

Socio-Economic Impact Assessment for the Proposed Kangala Extension Project

Delmas, Mpumalanga Province

SCOPING REPORT



Prepared by: NLN Consulting (Pty) Ltd.
Prepared for: Environmental Impact Management Services
On behalf of: Universal Coal Development 1 (UCD1)

Date: 10 August 2018

10 August 2018

DECLARATION OF INDEPENDENCE

I, Nonka Byker, as duly authorised representative of NLN Consulting, hereby confirm my independence (as well as that of the Company) as a specialist and declare that neither I nor NLN Consulting have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which Environmental Impact Management Services (EIMS) was appointed as environmental assessment practitioner in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), other than fair remuneration for work performed, specifically in connection with the Social Impact Assessment for the proposed Kangala Extension Project in the Victor Khanye Local Municipality, Mpumalanga Province. I further declare that I am confident in the results of the studies undertaken and conclusions drawn as a result of it – as is described in my attached report.



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EXECUTIVE SUMMARY

Universal Coal Development 1 (UCD1), a subsidiary of Universal Coal plc, proposes to develop a new opencast coal mining pit and associated soft, hard and topsoil stockpiles adjacent to their current Kangala Colliery – known as the Kangala Extension Project (hereafter referred to as the Project). The proposed new pit associated with the Project is located on portions 15, 16, 19 and 20 of the Farm Strydpan 243 IR. However, the Project area also encompasses neighbouring portions 14, 18, 22, 23 and 24 of the same farm on which the associated stockpiles (soft, hard and topsoil) will be located.

This report details the results of the Social Impact Assessment (SIA) Scoping Phase that is being undertaken by NLN Consulting as part of the overall EIA process conducted by Environmental Impact Management Services (EIMS).

Vanclay (2002) defines a **social impact assessment** as follows:

“... the process of analysing (predicting, evaluating and reflecting) and managing the intended and unintended consequences on the human environment of planned interventions (policies, programmes, plans and projects) and any social change processes invoked by those interventions so as to bring about a more sustainable and equitable biophysical and human environment.”

For the purpose of the scoping study, three study areas were defined as follows:

- **Site-specific**, i.e. the area likely to experience impacts from physical intrusion. It is defined as the local municipal ward within which the Project is located (Ward 7 of the Victor Khanye Local Municipality – VKLM);
- **Local**, i.e. the area likely to experience the effects of economic pull. In this instance it is defined as the wider municipal area; and
- **Regional**, i.e. the area likely to experience indirect or induced impacts. This is defined as the wider municipal area as well as the Nkangala District.

The key findings of the SIA Scoping study are as follows:

- The site-specific Project area has seen a rather significant change in the size and composition of the local population over recent years. This is suggestive of a changing landscape that leads to a change in economic opportunities, which in turn causes certain segments of the population (e.g. migratory or farm workers) to leave the area, while others enter or return to the area (e.g. mining professionals). It is expected that the Project could continue to influence this process as further land use change would further reduce the number of jobs in the agriculture sector (causing out-migration), while on the other hand attracting newcomers and job seekers to the area (causing in-migration).

- Despite a high employment rate, the majority of households still live in absolute poverty. This is indicative of minimum wage labour. This implies a need for fast growing industries to diversify the economy and create employment, but unfortunately many such industries (like the mining industry) are so advanced that they create minimal opportunities for unskilled labour.
- A number of social sensitive receptors have been identified within a 10 km radius of the Project. The Project itself will lead to land use changes from (what is presumably now) agricultural land to mining. This in turn would affect the visual landscape of the area and lead to secondary changes in the biophysical environment and the local economy.
- The baseline municipal profile suggests that the local authority is taking some strain delivering basic municipal services. The supply and quality of such services further diminishes towards the more rural areas where the Project is located. This implies that UCD1 would likely have to render support to the municipality in service delivery if it is to place additional strain on the system in the form of newcomers (and job seekers) seeking housing and access to services.
- The farmers in Mpumalanga mobilised against the coal mining industry. This is evident in the formation of a farmers' organisation aimed at resisting further coal mine developments. There is therefore a fairly high risk for social mobilisation against the Project – not only from the immediate area, but also attracting interest from other parties such as non-governmental organisations (NGOs) advocating for greener industries and more environmentally friendly forms of energy generation.

None of the preliminary impacts identified as part of the SIA scoping study are currently considered to be fatal flaws. However, coal mining remains a sensitive topic and more and more people are joining the cause against fossil fuels in favour of cleaner industries. It is therefore recommended that a detailed SIA study be undertaken once the scoping report has been approved by the competent authority and that the detailed SIA includes a more detailed assessment of economic impacts to provide a balanced view of how impacts on the immediate environment could potentially be offset by wider and more long-term impacts on the region, province and country.

Socio-Economic Impact Assessment (Scoping Phase) for the Proposed Kangala Extension Project, Delmas, Mpumalanga

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1. INTRODUCTION

1.1 Background

Universal Coal Development 1 (UCD1), a subsidiary of Universal Coal plc, proposes to develop a new opencast coal mining pit and associated soft, hard and topsoil stockpiles adjacent to their current Kangala Colliery – known as the Kangala Extension Project (hereafter referred to as the Project). It is anticipated that the Project will utilise standard truck and shovel mining methods based on strip mining design and layout. It is furthermore expected that the Project will make use of the Kangala Colliery's existing coal handling and processing plant (CHPP) and that no new surface infrastructure (such as offices, dams, workshops or houses) will be required.

The Project will require the following approvals:

- Environmental authorisation in terms of the National Environmental Management Act's (NEMA) (2014) Environmental Impact Assessment (EIA) regulations (GNR 982, GNR 984 and/or GNR 985);
- Amendments to the mine's existing Environmental Management Plan (EMP) (NEMA GNR 982, Chapter 5, Section 31, Part 2 Amendment);
- Water Use Licence (WUL) in terms of the National Water Act (NWA) (Section 21); and
- Waste Management License (WML) in terms of the National Environmental Management Waste Act (NEMWA) (GNR 921, category B11) – if required.

This report details the results of the Social Impact Assessment (SIA) Scoping Phase that is being undertaken by NLN Consulting as part of the overall EIA process conducted by Environmental Impact Management Services (EIMS).

1.2 Location

The proposed new opencast mining pit associated with the Project is proposed to be located on portions 15, 16, 19 and 20 of the Farm Strydpan 243 IR. However, the Project area also encompasses neighbouring portions 14, 18, 22, 23 and 24 of the same farm on which the associated stockpiles (soft, hard and topsoil) will be located. As indicated above, the Project area is located adjacent to UCD1's existing Kangala colliery operation, approximately 7.5 km south-east of Delmas in the Victor Khanye Local Municipality (VKLM) of the Nkangala District Municipality (NDM), Mpumalanga Province.

An indication of the Project site within its local context is provided in Figure 1-1.

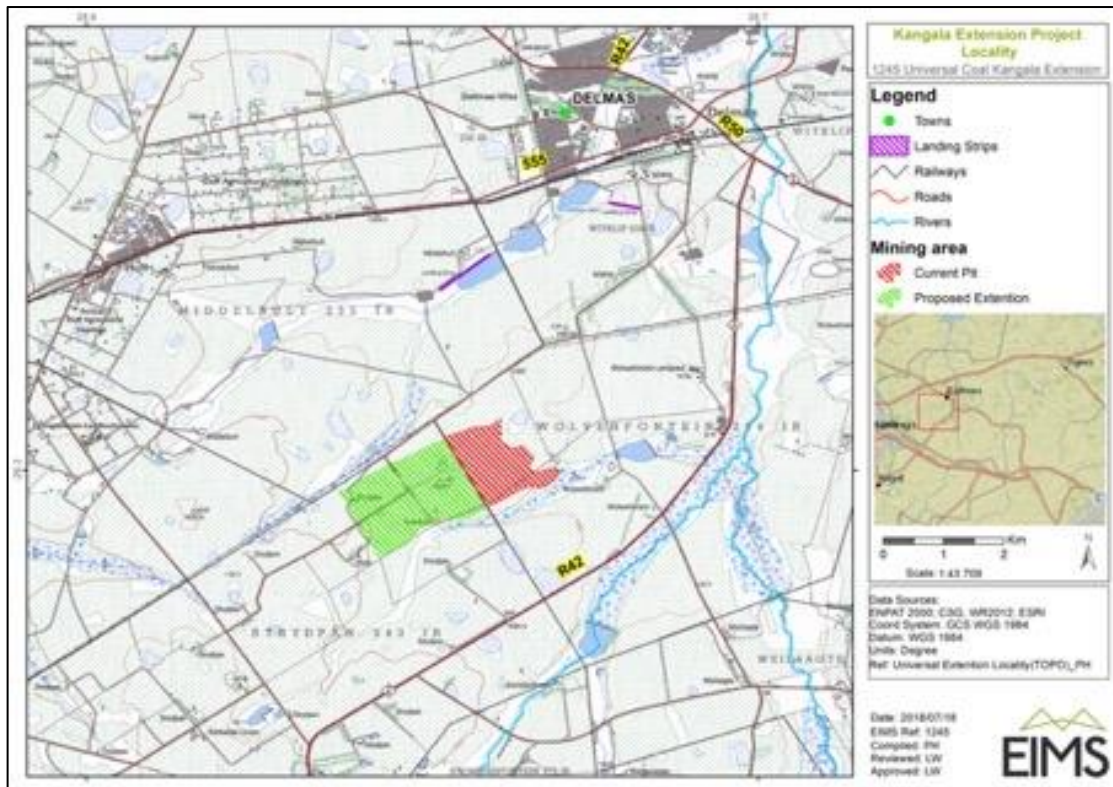


Figure 1-1: Project site location

1.3 Definitions

Vanclay (2002) defines a **social impact assessment** as follows:

“... the process of analysing (predicting, evaluating and reflecting) and managing the intended and unintended consequences on the human environment of planned interventions (policies, programmes, plans and projects) and any social change processes invoked by those interventions so as to bring about a more sustainable and equitable biophysical and human environment.”

Given this definition, this study made a distinction between **change processes** and **impacts**. The latter refers to the effects that the Project might have on people on either a physical (e.g. health) or cognitive (e.g. fear) level, whereas the former relates to the possible causes of an impact (e.g. a temporary influx of people). Vanclay (2002) defines socio-economic impacts as “the consequences to human populations... that alters the ways in which people live, work, play, relate to one another, organise to meet their needs and generally live and cope as members of a society”.

1.4 Objectives of the Study

The **primary** study objective of the SIA is to determine and explore all relevant socio-economic aspects that the Project might have on the surrounding socio-economic environment and vice versa, and to make a set of recommendations based on the effects of these – including mitigation and/or enhancement measures for inclusion in the updated Environmental Management Programme (EMPR).

The secondary objectives of the current (scoping) phase are to:

- Present a baseline description of the study area in terms of various change processes;
- Identify and map social sensitive areas;
- Identify and describe change processes and associated socio-economic impacts that may result from the construction and operation phases of the Project;
- Identify any gaps in knowledge; and
- Formulate recommendations regarding more detailed studies to be undertaken during the Impact Assessment Phase and describe how these studies will be undertaken.

1.5 Scope and Limitations

1.5.1 Scope of Work

NLN Consulting was appointed by EIMS on behalf of UCD1 to conduct a Socio-Economic Specialist Study in accordance with the EIA requirements for a project of this nature. This specialist study will be conducted in two phases, namely a scoping phase and an impact assessment phase. The scope of work (SOW) for the current phase is as follows:

- Compilation of a socio-economic baseline profile;
- Socio-economic sensitivity mapping;
- Preliminary identification and assessment of socio-economic impacts; and
- Outline detailed studies required for the impact assessment phase.

1.5.2 Assumptions and Limitations

Although every reasonable effort was made to provide an updated and representative picture of the socio-economic setting, this report is still subject to the following assumptions and limitations:

- This report is only intended as a scoping report and is therefore solely based on secondary data. The sources consulted during the compilation of the report are not exhaustive but deemed sufficient to meet the SOW for the current phase. No relevant information was deliberately excluded from this report.
- It was assumed that the motivation for, and the ensuing planning and feasibility studies of the Project were done with integrity, and that the information provided to date by the independent EAP was accurate.

1.6 Approach and Methodology

In order to address the objectives of the study for the Scoping Phase, the following approach and methodology was followed:

1.6.1 Desktop Study

The desktop study consisted of a review of the relevant local and district municipal documentation, which was incorporated into the baseline profile where relevant. This included the Integrated Development Plans (IDP) for the Victor Khanye Local Municipality and the Nkangala District Municipality (both for the years 2017-2022).

Secondary data from Census 2011 and Community Survey 2016 was obtained from Wazimap (www.wazimap.co.za), an online open source census data management database that manipulated census data to conform to the new municipal ward boundaries established in 2016. Data obtained from Wazimap was processed in MS Excel and compared on various levels to determine socio-economic trends in the area. This data, together with the information obtained from the IDPs, were used to compile the baseline socio-economic profile.

1.6.2 Social Sensitivity Map

Satellite imagery from Google Earth were used to identify preliminary social sensitive areas. These areas were then marked according to their sensitivity, i.e. low, medium or high.

During the scoping phase it was assumed that the social sensitivity of certain activities will decrease the further away these activities are located from the Project site. The following criteria was applied to determine preliminary (desktop based) social sensitive receptors:

Sensitivity	Description
High	<p>Any of the following socio-economic activities within a 2 km radius from the Project site:</p> <ul style="list-style-type: none">• Any form of human settlement, such as formal housing, informal housing, scattered houses, small villages, grouped houses, etc.;• Heavy industrial and/or commercial with high economic value in terms of employment; and• Areas with high agricultural potential. <p>It is expected that there would be a marginal to no buffer between these activities and the Project.</p>
Medium	<p>Any of the following socio-economic activities within a 5 km radius from the proposed Project site:</p> <ul style="list-style-type: none">• Any form of human settlement, such as formal housing, informal housing, scattered houses, small villages, grouped houses, etc.;• Heavy industrial and/or commercial with high economic value in terms of employment; and• Areas with high agricultural potential. <p>It is expected that most activities within the 5 km radius would be buffered somewhat by activities taking place within the 2 km radius.</p>

Sensitivity	Description
Low	<p>Any of the following socio-economic activities within a 10 km radius from the Project site:</p> <ul style="list-style-type: none"> • “Greenfields” areas (areas not currently occupied by any infrastructure); • Any form of human settlement, such as formal housing, informal housing, scattered houses, small villages, grouped houses, etc.; • Heavy industrial and/or commercial with high economic value in terms of employment; and • Areas with low agricultural potential. <p>It is expected that these activities would be buffered by activities taking place in both the 5 km and 2 km radii.</p>

1.6.3 Identification of Preliminary Impacts and further studies

Based on the results of the baseline profile, the social sensitivity map, and past experience, the social team were able to identify possible change processes that could be expected in the Project area. These change processes and associated socio-economic impacts were assessed but it should be noted that the assessment as part of the Scoping phase is only **preliminary** in nature. More information is required to inform the detailed assessment of impacts and therefore the Scoping Report has listed certain information gaps that will guide the scope of work for the subsequent impact assessment phase.

2. REGULATORY FRAMEWORK

There is currently no legislation in South Africa that has any direct bearing on SIAs. However, there are laws that govern public participation and stakeholder engagement and these, either directly or indirectly, inform the socio-economic context of SIA studies. The relevant legislation and other regulatory guidelines are briefly summarised in the following subsections.

2.1 The Constitution of South Africa

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

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

Other relevant sections of the Constitution include Section 25 that refers to expropriation of property to enhance land redistribution or to achieve development objectives that are in the public’s interest. This section further prohibits the indiscriminate denial of property and the expropriation of property without just compensation.

2.2 National Environmental Management Act

The National Environmental Management Act (NEMA) promotes people’s right to an environment that is not harmful to their health and wellbeing, which ties in with the Constitution as described above. It further stipulates that sustainable development requires an integrated approach to social, economic and environmental factors to ensure that development serves present and future generations. In this regard, NEMA defines “environment” not only as the natural environment, but also as the physical, chemical, aesthetic and cultural properties that influences a person’s health and wellbeing.

2.3 Mineral and Petroleum Resources Development Act

The Mineral and Petroleum Resources Development Act (MPRDA) requires all mining companies to assess their social impacts from start to post-closure. In terms of the MPRDA, mines are required to develop and implement a Social and Labour Plan (SLP)

that promotes socio-economic development in their areas of impact and that serves to minimise and mitigate any negative social impacts.

The Draft Mining Charter of 2018 (published for public comment) requires that, for a new mining right to be issued, neighbouring communities must hold 8% of that mining right. This is likely to be done through community trusts. The updated charter also has a requirement that 1% of Earnings before Interest, Taxes, Depreciation and Amortisation (EBITDA) is paid to communities and employees as a trickle dividend from year 6 of the mining right. The target to procure *services* from Broad-based Black Economic Empowerment (BBBEE) entities increased from 70% to 80% and the target to procure *goods* from such entities increased to 70%. The draft charter requires 50% Historically Disadvantaged South African (HDSA) Board representation, of which 20% must be female.

The MPRDA also requires a mining right applicant to prepare an Environmental Management Programme (EMPR) to mitigate the environmental and social impacts of the Project.

2.4 Extension of Security of Tenure Act (ESTA)

ESTA provides for measures to facilitate the long-term security of land tenure and regulates the conditions of residence on certain land, the circumstances under which a person's right to reside on a particular piece of land may be terminated, and to provide for regulatory matters where persons have been evicted from a particular piece of land or land portion.

2.5 Municipal Systems Act

This Act provides the principles, mechanisms and processes necessary for enabling local municipalities towards the social and economic upliftment of its residents and to ensure that all have equal and affordable access to essential services.

2.6 The Department of Mineral Resources' Consultation Guidelines

The Department of Mineral Resources (DMR) consultation guidelines provide guidelines for engaging stakeholders, including host communities, land owners, traditional authorities, land claimants, lawful occupiers or any other person whose socio-economic circumstances could be altered by prospecting or mining rights.

3. SOCIO-ECONOMIC BASELINE PROFILE

3.1 Definition of the Study Area

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

- **Physical intrusion** refers to Project infrastructure and Project-related activities' material presence in an area, which could lead to changes in land ownership, noise, dust, vibration and changes in the visual landscape. Such changes typically extend to land uses within a few hundred meters from the Project site.
- **Economic pull** occurs when a Project exerts changes and impacts on job creation, in-migration of workers and job-seekers, multiplier effects in the local and regional economy – all of which can lead to an increased risk of social pathologies and community conflict. These impacts can typically be expected in settlements and towns closest to the Project.
- **Indirect or induced impacts** are by-products of the above-mentioned categories and can include aspects such as increased pressure on local services and resources, macro-economic benefits, etc. These impacts could have a wide geographic reach and include major towns or cities up to 50 km from the Project site.

The relevance of mentioning these categories are that the type and level of baseline information required to inform the assessment of impacts, differs between these three categories. Accordingly, three types of study areas were identified – each area roughly corresponds to the geographical extent of one of the categories described above, while at the same time considering the manner in which publicly-available data is aggregated (i.e. the study areas were defined to correspond to existing administrative boundaries as per the 2016 municipal and ward boundary delineations). For the purpose of the scoping study, the three study areas are defined as follows:

- **Site-specific**, i.e. the area likely to experience impacts from physical intrusion. It is defined as the local municipal ward within which the Project is located (Ward 7 of the VKLM);
- **Local**, i.e. the area likely to experience the effects of economic pull. In this instance it is defined as the wider municipal area; and
- **Regional**, i.e. the area likely to experience indirect or induced impacts. This is defined as the wider municipal area as well as the Nkangala District.

The remainder of this chapter describes the main socio-economic characteristics of the Project's study areas.

3.2 Regional Study Area: Nkangala District

Nkangala is one of three districts of the Mpumalanga Province. It covers a geographical area of 16,758 km² and consists of 160 towns and villages. Despite the fact that Nkangala is the smallest of the three districts, it is the economic hub of Mpumalanga. The district is made up of six local municipalities, namely Emalahleni, Steve Tshwete, Emakhazeni, Thembisile Hani, Dr JS Moroka and Victor Khanye. The district has an average population density of 83.3 people per km².

Between 2005 and 2015, the district experienced a population growth rate of 2.14% per annum – in 2015 the total population stood at an estimated 1.4 million people. This represents approximately 33% of the Mpumalanga Province's population. Of these, 89% are Black African, 9% are White and the remainder are made up of Coloured and Indian/Asian population groups. Nkangala is made up of 388,000 households at an average occupancy rate of 3.6 persons per household.

Nkangala is made up of various economic industries, of which the mining sector is the largest, accounting for R 45.9 billion (40.9%) of the district's Gross Value Add (GVA). In comparison, the agricultural sector only contributes an estimated 1.91% (R 2.14 billion) to the GVA. However, the agricultural sector experienced the highest positive growth rate between 2005 and 2015 at 18%. According to the Nkangala IDP (2017-2022), the district had a GDP of R 123 billion in 2015 – a significant increase from 2005's R 43.3 billion. This means that the Nkangala District Municipality (NDM) contributed approximately 41.2% to Mpumalanga's overall GDP of R 300 billion and 3% to South Africa's GDP of R 4 trillion in 2015. The IDP further states that it is expected that the district will continue to grow at an average annual rate of 1.81% between 2015 and 2020, which is slightly higher than that of the province (1.67%) and the country (1.79%). Nkangala's forecasted GDP in 2020 is an estimated R 100 billion (41.6% of Mpumalanga's total GDP). The district has a tress index of 48¹, which is brought about by the mining sector.

An overview of the NDM's spatial development framework is provided in Figure 3-1.

¹ The tress index measures the concentration of an area's sector economy on a scale of 0 to 100, where 0 = all economic sectors contribute equally to the GVA and 100 = one economic sector dominates the GVA. The more diverse an economy is, the more likely it is to create employment opportunities.

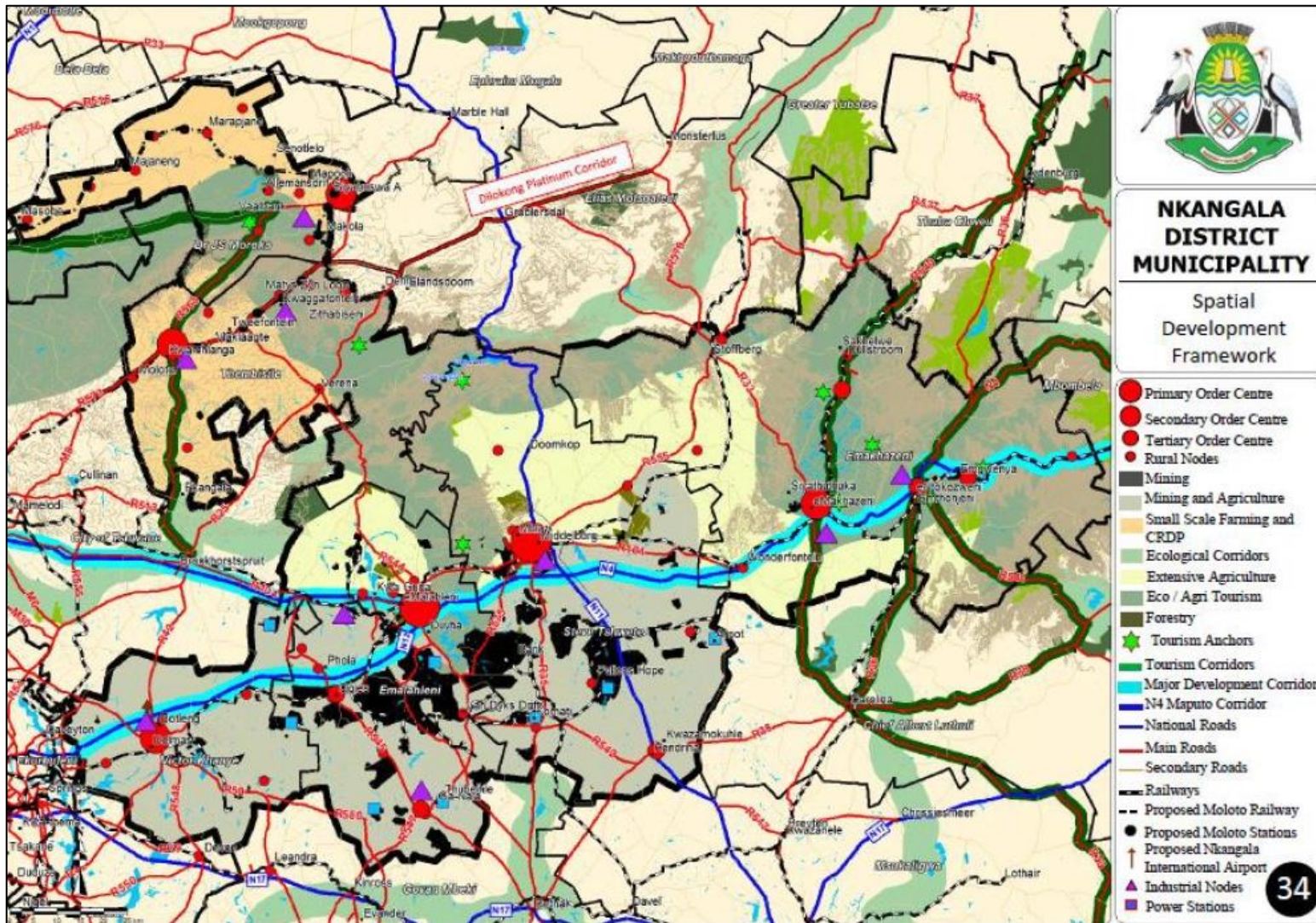


Figure 3-1: Overview of Nkangala District's Spatial Development Framework

Source: Nkangala District Municipality IDP (2017-2022)

3.3 Local Study Area: Victor Khanye Local Municipality

Delmas is one of the five major towns and settlements located in the VKLM, Delmas is also the “headquarters” for this municipality as it has well-developed infrastructure². VKLM forms part of Nkangala District which falls within the Mpumalanga Province. The VKLM covers a geographic area of approximately 1,570 km². Other prominent settlements with the VKLM are Botleng, Sundra, Eloff and Delpark.

A summary of VKLM socio-economic make-up is depicted in Figure 3-2 (spatial summary) and described in more detail in the ensuing subsections. Unless otherwise indicated, the VKLM profile is based on data obtained from the Statistics South Africa 2016 Community Survey.

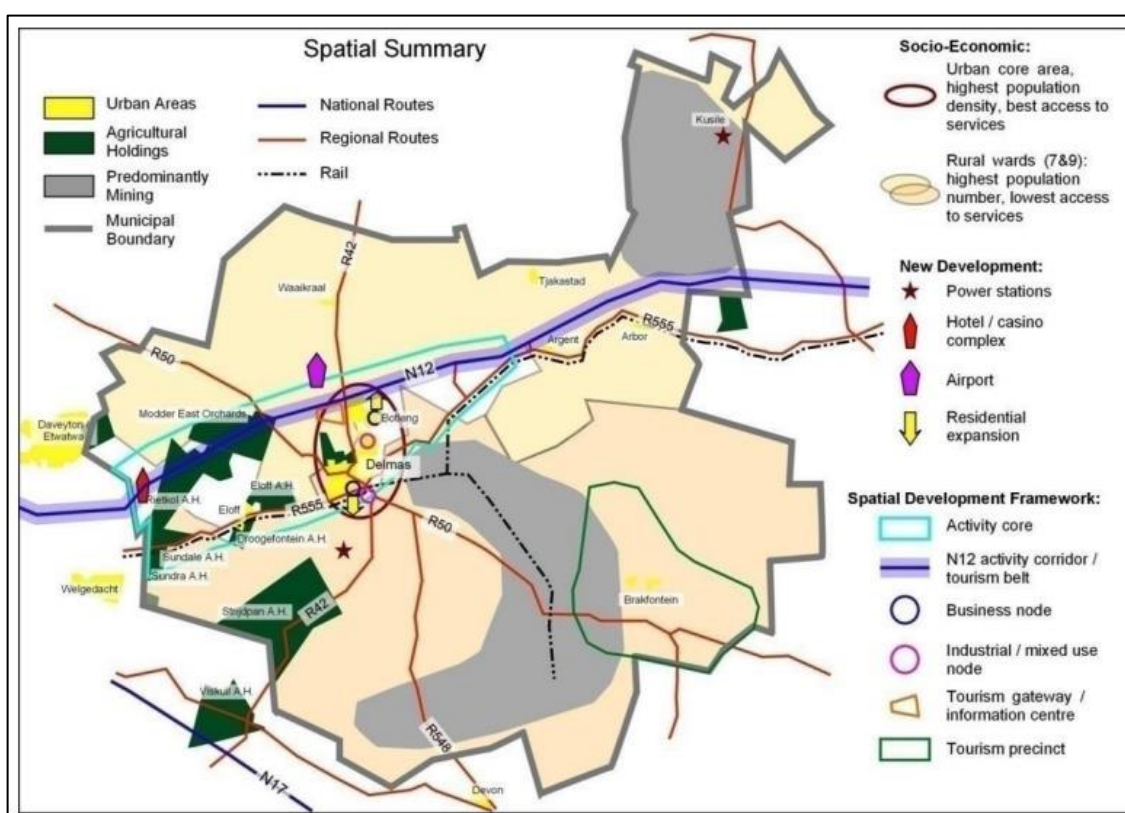


Figure 3-2: VKLM Spatial Summary

Source: VLKM IDP 2017-2022

3.3.1 Population

The population size of VKLM was recorded by Statistics South Africa in 2016³ as 84,150 (population density: 53.6 per km²). This represents an annual growth rate of approximately 2.3% since the 2011 census, when the population size stood at 75,452.

² Victor Khanye Local Municipality Integrated Development Plan (VKLM IDP 2017-2021). Retrieved from: <http://www.victorkhanyelm.gov.za/index.php/legislation-doc/idp#>

³ Statistics South Africa 2016 Community Survey. Retrieved from: <https://wazimap.co.za/profiles/municipality-MP-311-victor-khanye/>

VKLM has had the third highest population growth rate in the province, according to the VKLM IDP (2017-2021) this is the result of economic growth and consequent increase in available job opportunities.

Black Africans account for 86% of the population, with the remaining 14% made up of White, Asian, Coloured and Indian population groups. The most prominent language spoken at home is isiZulu (44%) followed by isiNdebele (25%) and then Afrikaans (13%). Just over half (52%) of the population are male.

In terms of age distribution, the working-age population (aged between 15 and 64) accounts for 68.7% of the population of VKLM. Persons under the age of 14 make up 27.5% of the population. The fact that the majority of the population is of working age is in line with the conclusion made in the IDP – namely, that the population growth observed is as a result of migration in the hopes of economic development and job opportunities.

3.3.2 Education, employment and income

Of the inhabitants of VKLM who are over the age of 15 years, 10.7% have no schooling or did not finish school, whereas 27.6% completed Matric. Persons with limited education tend to find themselves restricted to unskilled manual work (VKLM IDP). According to IHS Global Insight data (2015), the unemployment rate (i.e. the proportion of the population between 14 and 65 years of age who classify themselves as “not employed but looking for work”) is around 21.6% – this represents a decrease of approximately 6.6% in the unemployment rate since Census 2011.

On average, almost half (42.5%) of households in VKLM live in absolute poverty, which is defined as an annual household income of R 19 200 or less (or ≤ R 1 600 per month) for a family of 4, i.e. the family is unable to meet their basic food needs. A further third (37.7%) of households are considered lower middle-class (defined as a household income of ≤ R 76 000 per annum). One in every five (19.8%) of households fall into the higher income bracket (a household income of R 76 801 or more per annum).

3.3.3 Economic Sectors

The two most dominant economic sectors in the VLKM are agriculture and mining.

- **Agriculture:** the rural areas round the VKLM are predominantly made up of commercial farming (and mining activities), notably maize farming. Since the municipality is viewed as an agricultural area with high potential, the IDP states that agricultural land must be protected against urban sprawl and mining activities (presumably uncontrolled).
- **Mining operations** in the VKLM are made up of coal (3 million metric tons per annum) and silica (2 million metric tons per annum). Given the fact that the mining industry continues to grow, the IDP identifies an urgent need to establish an “equitable and realistic trade-off that maximises provincial benefits from

mining and energy sectors while mitigating any environmental impacts” (IDP, 2018:38).

3.3.4 Households and Services

The total number of households across the VKLM amounts to 24,268 with an average occupancy rate of 3.5 persons per household. Of these, an estimated 3,300 households are living in informal settlements.

The majority of households (84%) have access to piped water. Of these, 55% have piped water inside the house and a further 29% have piped water inside the yard. Almost all houses (92%) have electricity either in the form of a pre-paid meter (64%) or a conventional meter (28%). Only 1% of households have no access to any toilet facilities. Over two thirds (72%) refuse is removed at least once a week by the local authority.

3.3.5 Main transport infrastructure

The municipality is linked to major metropolitan areas like Johannesburg, the City of Tshwane and Emalahleni by the N12 freeway, which is regarded as part of the “Maputo Corridor.” The railway line running through VKLM also forms part of this corridor, which connects South Africa's northern provinces with the nearest deep-sea port at Maputo.⁴

The VKLM is regarded as a gateway to the inner Mpumalanga Province. Several provincial roads run through VKLM and converge at Delmas:

- R50 that links Tshwane with Standerton;
- R42 that links with Bronkhorstspuit;
- R555 that links Springs with Emalahleni;
- R548 that links with Balfour; and
- R42 that links with Nigel.

3.4 Site-specific Study Area: Ward 7 of the VKLM

The current and proposed new mining pit of the UCD1 Kangala mine is located in the western portion of Ward 7 of the VKLM (see Figure 3-3).

⁴ 10 years of partnership for progress on the Maputo Corridor (2015, March 18). Retrieved from: <http://www.mcli.co.za/mcli-web/mdc/rail.htm>



Figure 3-3: Project Area within VKLM Ward 7

Ward 7 is the largest ward within VKLM and covers a geographical area of approximately 825 km² (approximately 52% of the municipality's land surface). The ward is dominated by agricultural land use with scattered human settlements and other mining areas, e.g. Exxaro's Leeuwan colliery lies approximately 5 km northeast of Kangala – a coal mine that is currently also in the process of expanding its pit to the south and southeast in order to increase the life of mine (this has resulted in the re-alignment of the R50, which will be completed towards the end of September 2018).

As this SIA will ultimately consider social change processes (cf. Section 1.3), the site-specific baseline profile was categorised as per these processes:

- Demographic processes: the movement and/or composition of the local community in the area(s) affected by the Project;
- Economic processes: the way in which the local people make a living and the economic activities in the society;
- Geographical processes: land use patterns;
- Institutional and Legal processes: the efficiency and effectiveness of institutional structures; and
- Socio-cultural processes: the culture of society, i.e. the way that people live together.

3.4.1 Baseline Demographic Processes

The section describes the composition of the local population and considers variables such as population size, education profile, age, etc.

Ward 7 has a total estimated population of 10,230 people (2011 Census), at an average population density of 12.4 people per km² – indicative of the largely rural nature of the ward. This is indicative of a negative population growth rate of approximately -1% per annum between the period 2001 and 2011, which is likely attributable to agricultural land being purchased for mining developments and the resultant out-migration of farmers, their families and farm workers. More than two thirds (69.8%) of the current population in Ward 7 are Black African, followed by White (13,7%) population group. The largest out-migration between 2001 and 2011 was under the Black African group at an average pace of -2.5% per annum, whereas the largest in-migration was under the White group (+2.3% per annum). This supports the hypothesis of a change in land use causing certain groups to leave the area as they are likely left unemployed when the farms they worked on, are sold. The most widely spoken languages in the ward are isiZulu (29.4%), Afrikaans (26.5%) and isiNdebele (18.4%).

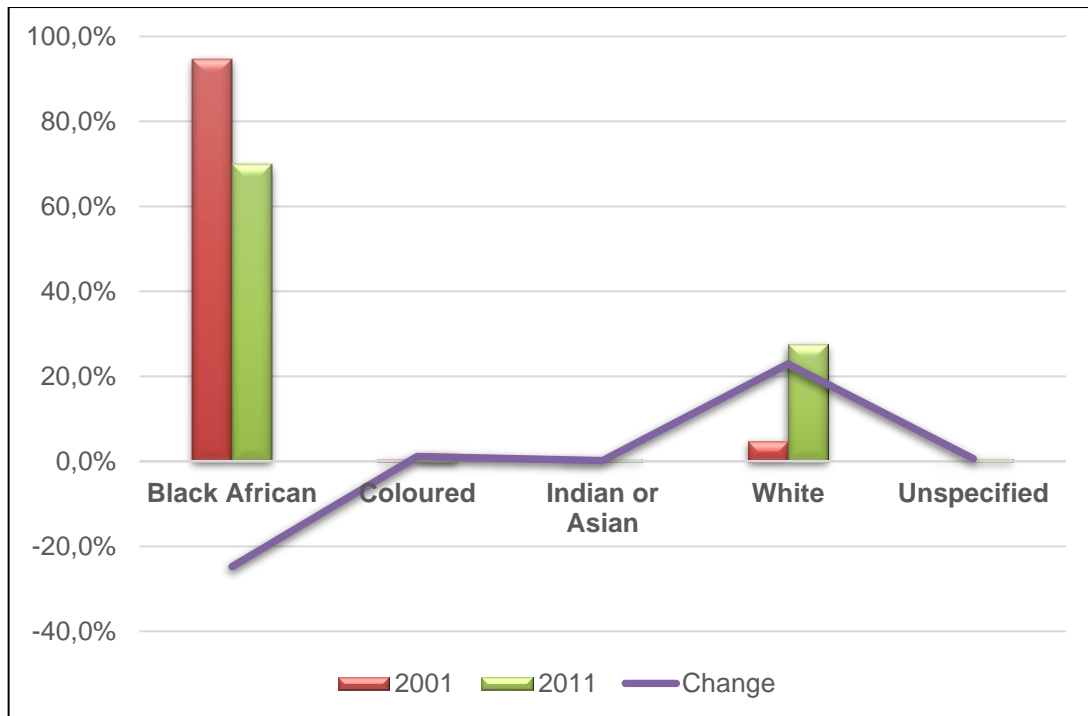


Figure 3-4: Change in Population Group Compositions between 2001 and 2011

The closest populations to the Project site are located on the farm Middelbult (approximately 3 km north - 138 people), the farm Droogfontein (approximately 3 km west - 723 people) and Eloff town (approximately 5 km northwest - 3,243 people). Eloff is located in Ward 8 of the VKLM, which is adjacent to the site-specific study area.

Most of the ward's inhabitants are native to Mpumalanga (56.7%) with a fairly large immigration from neighbouring Gauteng (16.7%). Given that just over half of the population are male (52.4%) and within the economically active age group (15-64), it is possible that the mining activities in the ward attract job seekers to the area. It can therefore also be expected that the expansions of the Kangala colliery and nearby Leeuwpán could exacerbate this influx.

The education levels in the ward are fairly low, with only about a quarter (24.4%) of the adult population (those aged 20 years and older) who have completed their secondary education. Only 3% of the population have completed some form of tertiary education (diploma, degree, etc.). An overview of the educational profile of the ward is provided in Figure 3-5.

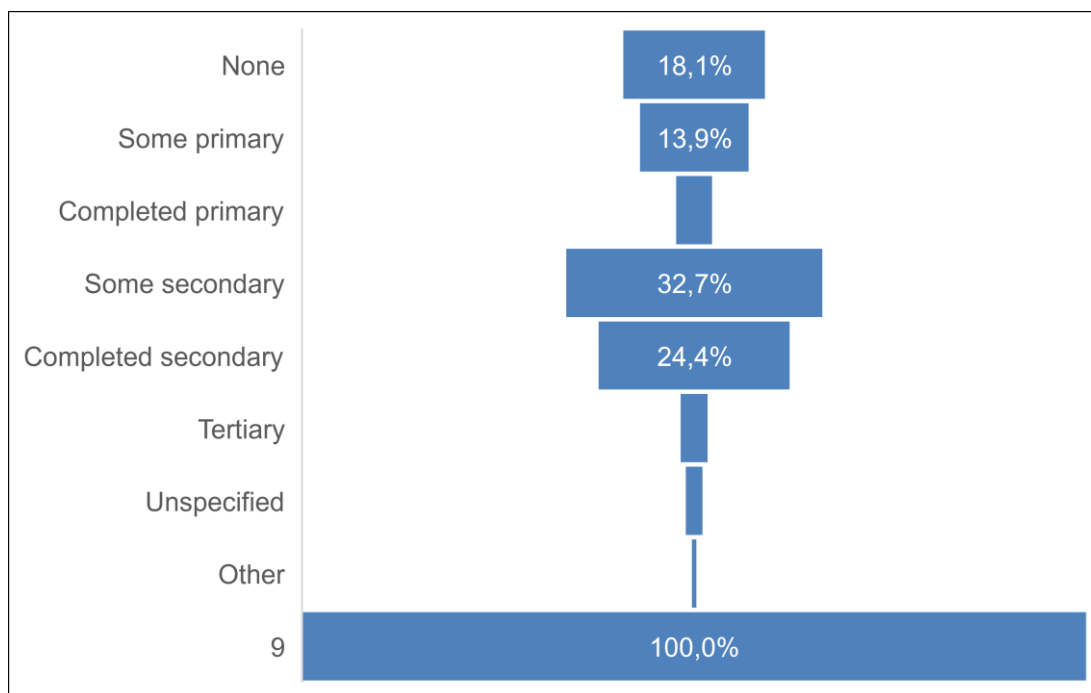


Figure 3-5: Educational Profile of Ward 7 (2011)

3.4.2 Baseline Economic Processes

The employment rate amongst the economically active population (aged 15-64) was at 74.3% in 2011 – up 10.5% from 2001’s 63.8%. Although the overall unemployment rate decreased by 16.7% between 2001 and 2011, 6.2% of these were classified as discouraged work seekers⁵ in 2011 (and therefore still unemployed). The overall employment rate in VKLM in 2016 (Community Survey, Stats SA) stood at 66.4% of the economically active population.

An overview of the ward’s employment profile is provided in Figure 3-6.

⁵ Census 2011 added the “discouraged work seeker” category to refer to people who are economically active but who are not actively seeking employment due to a variety of reasons.

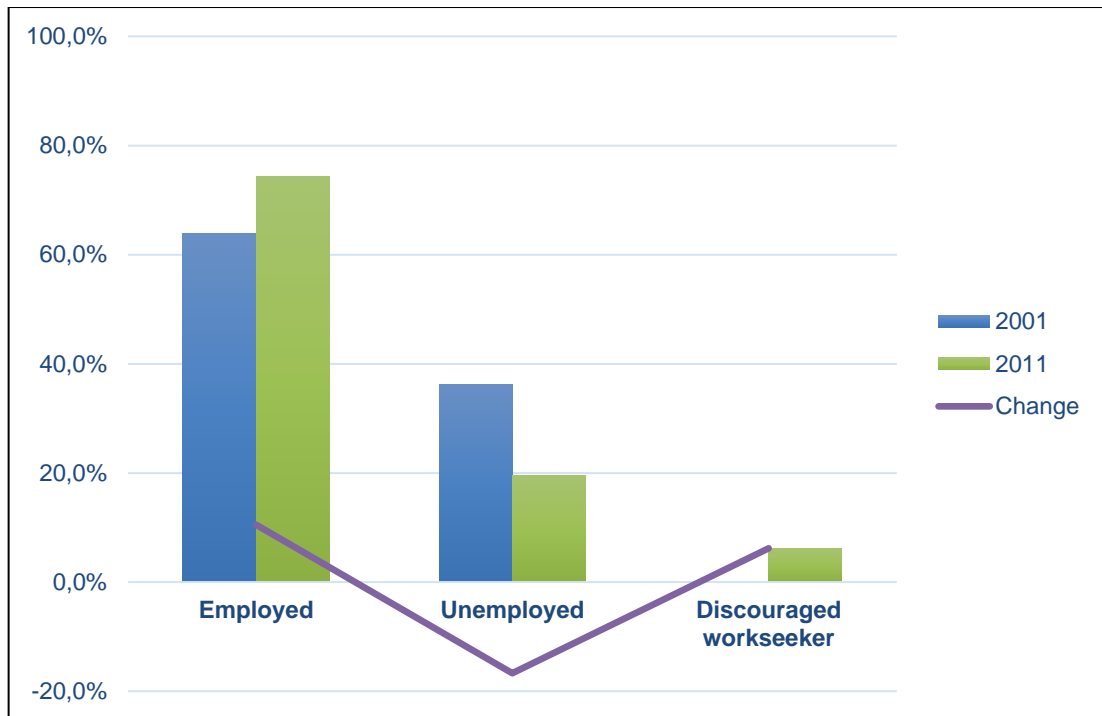


Figure 3-6: Employment Profile of Ward 7 (2011)

In 2001, almost half of the ward’s economically active population were employed in the agricultural sector (46.4%), followed by private households (15.5%). Data could not be obtained for the various sectors on ward level for 2011, apart from an indication that 21.4% were employed in the formal sector, 6.3% in the informal sector and 3.9% in private households.

Figure 3-7 provides an overview of the annual household income of the ward. As could be expected, the increased employment rate brought about change in the annual household income profile of the ward – whereas 73.2% of households in 2001 lived in absolute poverty⁶, this was reduced significantly to 43.9% in 2011. A significant number of households entered the lower middle income and middle income brackets, which increased by 16% and 9.7% respectively.

⁶ Classification of household income is as follows:

Absolute poverty = ≤ R 19,200 p.a. for a household of 4 people, i.e. the household is unable to meet their basic needs. This includes households with no income.

Lower middle income = from R 19,201 up to R 76,800 p.a. for a household of 4 people.

Middle income = from R 76,801 up to R 307,200 p.a. for a household of 4 people.

Higher middle income = R 307,201 up to R 614,400 p.a. for a household of 4 people.

High income = R 614,401 and more p.a.

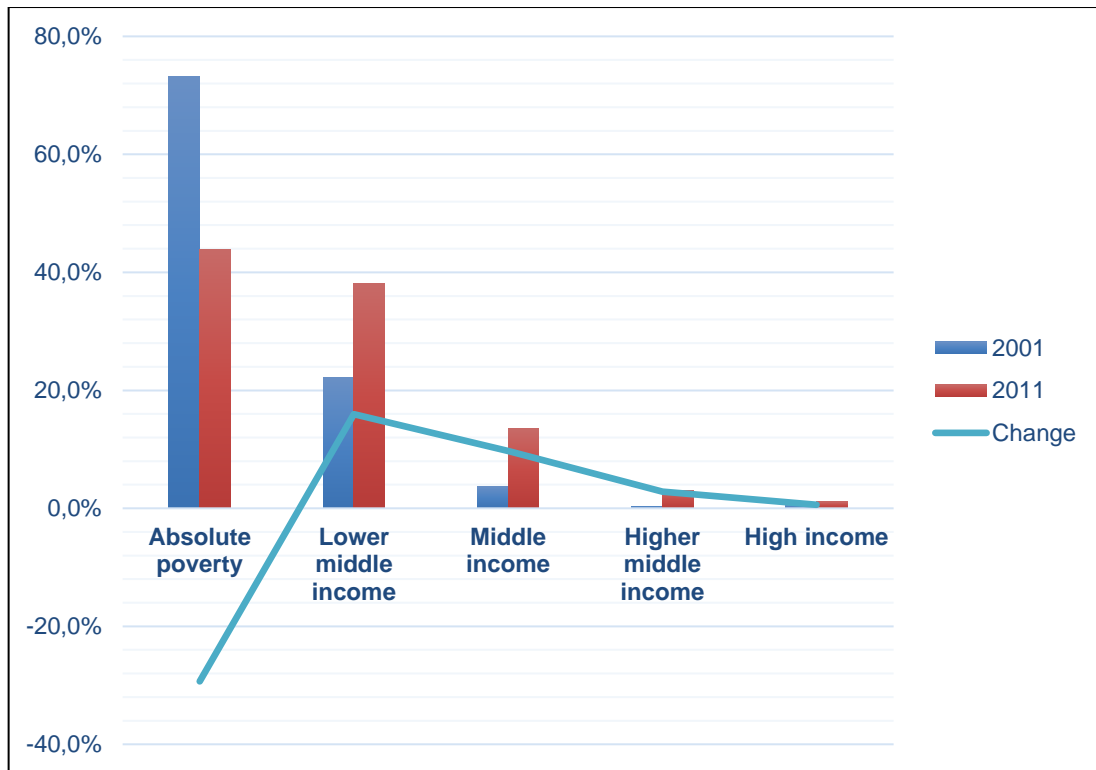


Figure 3-7: Overview of Annual Household Income in Ward 7

Considering that land use change (from predominantly agriculture to also include mining) brought about a change in the economic make-up of Ward 7, the assumption is that the local economy of Ward 7 is now also more diverse. The more diverse an economy, the more likely it will lead to job creation and a better balance between labour-intensive and capital-intensive industries. However, this implies that there is a need for fast growing industries to also create employment, particularly for the semi-skilled and the unskilled. Unfortunately, in practice, many fast-growing industries are of such a nature that they do not create job opportunities for unskilled labour (e.g. very few such opportunities exist within the mining sector) and therefore these industries do not contribute significantly towards unemployment and poverty alleviation in the local area. This is one of the reasons why the MPRDA requires mines to develop a Social Labour Plan (SLP) to outline how they would contribute to the socio-economic development of their area of impact.

Important to note is the disparity in income between male and female-headed households. Although fewer female-headed households live in absolute poverty (14% compared to 29.9%), the household income in all other categories seems to favour men – i.e. it would appear that male-headed households on average earn more than their female counterparts. Female and child-headed households are considered vulnerable as they often do not have a wide range of resources to buffer change. In 2011, Ward 7 had approximately 660 households headed by women and 18 child-headed households.

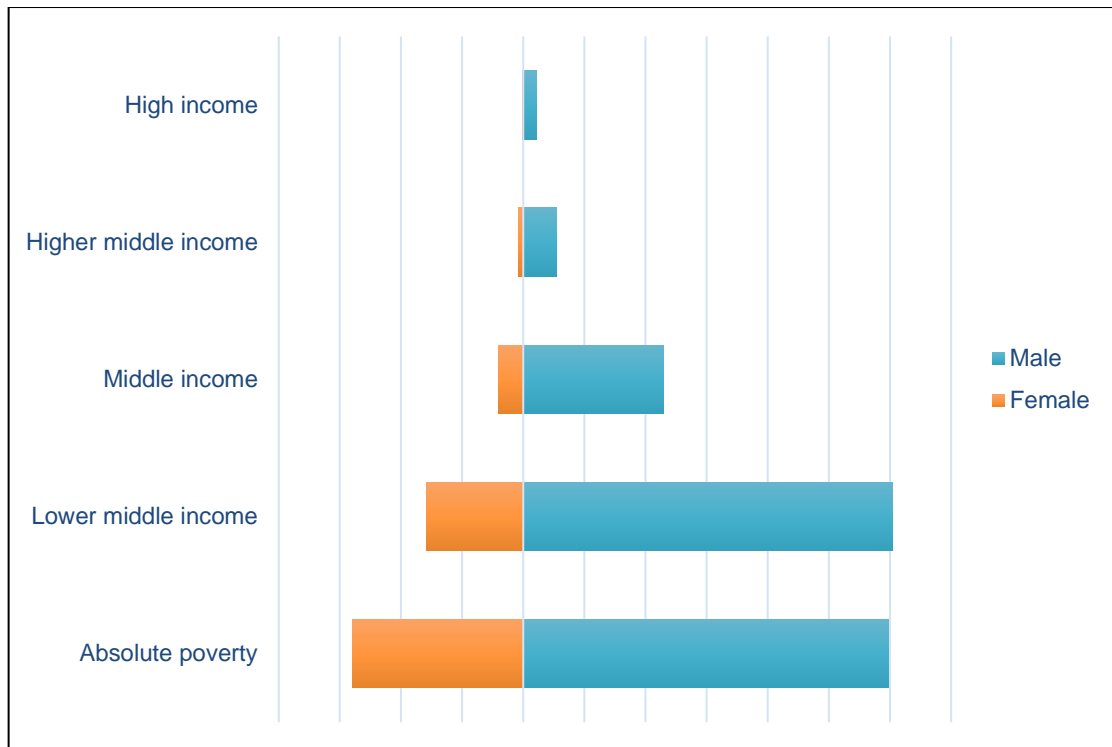


Figure 3-8: Comparative Household Income (Male vs Female)

3.4.3 Baseline Geographical Processes

This section describes the current land use in the study area from a social perspective, specifically in terms of settlement patterns and land use developments. Land use in this regard is defined as "...the way land is developed and used in terms of the types of activities allowed [zoned] (agriculture, residences, industries, etc.) and the size of buildings and structures permitted".⁷

The proposed site is surrounded by a number (and great variety) of potential social sensitive receptors. In addition, the nature of the Project might attract the interest and concerns of people from further afield than the site-specific study area (e.g. farmers in the broader local study area who have to co-exist with mining activities). Figure 3-9 presents an overview of the preliminary identified social sensitive receptors. However, for the purposes of this scoping report, exhaustive land use detail was avoided as the major objective for this phase was the identification of potentially sensitive areas that will be explored in greater depth during the EIA phase.

⁷ www.soil.ncsu.edu/publications/BMPs/glossary.html

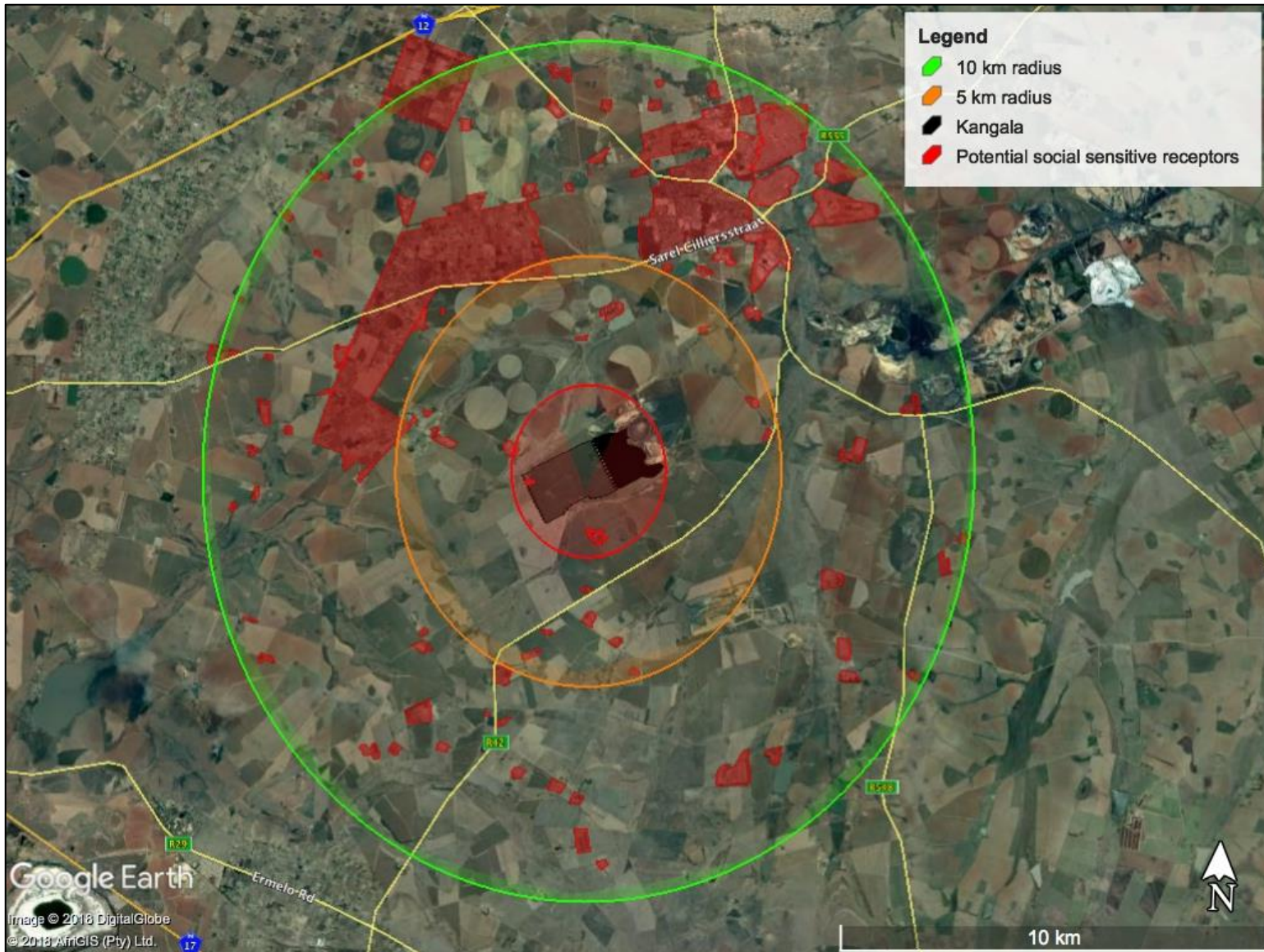


Figure 3-9: Preliminary Social Sensitivity Map

Social sensitive receptors were regarded as any area of human activity within a 10 km radius from the existing Kangala colliery and the proposed new opencast mining pit (the Project). This included large-scale human settlement to the northwest and northeast of the existing Kangala mine (within the 10 km radius) and scattered settlement to the southwest and southeast (within the 10 km and 5 km radii). There seems to be human settlement on the far western border of the Project site, but this will be confirmed during the impact assessment phase along with the current land use and ownership of the area earmarked for the Project.

3.4.4 Baseline Institutional & Legal Processes

This section looks at the processes that affect the efficiency and effectiveness of the various organisations responsible for the supply of goods and services that people depend on, e.g. municipal and social services.

In 2011, Ward 7 consisted of 2,710 households. Of these, approximately 9.1% (or around 250) were considered to be part of informal settlements. The VKLM IDP of 2008 (for what was then the Delmas Local Municipality) noted a substantial growth in the number of informal settlements in the area, attributed to rapid population growth. The current IDP (2017-2022) has the formalisation of informal settlements as part of its 5-year strategic plan and is busy developing an Integrated Informal Settlement Plan to give effect to this strategic goal.

Water within the VLKM is obtained from subterranean water through a number of boreholes and a regional water scheme in the form of Rand Water. In Ward 7 specifically, just under half of the households (49.7%) get their water from Rand Water, a further third of households (30.2%) rely on boreholes, while 1 in every 5 households (20%) rely on other water sources (including rivers and streams). This means that half of all households in the ward rely on natural resources as their main water source and are therefore vulnerable to any surface or groundwater contamination.

Linked to access to water is access to waterborne sanitation services, which follows a similar pattern: just slightly over half of households (56%) have access to sanitation services on par or above RDP standards (a flush toilet, septic tank or VIP-system) whereas the remainder rely on pit latrines without ventilation, bucket systems or no access – in the case of the latter, people are forced to use public spaces, often resulting in contamination of rivers and streams. A further concern is the apparent lack of refuse removal in the ward, likely because of its mostly rural nature: less than half of the households' (47.3%) refuse is removed on a weekly basis by the local authority, which means more than half have to rely on their own means of waste disposal (43.4%) or have no access to any form of refuse removal (9.3%). Badly managed landfill sites (both formal and informal) may attract vermin, which in turn impacts on human health.

Figure 3-10 provides an overview of the number of crimes reported at the Sundra police station within Ward 7, compared to the number of cases reported at the nearby Delmas

police station. From this graph it is evident that the crime rate in Ward 7 peaked at around 2014/15, after which there appears to have been a steady decline in crime. Delmas, on the other hand, that serves a more urban population seems to have experienced a steady increase in crime between 2012 and 2017 with the number of crimes reported at this police station increasing year on year.

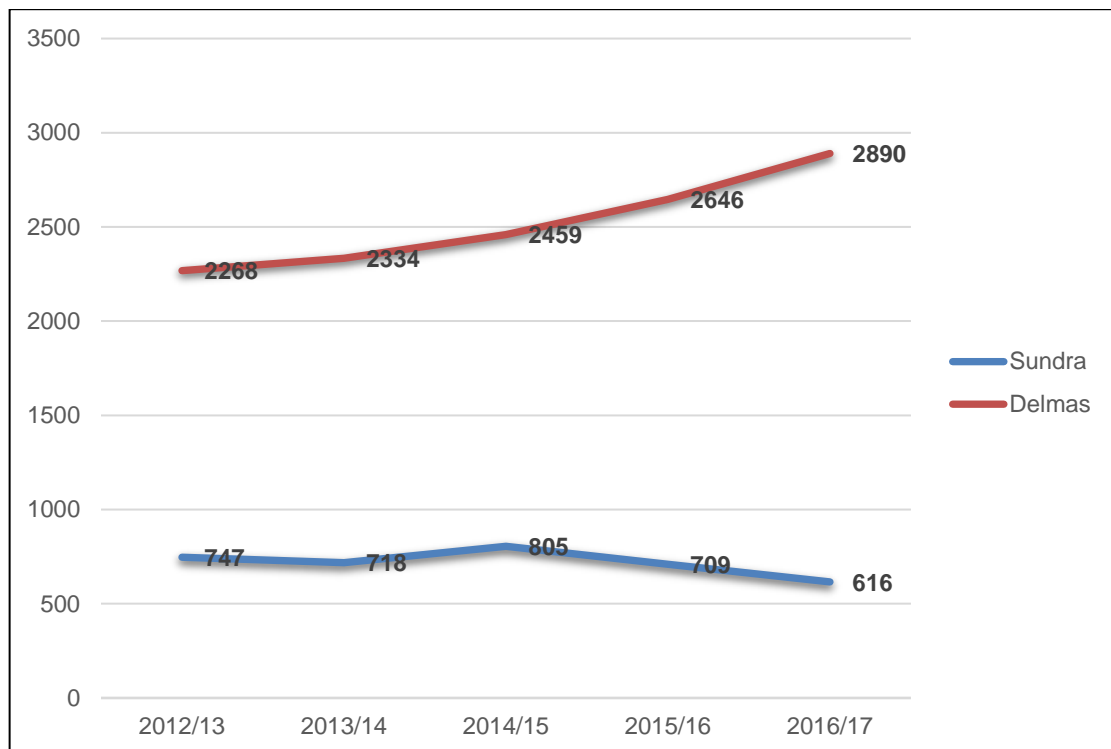


Figure 3-10: Overview of Crime Rate in Ward 7 compared to nearby Delmas

Figure 3-11 provides a more specific overview of the types of crimes reported over the past 5 years at the Sundra police station (as the station servicing Ward 7). It would appear that property-related crimes dominate the crime profile of the area – this includes burglary at residential and business premises, theft of motor vehicles and stock-theft. Contact crimes (crimes against the person, including offenses such as murder, attempted murder, assault, and robbery) seem to be on the increase, while contact-related crimes (arson and malicious damage to property) are decreasing. Overall, given the results in Figure 3-10, the crime rate in this study area has reduced by some 24.5% between 2015 and 2017.

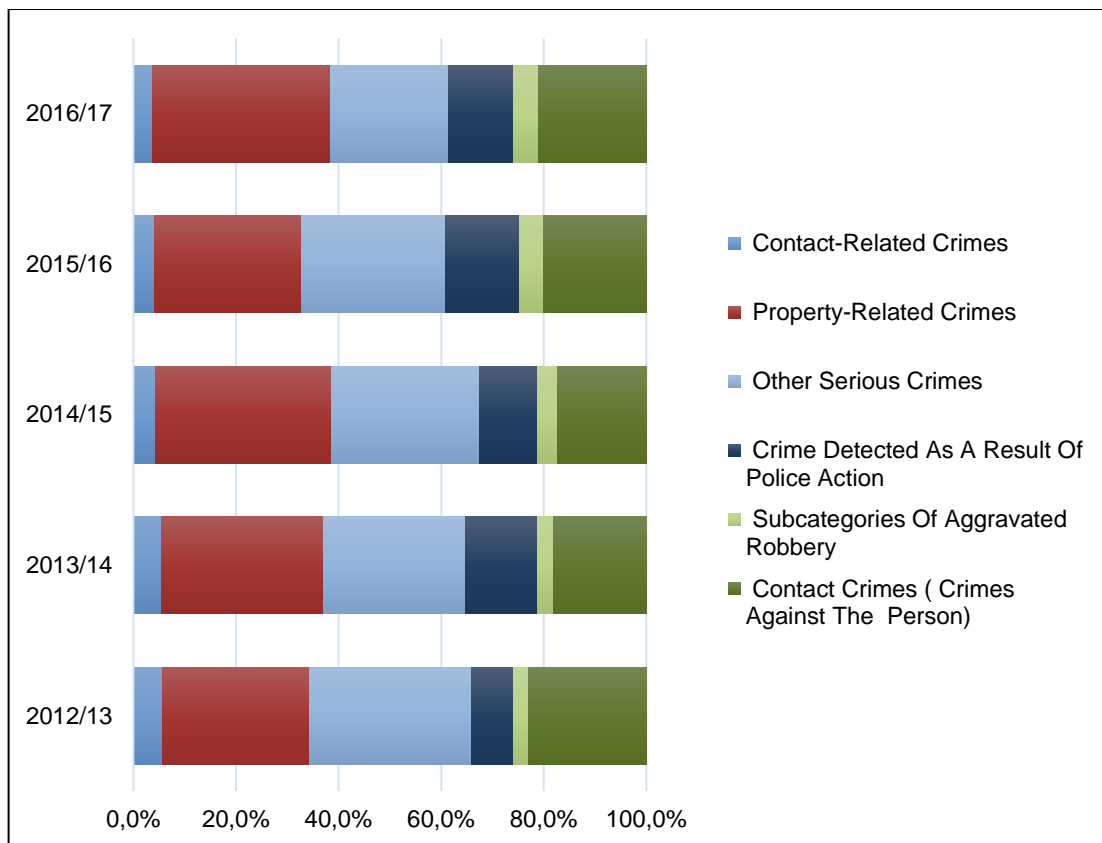


Figure 3-11: Overview of Specific Crimes in Ward 7 (Sundra Police Station) between 2012-2017

3.4.5 Baseline Socio-Cultural Processes

This section describes the culture of the local society, i.e. the way that people live together and the influence that their historical background could have on the viewpoints they have.

As discussed in Section 3.4.1, the local community consists largely of isiZulu and isiNdebele-speaking Black Africans from Mpumalanga and, to a lesser extent, Gauteng as well as a fairly large group of Afrikaans-speaking Whites. The former group is also the group who, historically, largely live in absolute poverty or form part of the lower middle income group, whereas the latter group are from the middle and higher middle income groups. It is likely that these groups would experience the Project in vastly different ways:

- Those living in poverty tend to have a short-term view of negative social and environmental impacts as they are more focused on the benefits (or perceived benefits) of any development, which is job creation. They are willing to endure negative impacts for as long as they benefit from the Project.
- People from the higher income groups tend to focus more on the negative effects of a development as they are focused on how it would affect their individual lives. People from this segment of the local community are unlikely to seek work at the mine, they are likely to focus on the visual intrusion, health,

blasting or other negative impacts, i.e. there is no immediate benefit for this group to support the Project. They are also more likely to have resources at their disposal to oppose the Project.

It is likely that the process of 'othering' is present, in other words that there is division within the local community, largely based on economic and cultural disparities. Cultures have well-developed systems that allow them to buffer change, but when change occurs too rapidly, such systems often cannot cope which then leads to social ills and the loss of social capital.

The socio-cultural aspect of the local area will be investigated in more detail during the impact assessment phase by conducting focus group discussions with representatives from the various culture groups present in the area.

4. PRELIMINARY SOCIO-ECONOMIC IMPACT ASSESSMENT

This section aims to identify and describe change processes and associated socio-economic impacts that may arise from the Project. It follows the same social processes as described in the site-specific study area's baseline profile (see Section 3.4).

4.1 Method of Assessing Impacts

The impact assessment methodology is guided by the requirements of the NEMA EIA Regulations (2010). 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, Extent, Duration, Magnitude, and Reversibility) and relate this to the **probability/likelihood (P)** of the impact occurring. This determines the environmental risk. In addition, other factors, including cumulative impacts, public concern, and potential for irreplaceable loss of resources, are used to determine a **prioritisation factor (PF)** which is applied to the ER to determine the overall **significance (S)**.

4.1.1 Determination of Environmental Risk

The significance (S) of an impact is determined by applying a prioritisation factor (PF) to the environmental risk (ER). The environmental risk is dependent on the consequence (C) of the particular impact and the probability (P) of the impact occurring. Consequence is determined through the consideration of the Nature (N), Extent (E), Duration (D), Magnitude (M), and reversibility (R) applicable to the specific impact. For the purpose of this methodology the consequence of the impact is represented by:

$$C = (E+D+M+R) \times N$$

4

Each individual aspect in the determination of the consequence is represented by a rating scale as defined in Table 4-1.

Table 4-1: Criteria for Determining 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),

Aspect	Score	Definition
	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

Once the C has been determined the ER is determined in accordance with the standard risk assessment relationship by multiplying the C and the P. Probability is rated/scored as per Table 4-2.

Table 4-2: Probability Scoring

Probability	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),

The result is a qualitative representation of relative ER associated with the impact. ER is therefore calculated as follows:

$$ER = C \times P$$

Table 4-3: Determination of Environmental Risk

Consequence	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
		1	2	3	4	5
Probability						

The outcome of the environmental risk assessment will result in a range of scores, ranging from 1 through to 25. These ER scores are then grouped into respective classes as described in Table 4-4.

Table 4-4: 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).

The impact ER will be determined for each impact without relevant management and mitigation measures (**pre-mitigation**), as well as post implementation of relevant management and mitigation measures (**post-mitigation**). This allows for a prediction in the degree to which the impact can be managed/mitigated.

4.1.2 Impact Prioritisation

In accordance with the requirements of Regulation 31 (2)(l) of the EIA Regulations (GNR 543), and further to the assessment criteria presented in the Section above it is necessary to assess each potentially significant impact in terms of:

- Cumulative impacts; and
- The degree to which the impact may cause irreplaceable loss of resources.

In addition, it is important that the public opinion and sentiment regarding a prospective development and consequent potential impacts is considered in the decision making process.

In an effort to ensure that these factors are considered, an impact prioritisation factor (PF) will be applied to each impact ER (post-mitigation). This prioritisation factor does not aim to detract from the risk ratings but rather to focus the attention of the decision-making authority on the higher priority/significance issues and impacts. The PF will be applied to the ER score based on the assumption that relevant suggested management/mitigation impacts are implemented.

Table 4-5: Criteria for Determining Prioritisation

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).

The value for the final impact priority is represented as a single consolidated priority, determined as the sum of each individual criteria represented in Table 4-5. The impact priority is therefore determined as follows:

$$\text{Priority} = \text{PR} + \text{CI} + \text{LR}$$

The result is a priority score which ranges from 3 to 9 and a consequent PF ranging from 1 to 2 (Refer to Table 4-6).

Table 4-6: 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

In order to determine the final impact significance, the PF is multiplied by the ER of the post mitigation scoring. The ultimate aim of the PF is to be able to increase the post mitigation environmental risk rating by a full ranking class, if all the priority attributes

are high (i.e. if an impact comes out with a medium environmental risk after the conventional impact rating, but there is significant cumulative impact potential, significant public response, and significant potential for irreplaceable loss of resources, then the net result would be to upscale the impact to a high significance).

Table 4-7: Final 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).

The following subsections include a description of anticipated impacts associated with the various change processes, followed by a preliminary assessment of identified impacts. The significance rating scales also include preliminary mitigation/enhancement measures but it both instances it should be noted that the significance rating and mitigation measures are currently desktop based and subject to change during the ensuing impact assessment phase when primary data will be collected to inform the impact assessment.

4.2 Demographic Change Processes and Potential Impacts

4.2.1 Preliminary Impact Description

A preliminary identification of demographic change processes and potential impacts are discussed in Table 4-8.

Table 4-8: Demographic Change Processes and Potential Impacts

ISSUE	DISCUSSION
CHANGE PROCESS	The Project will likely cause in-migration into the area, e.g. construction workers and job seekers.
EXISTING IMPACT	<p>According to the mine's SLP, the existing Kangala colliery employs approximately 400 people, including contractors. The labour sending areas include eMalahleni, Steve Tshwete and the VKLM.</p> <p>Historically, the Kangala colliery (and other nearby collieries like Exxaro's Leeuwpán) likely also contributed to the out-migration of a certain segment of the population when agricultural land was transformed to mining land.</p>
POTENTIAL IMPACT	The SLP states that the number of people employed by the mine will increase to approximately 720 with the introduction of the Project, with an additional 50 people employed by the mining

ISSUE	DISCUSSION
	<p>contractor during construction. This means an additional 370 people (320 operational and 50 construction staff) that will migrate to the area on a permanent or semi-permanent basis, which equates to a 3.6% rapid population increase. On the other hand, a process of out-migration could also occur with the transformation of land.</p> <p>Depending on how stable the local social networks are, this could create any of the following:</p> <ul style="list-style-type: none"> • In-migration: rapid population growth can place strain on the local area and lead to economic, social and environmental impacts. • Out-migration: the area affected by the Project becomes less desirable. A decline in the local population can have an effect on the viability and vitality of the area. • Presence of newcomers: impacts of in-migration can be exacerbated if newcomers are different from (or perceived to be such) from local communities. • Presence of construction workers: the type and severity of impacts will depend on the number, composition and (dis)similarity of this group to local residents. Due to the temporary nature of their presence, they are unlikely to form place attachment and follow a 'work hard, play hard' mentality, impacting on social cohesion locally. • Displacement: local people can lose land or other assets, resulting in physical relocation or loss of income which could cause impoverishment or social disintegration.
<p>INFORMATION REQUIRED</p>	<ol style="list-style-type: none"> 1. The size of the construction team and the skills required. 2. The quotas that a contractor has to comply with in terms of the mine's SLP and other terms and conditions. 3. The number of jobs that will be created overall, broken down per skills level, activity and duration of employment. 4. The likelihood that local community members will communicate the availability of jobs to friends and family not from the area.
<p>EIA STUDIES</p>	<ol style="list-style-type: none"> 1. Consult with the project proponent and/or its appointed or shortlisted contractor(s) on aspects 1-3 mentioned above. 2. Attend a public meeting within a PDI community (if such a meeting will be held) to determine the expressed interest for jobs and the likelihood that the availability of such jobs would be communicated to people outside the project area.
<p>CUMULATIVE EFFECT</p>	<p>The presence of the construction team and the prospect of employment could also lead to an influx of unemployed jobseekers.</p> <p>The nearby Leeuwpan expansion project is in advanced stage. Construction at this colliery could coincide with construction activities at the Project, causing the area to become an unintentional 'honey pot' for job seekers.</p>

4.2.2 Preliminary Impact Rating

A. Project-induced in-migration - Alternative 1					
Impact Name	Project-induced in-migration				
Alternative	Alternative 1				
Environmental Risk					
Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
Nature	-1	-1	Magnitude	3	2
Extent	3	2	Reversibility	3	3
Duration	2	2	Probability	4	2
Environmental Risk (Pre-mitigation)					-11,00
Mitigation Measures					
Maximise local employment as much as possible to curb in-migration. Prevent opportunistic influx of job seekers by advertising job requirements in the local area and beyond.					
Environmental Risk (Post-mitigation)					-4,50
Degree of confidence in impact prediction:					Medium
Impact Prioritisation					
Public Response					1
Low: Issue not raised in public responses					
Cumulative Impacts					2
Medium: Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
Degree of potential irreplaceable loss of resources					2
Medium: 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.					
Prioritisation Factor					1,33
Final Significance					-6,00

4.3 Economic Change Processes and Potential Impacts

4.3.1 Preliminary Impact Description

A preliminary identification of demographic change processes and potential impacts are discussed in Table 4-9.

Table 4-9: Economic Change Processes and Potential Impacts

ISSUE	DISCUSSION
CHANGE PROCESS	During construction and operation, the local area is likely to experience an economic injection in the form of employment creation, taxes, CSI and SLP spend, and increased business and consumer spending.
EXISTING IMPACT	<p>The mine currently employs in the order of 400 people. Given the average household size of the local area (3.6), this could mean financial stability for up to 1,440 individuals who are in turn able to access other services like education, housing, entertainment, etc.</p> <p>Through its SLP, the mine is currently implementing various Local Economic Development (LED) projects and to date (2017/18) have spent approximately R 3.5 million with plans to spend a further R 3 million over the next 3 years.</p>

ISSUE	DISCUSSION
POTENTIAL IMPACT	<p>The Project would expand the Kangala colliery's life of mine by another 10 years – providing job security for the current workforce and creating job opportunities for a further 320 people. The expansion is also likely to secure more funds for further LED projects in the area for the duration of the Life of Mine. This could lead to the following economic changes and impacts:</p> <ul style="list-style-type: none"> • Conversion and diversification of economic activities: The Project could stimulate a process of change from one type of production to another type (e.g. agricultural to mining). • Impoverishment: certain groups could experience a downward spiral of poverty, usually involving displacement (loss of access to resources) and disempowerment. • Inflation: can occur at local level through the spending power of increasing numbers of income earners. • Concentration of activity in a single industry: this makes the local society vulnerable to the fortunes of a single commodity, which can lead to uneven economic development and, in certain cases, financial dependency on the mine through its LED spend.
INFORMATION REQUIRED	1. Financial information on current and future mining operations.
EIA STUDIES	<p>Conduct a more detailed economic assessment, inclusive of economic modelling, to determine the following:</p> <ul style="list-style-type: none"> • Direct impacts (income and employment created due to employment by the Project); • Indirect impacts (backward linkages to local suppliers); and • Induced impacts due to the overall increase in income levels and increased spending on goods and services.
CUMULATIVE EFFECT	<p>The expansion of the nearby Leeuwpan colliery could enhance the concentration of activity on a single industry, i.e. coal mining. Agricultural land is further reduced, leaving this industry to shrink, resulting in job losses of (in particular) unskilled workers.</p>

4.3.2 Preliminary Impact Rating

B. Labour draw down from other sectors - Alternative 1					
Impact Name	Labour draw down from other sectors				
Alternative	Alternative 1				
Environmental Risk					
Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
Nature	-1	-1	Magnitude	3	2
Extent	4	3	Reversibility	2	2
Duration	2	2	Probability	3	2
Environmental Risk (Pre-mitigation)					-8,25
Mitigation Measures					
Do not recruit unskilled labour at wage levels above the wages paid in other sectors.					
Environmental Risk (Post-mitigation)					-4,50
Degree of confidence in impact prediction:					Medium
Impact Prioritisation					
Public Response					1
Low: Issue not raised in public responses					
Cumulative Impacts					2
Medium: Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
Degree of potential irreplaceable loss of resources					2
Medium: 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.					
Prioritisation Factor					1,33
Final Significance					-6,00

C. Employment and income creation - Alternative 1					
Impact Name	Employment and income creation				
Alternative	Alternative 1				
Environmental Risk					
Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
Nature	1	1	Magnitude	2	3
Extent	3	3	Reversibility	2	2
Duration	2	2	Probability	2	4
Environmental Risk (Pre-mitigation)					4,50
Mitigation Measures					
Prioritise local labour in the recruitment process. Upskill unskilled labour where possible. Keep a register of local suppliers.					
Environmental Risk (Post-mitigation)					10,00
Degree of confidence in impact prediction:					Medium
Impact Prioritisation					
Public Response					2
Medium: Issue has received a meaningful and justifiable public response					
Cumulative Impacts					2
Medium: Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
Degree of potential irreplaceable loss of resources					1
Low: Where the impact is unlikely to result in irreplaceable loss of resources.					
Prioritisation Factor					1,33
Final Significance					13,33

D. Tax income - Alternative 1					
Impact Name	Tax income				
Alternative	Alternative 1				
Environmental Risk					
Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
Nature	1	1	Magnitude	3	3
Extent	5	5	Reversibility	1	1
Duration	4	4	Probability	5	5
Environmental Risk (Pre-mitigation)					16,25
Mitigation Measures					
None					
Environmental Risk (Post-mitigation)					16,25
Degree of confidence in impact prediction:					High
Impact Prioritisation					
Public Response					1
Low: Issue not raised in public responses					
Cumulative Impacts					2
Medium: Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
Degree of potential irreplaceable loss of resources					1
Low: Where the impact is unlikely to result in irreplaceable loss of resources.					
Prioritisation Factor					1,17
Final Significance					18,96

4.4 Geographical Change Processes and Potential Impacts

4.4.1 Preliminary Impact Description

A preliminary identification of geographical change processes and potential impacts are discussed in Table 4-10.

Table 4-10: Geographic Change Processes and Potential Impacts

ISSUE	DISCUSSION
CHANGE PROCESS	On satellite imagery, it seems that the land earmarked for the Project, is currently used as agricultural land with some settlement in the north-western corner. Presumably only a portion of the farmland will be converted to mining – this will be confirmed during the next phase of the SIA.
EXISTING IMPACT	The Kangala colliery is surrounded by cultivated farmland, some of which are under irrigation as is evident from the number of centre pivots to the north and northwest of the colliery. Activities at the Kangala colliery is regulated through an Environmental Management Plan (EMP) (Digby Wells, 2014). The EIA that was conducted as part of the EMP, found that the most significant impacts were on topography, soil, surface water, groundwater, wetlands, air quality, blasting and vibration, and traffic and safety (medium to high impacts prior to mitigation). The EIA concluded that the mine's overall impact on the natural environment was of medium significance, but that if all mitigation measures, management and monitoring procedures of the EMP were

ISSUE	DISCUSSION
	correctly implemented, all impacts would be significantly reduced.
POTENTIAL IMPACT	<p>It is expected that similar impacts would occur at the Project as those currently occurring at the Kangala colliery. This could include changes such as:</p> <ul style="list-style-type: none"> • Conversion and diversification of land use: The Project could give rise to a change in the way in which the surrounding land is utilised. • Urbanisation: the establishment of a new mining pit could enhance the rural to urban migration as farm workers leave the area and move to Delmas or Botleng in search of other work.
INFORMATION REQUIRED	<ol style="list-style-type: none"> 1. The current land use and ownership, as well as the extent of agricultural land use surrounding the Project site. 2. The agricultural potential of the Project site– this will feed into the economic modelling process. 3. The extent of similar developments in the area to determine the magnitude of land use change in the VKLM.
EIA STUDIES	<ol style="list-style-type: none"> 1. Analyse the issues and response register compiled during the scoping phase public participation process to identify pertinent social issues raised by stakeholders. 2. Conduct interviews with neighbouring landowners to determine the actual impact the existing mine has had on their lives. 3. Conduct a desktop study to determine which other projects are taking place in the VKLM area that could be relevant to the current study.
CUMULATIVE EFFECT	<p>Considering the expansion at nearby Leeuwpan colliery, large portions of land in the vicinity of this Project are being transformed from agriculture to mining. This could be threatening to farmers in the area who own farmland that does not contain coal deposits as they have to continue farming in an area that is visually, health and otherwise, transformed by mining activities.</p>

4.4.2 Preliminary Impact Rating

F. Conversion of land use - Alternative 1					
Impact Name	Conversion of land use				
Alternative	Alternative 1				
Environmental Risk					
Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
Nature	-1	-1	Magnitude	5	3
Extent	3	2	Reversibility	4	3
Duration	3	3	Probability	4	4
Environmental Risk (Pre-mitigation)					-15,00
Mitigation Measures					
Cross-check mitigation measures from other specialist studies, e.g. noise, air quality and visual.					
Environmental Risk (Post-mitigation)					-11,00
Degree of confidence in impact prediction:					Medium
Impact Prioritisation					
Public Response					1
Low: Issue not raised in public responses					
Cumulative Impacts					2
Medium: Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
Degree of potential irreplaceable loss of resources					3
High: Where the impact may result in the irreplaceable loss of resources of high value (services and/or functions).					
Prioritisation Factor					1,50
Final Significance					-16,50

4.5 Institutional and Legal Change Processes and Potential Impacts

4.5.1 Preliminary Impact Description

A preliminary identification of institutional and legal change processes and potential impacts are discussed in Table 4-11.

Table 4-11: Institutional and Legal Change Processes and Potential Impacts

ISSUE	DISCUSSION
CHANGE PROCESS	The Project will create an estimated 370 employment opportunities (50 during construction and 320 during operation). Assuming people who work at the mine will move to the area, they will require housing, access to services and protection. Should people opt to rather stay in Pretoria as the closest city, it will lead to an increase in traffic on the R50 and R42.
EXISTING IMPACT	According to the EIA/EMP Report prepared for the Kangala Colliery (Digby Wells, 2014), the mine currently has the following environmental impacts that also impact on the socio-economic environment: <ul style="list-style-type: none"> • Topsoil and overburden removal and stockpiling, discard dump, and pollution control dams impacts on surface water. This leads to potential contamination of surface water and runoff from the discard dump. As was noted in Section 3.4.4, a fairly large proportion of the

ISSUE	DISCUSSION
	<p>surrounding area's people make use of rivers and streams as their only form of access to water. Human consumption of contaminated water impacts on health.</p> <ul style="list-style-type: none"> • Workshop activity, storage of fuel, lubricant and explosives, coal removal and stockpiling, discard dumps, and waste and sewage generation and disposal impacts on groundwater. This could lead to possible contamination of groundwater sources through contaminated water filtering into underground aquifers. Again, a large proportion of the surrounding communities are dependent on groundwater as they obtain their water from boreholes. • Air blasting and ground vibration: the drilling and blasting of hard overburden could result in fly rock, which in turn leads to damages on nearby infrastructure and contributes to noise and dust fallout levels. <p>For these and other reasons, it was reported in <i>Die Beeld</i> of 17 April 2009, that farmers in Mpumalanga have joined forces to prevent authorities from approving new applications for coal and other mines. It was reported that such a farmers' organisation was also established in Delmas.</p>
POTENTIAL IMPACT	<p>It is expected that that the Project would increase the magnitude of impacts described above. It is also expected that the Project would lead to the in-migration of workers and job seekers, who are all in need of housing and access to services. Unemployed job seekers are likely to lack resources to sustain themselves and are therefore likely to settle in informal settlements, causing such settlements to expand and place further strain on the municipality.</p>
INFORMATION REQUIRED	<ol style="list-style-type: none"> 1. Housing requirements during construction and operation and how the mine plans to address these. 2. The extent and location of informal settlements in the Delmas area. 3. The extent of the municipality's backlog in terms of delivering housing and services. 4. The magnitude of the existing Kangala colliery's impact on neighbouring farmers.
EIA STUDIES	<ol style="list-style-type: none"> 1. Conduct interviews with UCD1 to determine housing needs and requirements and any plans that the mine has in place to address these (e.g. a construction camp during construction). 2. Conduct interviews with local municipal officials and the ward councillor to determine the extent of informal settlements and associated problems. Also use these interviews to determine the existing housing and services backlog and determine the municipality's capacity to carry an additional strain. 3. Conduct a focus group meeting with the farmers' organisation in Delmas to determine their issues and concerns with current and future mining operations.

ISSUE	DISCUSSION
CUMULATIVE EFFECT	Other development projects in the area (not only mining related) would exacerbate the pressure on the municipality to deliver housing and quality municipal services.

4.5.2 Preliminary Impact Rating

G. Increased demand for housing and services - Alternative 1					
Impact Name	Increased demand for housing and services				
Alternative	Alternative 1				
Environmental Risk					
Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
Nature	-1	-1	Magnitude	3	2
Extent	3	2	Reversibility	3	3
Duration	2	1	Probability	4	3
Environmental Risk (Pre-mitigation)					-11,00
Mitigation Measures					
Include local labour requirements in tender BIDs (i.e. percentage of local hire is a condition of contract). Accommodate constructions teams on-site, utilising existing services. Avoid hiring at the gate to curb establishment and expansion of informal settlement.					
Environmental Risk (Post-mitigation)					-6,00
Degree of confidence in impact prediction:					Medium
Impact Prioritisation					
Public Response					1
Low: Issue not raised in public responses					
Cumulative Impacts					2
Medium: Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
Degree of potential irreplaceable loss of resources					2
Medium: 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.					
Prioritisation Factor					1,33
Final Significance					-8,00

H. Social investment in the local community - Alternative 1					
Impact Name		Social investment in the local community			
Alternative		Alternative 1			
Environmental Risk					
Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
Nature	1	1	Magnitude	2	3
Extent	3	4	Reversibility	3	3
Duration	3	3	Probability	3	4
Environmental Risk (Pre-mitigation)					8,25
Mitigation Measures					
Consult with local stakeholders to determine actual needs in the local area. Consider the development of regional investment initiatives to widen the positive impact of the mine's presence on social development.					
Environmental Risk (Post-mitigation)					13,00
Degree of confidence in impact prediction:					High
Impact Prioritisation					
Public Response					1
Low: Issue not raised in public responses					
Cumulative Impacts					2
Medium: Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
Degree of potential irreplaceable loss of resources					2
Medium: 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.					
Prioritisation Factor					1,33
Final Significance					17,33

4.6 Socio-Cultural Change Processes and Potential Impacts

4.6.1 Preliminary Impact Description

A preliminary identification of socio-cultural change processes and potential impacts are discussed in Table 4-12.

Table 4-12: Socio-Cultural Change Processes and Potential Impacts

ISSUE	DISCUSSION
CHANGE PROCESS	<p>The expansion of the Kangala colliery in the form of the proposed opencast mining pit extension would change the natural and human capital landscape of the area. This is likely to lead to social mobilisation on two levels:</p> <ul style="list-style-type: none"> Local unemployed people could mobilise if they were under the impression that work was given to 'outsiders'. Local farmers feel unheard when mining developments continue unabated. They are likely to mobilise against the mine over 'higher order' issues that affect individuals but which they largely feel affect all of them – e.g. noise, dust, blasting effects, etc.
EXISTING IMPACT	<p>The presence of a farmers' organisation (if still in existence) would suggest that farmers from the VKLM have formalised as a group and that this group is likely to uniformly oppose the Project based on negative past experiences (whether factual or perceived) with coal mines in the area. The risk for social</p>

ISSUE	DISCUSSION
	mobilisation against the Project is therefore considered to be quite high.
POTENTIAL IMPACT	<p>Depending on the form that social mobilisation takes, it could lead to work stoppages, violent protests (causing health and safety fears), and appeals against the Project at the competent authority. All of this can cause delays, which could have an economic impact on the developer and its workforce. Changes can occur in the following areas:</p> <ul style="list-style-type: none"> • Segregation: creating social difference within the community. • Social disintegration: the loss of social capital and the abandonment of social and cultural practices. • Cultural differentiation: an increase in cultural differences (or perceived differences), which enhances the process of 'othering'. • Defiant social behaviour: e.g. an increase in prostitution, drug and alcohol use, violent protests, etc.
INFORMATION REQUIRED	<ol style="list-style-type: none"> 1. Past and existing grievances with Kangala colliery, what sector of stakeholder raised these, and how it was addressed. This is required to determine further risk of social mobilisation. 2. Where UCD1 intends to source labour for the Project and the labour sourcing process. 3. Other interventions planned by the mine (outside of mining) that could serve to buffer the impact of the Project (e.g. an LED project in a nearby community aimed at developing non-mining related skills that could enhance employability in other sectors).
EIA STUDIES	<ol style="list-style-type: none"> 1. Conduct interviews with UCD1 to determine labour hiring practices. 2. Conduct a focus group meeting with the farmers' organisation in Delmas to determine their issues and concerns with current and future mining operations. 3. Through the above-mentioned interviews, determine the actual impacts that occurred at the mine (i.e. which of the predicted impacts in the Kangala colliery SIA materialised and to what extent).
CUMULATIVE EFFECT	The simultaneous development and expansion of various coal mines in the area could make local residents feel disempowered, which could enhance the risk for social mobilisation.

4.6.2 Preliminary Impact Rating

I. Social disintegration and conflict - Alternative 1					
Impact Name	Social disintegration and conflict				
Alternative	Alternative 1				
Environmental Risk					
Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
Nature	-1	-1	Magnitude	3	2
Extent	3	2	Reversibility	3	3
Duration	2	2	Probability	3	2
Environmental Risk (Pre-mitigation)					-8,25
Mitigation Measures					
Develop and implement a Stakeholder Engagement Strategy, inclusive of a communication plan, for the Project. The SEP should consider CSI and a grievance mechanism as mechanisms to maintain communication channels with local stakeholders.					
Environmental Risk (Post-mitigation)					-4,50
Degree of confidence in impact prediction:					Medium
Impact Prioritisation					
Public Response					2
Medium: Issue has received a meaningful and justifiable public response					
Cumulative Impacts					3
High: 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.					
Degree of potential irreplaceable loss of resources					2
Medium: 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.					
Prioritisation Factor					1,67
Final Significance					-7,50

J. Defiant social behaviour - Alternative 1					
Impact Name	Defiant social behaviour				
Alternative	Alternative 1				
Environmental Risk					
Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
Nature	-1	-1	Magnitude	4	3
Extent	3	3	Reversibility	3	3
Duration	2	2	Probability	3	2
Environmental Risk (Pre-mitigation)					-9,00
Mitigation Measures					
Contractors should, as part of conditions of tender, be required to develop and implement health and safety policies pertaining to high risk areas (e.g. HIV prevention, alcohol and drug abuse, etc.) Train selected construction workers as peer educators and counsellors.					
Environmental Risk (Post-mitigation)					-5,50
Degree of confidence in impact prediction:					Low
Impact Prioritisation					
Public Response					1
Low: Issue not raised in public responses					
Cumulative Impacts					3
High: 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.					
Degree of potential irreplaceable loss of resources					2
Medium: 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.					
Prioritisation Factor					1,50
Final Significance					-8,25

K. Nuisance factors - Alternative 1

Impact Name	Nuisance factors				
Alternative	Alternative 1				
Environmental Risk					
Attribute	Pre-mitigation	Post-mitigation	Attribute	Pre-mitigation	Post-mitigation
Nature	-1	-1	Magnitude	3	2
Extent	3	2	Reversibility	3	3
Duration	2	2	Probability	4	3
Environmental Risk (Pre-mitigation)					-11,00
Mitigation Measures					
Water down construction site to curb dust. Erect notice boards to inform neighbouring properties of construction processes and timeframes - notably to alert them to activities such as blasting. Implement a grievance mechanism.					
Environmental Risk (Post-mitigation)					-6,75
Degree of confidence in impact prediction:					Medium
Impact Prioritisation					
Public Response					2
Medium: Issue has received a meaningful and justifiable public response					
Cumulative Impacts					2
Medium: Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.					
Degree of potential irreplaceable loss of resources					1
Low: Where the impact is unlikely to result in irreplaceable loss of resources.					
Prioritisation Factor					1,33
Final Significance					-9,00

4.7 Summary of Impacts

The findings of this report take into consideration the Project's proposed activities, location of the Project, the status of the existing socio-economic environment, and the ultimate effect that the Project will have on this environment. The pre- and post-mitigation ratings assigned to the various impacts discussed in the report are summarised as follows:

IMPACT DESCRIPTION			PRE - MITIGATION						POST - MITIGATION						IMPACT PRIORITISATION							
Impact	Alternative	Phase	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Pre-mitigation ER	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Post-mitigation ER	Confidence	Public response	Cumulative Impact	Irreplaceable loss	Priority Factor	Final score
Project-induced in-migration	Alternative 1	Construction	-1	3	2	3	3	4	-11	-1	2	2	2	3	2	-4.5	Medium	1	2	2	1.33	-6.00
Labour draw down from other sectors	Alternative 1	Construction	-1	4	2	3	2	3	-8.25	-1	3	2	2	2	2	-4.5	Medium	1	2	2	1.33	-6.00
Employment and income creation	Alternative 1	Construction	1	3	2	2	2	2	4.5	1	3	2	3	2	4	10	Medium	2	2	1	1.33	13.33
Tax income	Alternative 1	Operation	1	5	4	3	1	5	16.25	1	5	4	3	1	5	16.25	High	1	2	1	1.17	18.96
Employment and income creation	Alternative 1	Operation	1	3	3	2	1	2	4.5	1	3	3	3	1	3	7.5	Medium	2	2	1	1.33	10.00
Conversion of land use	Alternative 1	Operation	-1	3	3	5	4	4	-15	-1	2	3	3	3	4	-11	Medium	1	2	3	1.50	-16.50
Increased demand for housing and services	Alternative 1	Construction	-1	3	2	3	3	4	-11	-1	2	1	2	3	3	-6	Medium	1	2	2	1.33	-8.00
Social investment in the local community	Alternative 1	Operation	1	3	3	2	3	3	8.25	1	4	3	3	3	4	13	High	1	2	2	1.33	17.33
Social disintegration and conflict	Alternative 1	Construction	-1	3	2	3	3	3	-8.25	-1	2	2	2	3	2	-4.5	Medium	2	3	2	1.67	-7.50
Defiant social behaviour	Alternative 1	Construction	-1	3	2	4	3	3	-9	-1	3	2	3	3	2	-5.5	Low	1	3	2	1.50	-8.25
Nuisance factors	Alternative 1	Construction	-1	3	2	3	3	4	-11	-1	2	2	2	3	3	-6.75	Medium	2	2	1	1.33	-9.00

5. TERMS OF REFERENCE FOR THE IMPACT ASSESSMENT PHASE

The activities that will form part of the impact assessment phase are guided by the information requirements and EIA studies as outlined in Section 4. These are summarised in the following subsections.

4.8 Qualitative Data Collection

This will be done by means of key informant interviews (either individual or group discussions). A maximum of five (5) such engagement sessions will be conducted, involving representatives of local government, local community leadership, potentially-affected landowners and land users, local business operators and the like. The main aims of such consultation will be to:

- Assess stakeholders' perceptions, concerns and expectations regarding the Project and its cumulative effects;
- Verify baseline socio-economic information;
- Identify potential impacts that the Project could have on people's lives and livelihoods; and
- Help identify possible mitigation measures to avoid or reduce negative impacts and enhance any positive impact.

4.9 Economic Modelling

Input-output (I/O) modelling will be used to assess the Project's potential impact on employment and economic output. The I/O analyses is based on:

- Direct impacts (income and employment created due to employment by the project);
- Indirect impacts (backward linkages to local suppliers); and
- Induced impacts due to the overall increase in income levels and increased spending on goods and services which could lead to a further increase in production and employment in the local area.

4.10 Impact Identification and Assessment

Potential socio-economic impacts will be identified through information obtained from interviews with key informants, specialist opinion and experience from other similar projects. The following impact rating system (provided by EIMS) will be applied to determine the severity and significance of identified socio-economic impacts.

4.11 Mitigation/Enhancement Measures and Recommendations

Mitigation measures will be prescribed with the aim of avoiding or ameliorating negative socio-economic impacts and enhancing potential positive impacts. The rating exercise described above will be repeated to assess the severity and significance of any residual impacts remaining after mitigation measures have been implemented.

4.12 Reporting

The results of the study will be presented in the form of a specialist SIA report that can be incorporated into the final EIA report. The SIA report will include:

- An executive summary;
- Overview of the project;
- The socio-economic baseline profile;
- Sensitivity map(s);
- Summary of consultations and key discussion points;
- A description of the key project influences on the socio-economic baseline profile;
- Impact assessment tables reflecting the nature, geographical extent, probability, reversibility, loss of resources, duration, cumulative effect, and resultant significance of the impact;
- Mitigation/enhancement measures; and
- Recommendations.

Preliminary findings of other specialist studies forming part of the separate EIA process will also be considered. The findings of specifically the following specialist studies are deemed relevant – where available:

- Heritage;
- Visual;
- Air quality;
- Noise;
- Soils and Agriculture Potential; and
- Waste Classification.

The relevance of such findings stems from the fact that impacts on, for example, the visual qualities of landscapes may also affect the lives and well-being of people living in the area.

Please note: Since the SIA must consider the findings of other specialist reports, the SIA studies can only be concluded approximately a week after receipt of other specialist reports for consideration.

6. CONCLUSIONS AND RECOMMENDATIONS

This study fulfilled the objectives of the SIA Scoping phase, which was to:

- Present a baseline description of the study area in terms of various change processes;
- Identify and map social sensitive areas;
- Identify and describe change processes and associated socio-economic impacts that may result from the construction and operation phases of the Project;
- Identify any gaps in knowledge; and
- Formulate recommendations regarding more detailed studies to be undertaken during the Impact Assessment Phase and describe how these studies will be undertaken.

The following key conclusions were drawn from the above-mentioned activities:

- The site-specific Project area has seen a rather significant change in the size and composition of the local population over recent years. This is suggestive of a changing landscape that leads to a change in economic opportunities, which in turn causes certain segments of the population (e.g. migratory or farm workers) to leave the area, while others enter or return to the area (e.g. mining professionals). It is expected that the Project could continue to influence this process as further land use change would further reduce the number of jobs in the agriculture sector (causing out-migration), while on the other hand attracting newcomers and job seekers to the area (causing in-migration).
- Despite a high employment rate, the majority of households still live in absolute poverty. This is indicative of minimum wage labour. This implies a need for fast growing industries to diversify the economy and create employment, but unfortunately many such industries (like the mining industry) are so advanced that they create minimal opportunities for unskilled labour.
- A number of social sensitive receptors have been identified within a 10 km radius of the Project. The Project itself will lead to land use changes from (what is presumably now) agricultural land to mining. This in turn would affect the visual landscape of the area and lead to secondary changes in the biophysical environment and the local economy.
- The baseline municipal profile suggests that the local authority is taking some strain delivering basic municipal services. The supply and quality of such services further diminishes towards the more rural areas where the Project is located. This implies that UCD1 would likely have to render support to the municipality in service delivery if it is to place additional strain on the system in the form of newcomers (and job seekers) seeking housing and access to services.

- The farmers in Mpumalanga mobilised against the coal mining industry. This is evident in the formation of a farmers' organisation aimed at resisting further coal mine developments. There is therefore a fairly high risk for social mobilisation against the Project – not only from the immediate area, but also attracting interest from other parties such as non-governmental organisations (NGOs) advocating for greener industries and more environmentally friendly forms of energy generation.

None of the preliminary impacts identified as part of the SIA scoping study are currently considered to be fatal flaws. However, coal mining remains a sensitive topic and more and more people are joining the cause against fossil fuels in favour of cleaner industries. It is therefore recommended that a detailed SIA study be undertaken once the scoping report has been approved by the competent authority and that the detailed SIA includes a more detailed assessment of economic impacts to provide a balanced view of how impacts on the immediate environment could potentially be offset by wider and more long-term impacts on the region, province and country. The terms of reference for the SIA are outlined in Section 5.

7. REFERENCES

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