ward 9 has the highest proportion of people who have completed Grade 12 or higher, but also the highest proportion of people who have only completed primary school or less.



Figure 8: Education profiles (those aged 20 years or older, shown in percentage, source: Census 2011)



5.2.2 Livelihoods

5.2.2.1 Employment

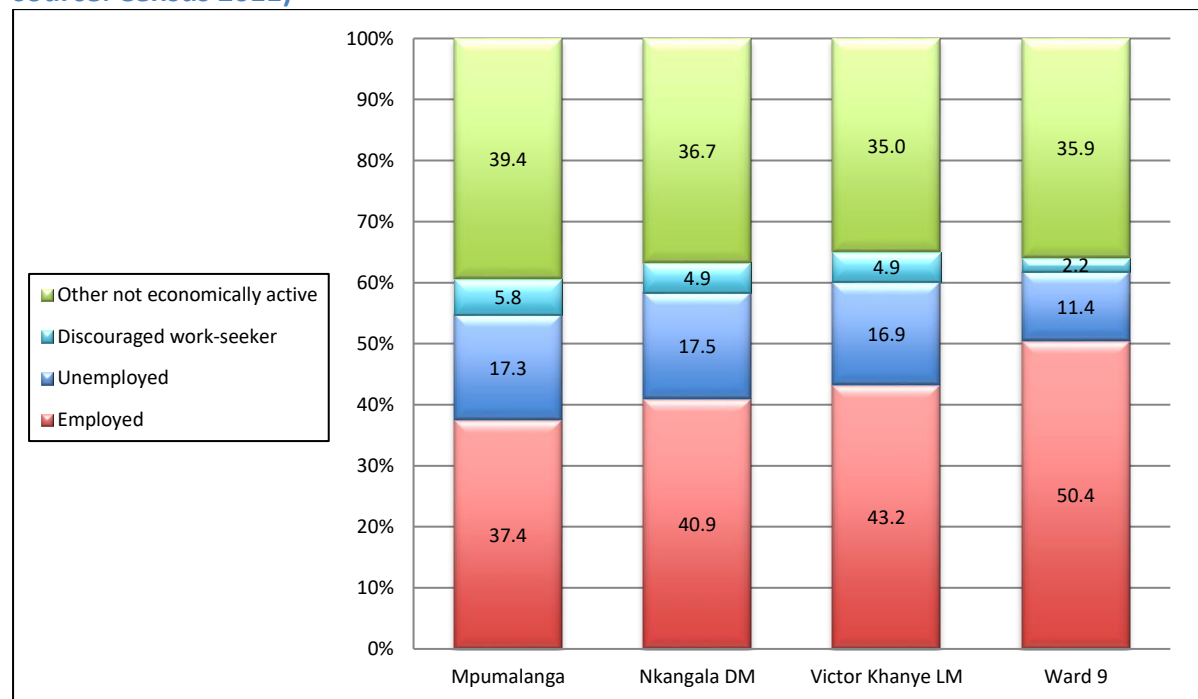
Ward 9 has the highest proportion of people of economically active age (aged between 15 years and 65 years) that are employed (



Figure 9), with about half of the people indicating that they are employed.



Figure 9: Labour status (those aged between 15 - 65 years, shown in percentage, source: Census 2011)



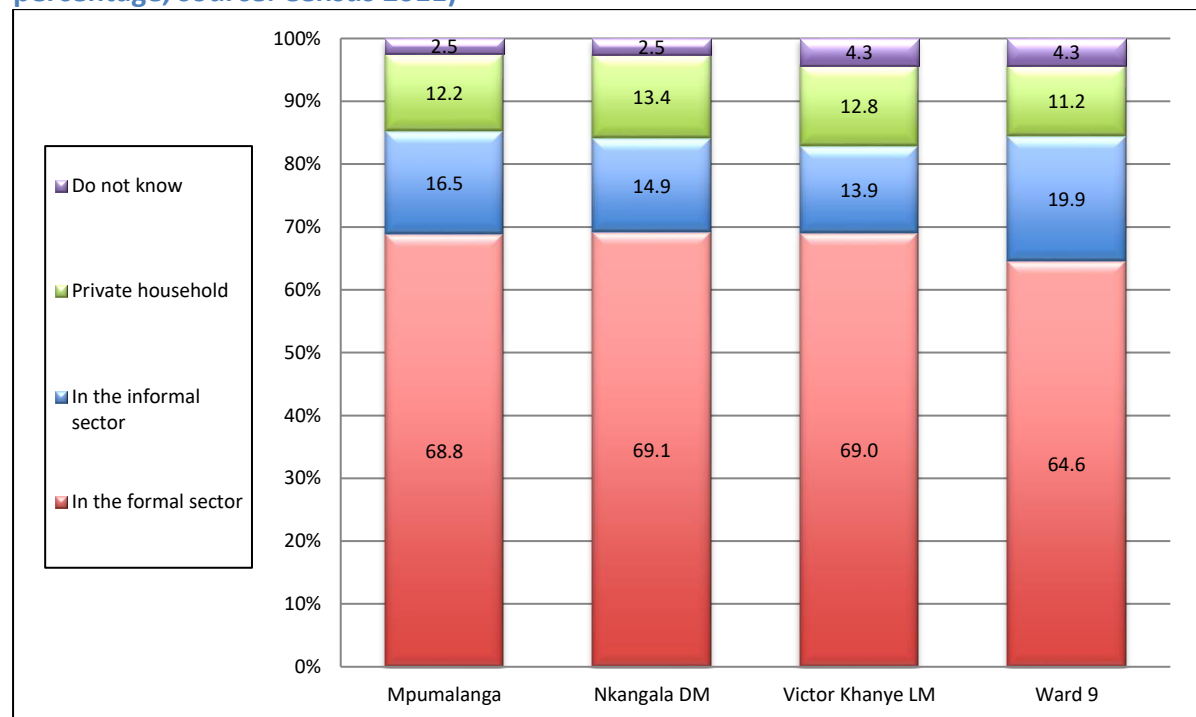
The majority of the employed people in the areas under investigation work in the formal sector (



Figure 10). Ward 9 has the highest proportion of people that are employed in the informal sector, and the lowest proportion of people employed in the formal sector.



Figure 10: Employment sector (those aged between 15 - 65 years, shown in percentage, source: Census 2011)



5.2.2.2 Household Income

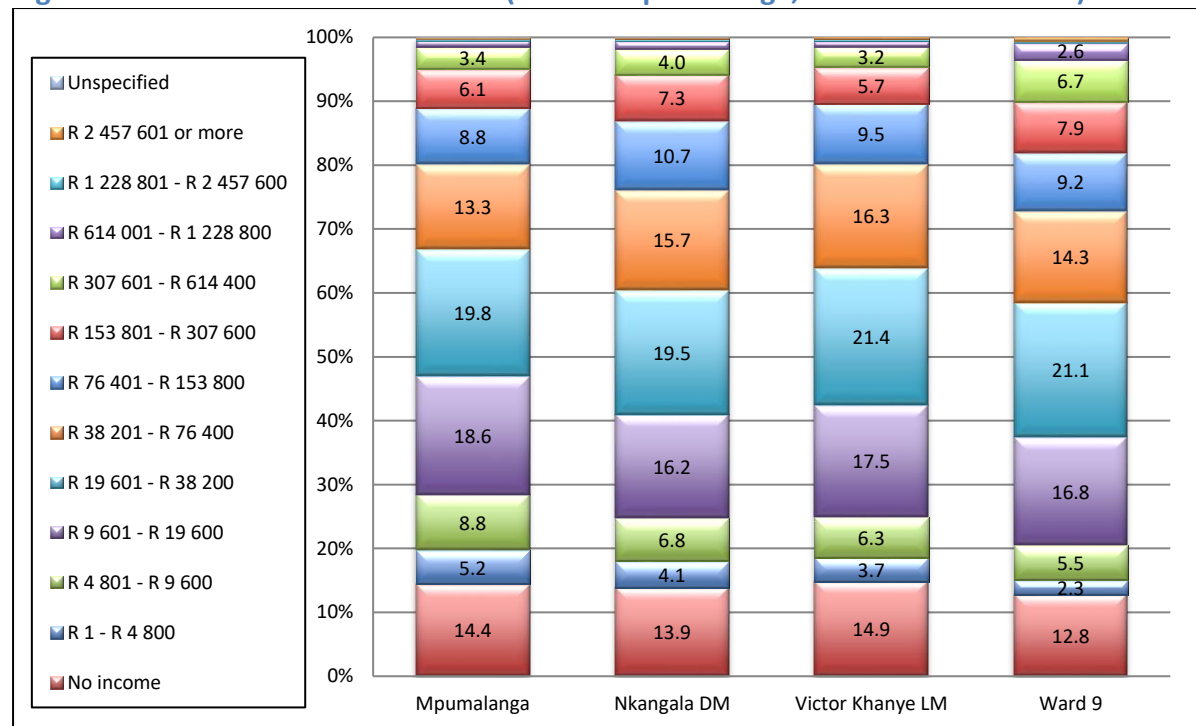
Ward 9 has the lowest proportion of households that have no annual household income (



Figure 11), as well as the lowest proportion of people with an annual household income of less than R38 201.



Figure 11: Annual household income (shown in percentage, source: Census 2011)



5.2.3 Community Infrastructure

5.2.3.1 Housing

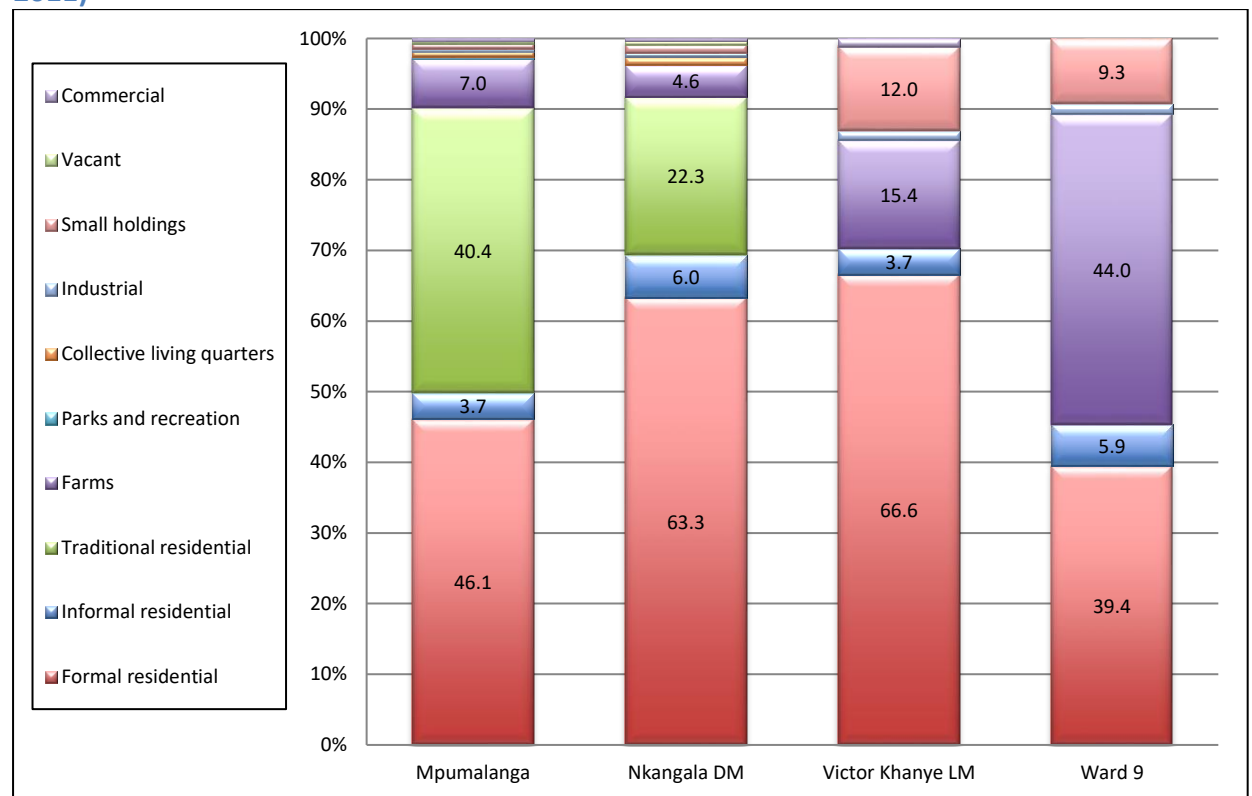
The enumeration area types look very different on provincial, district, local and ward level (



Figure 12). In Ward 9 most households live on land classified as farms or formal residential areas.



Figure 12: Enumeration area types (persons, shown in percentage, source: Census 2011)



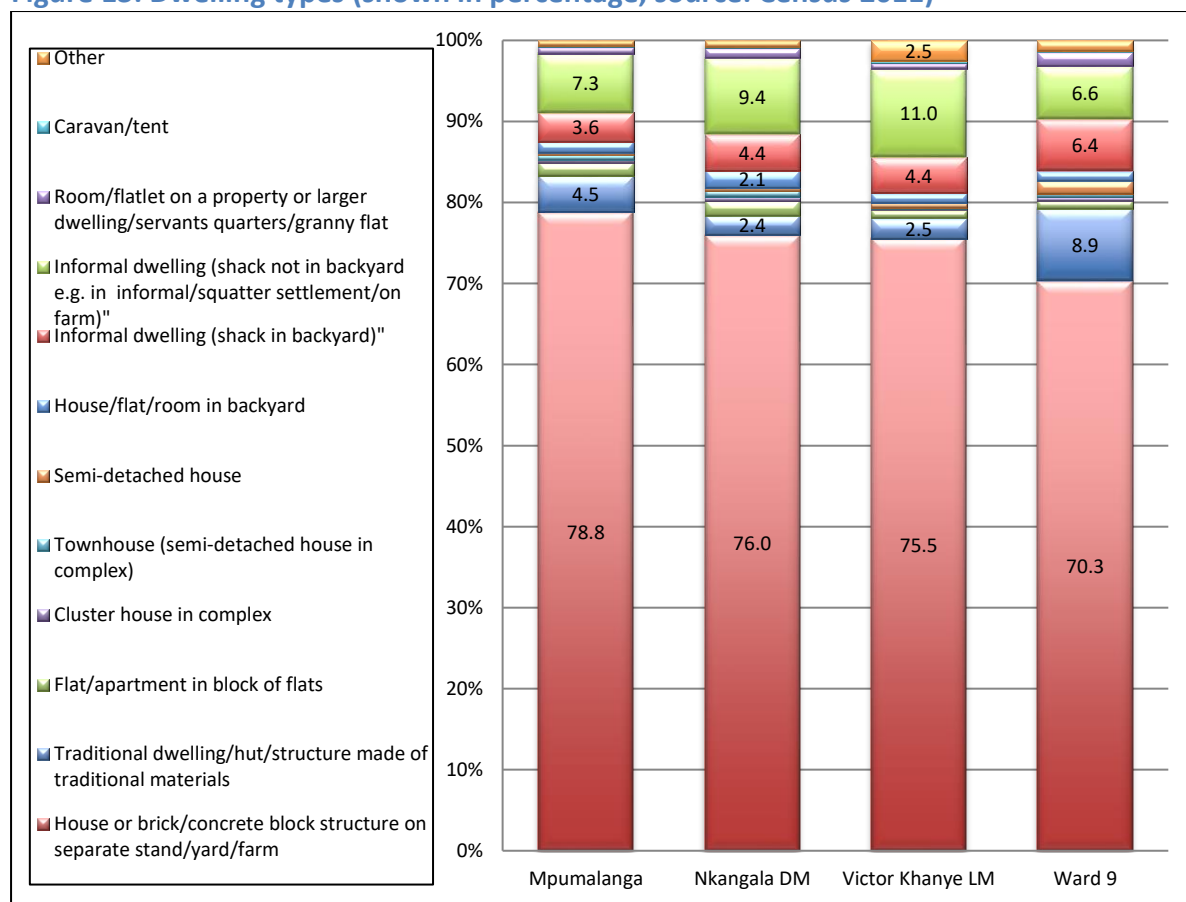
Most of the dwellings in the area are houses or brick/concrete block structures that are on a separate yard, stand or farm (



Figure 13). Ward 9 has the highest proportion of dwellings made of traditional materials, although there are no traditional areas within the ward.



Figure 13: Dwelling types (shown in percentage, source: Census 2011)



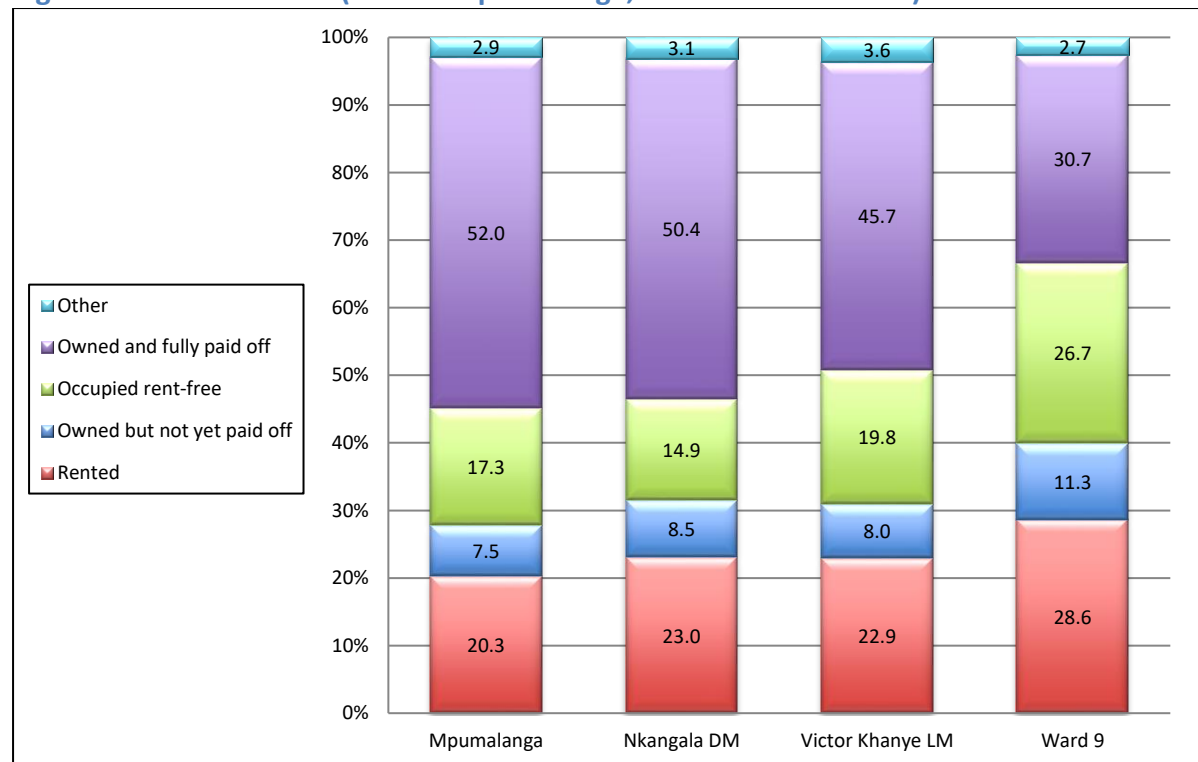
Ward 9 has the largest proportion of households that are renting their dwellings or are occupied rent-free (



Figure 14).



Figure 14: Tenure status (shown in percentage, source: Census 2011)



5.2.3.2 Access to water and sanitation

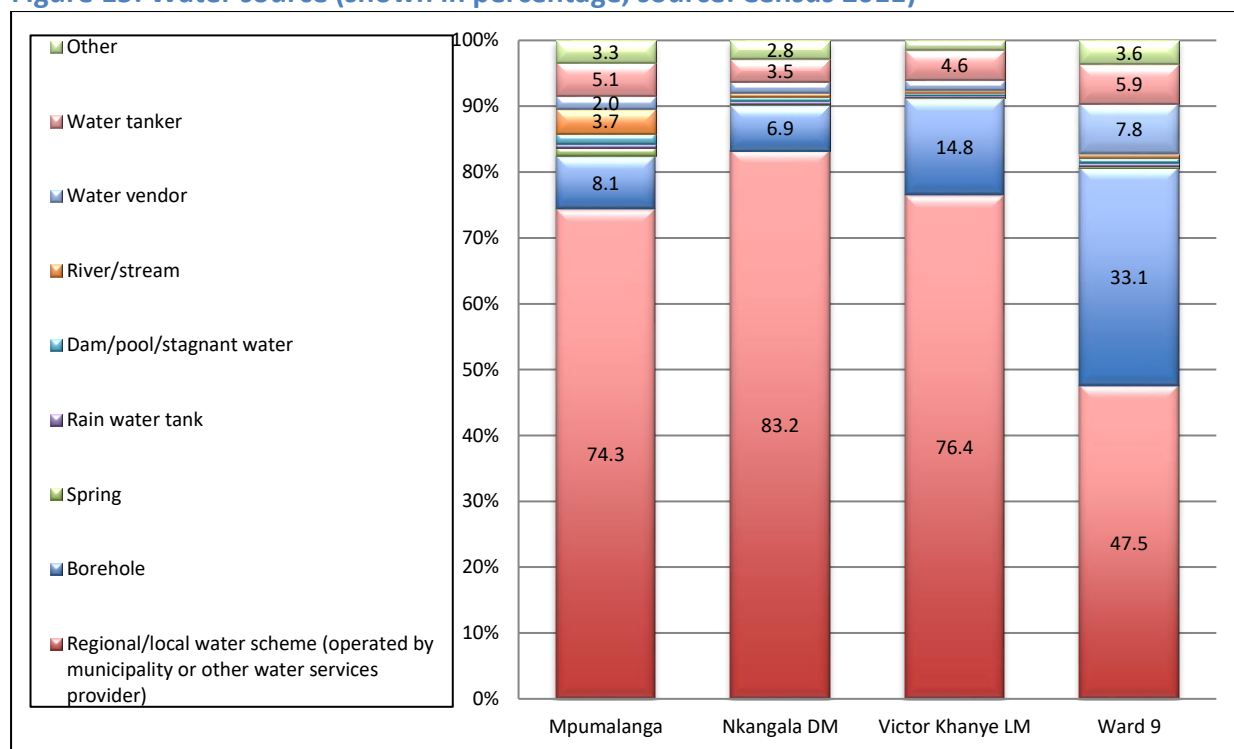
Access to water from a local or a regional water scheme is much lower on ward level, than on local, district or provincial level (



Figure 15). Less than half of the households on ward level have access to water from a local or regional water scheme, with a third having access to water through a borehole.



Figure 15: Water source (shown in percentage, source: Census 2011)



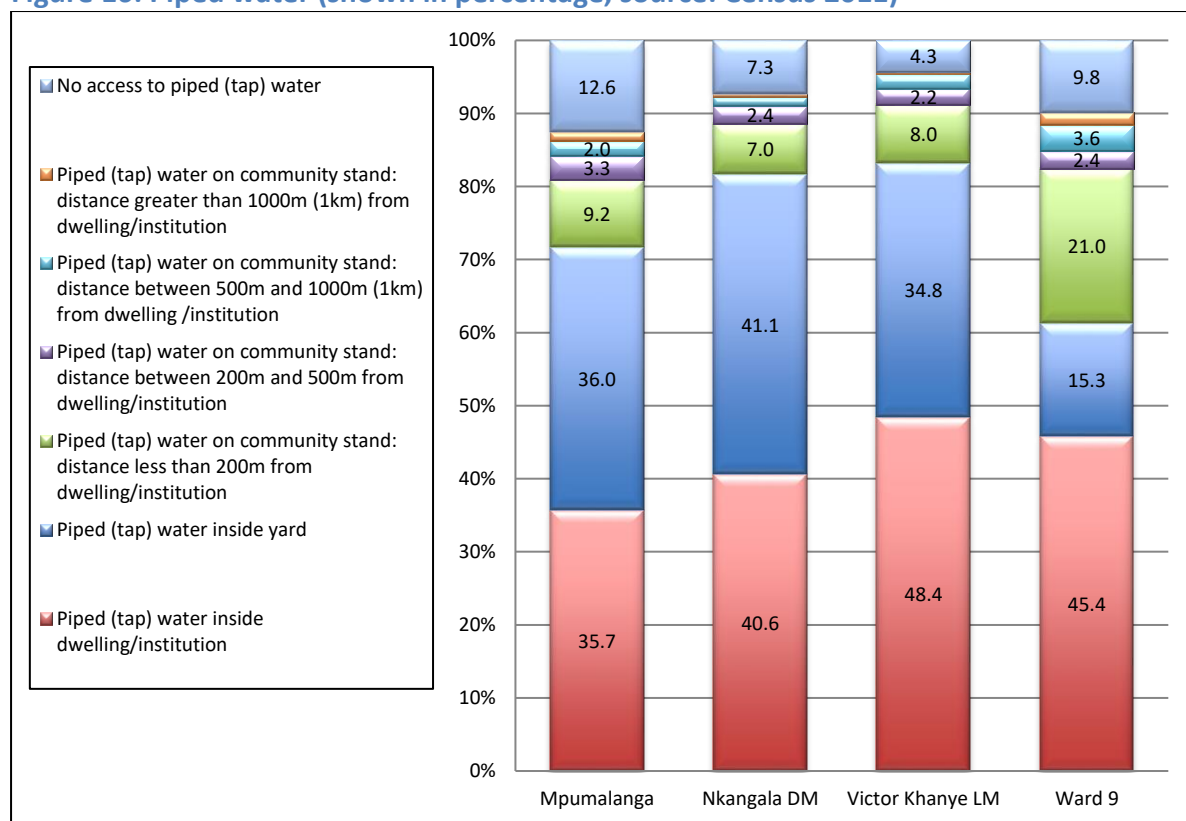
Access to piped water, electricity and sanitation relate to the domain of Living Environment Deprivation as identified by Noble et al (2006). Access to piped water in Ward 9 is lower than on local level (



Figure 16), but higher than on district or provincial level, with less than half of the households having access to piped water inside their dwellings. About a fifth of the households only have access to piped water through a tap on a community stand less than 200 meters from their dwelling.



Figure 16: Piped water (shown in percentage, source: Census 2011)



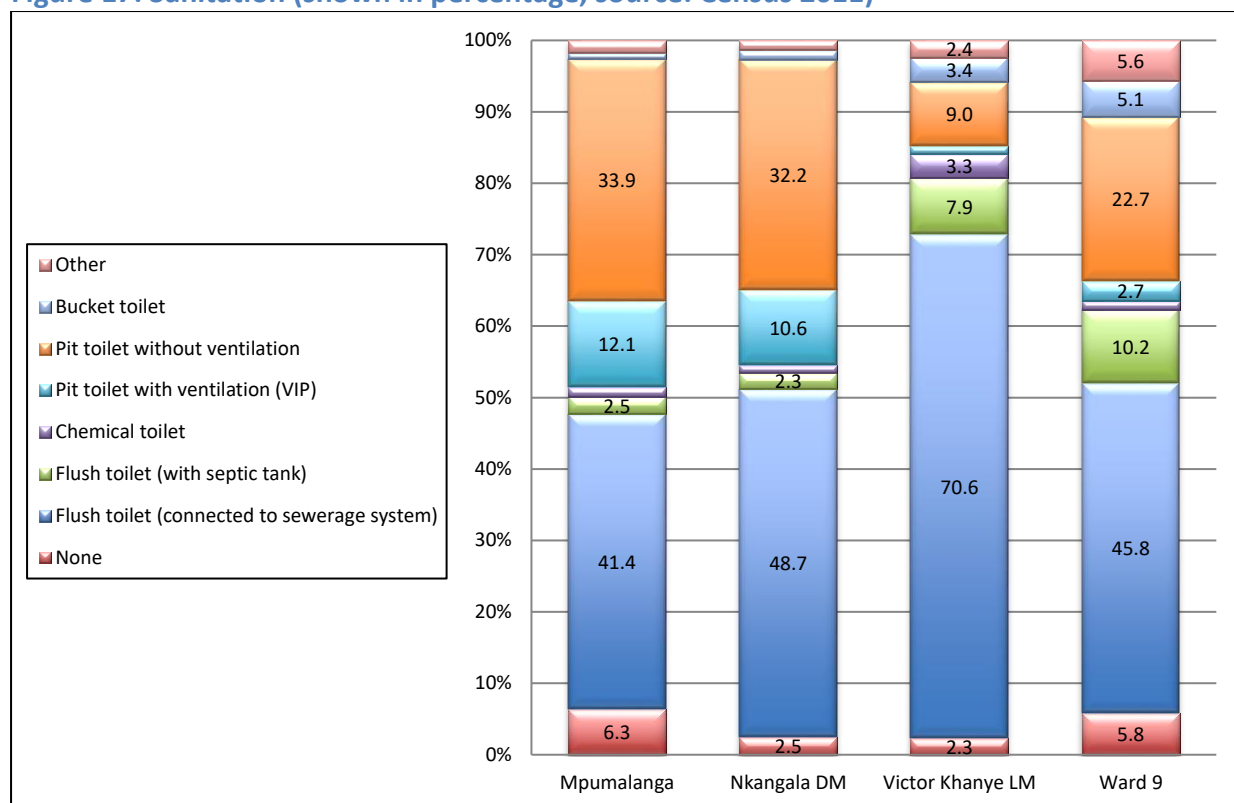
The second highest incidence of households that do not have access to any sanitation services is on ward level (



Figure 17). Just over half of the households on ward level have access to flush toilets that are either connected to a sewerage system or a septic tank.



Figure 17: Sanitation (shown in percentage, source: Census 2011)

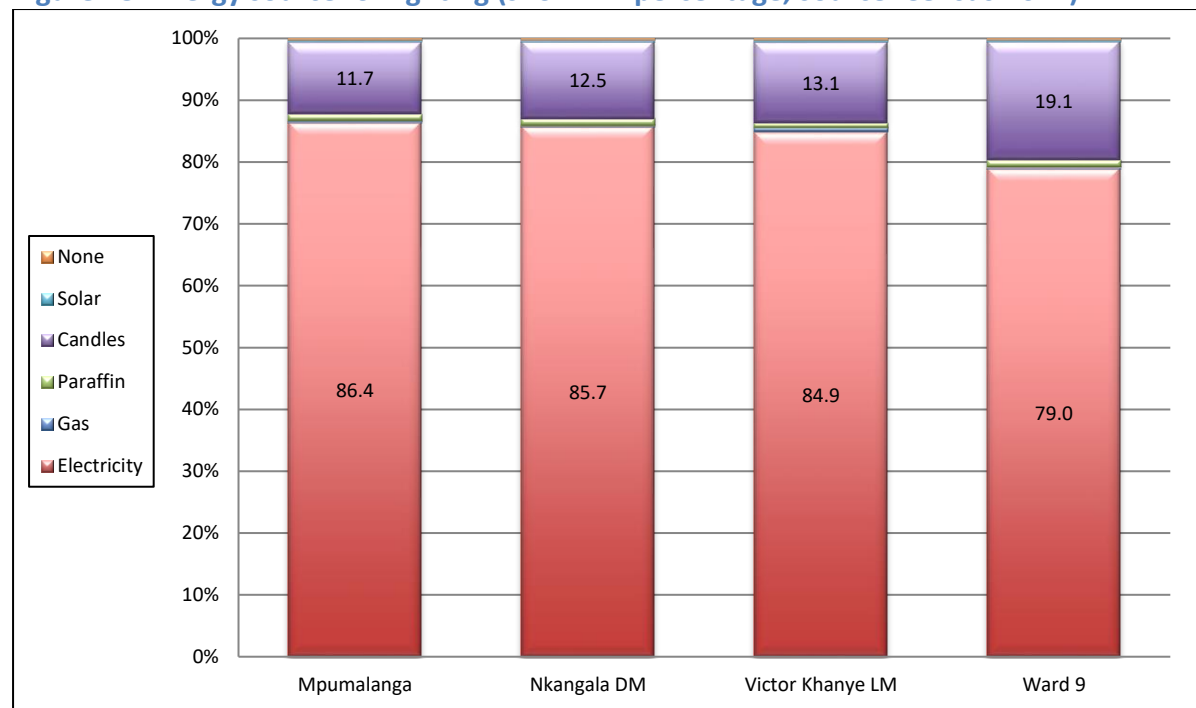


5.2.3.3 Energy

Electricity is seen as the preferred lighting source (Noble et al, 2006) and the lack thereof should thus be considered a deprivation. Even though electricity as an energy source may be available, the choice of energy for cooking may be dependent on other factors such as cost. Ward 9 has the lowest incidence of households with access to electricity for lighting. Candles is the most likely alternative to be used for lighting purposes.



Figure 18: Energy source for lighting (shown in percentage, source: Census 2011)



5.2.3.4 Refuse removal

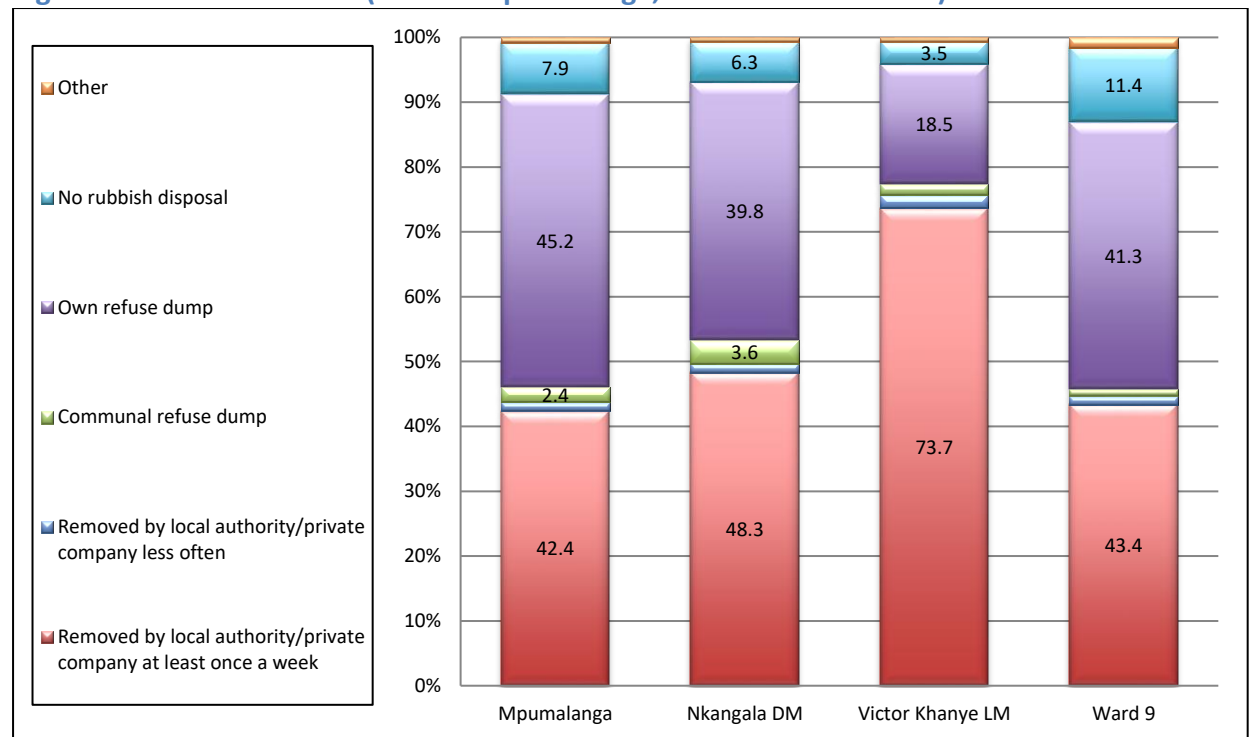
Ward 9 has the highest incidence of households that do not have any rubbish disposal (



Figure 19), with just over 40% of households indicating that they have their own refuse dump.



Figure 19: Refuse removal (shown in percentage, source: Census 2011)





6 Stakeholder Identification and Analysis

Stakeholders include all individuals and groups who are affected by, or can affect, a given operation. Stakeholders consist of individuals, interest groups and organizations (Vanclay, Esteves, Aucamp & Franks, 2015). Stakeholder analysis is a deliberate process of identifying all stakeholders of a project - the individuals and groups that are likely to impact or be impacted by it - and understanding their concerns about the project and/or relationship with it (Vanclay et al, 2015). Stakeholder analysis assists the proponent with understanding the local cultural and political context. It is acknowledged that different stakeholder groups have different interests, and that there are individual differences within stakeholder groups. The purpose of this section of the report is to introduce the stakeholder groups that will be affected by the proposed project.

The geographical area where the Vlakvarkfontein mine is situated has been exposed to intensive agricultural, mining and industrial development in recent years. The stakeholder groups for this project are also stakeholders in other developments, and there are significant cumulative impacts to consider. Some of the groups include vulnerable parties that have been victims of rapid development who have not shared in the benefits of the development in the area. These parties have been marginalised to live in an area that is not suitable for the development of sustainable communities, but remain there because they do not have any other alternative. The Vlakvarkfontein mine must be considered in this context. The purpose of this section of the report is to introduce the stakeholder groups that will be affected by the proposed project, and giving a snapshot of historical and current conditions and impacts. The following key stakeholder groups were identified:

- The Arbor community
- Commercial farmers
- Industries
- Government
- Vlakvarkfontein mine



6.1 Stakeholder groups

6.1.1 The Arbor community

The Arbor community is situated next to the Vlakvarkfontein mine, and currently consists of approximately 300 houses. It is unclear how long the Arbor community has existed, but it first attracted attention in the early 2000s, when the Arbor Colliery was identified as one of 27 abandoned mines in the upper Olifants catchment. The last owners could not be identified. The mine included both open pit and underground workings and rehabilitating it was given high priority because the Arbor settlement was next door and there was a high risk of surface water pollution, according (Waygood et al, 2006). At that time Arbor consisted of about 100 households with 80% unemployment. The people mined coal for domestic use and needed to retain this source of free fuel but they also wanted the mine made safe. There were five open pits on the mine site with lakes formed in each. The water was very acid with high sulphate concentrations. The local water supply from wells and boreholes was at risk and there was evidence that the acid water spilled into the surface water when it rained. Discard coal heaps were burning but the fires were not visible at the surface (the groundWork Report, 2016).

People moved to Arbor from different places. Some of the residents moved there from surrounding farms, often because the farms were bought for mining. Some people still work on local farms but prefer to live in Arbor. Others are mineworkers that work for the mining companies in the area. There are also people that moved there to obtain a local address and look for work in the area. There are high numbers of unemployed people residing in the Arbor community (the groundwork Report, 2016). Arbor falls in Ward 9, which is at the edge of the Victor Khanye Municipality and the residents feel as if the municipality has forgotten about them. *“They come when they want our votes but they run when we have trouble”* (The groundWork Report 2013). There are high levels of illiteracy in the community and most people speak Zulu or Ndebele.

Ntshovelo Mining Resources reopened the mine in 2010 by as the open cast Vlakvarkfontein Colliery. In 2012 Vlakvarkfontein Colliery appointed a community



relations manager, whom has been stationed at the mine full time since 2014. Since Ntshovelo Mining Resources reopened the mine, people are no longer allowed to enter the mining area, but to compensate for the loss of access to coal that people were used to, the colliery dumped coal in the village for the residents to use (the groundWork Report, 2016). The mine built a bunt wall to screen the area off, but it was vandalized. In March 2016 some community members reported the mine to the Department of Mineral Resources (DMR). The DMR then issued a directive to the mine, ordering them to stop the practice of providing coal, and in response no coal is supplied to the community any longer, and the areas where the coal used to be supplied was cleaned up. Not all community members were satisfied with this arrangement (Ntshovelo Mining Resources, 2016).

The community is divided in different groups, and there are struggles for leadership. There are also political divisions. Although there is an elected ward councillor, the community does not necessarily support him. There is a lack of trust between community members, so they don't want representatives to speak on their behalf and everybody wants to be present at all meetings. The community claims that the mine has caused the divisions in the community. In 2013, *"people said there was no longer a local community forum as community leaders had been bought off with jobs at the mine. Further attempts at local organising would be divisive and bring conflict"* (The groundWork Report 2013). Since then, local people have created an organisation called *Guide the People* and affiliated to Highveld Environmental Justice Network (HEJN), a non-profit organisation started in 2015, which represent 14 community-based organisations. Despite this, divisions in the community continue. The community struggle to trust anyone, and despite agreeing to allow the SIA consultants to consult with smaller groups in the area and show them their concerns on two occasions, it never materialised. Community members became volatile and emotional, having been left down on many occasions before. The community feels that they have spend enough time talking, and want to see some action. It is alleged that the official Community Liaison Forum is not functioning as it should, and used to monopolise available jobs on the mines. At the moment there are two leadership



teams in the community – the Community Forum and the Steering Committee – that both claim to have the interest at heart.

May 2016 mark an important change in the relationship between the mine and the community. On 7 May 2016 there was a blasting incident resulting in fly-rock damaging some of the resident's houses. Bega (Saturday Star, 19 November 2016) claimed that this incident turned the attitude of the community from *"reluctant toleration to angry resistance."* Members of the community blocked the entrance to the mine and demanded that all mining activity stopped. Their concerns were related to blasting, dust resulting from coal trucks, water supply and compensation for houses damaged by blasting (the groundWork Report, 2016). As a result, all mining activities had to be stopped for a week. This also affected other mines in the area. In response, Ntshovelo approached the court, and acquired an interdict against the community to prevent them from interfering with mining operations (Bega, 2016; the groundWork Report, 2016). *Guide the People* has opposed this application, with the assistance of the Centre for Environmental Rights (CER). From a rights based perspective, there is a conflict between Ntshovelo's property right based on the mining licence; and the Arbor community's human rights based on their right to an environment not harmful to their health and wellbeing and their right to clean water. There are also issues around environmental justice.

The mine was also reported to the Human Rights Commission, and had to attend a hearing on 3 November 2016. The relationship between the mine and the community can be described as turbulent, and the community claim that the mine does not deliver on its promises. In turn, the mine feels that the community is not always realistic about the demands they put on the mine and fail to recognise the positive things that has been done in the community. The community wants to have more input in the Social and Labour Plan (SLP), and seem to have high expectations of the SLP. In 2014 the mine and the Victor Khanye Municipality established the Arbor Community Trust to develop an essential oil project. The project failed due to community members removing infrastructure, and animals eating plants. The current thinking is that the mine will donate the property to the trust or to the



municipality to benefit the community when operations cease, but negotiations with the DMR is still underway (Ntshovelo Mining Resources, 2016). In January 2017 a community meeting turned violent and the operations of the mine was affected (Highveld Chronicle, 29 January 2017). According to the mine, they eventually had a successful meeting later in January. In May 2017 the mine handed two constructed high mast lights at a value of R900 000 over to the community (Highveld Chronicle, 22-29 May 2017). The mine also committed to contribute to a solution to the water issues. In August 2017 the mine had a stakeholder meeting to try and improve relationships between the mine and the community and to engage without the presence of a mediator (Highveld Chronicle, 11-17 August 2017).

The side effects of blasting are a major concern for community members. Blasting events are shared on the community notice boards and through a siren sounding in the community. The blasts create dust and vibrations. Many community members claim that their houses are cracked because of the blasting. The mine has agreed to relocate some houses that is most affected by the blasting from the one side of the community to the other side in the interest of the safety of the residents. Apart from the blasting impacts, there are other existing environmental impacts that the community are living with. Dirt roads lead to the mine and pass close to people's houses. Despite dust control measures, dust remains a problem in the community. Mines and power stations (Kusile and Kendal) are in close proximity to the community, and the cumulative impacts of these industries are significant. The Arbor rail siding for coal loading is adjacent to the community, and receives coal from many of the mines in the surrounding area. Every time a truck tips its load onto the coal train, significant dust is created. In 2012, people from across the Highveld conducted indoor air monitoring in their homes using a *minivol* sampler to test for particulates and metals. The highest level was recorded in Arbor where the particulate concentration measured nine times higher than the World Health Organisation guideline (the groundWork Report, 2016).

Another current concern that the community have is water and services. People reported that the borehole water was foul in 2013. Since then, the water it dried up



altogether. The municipality now delivers water to JoJo tanks in the village but people claim that deliveries are irregular. In 2009, just ahead of elections, the municipality installed dry composting toilets but failed to maintain them. By 2013, they had fallen into disrepair. In 2016 people reverted to using pit latrines, which creates another potential source of groundwater pollution. The latrines are not serviced and overflow in heavy rain (the groundWork Report, 2016). As part of the commitments in their SLP the mine has undertaken to donate convertible VIP toilets to the community. There are also discussions about water provision, but details of this project are not in the public domain.

The Arbor community is volatile and divided. Some people are vehemently against the mine, whilst others recognise and rely on it as a source of livelihoods, despite the negative impacts. It is situated in an area that bears the brunt of many impacts from the surrounding industries, and the conditions in the community cannot be solely attributed to the Vlakvarkfontein mine. Although the mine does contribute directly to the circumstances, other contributing factors must also be considered. The socio-political context in South Africa, high unemployment levels, government policies related to land ownership, lack of municipality to provide essential services and other polluting industries in the area all played a role. The relationship with the Vlakvarkfontein mine is tense, and the bulk of the frustration that the community experience is directed at the mine.

6.1.2 Commercial farmers

The two commercial farming enterprises that will be affected by the proposed Vlakvarkfontein Extension are Truter Boerderye and Torero Investments. Given the myriad of development in the area, there are significant levels of stakeholder fatigue amongst this stakeholder group, especially related to environmental authorisation processes.

The father of Christie Truter, the owner of Truter Boerderye, was a mineworker at Witbank Consolidated, which then owned most of the mines in the area. He bought a farm in 1961 and started farming part time. His two sons and three grandsons now operate over 25 000 hectares of which they own about 85% and rent the rest. Their



main business is growing maize, but they also own cattle and have seven battery chicken farms (the groundWork Report, 2016). The Truters hire and buy farms from coalmines and are familiar with the risks of farming in the area. They sign contracts with clauses releasing the mines from all responsibility for any mine related risk, such as sinking earth above old underground mines where the pillars have been robbed. They have also bought up about 60 farms from farmers who have left the area (the groundWork Report, 2016).

The main concern of farming next to coalmines is water. At smallholder farms near Kendall, the water has started stinking of methane because the gas released by coal mining enters into the water. Boreholes dry up because the mines pump the water table down until it is empty. Open cast mines generate a lot of dust, which creates a dust layer on the leaves of the maize plants, stopping them from photosynthesising and affecting the growth of the plant. Rain does wash it off but the maize harvest could be down by a third next to a coal haul road (the groundWork Report, 2016).

Although the commercial farmers rent land from industries in the area, the cumulative impact that the coalmines and coal fired power stations in the area have on agricultural activities must be acknowledged. As an example eight mines surround the property owned by Torero Investments. Although it is a commercial enterprise, the farmers emphasised that the impact is not merely financial, as farming is also a lifestyle choice and their homes are in the area. Despite the negative impacts experienced, the farmers believe that the soil in the area is of the most fertile in the country, and therefore they are willing to absorb some of the impacts. Existing impacts mentioned by the farmers include an influx of people leading to issues such as poaching, arson, theft and squatter camps; issues with water quality impacting on the health of animals and crops; health impacts such as sinusitis; air quality issues; and the effect of coal dust and ash on animal, crop and human health. Farming commodities include cattle, maize, soya and potatoes.

6.1.3 Industries

Wescoal's Intibane mine is next door to Vlakvarkfontein and also encroaching on Arbor. It opened in late 2015 and has a life of mine of only two or three years.



Rirhandzu Colliery, also owned by the Mbuyelo group is also close to Vlakvarkfontein. Wescoal's Khanyisa Colliery is five or six kilometres from Arbor. It is a similarly small operation with a life of mine of little more than a year. Other mines in the area include including Intibane, Zibulo, New Largo, Khutuka, Leeufontein, Bankfontein, Lakeside and Klipspruit amongst others. The Kendal power station is situated east of the mine, a few kilometres away, and Kusile power station is about 20km to the north. These industries contribute to the existing impacts experienced in the area, and some of the mines also use the Arbor rail siding to transport their coal. Some of the people employed by these industries also reside in the Arbor community.

6.1.4 Government

South Africa has a three-tier government consisting of national, provincial and local government. All three levels of government have legislative and executive powers in their own domain (RSA, 2013), and are responsible for a different aspect of service delivery.

6.1.4.1 Mpumalanga Provincial Government

The provincial government is responsible for housing, schools and clinics (NCP, 2012). The Mpumalanga Provincial Government is therefore the appropriate party to liaise with about the housing situation of the Arbor community.

6.1.4.2 Victor Khanye Local Municipality

Local municipalities are responsible for planning, water delivery, electricity, sanitation and refuse removal (NPC, 2012). Consultation with the communities that will potentially be impacted by the proposed project revealed that basic services such as water, electricity and sanitation are not provided in the area, and therefore the VKLM is not fulfilling their mandate. There also seem to be a lack of communication between communities and the VKLM. All South African municipalities are demarcated into wards, and a ward councillor and ten elected members lead each ward. The Vlakvarkfontein mine falls in Ward 9 of the VKLM. Representatives of the VKLM indicated that there are existing problems in the affected communities such as community members without identity documents (which will exclude them from certain democratic processes), illegal occupation of



properties, illegal immigrants, friction within the communities and segregation between some community groups. These problems make it a challenge to govern the community from the perspective of the VKLM.

6.1.5 Vlakvarkfontein Mine

Although the Vlakvarkfontein mine is the the project proponent, it must be acknowledged that the mine, its employees and contractors are also key stakeholders in the project. Vlakvarkfontein is an opencast coal mine situated within the Emalahleni Municipal District, approximately 20 kilometers northeast of Delmas. The Mining Right was awarded in February 2010 and first coal produced in May 2010. Vlakvarkfontein is owned by Ntshovelo Mining Resources (Pty) Ltd, (“Ntshovelo”), through Orha Mining Resources (Pty) Ltd and has a 100% BBBEE shareholding.

Vlakvarkfontein Colliery is an opencast truck and shovel operation. The mining is done by Trollope Mining Services and the crushing and screening is done by Warthog. The total personnel employed by the contractors at the operation are 95 employees. The mine itself has permanent 13 employees. The employee breakdown indicates that 81% of the employees are from Mpumalanga, 41% from the Victor Khanye Local Municipality (69% of the this group is from the Arbor Community), 8% from Kwa Zulu Natal, 6% from Gauteng, 4% from Limpopo and the remaining 2% from the Eastern Cape and Free State (Vlakvarkfontein SLP, 2015). There are complaints from the Arbor community that the mine does not employ enough local people, and that the training that the mine present are not specific to the mining operations, therefore it is not beneficial for them to attend these training events, as it does not lead to employment.

The mine produces an average of 120 000 ROM tonnes per month. It supplies Eskom with an average of 100 000 tonnes per month. The remaining 20 000 tonnes per month are sold in the inland market. The proposed expansion project will increase the life of mine to 2025 (EIMS Scoping report, 2017).



6.2 Human Rights

Core human rights principles — participation, accountability and transparency, non-discrimination, empowerment and linkage to the international human rights framework — align in spirit with the social impact assessment principles, therefore it is necessary to adopt a human rights based approach to SIA. The adoption of the United Nations Guiding Principles on Business and Human Rights (UNGP) in 2011 confirmed the corporate responsibility to respect human rights (Vanclay et al, 2015). The Vlakvarkfontein mine can only mitigate and manage human rights infringements if it is aware of the potential for these impacts to take place, and the associated risks. Many social impacts can be understood in human rights terms. This includes recognising project-affected individuals and communities as human rights-holders with legal entitlements, including the right of legal redress for impacts on their human rights. Thus when a project creates social impacts, it may also be in breach of its responsibility to respect human rights (Vanclay et al, 2015). Protection of an individual's rights is embedded in a range of international and national principles, law, conventions, guidelines and practices. Human rights is a complex concept, but the United Nations (1987) provides a general definition:

“...those rights, which are inherent in our nature and without which we cannot live as human beings. Human rights and fundamental freedoms allow us to fully develop and use our human qualities, our intelligence, our talents and our conscience and to satisfy our spiritual and other needs. Human rights are based on mankind's increasing demand for a life in which the inherent dignity and worth of each human being will receive respect and protection.”

Human rights are enshrined in the South African Constitution (1996), which forms the basis of all the country's legislation. Chapter 2 consists of a Bill of Rights, which explicitly spells out the rights of every South African citizen. The human rights that are safeguarded by the Constitution of the Republic of South Africa 1996 in the Bill of Rights and which are relevant to the Vlakvarkfontein mine, includes:



- Right to a healthy environment;
- Rights of access to land and to security of tenure;
- Right to adequate housing and protection against evictions and demolitions; and
- Children's rights to basic nutrition, shelter, basic health care services and social services.

The group whose rights may potentially be affected are the Arbor Community, especially from the perspective of a right to a healthy environment. Some of the human rights impacts are legacy human rights impacts that occur due to a combination of factors and cumulative impacts. It must be considered that the potentially affected community can be seen as a vulnerable community with a low socio-economic status, where there are high levels of poverty and unemployment. Vulnerability refers to a situation or condition characterized by low resilience and/or higher risk and reduced ability of an individual, group or community to cope with shock or negative impacts. Vulnerability is associated with having low socio-economic status, disability, ethnicity, or one or more of the many factors that influence people's ability to access resources and development opportunities (Vanclay et al, 2015).

Human rights cannot be considered without considering environmental justice. Hornberg and Pauli (2007) define environmental injustice as an uneven distribution of environmental quality between different social groups and relate decreasing socio-economic status to an increasing burden of environmental hazards. Environmental justice acknowledges that some groups within the population face a larger risk from exposure to environmental hazards than others (Ikeme, 2003). The Arbor community is exposed to multiple sources of potential environmental hazards, such as mines, commercial agriculture, existing and new power stations that contribute or will potentially contribute to the water and air pollution in the area. Being a vulnerable community, the people of Arbor does not have the resources to protect themselves or move away from the area, mainly due to socio-economic reasons. Paben (2014) states that environmental justice impacts from coal are significant from the cradle to the grave, with health and environmental impacts for people working in mines and power stations, and people who live near these places.



Acknowledging that potential human rights impacts and environmental justice issues are possible in the project area will assist Vlakvarkfontein with mitigating and managing these issues, and to avoid potential pitfalls. The mitigation measures suggested as part of the impact management strategy will include measures to address potential human rights impacts and environmental injustice.

6.3 Social licence to operate

Social licence to operate is a popular expression to imply that the acceptance of the community is also necessary for a project to be successful (Vanclay et al., 2015). In 2003 Pierre Lassonde drew attention to the observation that *“Without local community support, your project is going nowhere.”* He described social license as *“...the acceptance and belief by society, and specifically local communities, in the value creation of activities”*. Social licence cannot be obtained by going to a government ministry and making an application or simply paying a fee. It requires far more than money to truly become part of the communities in which a company operates (Lassonde 2003). A primary objective of gaining a social license is to minimize project risk. *“Successful operations require the support of the communities in which they operate now, and in the future, to ensure continued access to land and resources”* (Render 2005). The social license to operate can be further described as the degree of match between stakeholders’ individual expectations of corporate behaviour and companies’ actual behaviour.

Earning a social licence to operate starts in the planning phase of any given project. First impressions are long lasting and the company must recognize that community opinion will be conditioned by previous experience, knowledge gained from elsewhere and the approach taken by the company. Conflict can arise very quickly if there is a failure to respect local customs, give notice of actions, address community concerns and so on. Knowledge of the community and on-going communications are prerequisites for good relations. At the moment the Vlakvarkfontein mine’s social licence to operate in the Arbor community is not very strong. Although the mine is trying to improve relationships through better communication and action, there are historical issues that makes this difficult. Partnered with the community’s



expectations about the value that the mine should add to their community, some of which are unrealistically high, it is unlikely that it will be an easy task to win the trust of the community and earn a social licence to operate in the near future. Some community members have explicitly stated that they do not want the mine there, and that the mine should first address the current issues that the community have with the mine before they can start planning extensions. Although the mine technically does not need the permission or approval of the community to continue with the expansion, there are significant risks associated with continuing with mining activities without a social licence to operate. As the community has proven before, it can force the mine to close down for extended periods of time. There have already been incidences of violent protests, and community members claim that the mine uses the police to intervene, and that this contributes to the already tense relationship. The situation in Arbor is influenced by many other factors that are outside the control of the mine, but the mine is viewed by the community as the main culprit. It will not be easy to change this perception, and any positive improvement will take time, patience and action. There are no quick fixes in for the current state of affairs. It is therefore in the interest of the mine and the community to improve and invest in relationships between the parties, as this is the first step forward.



7 Social Impact Assessment

The following section of the report focuses on the identification and analysis of social impacts. Mitigation and management measures will also be discussed. It must be considered that most social impacts are of a cumulative nature, as many existing social challenges are present in the affected community.

7.1 Impact Assessment Criteria

The impact tables and ratings were adapted from the environmental sciences and it is not always possible to compartmentalise the social impacts. For the sake of consistency this has been attempted, but it is not innate to social sciences. Allowance for the changing and adaptive nature of social impacts should be made when interpreting the impact tables.

The broad approach to the significance rating methodology is to determine the environmental risk (ER) by considering the consequence (C) of each impact (comprising Nature (N), Extent (E), Duration (D), Magnitude (M), and Reversibility(R)) and to relate this to the probability/ likelihood (P) of the impact occurring. This determines the environmental risk. In addition, other factors, including cumulative impacts (CI), public concern (PR), and potential for irreplaceable loss of resources (LR), are used to determine a prioritisation factor (PF) that is applied to the ER to determine the overall significance (S).

The following formulae have been used in determining the significance ratings as well as the priority of the impact:

- $C = (E + D + M + R) / 4 \times N$;
- $ER = C \times P$;
- $Priority = PR + CI + LR$; and
- $S = PF \times ER$ (post mitigation).



The rating criteria used in determining the significance ratings are summarised in Table 2 to Table 7 below:

Table 2: Criteria for determination of impact consequence.

Aspect	Score	Definition
Nature	- 1	Likely to result in a negative/ detrimental impact
	+1	Likely to result in a positive/ beneficial impact
Extent	1	Activity (i.e. limited to the area applicable to the specific activity)
	2	Site (i.e. within the development property boundary),
	3	Local (i.e. the area within 5 km of the site),
	4	Regional (i.e. extends between 5 and 50 km from the site)
	5	Provincial / National (i.e. extends beyond 50 km from the site)
Duration	1	Immediate (<1 year)
	2	Short term (1-5 years),
	3	Medium term (6-15 years),
	4	Long term (the impact will cease after the operational life span of the project),
	5	Permanent (no mitigation measure of natural process will reduce the impact after construction).
Magnitude/ Intensity	1	Minor (where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected),
	2	Low (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected),
	3	Moderate (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way),
	4	High (where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease), or
	5	Very high / don't know (where natural, cultural or social functions or processes are altered to the extent that it will permanently cease).
Reversibility	1	Impact is reversible without any time and cost.
	2	Impact is reversible without incurring significant time and cost.
	3	Impact is reversible only by incurring significant time and cost.
	4	Impact is reversible only by incurring prohibitively high time and cost.
	5	Irreversible Impact

**Table 3: Probability scoring.**

Aspect	Score	Definition
	1	Improbable (the possibility of the impact materialising is very low as a result of design, historic experience, or implementation of adequate corrective actions; <25%),
	2	Low probability (there is a possibility that the impact will occur; >25% and <50%),
	3	Medium probability (the impact may occur; >50% and <75%),
	4	High probability (it is most likely that the impact will occur- > 75% probability), or
	5	Definite (the impact will occur),

Table 4: Significance classes.

Environmental Risk Score	
Value	Description
< 9	Low (i.e. where this impact is unlikely to be a significant environmental risk),
≥9; <17	Medium (i.e. where the impact could have a significant environmental risk),
≥ 17	High (i.e. where the impact will have a significant environmental risk).

Table 5: Criteria for the determination of prioritisation.

Aspect	Score	Definition
Public response (PR)	Low (1)	Issue not raised in public response.
	Medium (2)	Issue has received a meaningful and justifiable public response.
	High (3)	Issue has received an intense meaningful and justifiable public response.
Cumulative Impact (CI)	Low (1)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is unlikely that the impact will result in spatial and temporal cumulative change.
	Medium (2)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.
	High (3)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.
Irreplaceable loss of resources (LR)	Low (1)	Where the impact is unlikely to result in irreplaceable loss of resources.
	Medium (2)	Where the impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.
	High (3)	Where the impact may result in the irreplaceable loss of resources of high value (services and/or functions).

**Table 6: Determination of prioritisation factor.**

Priority	Ranking	Prioritisation Factor
3	Low	1
4	Medium	1.17
5	Medium	1.33
6	Medium	1.5
7	Medium	1.67
8	Medium	1.83
9	High	2

Table 7: Environmental significance rating.

Environmental Significance Rating	
Value	Description
< 10	Low (i.e. where this impact would not have a direct influence on the decision to develop in the area),
≥10 <20	Medium (i.e. where the impact could influence the decision to develop in the area),
≥ 20	High (i.e. where the impact must have an influence on the decision process to develop in the area).

7.2 Description of potential impacts

“Almost all projects almost always cause almost all impacts. Therefore more important than predicting impacts is having on-going monitoring and adaptive management.” Frank Vanclay

7.2.1 Existing and cumulative impacts

Given that Vlakvarkfontein mine is an existing facility, it must be considered that most of the impacts are existing impacts. When considering existing impacts, the complexity of the social environment must be contemplated. Social impacts are not site-specific, but occur in communities surrounding the site. The high concentration of human and industrial activities taking place in a relatively small area surrounding the project site has caused a number of impacts. From a social perspective it is not possible to pinpoint which percentage of any given impact result from a specific activity. For example, agricultural, mining and power generation activities may cause an influx of people into an area due to the possibility of employment creation. It is not possible to say, for example, that 10% of people moving into the area looked for



an agricultural job, 40% for a job at a power station and 60% at a mine. It is, however possible to say that all these industries contributed to the honeypot effect (project-induced in-migration where people move to the project site in search of work or economic opportunities that arise from the project) that is experienced in the area. Vlakvarkfontein mine and its activities are not the only party responsible for the existing social impacts in the area, but the mine does contribute to these impacts, to some more significantly than to others, and will continue to do so through the life of mine. The following existing impacts that are associated with coal mining are experienced in the community:

7.2.1.1 Environmental impacts with social dimensions

- Water quality and availability – boreholes have either dried up or the water is not fit for human consumption. This affects the basic human right to clean drinking water.
- Dust – dust from blasting, drilling, loading and unloading and transport of coal. This has health and quality of life impacts, and also impact on the right to life in a clean environment that is not detrimental to your health.
- Vibrations – related to blasting. The community report damage to their houses, and safety incidents due to fly-rock. Some community members must vacate their houses during blasting events.
- Noise – associated with blasting and transport of coal, safety requirements like reverse alarms.

7.2.1.2 Economic impacts

- Job creation – the mine does provide employment to 108 people. Especially in the lower socio-economic groups, each income can support a number of family members and dependants through remittances.
- Competition for jobs – South Africa has an unemployment rate of 27,7% in 2017, one of the highest in the world. There is therefor a high demand for available jobs. Due to the high illiteracy levels in the community, there is an



over-supply of unskilled labour, and the mine requires a minimum of Grade 12 for certain positions. Although there are some skilled labourers that live in the Arbor community, there are not always enough skilled labourers to meet the needs of the mine. Therefore people from outside the area are employed to fill these positions, something that the local community is critical about. They feel that the local community does not get enough benefit from the presence of the mine.

- Skills development – according to the requirements of the MPRDA the mine is forced to have skills development plans. This is not only to the advantage of the contractors and employees, but also benefit people from the local community. The MPRDA requires that skills development must focus on transferable skills that can be used outside of the mining industry, but the local community would prefer to acquire specific skills that the Vlakvarkfontein mine currently needs.
- Corporate social investment (CSI) – according to the MPRDA the mine is required to have a Social and Labour Plan (SLP). In addition to the commitments made in the SLP, there are also CSI investments made in the community such as donations of wheelchairs, computers, support to the school, wellness day, blankets donated to the elderly, donations of school uniforms, maintenance of the crèche buildings and donations of a container to house social services.

7.2.1.3 Impacts on infrastructure

- Traffic congestion and road surface damage through movement of construction materials and mine products – the mining traffic generated by Vlakvarkfontein mine and other industries in the area impacts negatively on the roads networks in the area. The proximity of the Arbor rail-siding intensify this impact.



7.2.1.4 *Community-based impacts*

- Community expectations – the community expect benefits because of the proximity of the mine to the community. They feel as if they do not have a voice that contributes to the SLP. They feel that the mine needs to show how it benefits the community if it wants to operate in their midst. Some community members feel that given the amount of money that they perceive the mine to make, there should be a shareholder agreement between the mine and the community.
- Community resistance to mining – at the moment there are groups in the community that do not want the mine there due to the existing impacts, and their feeling that the mine is not delivering on its promises. This resistance of the community manifested in volatile situations in the past. The mine's current social license to operate is weak.
- Community relations – the relationship between the mine and the community is tense. The tension can be attributed to the impacts that the community experience due to mining activities, and their perception that the mine is not managing the impacts or honouring its commitments. There is a lack of trust due to historic issues and bad experiences that the community had in the past. The fact that the police had to interfere in some of the community protests deepened the mistrust.
- Safety – community members do not feel safe in their houses during blasting events. The damage done to their houses as a result of the blasting exasperate their unease about the safety situation. Another aspect that contributes to safety impact is the constant movement of the coal trucks close to the community. Apart from the dust that it generates, it increases the risk of traffic or pedestrian accidents.
- Health – some community members have health complaints such as asthma, sinusitis and other respiratory diseases. This can partially be attributed to the



air quality issues in the Highveld region – mining, coal-fired power stations, agricultural practices and domestic use of coal for cooking and heating.

- Relocation – due to the impact of blasting on community safety, the mine agreed to move some of the houses closest to the operations. This process falls outside the scope of the SIA, and has been initiated before the current EIA commenced. Some community members are concerned that the expansion of the mine will impact negatively on the households that are relocated to the other side of the village, making it a futile exercise.

It is not expected that the expansion of the Vlakvarkfontein mine will cause a major influx of people into the community, especially because it will in essence ensure that business as usual continue. The expansion will be on the mining property, in an area that has been mined before. Therefore impacts traditionally associated with an influx of people such as social ills, lack of infrastructure, change of land use, safety and security due to strangers in the community and health impacts are not discussed. Some of these impacts may have taken place when the mine initially opened, but it is not anticipated that the expansion will trigger any new impacts in this regard.

7.2.2 Social impacts specific to the expansion of the Vlakvarkfontein mine

The following impacts will be triggered by the expansion of the Vlakvarkfontein mine. Some of the impacts are existing impacts, but have been included here because it will be caused by activities associated with the expansion.

7.2.2.1 Community expectations

As discussed in the stakeholder analysis and section about existing impacts, the relationship between the mine and the community is tense. There is a strong possibility that conflict between the mine and the local community can result due to the expectations that the community has. These expectations include that the mine needs to make the community a shareholder in the mine, that the community will not allow the project to continue before the mine addresses the current unresolved issues that the community has with them and that the mine must prove to the community what benefits they will receive from the mine. It must be acknowledged



that the EIA process is not a democratic process, and that there is a chance that the project may be approved despite the community's objections. Unless the expectations of the community are managed carefully, this impact may pose a significant risk to the mine, on different levels. Potential types of costs of conflict between mines and communities are explained in [Table 8](#) below:

Table 8: Types of cost to company as a result of community conflict.

Types of cost to company	
Security	<ul style="list-style-type: none"> • Payments to state forces or company security contractors. • Increased operational cost of security: fences, patrols, escorts, transport, alarm systems, reduced mobility. • Increased security training and management: staff time, lost production, costs of programs.
Project modification	<ul style="list-style-type: none"> • Design modification costs: application, redesign, legal. • Additional works.
Risk management	<ul style="list-style-type: none"> • Insurance: higher premiums and coverage, risk rating, withdrawal of coverage. • Legal and conflict expertise: specialist training for staff, additional staff.
Material damage	<ul style="list-style-type: none"> • Damage or destruction of private property or infrastructure. • Damage or destruction to public property or infrastructure.
Lost productivity	<ul style="list-style-type: none"> • Operations discontinued: voluntary closure or enforced through injunction. • Temporary shutdown of operations. • Lost opportunity for future expansion and/or for new projects. • Disruption to production: temporary or indefinite delays, absenteeism. • Delays in deliveries/supplies. • Greater regulatory burden/scrutiny.
Capital	<ul style="list-style-type: none"> • Loss of value of property: full write-off, other depreciation, sale at a loss, theft. • Inability to repay debt or default on debt. • Difficulty raising new capital. • Share price instability/loss in value (within relevant time period).
Personnel	<ul style="list-style-type: none"> • Staff time spent on risk and conflict management. • Costs of remediation: meetings, negotiations, mediators. • Hostage-taking: ransom payments, rescue operations, compensation. • Arrests of staff. • Injuries to staff and fatalities. • Low morale and stress-related effects. • Retention: higher salaries, compensation packages, bonuses. • Recruitment: advertising positions, screening, interviewing, induction training.
Reputation	<ul style="list-style-type: none"> • Higher expenditure on public relations: consultants, dissemination of information. • Competitive loss/disadvantage: impact on brand, investor confidence.
Redress	<ul style="list-style-type: none"> • Compensation (out of court payments). • Fines. • Increased social and environmental obligations: health care, education and training, provision of other services, clean-up and remediation costs. • Costs of administrative proceedings or litigation: costs of proceedings themselves, judgment/settlement costs.

Adapted from Davis & Franks, 2014



It is clear that community-company conflict can potentially cost the mine a lot of money, time and effort. Addressing this impact will not be an easy or quick process, and given that the expansion will increase the life of the mine with 8 years it is imperative that the process should start as soon as possible. The mitigation measures are captured in [Table 9](#) below.

**Table 9: Mitigation measures for impacts relating to community relations.**

No	Mitigation Measures	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (monitoring tool)
1.	Vlakovarkfontein must develop a grievance mechanism to address and keep record of community grievances. It must include a grievance register. Given the tense relationship it is imported to have documented evidence of community/mine interactions. This will assist the mine to track the issues, and the community to see what actions the mine has taken. The community must assist with developing the grievance mechanism. Given that mediation processes have been done before with limited success it is best to involve the community directly. The trust issues between the mine and the community means that both parties will need to work hard at re-building the relationship.	Design and planning, Construction Operation Decommission	Commence in the planning phase and continue through to the decommission phase of the project	Community Relations manager (CRM) Community groups Mine management	Grievance register must be checked on a weekly basis. Feedback to community about grievances must be done on a monthly basis	Record, track and address grievances	Grievance register Monthly feedback reports
2	The mine must include planning and budgeting for conflict situations in their emergency response procedure. They must also compile a stakeholder engagement plan to guide their interaction with stakeholders	Design and planning, Construction Operation Decommission	Commence in the planning phase and continue through to the decommission phase of the project	CRM Safety manager	Review the emergency response procedure and stakeholder engagement plan once a year	Ensure all staff knows what action to take in a conflict situation	Emergency response plan Stakeholder engagement plan
3	The mine must development a policy on dealing with community conflict and share it with the community. All community interactions must be documented and reported on twice a year. The mine should conduct a root cause analysis or use	Design and planning, Construction Operation Decommission	Commence in the planning phase and continue through to the	CRM Mine management Community	Review community interaction report monthly Feedback reports twice a year	Record and document community interaction Establish root	Register of community interaction Community interaction feedback reports Root cause analysis

Equispectives



Social Impact Assessment

	other appropriate systems to identify potential sources and impacts of conflict.		decommission phase of the project		Root cause analysis once off, or repeat if needed.	cause of mine/community conflict	
--	--	--	-----------------------------------	--	--	----------------------------------	--



7.2.2.2 Dust from a social and health perspective

The Arbor community settled in an area where there are many sources of dust which include dust created by loading and off-loading coal at the mine and at the Arbor rail-siding; dust created by vehicles travelling on dirt roads; dust from agricultural activities, and dust created by the activities from the nearby power stations. The proposed expansion will intensify the dust that the community is exposed to through construction activities and the added activities associated with the new wash plant. The community lives very close to the mining area and the dust does not only impact on their health, but also on their quality of life. Vulnerable people such as the elderly, child-headed households and young children are a special concern.

Dust may also impact on the commercial farmers in the area at times when the wind blows in their direction. Given the many potential sources of dust, it may be difficult to attribute specific impacts to Vlakvarkfontein mine. Therefore it is important for the mine to have good relationships with the surrounding commercial farmers. The mitigation measures are captured in [Table 10](#) below.

**Table 10: Mitigation measures for dust relating to dust from a social and health perspective.**

No	Mitigation Measures	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (monitoring tool)
1.	The relevant specialists will provide scientific mitigation measures for this aspect. From a social perspective it is important to create a community liaison forum that communicate the mitigation and monitoring measures to the affected parties. This forum can also act as a platform to discuss environmental issues. It can be an important aspect assisting Vlakvarkfontein with obtaining a social licence to operate. Practical, visible solutions such as putting shade nets against berms close to dwellings should be investigated. Berms made of coal or soil still have the potential to create dust in windy conditions.	Design and planning, Construction, Operation.	Commence in the planning phase and continue through to the operation phase of the project	CRM Environmental Manager	As prescribed by specialists CLF meetings at least twice a year Meetings with Arbor community to discuss issues	Minimise the dust impact on the Arbor community	Minutes of CLF meetings Monitoring results from relevant specialist studies. Practical solutions implemented by the mine Minutes of meetings with Arbor community.
2.	The CRM should establish relationships with the surrounding commercial farmers. This can include a yearly courtesy visit and sharing of environmental data to keep the farmers informed. All meetings should be recorded and records must be included in the communication register.	Design and planning, Construction, Operation.	Commence in the planning phase and continue through to the operation phase of the project	CRM Environmental Manager	Once a year	Improve relationship with commercial farmers to allow quick action should there be an incident	Meeting minutes with farmers Communication register



7.2.2.3 Blasting and vibrations from a social perspective

Vibrations due to blasting is a current impact. The new activities will also require blasting in different phases of the project. Blasting is one of the greatest community concerns as damage to houses and injury to people has been recorded in the past. At the moment some people need to evacuate their houses before the mine blasts. The mine is busy with a process of moving people from one side of the community to the other because of safety issues associated with blasting. Some community members are concerned that the houses that are moved now will be close to the new expansion, and will then be subjected to similar impacts. Blasting and vibrations impact on people's sense of safety, their quality of life and their material wellbeing. Given the high rates of poverty in the community, any damage to goods is difficult to recover from. Many people also live in traditional houses or shacks that cannot structurally deal with blasting, and as a result these houses are damaged often. Due to their socio-economic conditions they cannot afford better housing.

The community is also not satisfied with how blasting incidents are dealt with currently, from their perspective. They claim that the mine is not taking their complaints seriously, and that no action is taken when damage occurs. They also claim that there are no records from incidents, and that they have to keep telling their stories over and over every time a new person from the mine arrives. The mitigation measures are captured in [Table 11](#) below.



Table 11: Mitigation measures for impacts relating to blasting from a social perspective.

No	Mitigation Measures	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (monitoring tool)
1.	<p>The mine already communicates blasting events to the community via notice boards and loud speakers. Complaints about blasting must be recorded in the grievance mechanism to ensure that it is recorded. There must also be a feedback mechanism to ensure that the person that laid the complaint is informed about how it was dealt with. Feedback should be given within a reasonable time.</p> <p>Given the current dissatisfaction with how the mine is dealing with damage due to blasting, the mine should develop a policy with the Arbor community on how to deal with damage due to blasting. The policy should detail the responsibilities of the mine and community respectively. Although the community lives in informal houses, it does not mean that the mine is not responsible for damage to their property due to blasting.</p>	Design and planning, Construction, Operation.	Commence in the planning phase and continue through to the decommission phase of the project	CRM Safety Manager Mine management Arbor community	Feedback about grievances within two weeks. Blasting policy to be reviewed once a year. Meetings with Arbor community to develop policy (ideally there will be a working group, but it may be challenging given the conflict in the Arbor community).	Protect both the mine and community from damage related to blasting	Grievance mechanism Social blasting policy
2.	<p>The mine should liaise with the VKLM about formalising the houses in the area and provision of municipal services. The supply of housing and services is the responsibility of the government, but the land belongs to the mine. The mine did attempt to hand the land over to the VKLM, but they was not ready to accept the land. From a health perspective it would be better if the municipality could relocate the Arbor community to a nearby town, but it must be acknowledged that moving people from the area may set off a whole range of other social impacts. It</p>	Design and planning Construction	As soon as possible – realistically this will take some time.	Mine Management VKLM	Quarterly checks on progress	Improve living conditions of Arbor community through cooperative governance and partnerships	Minutes of meetings Transfer documents to VKLM



	is unlikely that the situation of the community will change in the foreseeable future, but the mine should assist the community with negotiations for better housing and services. Through its CSI programmes and SLP, the mine could also contribute to improving local conditions, whilst not taking on the role of “surrogate government”.						
--	---	--	--	--	--	--	--



7.2.2.4 Safety

There are current safety concerns in the community. Some community members own cattle, and they are concerned about the safety of the cattle when there will be an increase in traffic during the construction phase of the expansion. Further concerns include the safety of children and the elderly, especially given the proximity of the road to the village. Other safety concerns include the safety of the community during blasting incidents, especially related to fly-rock and the safety of structures. Community members also expressed concerns about the expansion into areas that was previously under-mined and the possibility of sinkholes. The mitigation measures are captured in [Table 12](#) below.

**Table 12: Mitigation measures for impacts relating to safety.**

No	Mitigation Measures	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (monitoring tool)
1.	The safety manager must engage with the Arbor community about their safety concerns. Lectures about health and safety in the community should be presented at the Arbor primary school to ensure that children are aware of safety issues.	Design and planning, Construction, Operation	Commence in the planning phase and continue through to the decommission phase of the project	CRM Safety Manager Mine management Arbor community	Safety meetings with community on a quarterly basis. Lectures to primary school once a year	Educate the community about safety issues	Minutes of meetings Lecture material
2.	All staff and sub-contractors must be informed about the community concerns, especially during the construction phase. Toolbox talks can be used for this. Speed limits on the road to the mine must be enforced. People that do not adhere to the speed limits must receive written warnings. The community must be informed that they can complain about unsafe behaviour through the grievance mechanism.	Design and planning Construction Operation	As soon as possible	Mine Management Safety Manager CRM	Monthly toolbox talk	Create safety awareness	Toolbox talks Number of written warnings Grievance register



7.2.2.5 Water from a social perspective

The community associate the drying up of their boreholes with blasting events. They indicated that their boreholes started to dry up around 2013/2014. The mine provides them with drinking water. Some community members own livestock that needs fresh drinking water. Their livelihoods are closely related to the health of their livestock. They fear that the proposed expansion will lead to further reductions in water quality and quantity.

Water is also a major concern for the surrounding commercial farmers. Water pollution will impact negatively on the livelihoods of the farmers and the people that they employ. The mitigation measures are captured in [Table 13](#) below.

**Table 13: Mitigation measures for impacts relating to water from a social perspective.**

No	Mitigation Measures	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (monitoring tool)
1.	The relevant specialists will provide scientific mitigation measures for this aspect. From a social perspective it is important to create a community liaison forum that communicate the mitigation and monitoring measures to the affected parties. This forum can also act as a platform to discuss environmental issues. It can be an important aspect assisting Vlakvarkfontein with obtaining a social licence to operate. In addition, the mine management have commenced with engaging with the community about water supply. The negotiations must continue and be recorded.	Design and planning, Construction, Operation.	Commence in the planning phase and continue through to the operation phase of the project	CRM Environmental Manager Vlakvarkfontein management	As prescribed by specialists CLF meetings at least twice a year Meetings with Arbor community to discuss water supply issues	Manage the impact water in the Arbor community	Minutes of CLF meetings Monitoring results from relevant specialist studies. Practical solutions implemented by the mine Minutes of meetings with Arbor community.
2.	Repeat the water census periodically as recommended by the relevant specialists. Keep the affected people informed about the census and monitoring results. Share water monitoring results with farmers once a year.	Construction Operation Decommission	Use the design and planning phase to get communication channels in place	Environmental Manager CRM Commercial farmers	As prescribed by relevant specialists Yearly feedback to farmers	Build relationship with farming community and inform them in time about potential risks	Monitoring results Yearly report to farmers



7.2.2.6 Economic impacts from a social perspective

The expansion of the mine will ensure job security for currently employed people, as they will be able to continue with their current jobs for the next eight years. This impact would be experienced on a wider level, since it will allow them to meet the needs of their family members for the same period. The mine will also continue with their skills development programmes required as a part of the SLP. This will allow more people to benefit from the skills development programmes. Community members want the mine to focus more on specific skills that the Vlakvarkfontein mine needs. However, the requirement of the DMR is that skills development plans must ensure that people obtain transferable skills. Fifteen new jobs will be created in the expansion phase. It is highly likely that these jobs may require skills that are not available in the community. The community is unhappy about the fact that not enough people from the Arbor community is employed, and about the requirement that people must have Grade 12 to be employed, as many people in the community do not have Grade 12. The mitigation measures are captured in [Table 14](#) below.



Table 14: Mitigation measures for economic impacts from a social perspective.

No	Mitigation Measures	Phase	Timeframe	Responsible party for implementation	Monitoring party (frequency)	Target	Performance indicators (monitoring tool)
1.	Skills development plans must be focussed on skills that the mine needs, and that are also transferable. As part of the Local Economic Development (LED) plan required as part of the SLP, the mine should identify projects that can assist more community members with earning a livelihood. Examples of this is sewing programmes that teach local people to make uniforms and safety vests, nursery programmes that teach community members how to grow plants that can be used in the rehabilitation process, and cooking programmes that teach people to cook food that can be sold to the workers. These programmes can include people that do not have Grade 12. The community must be involved in the identification of suitable programmes if possible, and the training programmes must include business development skills. Support must be given to people after the training to ensure that their newly	Design and planning Construction Operation	Commence in the planning phase and continue through to the operation phase of the project	CRM Vlakovarkfontein management	Yearly reviews of SLP and skills development initiatives.	Develop transferable skills in the Arbor community. Assist them to start up businesses by providing a market for their products	SLP Training reports Number of people successfully trained and earning a living from the skills that they acquired



	acquired skills can be implemented.						
2.	Create a labour desk that can communicate any available positions to the community.	Design and planning Construction Operation Decommission	Use the design and planning phase to get labour desk in place	CRM HR manager	Advertise available jobs on a quarterly basis	Indicate to the community that they will be informed about available jobs	Number of people of the Arbor community employed by the mine

7.2.3 Impact Ratings

The Scoping Report for the proposed Vlakvarkfontein Extension (EIMS, 2017) identified a number of alternatives to be taken forward to the EIA phase. The identified alternatives are:

- Alternative P2A – Stockpile filter cake for use as non-select product;
- Alternative P2B – Filter cake disposal;
- Alternative P3A – Disposal of carboniferous wastes (wash plant waste rock and possible filter cake) – disposal to surface waste disposal facility located on old rehabilitated mine area;
- Alternative P3B – Disposal of carboniferous wastes (wash plant waste rock and possible filter cake) – disposal to surface waste disposal facility located on unmined area;
- Alternative P3D – Disposal of carboniferous wastes (wash plant waste rock and possible filter cake) – disposal of discard and filter cake to pit;



- Alternative P4A – Old underground workings – dewatering options: pump-treat-discharge; and
- Alternative P4B – Old underground workings – dewatering options: pump-store (in existing penstock area)-treat-discharge.

The alternatives are all process alternatives and do not change the social impacts or the ratings of the social impacts. The ratings of the social impacts will be the same, regardless of the chosen alternatives. The impact ratings for the social impacts in the different phases of the project are given in the tables below.

Table 15: Impacts in the Planning Phase.

Impact	Pre-Mitigation							Post-Mitigation							Confidence	Impact Prioritisation			Priority Factor	Final Score
	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Post-mitigation ER	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Post-mitigation ER		Public Response	Cumulative Impact	Irreplaceable Loss		
Community expectations	-1	3	5	5	4	5	-21.25	-1	3	5	5	3	4	-16	High	3	3	3	2.00	-32.00



Table 16: Impacts in the Construction Phase.

Impact	Pre-Mitigation							Post-Mitigation							Confidence	Impact Prioritisation			Priority Factor	Final Score
	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Post-mitigation ER	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Post-mitigation ER		Public Response	Cumulative Impact	Irreplaceable Loss		
Community expectations	-1	3	5	5	4	5	-21.25	-1	3	5	5	3	4	-16	High	3	3	3	2.00	-32.00
Dust from a social and health perspective	-1	3	5	5	3	5	-20	-1	3	5	5	3	4	-16	High	3	3	2	1.83	-29.33
Blasting and vibration from a social aspect.	-1	3	3	5	3	5	-17.5	-1	3	3	4	3	4	-13	High	3	3	2	1.83	-23.83
Safety	-1	3	3	4	3	5	-16.25	-1	3	3	3	2	4	-11	High	3	2	2	1.67	-18.33
Water from a social perspective	-1	3	5	5	4	5	-21.25	-1	3	5	5	4	4	-17	High	3	3	3	2.00	-34.00
New jobs	1	3	2	3	2	5	12.5	1	3	2	4	2	4	11	High	3	2	1	1.50	16.50

Table 17: Impacts in the Operation Phase.

Impact	Pre-Mitigation							Post-Mitigation							Confidence	Impact Prioritisation			Priority Factor	Final Score
	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Post-mitigation ER	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Post-mitigation ER		Public Response	Cumulative Impact	Irreplaceable Loss		
Community expectations	-1	3	5	5	4	5	-21.25	-1	3	5	5	3	4	-16	High	3	3	3	2.00	-32.00



Dust from a social and health perspective	-1	3	3	4	3	5	-16.25	-1	3	3	3	3	4	-12	High	3	3	2	1.83	-22.00
Blasting and vibration from a social aspect.	-1	3	3	5	3	5	-17.5	-1	3	3	4	3	4	-13	High	3	3	2	1.83	-23.83
Safety	-1	3	3	4	3	5	-16.25	-1	3	3	3	2	4	-11	High	3	2	2	1.67	-18.33
Water from a social perspective	-1	3	5	5	4	5	-21.25	-1	3	5	5	4	4	-17	High	3	3	3	2.00	-34.00
Job retainment	1	3	3	3	2	5	13.75	1	3	3	4	2	4	12	High	3	2	1	1.50	18.00
Skills development	1	3	3	3	2	5	13.75	1	3	3	4	2	4	12	High	3	2	1	1.50	18.00
New jobs	1	3	2	3	2	5	12.5	1	3	2	4	2	4	11	High	3	2	1	1.50	16.50

Table 18: Impacts in the Decommissioning Phase.

Impact	Pre-Mitigation							Post-Mitigation							Confidence	Impact Prioritisation			Priority Factor	Final Score
	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Post-mitigation ER	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Post-mitigation ER		Public Response	Cumulative Impact	Irreplaceable Loss		
Community expectations	-1	3	5	5	4	5	-21.25	-1	3	5	5	3	4	-16	High	3	3	3	2.00	-32.00
Blasting and vibration from a social aspect.	-1	3	3	5	3	5	-17.5	-1	3	3	4	3	4	-13	High	3	3	2	1.83	-23.83
Safety	-1	3	3	4	3	5	-16.25	-1	3	3	3	2	4	-11	High	3	2	2	1.67	-18.33



Table 19: Impacts in the Rehabilitation and Closure Phase.

Impact	Pre-Mitigation							Post-Mitigation							Confidence	Impact Prioritisation			Priority Factor	Final Score
	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Post-mitigation ER	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Post-mitigation ER		Public Response	Cumulative Impact	Irreplaceable Loss		
Community expectations	-1	3	5	5	4	5	-21.25	-1	3	5	5	3	4	-16	High	3	3	3	2.00	-32.00
Safety	-1	3	3	4	3	5	-16.25	-1	3	3	3	2	4	-11	High	3	2	2	1.67	-18.33



7.3 Social Action Plan

SOCIAL ACTION PLAN				
Phase	Management action	Timeframe for implementation	Responsible party for implementation (frequency)	Responsible party for monitor/audit/review (frequency)
Planning Phase	Develop community relations strategy	As soon as possible	Applicant Continued for the life of project	CRM No external review required
	Develop policies to deal with community conflict, blasting. Develop grievance mechanism	In consultation with stakeholders	Applicant Continued for the life of project	CRM Internal No external review required
Construction Phase	Monitoring of social mitigation and management measures	Throughout construction	Applicant (CRM) Continued for the life of project	Management Once a year or as required
	Implementation of community relations strategy	Throughout construction	Applicant (CRM) Continued for the life of project	Management Once a year or as required
	Implement policies and grievance mechanism	Throughout construction	Applicant (CRM) Continued for the life of project	Management Once a year or as required
Operation Phase	Monitoring of social mitigation and management measures	Throughout operation	Applicant (CRM) Continued for the life of project	Management Once a year or as required
	Implementation of community relations strategy	Throughout operation	Applicant (CRM) Continued for the life of project	Management Once a year or as required
	Implement policies and grievance mechanism	Throughout operation	Applicant (CRM) Continued for the life of project	Management Once a year or as required
Decommissioning Phase	Implement policies and grievance mechanism	Throughout decommissioning	Applicant (CRM) Continued for the life of project	Management Once a year or as required
	Continue with community relations strategy	Throughout decommissioning	Applicant (CRM)	Management



			Continued for the life of project	Once a year or as required
	Commission closure SIA	Throughout decommissioning	External SIA consultant	Management
Closure and Rehabilitation Phase	Continue community relations strategy until all activities on site cease and rehabilitation is completed	Until all rehabilitation activities have ceased	Applicant (CRM) Continue until all rehabilitation activities have been completed	Management Once a year or as required
	Continue with implementations of policies and grievance mechanism	Until all rehabilitation activities have ceased	Applicant (CRM) Continue until all rehabilitation activities have been completed	Management Once a year or as required



8 Analysis of alternatives

The alternatives identified for the proposed Vlakvarkfontein mine expansion that were taken forward into the EIA phase of the project all relate to process alternatives, and will not alter the social impacts that have been identified in this report, irrespective from which alternative will be used. The only alternative that warrants a discussion in the SIA is the No-go option.

The No-go option implies that the mine will cease operations in the next year. Although the mine contributes to negative impacts in the Arbor community, it is not the sole contributor. Despite the negative impacts caused by the mine, it must be considered that there are positive impacts as well, mostly based on the economic contributions, skills development and SLP initiatives. The mine employs a number of people in the community, and the mine closure would result in them losing their jobs in a time when South Africa is going through tough economic times. This will probably mean that they will struggle to find new employment. The mine currently provides drinking water to the community. If the mine closes this function will be taken over by the municipality, who did this in the past, but were not reliable with the provision of services.

This must be weighed up against the current impacts that the mine cause in the community, such as impacts related to blasting and vibrations. The negative and irreversible environmental and health impacts associated with coal mining must also be considered during a time that climate change threats are becoming imminent. Another important factor is that there are members within the Arbor community that do not want the mine to continue with operations.

However, based on current economic conditions and the possibility that the Arbor community will be worse off without the mine than with it in the next eight years, specifically with regard to the ability to survive the current conditions and earn a livelihood, the No-go option is not the best alternative. Another consideration in this recommendation is that if the current owners of the Vlakvarkfontein do not use this



opportunity, another mining group may use it. The management of the mine has taken some positive steps in reaching out to the community and indicated a willingness to work on the relationship going forward. Yet a new entity to deal with may cause further trauma to an already frail community.



9 Stakeholder Engagement Plan

Social impacts already start in the planning phase of a project and as such it is imperative to start with stakeholder engagement as early in the process as possible. A stakeholder engagement plan will assist Vlakvarkfontein to outline their approach towards communicating in the most efficient way possible with stakeholders throughout the life of the project. Such a plan cannot be considered a once off activity and should be updated on a yearly basis to ensure that it stays relevant and to capture new information. Stakeholders must provide input in the Stakeholder Engagement Plan.

The Vlakvarkfontein Stakeholder Engagement Plan should have the following objectives:

- To identify and assess the processes and/or mechanisms that will improve the communication between local communities, the wider community and Vlakvarkfontein.
- To improve relations between Vlakvarkfontein staff and the people living in the local communities (Arbor and commercial farmers).
- To provide a guideline for the dissemination of information crucial to the local communities in a timely, respectful and efficient manner.
- To provide a format for the timely recollection of information from the local communities in such a way that the communities are included in the decision making process.

The Stakeholder Engagement Plan should be compiled in line with International Finance Corporation (IFC) Guidelines and should consist of the following components:

- Stakeholder Identification and Analysis – time should be invested in identifying and prioritising stakeholders and assessing their interests and concerns.



- Information Disclosure – information must be communicated to stakeholders early in the decision-making process in ways that are meaningful and accessible, and this communication should be continued throughout the life of the project.
- Stakeholder Consultation – each consultation process should be planned out, consultation should be inclusive, the process should be documented and follow-up should be communicated.
- Negotiation and Partnerships – add value to mitigation or project benefits by forming strategic partnerships and for controversial and complex issues, enter into good faith negotiations that satisfy the interest of all parties.
- Grievance Management – accessible and responsive means for stakeholders to raise concerns and grievances about the project must be established throughout the life of the project.
- Stakeholder Involvement in Project Monitoring – directly affected stakeholders must be involved in monitoring project impacts, mitigation and benefits. External monitors must be involved where they can enhance transparency and credibility.
- Reporting to Stakeholders – report back to stakeholders on environmental, social and economic performance, both those consulted and those with more general interests in the project and parent company.
- Management Functions – sufficient capacity within the company must be built and maintained to manage processes of stakeholder engagement, track commitments and report on progress.

It is of critical importance that stakeholder engagement takes place in each phase of the project cycle and it must be noted that the approach will differ according to each phase. The stakeholder analysis done in Section 6 of this report must inform the stakeholder engagement strategy.



10 Proposed Grievance Mechanism

In accordance with international good practice Vlakvarkfontein mine should establish a specific mechanism for dealing with grievances. A grievance is a complaint or concern raised by an individual or organisation that judges that they have been adversely affected by the project during any stage of its development. Grievances may take the form of specific complaints for actual damages or injury, general concerns about project activities, incidents and impacts, or perceived impacts. The IFC standards require Grievance Mechanisms to provide a structured way of receiving and resolving grievances. Complaints should be addressed promptly using an understandable and transparent process that is culturally appropriate and readily acceptable to all segments of affected communities, and is at no cost and without retribution. The mechanism should be appropriate to the scale of impacts and risks presented by a project and beneficial for both the company and stakeholders. The mechanism must not impede access to other judicial or administrative remedies.

The grievance mechanism should be based on the following principles:

- Transparency and fairness;
- Accessibility and cultural appropriateness;
- Openness and communication regularity;
- Written records;
- Dialogue and site visits; and
- Timely resolution.

Based on the principles described above, the grievance mechanism process involves four stages:

- Receiving and recording the grievance;



- Acknowledgement and registration;
- Site inspection and investigation; and
- Response.



11 Conclusion and recommendations

The Vlakvarkfontein mine is an existing mine situated in an area with complex social dynamics. The community is already exposed to a number of social and environmental impacts from different sources. The Arbor community is a poor community with high levels of illiteracy. They have tried to use external parties such as the DMR, CER and Human Rights Commission to assist them with improving the situation. Despite this, not much has changed in the community, and the community remains divided. The relationship between the mine and the community is tense. Some community members welcome the presence of the mine and the attempts of the mine to improve relationships. Others do not want the mine as a neighbour, and view the mine as a hostile presence. The mine is situated in the Highveld Air Quality Priority area, where there are socio-political processes taking place involving the government and environmental activists. The Arbor community is neglected in terms of services from the VKLM, and some community members feel they are left to their own devices to try and better their situation. The leadership battles in the community have created conflict in the community, and they struggle to come across as a united force. This has been to the detriment of the community.

From an SIA perspective, the expansion of Vlakvarkfontein mine will mostly result in existing impacts continuing. The new development will not add significant social impacts. It must be considered that there will also be positive social impacts, such as skills development, CSI projects and SLP projects. Should the expansion not be allowed, these impacts will fall away.

Blasting is a serious issue for the community, and the damage done to community infrastructure because of the blasting is significant given the context of the community – some people live in informal structures and they do not have the material means to better or repair their houses. In order for the community to be comfortable with the expansion of the mine, it is critical that the mine and the community come to an agreement on how to deal with the issues between themselves and the mine. If the mine can resolve some of the current issues, it will assist with improving their social licence to operate.



The mine will need to work hard on improving relationships with the community before the proposed expansion start. However, this is not an easy task, due to the mistrust and division in the community, which makes it incredibly hard to engage with them. However, if the mine fails to do so, it may come at a great cost to them.

Many of the issues between the mine and the community have historic roots, and relate to some of the predecessors of the current mine, the failure of government on all levels to fulfil their mandate in terms of services and the current dire socio-economic conditions in South Africa.

The environmental and health impact of coal is undeniable, and some of the negative impacts can be seen in the area around the mine. In the case of the expansion of the Vlakvarkfontein, the social considerations that were taken into account was whether the community will be worse or better off without the mine for the next eight years. Despite the resistance to the mine, the conclusion is that without the mine, the socio-economic conditions in the Arbor community will deteriorate further. Therefore the recommendation is that the expansion of the mine should be approved on the condition that the mine put certain social processes such as a grievance mechanism in place, and that the current issues between the mine and the community must be attended to. This will take an effort and the investment of time and resources of the mine, but without active and specific effort, the community may not allow the mine to continue with operation, even if it receives environmental authorisation.



12 References

- Barnett, E. & Casper, M. 2001. **Research: A definition of “social environment”**. American Journal of Public Health. 91(3): 465.
- Becker, D.R., Harris, C.C., Nielsen, E.A. & McLaughlin, W.J. 2004. **A comparison of a technical and participatory application of social impact assessment**. Impact Assessment and Project Appraisal. 22(3): 177-189.
- Bell, P.A., Fisher, J.D., Baum, A. & Greene, T.C. 1996. **Environmental Psychology – Fourth Edition**. Florida: Harcourt Brace College Publishers.
- Bega, S. 2016. *Big Coal Blast Destroys Homes and Health*. Saturday Star 19 November 2016. Available: <https://www.pressreader.com/south-africa/saturday-star/20161119/282003262014652>
- Census 2011**. Statistics South Africa.
- Constitution of the Republic of South Africa**, 1996
- Davis, R. & Franks, D. 2014. *“Costs of Company-Community Conflict in the Extractive Sector.”* Corporate Social Responsibility Initiative Report No. 66. Cambridge, MA: Harvard Kennedy School.
- Draft Mpumalanga Economic Growth & Development Path (MEGDP)**. February 2011.
- Du Preez, M. & Perold, J. 2005. **Scoping/feasibility study for the development of a new landfill site for the Northern Areas of the Metropolitan Municipality of Johannesburg. Socio-Economic Assessment**. Mawatsan.
- EIMS. 2017. *Environmental Scoping Report for Public Review: Vlakvarkfontein Coal Mine Extension, Associated Infrastructure and Amendments to Existing Licence Conditions*.
- Esteves, A.M., Franks, D. & Vanclay, F. 2012. **Social impact assessment: The state of the art**, Impact Assessment & Project Appraisal 30(1): 35-44



Global Reporting Initiative. [Sa] **Focal Point South Africa**. Available:
<https://www.globalreporting.org/network/regional-networks/gri-focal-points/fp-southafrica/Pages/default.aspx>

Highveld Chronicle. 2017. *VKLM Councillor Defended By Mother With Butcher Knife*.
 29 January 2017

Highveld Chronicle. 2017. *Mbuylo ploughs 1M into Arbor*. 22-29 May 2017. Available:
<http://fliphtml5.com/oayq/jwhg/basic>

Highveld Chronicle. 2017. *Ntshovelo reaches out to Arbor*. 11-17 August 2017-11-26.
 Available: <http://fliphtml5.com/oayq/wbrb/basic>

Hornberg, C. & Pauli, A. 2007. **Child poverty and environmental justice**.
International journal of hygiene and environmental health, 210(5), 571-580.

Ikeme, J. 2003. **Equity, environmental justice and sustainability: incomplete approaches in climate change politics**. *Global Environmental Change*, 13(3), 195-206.

International Association for Impact Assessment. 2003. **Social Impact Assessment: International Principles**. Special Publication Series no.2. IAIA; Fargo.

Interorganizational Committee on Principles and Guidelines for Social Impact Assessment. **US Principles and Guidelines – Principals and guidelines for social impact assessment in the USA**. *Impact Assessment and Project Appraisal*, 21(3):231-250.

International Finance Corporation, 2012. **Performance Standards on environmental and social sustainability**. Washington, DC: International Finance Corporation.

International Finance Corporation: Environment and Social Development Department. 2002. Handbook for preparing a resettlement action plan.

International Organisation for Standardisation, 2010. ISO 26000 **Guidance on Social Responsibility**. Geneva: International Organization for Standardization.



Mineral and Petroleum Resource Development Act 28 of 2002. Mineral and Petroleum Resource Development Act 28 of 2002

National Planning Commission. 2012. **National Development Plan 2030: Our future—make it work.** Pretoria: National Planning Commission.

National Environmental Management Act no 107 of 1998 (NEMA). Mineral and Petroleum Resource Development Act 28 of 2002

National Water Act 36 of 1998. Republic of South Africa.

Nkangala District Municipality. **2017/18-2021/2022 Final Integrated Development Plan.** Nkangala District Municipality.

Noble, M., Babita, M., Barnes, H., Dibben, C., Magasela, W., Noble, S., Ntshongwana, P., Phillips, H., Rama, S., Roberts, B., Wright, G. and Zungu, S. 2006. **The Provincial Indices of Multiple Deprivation for South Africa 2001.** UK: University of Oxford.

Ntshovelo Mining Resources. 2016. *Vlakvarkfontein Colliery Human Rights Commission Hearing.* 3 November 2016.

Ntshovelo Mining Resources. 2015. *Ntshovelo Mining Resources Social and Labour Plan Re-submission (2016 – 2019)* Ref: F/2008/02/19/003. 300 MR

Paben, Jeanne Marie Zokovitch. 2014. **Green Power and Environmental Justice - Does Green Discriminate?** *Texas Technical Law Review.* 46: 1067-1229.

Promotion of Administrative Justice Act 3 of 2000. Republic of South Africa

South African Bureau of Standards [Sa]. **About the SABS.** Available: <https://www.sabs.co.za/About-SABS/index.asp>

The groundWork Report 2013: *Talking Energy. Part one of the People's Power Series.* groundWork.

The groundWork Report. 2016. *The Destruction of the Highveld: Digging Coal.* groundWork

UNEP, 2002. **EIA Training Resource Manual.** 2nd Ed. UNEP.



United Nations. 2013a. **Overview of the UN Global Compact**. Available:

<https://www.unglobalcompact.org/AboutTheGC/index.html>

United Nations, 2011. **Guiding Principles on Business and Human Rights**. Available:

http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf (Accessed 2015/05/25).

Vanclay, F., Esteves, A.M., Aucamp, I. & Franks, D. 2015. **Social Impact Assessment: Guidance for assessing and managing the social impacts of projects**. Fargo ND: International Association for Impact Assessment.

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

Victor Khanye Local Municipality. **2017-2021 Final Integrated Development Plan**. Delmas: Victor Khanye Local Municipality.

Waygood, C., M. Palmer, R. Schwab, 2006. *Case study on the remediation of the defunct coal mine: Arbor Colliery, in Mpumalanga South Africa*, Paper presented at the 7th International Conference on Acid Rock Drainage (ICARD), March 26-30, 2006, St. Louis MO. In R.I. Barnhisel (ed.) Published by the American Society of Mining and Reclamation (ASMR)

World Wide Web:

www.mpumalanga.gov.za (accessed November 2017)

www.nkangaladm.gov.za (accessed November 2017)

www.victorkhanyelm.gov.za (accessed November 2017)