Environmental Impact Assessment of the Volspruit Mine, Mokopane, Limpopo

Scoping Phase Input

Final

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1. INTRODUCTION

Urban-Econ Development Economists was appointed by EScience Associates (Pty) Ltd on behalf of Sylvania Resources to undertake an economic impact assessment study for the proposed open cast mine near Mokopane in the Limpopo Province. The study forms part of the Environmental Impact Assessment process as prescribed in the National Environmental Management Act of 1998 and its subsequent amendments. The EIA process comprises of the scoping phase and the Environmental Impact Report (EIA) compilation phase and includes consideration of findings from a variety of specialists. This report presents the socio-economic specialist’s inputs into the scoping phase of the project.

1.1 Project background and description

South Africa is the world’s leading platinum producer and the second largest palladium producer after Russia, where production is concentrated in the Norilsk region. South Africa possesses the largest Platinum Group Metals (PGM) reserves in the world (SA Yearbook, 2009/2010). According to the South Africa Yearbook 2009/2010, the country has 70 000 kilograms of PGM reserves, which represents about 87.7% of the world reserves. In 2007, the country produced 304 031 kilograms of PGM making it the largest PGM production country in the world too (SA Yearbook, 2009/2010).

According to the International Platinum Group Metals Association (IPA) (2011), all of South Africa’s production is sourced from the Bushveld Igneous Complex (BIC), which hosts the world’s largest resource of PGMs. In addition to platinum and palladium, these mines also produce rhodium, ruthenium, iridium, gold, silver, nickel, copper, cobalt, ammonium sulphate and sulphuric acid (IPA 2011). Platinum and palladium have the greatest economic importance and are found in the largest quantities. The other four - iridium, rhodium, ruthenium and osmium - are produced only as co-products of platinum and palladium and are never likely to be mined for their own sake (IPA 2011).

Sylvania Platinum Limited (Sylvania) is a fast-growing PGMs producer with tailings retreatment operations and shallow mining exploration interests located on South Africa’s PGM-rich BIC (Sylvania Platinum Limited, 2011). Sylvania Resources proposes to mine two open cast ore bodies on the farm Volspruit 326 KP, and a section of the farm Zoetveld 294 KR near Mokopane in the Limpopo Province. It will comprise of an open cast mine extracting Platinum Group Metals (PGMs) from two pits – a south pit and a north pit. It was estimated that the ore reserves on site equal to about 28 million tonnes, which suggests that the mine will be in operation for approximately 20 years. The mineral rights for the proposed project have not yet been acquired and are currently being pursued.

The project represents a green-fields development on the site that is currently being used for agricultural purposes. This means that all relevant surface infrastructure and other infrastructural requirements for the project will need to be established if the project is approved. These include access roads, administration buildings, workshops, storage/laydown yards, sewage treatment plants etc.

1.2 Scope of the study

The purpose of the Economic Impact Assessment is to determine the potential positive and negative effects of the proposed production facility on the local and regional economies and to compare its effects with the “no go” alternative. The “no go” alternative assumes that the proposed mine is not established, which means that it represents the current status of the environment, including the socio-economic situation.

The current report is prepared as part of the Socio-Economic Study and is used as inputs into the Scoping Report that is compiled by the Environmental Practitioner. The Scoping Phase inputs address only a portion of the scope of work involved in the Socio-Economic Study. Its purpose is as follows:

- provide a description of the environment that may be affected by the proposed project as well as a description and evaluation of social and economic issues and impacts that have been identified
• indicate the direct, indirect and cumulative impacts of the identified issues
• identify the potential significant impacts to be assessed in the EIA phase and provide a detailed methodology to be adopted in assessing these impacts

The scoping report therefore aims in identifying social, socio-economic, and economic issues that will form part of the detailed EIA phase.

1.3 Project location and study area delineation

The proposed facility is to be located near Mokopane in the Mogolakwena Local Municipality, the Limpopo Province (see Map 1-1).

Map 1-1: Site locality within Limpopo

The ore bodies that are planned to be mined are situated on the farm Volspruit 326 KP, and a section of the farm Zoetveld 294 KR near Mokopane in the Limpopo Province. Map 1-2 illustrates the approximate position of these ore bodies - the northern body is highlighted in yellow and the southern body is highlighted in green.

In order to delineate the study area, it is important to understand the concept of socio-economic impacts. Socio-economic impacts can be of a different nature and spatial extent. The latter differs significantly depending on the type of activity that is being analysed and the structure and composition of the locality where it is to be established. The more diversified the immediate locality of the project is in terms of its socio-economic variables, the more concentrated the impact will be in that area. It is very rare, though, to find a case when the demands of the proposed activity to be constructed and operated can be fully satisfied within the immediate locality of the project. Therefore, more often than not, economic impacts derived from any activity are spread throughout various administrative units. Understanding the potential distribution and concentration of impacts throughout the area is important to determine the magnitude and significance of these impacts in the context of spatial units.
The study area’s delineation is usually done in terms of three levels – primary, secondary and tertiary. From a socio-economic impact perspective, the primary study area refers to the locality where the immediate economic effects of the proposed activity will be observed. This is usually defined considering the actual location of the proposed project, proximity to skilled and unskilled labour, and juxtaposition relative to suppliers. The primary study area is usually relatively small and includes administrative units from where the majority of labour for the proposed project will be supplied and where some parts of the capital and operational budgets will be spent, such as a city, town or Local Municipality depending on data availability.

The secondary study area is generally far greater than the primary study area. It usually has a relatively diversified economy, which is why it is also characterised as an area where the majority of the domestic expenditure on the project will be distributed. The third tier of a delineated study area is the tertiary study area. From an economic impact perspective, it includes all impacts that would be derived from the project’s domestic expenditure.

The proposed project is located just over 55 kilometres south from Polokwane, Limpopo. The closest major town to the site by road is Polokwane (57 km). Other towns within 50 kilometres of the site is Sterkwater (46km) to the northwest, Sebedeila (46km) to the southeast, Roedtan (39km) to the south and Mahwelereng (3km) to the north. It is believed that most of the people who will be employed by the proposed project will come from the nearby settlements and above-mentioned towns. As far as procurements of services and equipment during construction and operation of the project, some of it will be sourced from Limpopo. Given the fact though that its economy is not diversified as Gauteng and given the proximity of the site to Gauteng, it could be argued that a significant portion of these services will be sourced from the Gauteng Province. Given the above, the following delineation of the study areas is done:

- primary study area the site and the Mogolakwena Local Municipality
- secondary study area includes Limpopo and Gauteng, and
- tertiary study area is South Africa.
1.4 Methodology for scoping phase

Given the requirements of the Scoping Phase, a three step methodology was employed to complete it. These included:

- **Data collection.** Given that the focus of the Scoping Phase is on presenting the key characteristics of the study areas, the first step in formulating socio-economic impacts for that phase was data collection. Both secondary and primary data are required to be presented to provide a complete profile of the socio-economic environment that could potentially be affected. Given that primary data collection requires considerable time to prepare for and gather, the decision has been taken to gather secondary data as part of the Scoping Phase and leave the primary data collection exercise for the EIA phase.

- **Baseline profiling.** Baseline profiling is the key component of the Scoping Phase input to be provided by the socio-economic specialist. It includes the description of the study area in terms of selected socio-economic variables. This information is used to interpret the impacts and measure the extent of socio-economic impacts that could be derived from the project in the context of the local, provincial and national economies. It includes the analysis of parameters such as population size and household numbers, structure and growth of the economy, labour force and employment situation. Profiling for the study was done making use of Quantec Research database and selected StatsSA statistics, such as Labour Force Surveys and Community Survey 2007. The information presented at this stage will be augmented with primary data collected during the EIA phase.

- **Identifying the anticipated impacts.** This step includes the identification of the socio-economic impacts that could be expected during the construction and operational phases of the proposed mining activity. The list of impacts, inclusive of their nature and extent, represents the impacts that are usually associated with similar projects. Its purpose is to ensure that the specialist study contains a detailed analysis thereof, which means that their list, as well as other characteristic could change from the ones outlined in the Scoping Phase inputs report once the detailed assessment is undertaken.

- **Reporting.** The data and information gathered during the study was included and presented as part of the Scoping Phase Input Report.

2. Policy Review

High unemployment rates and the need for increase injection into the national economy resulted in the change of the economic policy in the country in recent years. This creates a need to review the relevant policies and strategies with the purpose of identifying the alignment of the project with these policies and their implications on the proposed activity.

The proposed development is located in the Waterberg District. It involves extraction of PGMs and their beneficiation on site. For that purpose, the project includes the development of a smelter that will beneficiate the concentrate into platinum, nickel and copper, whereby the end result will be a chemically pure product of a relatively valuable grade. Given the intended processes and the output product targeted by the project, it can be determined that the level of beneficiation is represented by Stage 1 and Stage 2 operations (see Figure 2-1).
Given the above description of the proposed activity and the recent changes in the economic policy in the country, the following development growth plans, policies and strategies have been identified to potentially have a significant impact on the project’s successful implementation:

- New Growth Path
- IPAP 2011/2012-2013/2014
- Industrial Development Corporation (IDC) and Development Bank of South Africa (DBSA) financing plans
- Draft Mineral Beneficiation Strategy for South Africa
- Limpopo Economic Development Plan
- Waterberg LED
- Waterberg Mining strategy.

A brief synopsis of each policy and its relevance to the proposed development follows.

### 2.1 New Growth Path (2010)

The core focus of the New Growth Path is embedded in the objective to create decent employment, alleviate poverty, and support sustainable long-term growth. Through the New Growth Path and the underlying policies and strategies, the government aims to create five million new jobs by 2020. The approach taken in the growth path is to identify areas in which employment creation is viable on a large scale, and then to revisit policies that hinder or promote specific industries. Priority has been placed upon the following sectors given their ability to create employment opportunities whilst stimulating economic growth:

- Infrastructure
- Agricultural value chain
- Mining value chain
- Green economy
- Manufacturing sectors
- Tourism and high-level services

In terms of the mining sector, the Growth Path necessitates an effective review of mining policies, rights and regimes in order to stimulate private investment specifically aligned with beneficiation and greater utilisation of mineral resources in the country. Additionally, the New Growth Path gives preference to projects that engage Stage 3 and Stage 4 beneficiation (which entails semi-fabrication and fabrication of extracted minerals) as opposed to ending the value chain on smelting and refining. However, the Department of Mineral Resources (DMR) is currently conducting a value chain study to determine a strategic plan of action addressing Stage 4 beneficiation opportunities of certain minerals in the country. It is therefore worthy to note that although Stage 4 beneficiation is most advantageous, projects of lower levels of beneficiation remain highly desirable for the purpose of economic growth and provision of inputs for the downstream beneficiation.

The New Growth Path, based on the IDC’s projections, set the employment target for the mining industry to 140 000 new jobs by 2020 and an additional 60 000 jobs by 2030, in which the majority of employment opportunities are expected to be created from the enhanced PGMs, coal exports and final manufacturing using base metal products.

Since the proposed activity involves the extraction of PGMs and its beneficiation at Stage 1 and possibly Stage 2, it means that the project is in alignment with the New Growth Path framework and, if implemented, will make a direct contribution towards the achievement of the policy’s targets set for the sector. Although it does not include Stage 4 beneficiation activities, it would, however, provide valuable upstream support to
expanding these types of activities if the project’s outputs are used further in the local downstream activities instead of being exported.

### 2.2 New Industrial Policy Action Plan 2 (IPAP) 2011/2012-2013/2014

The policy reflects collaborative objectives in economic growth and employment opportunities with regard to industrialisation in the country. The updated IPAP constitutes a central tool in implementation of the New Growth Path job-creation strategy. The Action Plan spans three years and is meant to be updated on an annual basis to assist the New Growth Path in achieving its target of five million jobs to be created by 2020; the interventions for the current IPAP2 2011/2012-2013/2014, though, target the creation of 129 000 jobs, of which 46 000 are expected to be created through direct impacts.

IPAP 2 2011/2012-2013/2014 desegregates targeted sectors into various clusters. The proposed project is mostly aligned with Cluster 2 interventions that aim at scaling up and broadening the existing IPAP sectors. The cluster targets existing sectors with high potential to positively impact industrialisation in the country through expansion in the relative industry and innovative ways to unleash the potential of the sector.

With respect to mineral beneficiation, IPAP 2 2011/2012-2013/2014 states that opportunities in this sector have already been operationalised, including the use of PGMs in manufacturing of catalytic converters for application in emission control in the auto industry. The immediate actions set up for the active three-year period include, inter alia:

- setting minimum beneficiation levels for the key value chain through up-scaling the relevant strategy and programme, and
- development of a gold-loan scheme to promote jewellery production.

Based on the above, the proposed project does not form part of any immediate actions set up for implementation within the mineral beneficiation industry; nevertheless, it falls within the PGMs value chain that has been prioritised for development.

### 2.3 Support of job creation by IDC and DBSA

The achievement of the New Growth Path targets and implementation of IPAP’s interventions requires commitment from both public and private organisations. Some of the main vehicles that are charged with the objective to assist government in contributing to the achievement of the job-creation target include the Industrial Development Corporation and the Development Bank of South Africa.

- The IDC has been identified as one of the key instruments in the successful implementation of the government’s target of creating five million jobs over a decade. It is anticipated that about R102 billion will be lent to support government policies over the next five years, and particularly the implementation of initiatives set out in the current and later IPAPs. Mining and beneficiation will be allocated R22bn of the above-mentioned amount, whilst the rest will be spent as follows:
  - Green industries – R22.4 billion
  - Manufacturing – R20.8 billion
  - Agricultural value chain – R7.7 billion
  - Tourism and creative industries - R14.8 billion
  - Funding to distressed companies - R2.5 billion
  - Strategic high-impact projects - R11 billion, and
  - Venture capital - R500 million.

As part of its effort to support employment, the IDC has also launched a R10 billion scheme that would offer funding to developers of high-employment effect projects at prime less 3%.
The specific areas that the IDC has identified for funding and technical assistance (where applicable) in accordance with the New Growth Path and the IPAP are as follow:

- Mining, beneficiation and metal projects domestically and in the rest of the continent
- Facilitating acquisition of assets by historically disadvantaged people
- Developing the local jewellery manufacturing industry and other value-added beneficiation projects.

The role of the IDC in mining and mining beneficiation is primarily the funding of capital investment for mining-related activities on all levels, i.e. funding is available for (emerging) mining houses and enterprises focusing on mining beneficiation. This means that the proposed project could potentially also apply for funding from the IDC.

- Another initiative by government aimed at supporting employment creation and economic growth is the allocation of R9 billion towards grants through a Jobs Fund, which is overseen by the Development Bank of South Africa (DBSA). The funding is available to both public and private sector agents which stimulate long-term job creation and have the potential to boost other local industries, i.e. high indirect and induced effects. The following sectors have been identified as key focus areas when selecting potential beneficiaries:
  - Enterprise development, which includes assistance to local procurement, marketing support, equipment upgrading or enterprise franchising
  - Infrastructural development, which includes the funding of light manufacturing zones and communication links to market goods
  - Support for job-seekers, which includes setting up networks and projects that can provide training and career guidance
  - Institutional capacity building, which includes funding, internships and mentorship programmes

The mining industry has not been given a specific preference by the Job Fund; however, innovation, competitiveness, and sustainability are the core criterion for the selection of projects. Therefore, eligibility of the proposed development for the Job Fund is a possibility provided that the key criteria are satisfied and the project shows that it will, for example, contribute to the support of job-seekers.

2.4 Draft Mineral Beneficiation Strategy for South Africa (2009)

Government has developed a Draft Mineral Beneficiation Strategy for South Africa in 2009/2010. In June 2011, government has approved the mineral beneficiation as an official policy. The document will be released later in 2011 after amendments are made. Although it is not known what changes will be made to the draft strategy, its review can already provide an insight into the potential future developments in this sector.

The beneficiation strategy aims at promoting employment, poverty alleviation and improving the overall welfare of South Africans through mining, and more specifically through the enhancement of mining beneficiation such that mineral beneficiations is done up to the last stages of the value chains. Given the level of expertise and industry strength in the country, the strategy proposes the development of technological excellence and domestic know-how in beneficiation, in order for higher stages of beneficiation to be actively targeted.

The vision behind the beneficiation strategy is to identify innovative usage of mineral resources such that the mineral resource base can be optimised and incessantly benefit the nation. The strategic goals in support of beneficiation are implemented through infrastructural development, investment promotion and facilitation, skills development, enabling regulatory environment, and research and development.

The strategy focuses on commodities such as gold, PGMs, diamonds, iron ore, chromium, manganese, vanadium, nickel, titanium, coal and uranium. It promotes the creation of five key value chains on the bases of
the above-mentioned commodities, such as energy, steel/stainless steel, pigment production, auto-catalyst and
diesel particulates, and diamond processing and jewellery. These value chains have been chosen due to their
potential to develop to the last stages of downstream beneficiation, such as fabricated articles as outlined in
Figure 2-1. The use of PGMs is meant for the development of auto-catalyst and easel particulates, as well as
jewellery production.

The draft strategy emphasised that the success of development of the
PGMs-based value chain is based on, amongst others, commitment of the PGM mining sector to supply
saleable raw materials for the local downstream beneficiation processes versus exporting them as has largely
been done in the past. Give the composition of the proposed project, it can thus be stated that it would carry
an important role in ensuring the supply of necessary materials for the establishment of Stage 3 and Stage 4
beneficiation activities in the country.

2.5 Limpopo Growth and Development Plan for 2009-2014

The Growth and Development Plan for Limpopo is a five-year plan that targets achievement of accelerated
growth in terms of increasing sustainable jobs and increased levels of income sources in the Province through
structural change in critical areas. The key challenges faced in Limpopo at present that time included
persistent poverty due to lack of productive capacities, limited fixed capital formation, and low levels of skills
and education of the population.

The LGDP recognises the importance of mining in developing the provincial economy and creating new
employment opportunities. In this respect, it identified the Dilokong Corridor (in Sekhukhune) and Mokopane
(where the proposed mining site is based) as areas in the Province that carry potential for growth within the
mining sector, which shows the optimal selection of a location for the proposed mining activity. The
aforementioned high potential areas are likely to realise great benefit from the optimal location of the site
varying from positive government assistance and intervention to higher than expected mineral resources.

The recombination of the significance and potential of mining in the context of the provincial economy led to
the development of the primary goal to shift the local mining industry from a purely resource-based industry
to a knowledge-based industry by 2030. The strategic challenges that need to be overcome and interventions aimed to be implemented to achieve the developmental vision for the mining sector and related
beneficiation activities include, inter alia:

- Challenges:
  - Development of a Limpopo Mining and Minerals Beneficiation (LMMBI) which aims at
    acquiring the necessary skilled workforce (more specifically for the tooling and foundry
    industry) and establishing the Industrial Development Zones which will provide tax incentives,
    low tariff regimes and relaxed labour laws
  - Formation and prioritisation of downstream beneficiation clusters with the primary goal of
    attracting Foreign Direct Investment (FDI)

- Interventions:
  - Development of Limpopo Mining Input Suppliers Parks Beneficiation Hubs and Supplier
    Development Programme that would focus on the supply of goods and services to the local
    mining activities
  - Development of specialised mining skills programmes and schools
  - Reviewing of policy measures that allow for the creation of industrial incentives unique to
    Limpopo mining beneficiation initiatives.

2.6 Waterberg Local Economic Development (LED, 2007)

The main objective of the Waterberg LED is to stimulate economic growth in the district municipality via
maximising competitive and comparative advantages, as well as optimal usage of local resources. The
backbone of the LED is to target poverty alleviation whilst creating sustainable employment for the local people therefore improving the quality of life for all. Although the LED document is somewhat outdated, it still directs the development of the local economy and indicates the priorities for investments in the area.

Waterberg LED recognises mining as a key sector in the district municipality followed by agriculture. A mining development strategy focusing on the improvement of the mining value chain has been established in support of the local mining industry. The LED focuses on clusters which have been formed in order to facilitate the specialisation of certain resources, namely PGMs and coal. With the assistance of the public sector, the cluster development aims to maximise the benefits of mineral resources through upstream and downstream activity in the local area.

The Waterberg DM plays a two-tier role in the mining sector’s development, i.e. firstly its role is to facilitate high-impact mining projects and secondly it is to promote small-scale mining among local cooperatives (Waterberg LED 2007). The proposed project could be classified as a high impact project due to the fact that it does not only include the extraction of PGMs, but also involved their refinement and smelting. Although these stages of beneficiation are not usually assisted with labour-intensive activities and are rather capital-intensive exercises, the project will without doubt stimulate the growth of the local economy, thus making a direct contribution toward achieving a 6% economic growth rate target set by the LED. In addition, it will also provide new employment opportunities for local residents and ultimately improve the local employment situation and skills profiles, which is again in line with the objectives set by the LED.

2.7 Waterberg Mining Strategy (2006)

The district economy is highly reliant on agriculture, mining and tourism due to the natural resources inherent to it. The recognition of comparative advantages associated with these sector lead to the development of sectoral strategies for the district, including one for the mining sector. The Waterberg Mining Strategy aims to achieve a number of significant goals in order to advance economic growth through mining and minerals beneficiation. These goals include achieving increased competitiveness on a sustainable basis, attracting investment resulting in job creation, improving standard of living for communities, and regional integration. Overall, the Waterberg mining strategy has set the following objectives:

- Create a conducive environment for mining expansion and new mining developments through, amongst others; improved infrastructure (e.g. water, roads, electricity, and rail), skills promotion, and small scale mining development.
- Promoting the capacity of BBBEE companies with regard to supply side for local mines
- Enhance the capacity of local municipalities and local authorities as well as communities, to maximise the benefit from mining activity in and around their areas

The Waterberg Mining Strategy highlighted the potential of the Waterberg District to become the major producer of platinum group metals in the world. It further stated that in 2006 no smelting or refining activities were taking place in the District and limited local procurement was done in 2006. Given these gaps, the strategy calls for the development of downstream beneficiation and increased local procurement practices. The above are suggested to be achieved through a partnership between the local mines and government, whereby government should assist with the development of necessary infrastructure and removing land-use constraints. This suggests that potentially mining households and investors could approach local government to negotiate their involvement and assistance in the successful initiation of the project that would stimulate local economic growth and provide new employment opportunities for the residents.

3. BASELINE INFORMATION

This chapter examines key socio-economic characteristics of the study area, as per delineation provided in the previous chapter. This is essential as it provides both qualitative and quantitative data related to the economies under observation, creating a baseline against which the impacts can be assessed. It should be
noted that where possible information is provided for 2011, which is an estimate based on the historical trends and available statistics.

The following socio-economic indicators are analysed in this chapter:

- Population size and growth
- Average household size
- Income and Expenditure patterns
- Labour Market dynamics
- Production
- Gross Domestic Product per Region.

### 3.1 Population size and growth

The population of any geographical area is the cornerstone of the development process, as it affects the economic growth through the provision of labour and entrepreneurial skills, and determines the demand for the production output. Examining population dynamics is essential to gaining an accurate perspective of those who are likely to be affected by any prospective development or project. This sub-section describes the status quo of the study area’s population as estimated for 2011.

In 2011, South Africa’s population is expected to be above 50 million (Table 3-1). About one out of ten people in the country is expected to reside in Limpopo and one out of five in Gauteng. The Mogalakwena Local Municipality is expected to house 342 479 people in 2011, or just more than 6% of the Limpopo population.

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>50 430 328</td>
<td>1.7%</td>
<td>1.3%</td>
<td>1.1%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Gauteng</td>
<td>11 371 102</td>
<td>3.4%</td>
<td>2.3%</td>
<td>1.8%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Limpopo</td>
<td>5 526 585</td>
<td>1.5%</td>
<td>1.0%</td>
<td>1.0%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Mogalakwena LM</td>
<td>342 479</td>
<td>1.1%</td>
<td>1.2%</td>
<td>1.5%</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

Source: Urban-Econ’s calculations based on Quantec, 2011

As indicated in the table above, the Compounded Annual Growth Rate (CAGR) of the primary study area’s population between 1995 and 2010 was 1.3%. It was higher than the CAGR of the provincial population during the same period, but lower than that of Gauteng and South Africa. Whilst the population of Limpopo, Gauteng and South Africa experienced a slowdown in their growth rates, the primary study area’s population growth rate has been increasing (Table 3-1).

### 3.2 Household numbers and size

Household data enables a richer interpretation of the results of economic impact analyses. The economic model employed in the study assumes a closed system, where households are included as an additional endogenous sector. This provides for an opportunity to estimate the effects of increase of disposable income of households due to changes in employment and income. The number of households and the rate at which they grow also provide crucial information for the prediction of future demands, and therefore, potential economic growth. A large increase in household numbers coupled with the increase in disposable income levels result in greater consumption, which in turn stimulate local production and as a result the economy. In addition, knowledge of the size of the study areas in terms of households is useful for interpretation of the magnitude of the economic impact that could be created by the proposed activity.

In 2011, South Africa is expected to have about 13 285 517 households, which means that the average household size in the country will be about 3.8. Limpopo is estimated to have just under 1.3 million households and a bigger average household size than in the country. The primary study area is expected to have 70 452 households and the same average household size (4.3) as the rest of the Province.
Table 3-2: Household numbers (2011), household size (2011) and its historical growth rate (1995-2010)

<table>
<thead>
<tr>
<th>Study area</th>
<th>HH number</th>
<th>Average HH size</th>
<th>Household number historical growth rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>13 285 517</td>
<td>3.8</td>
<td>4.0%</td>
</tr>
<tr>
<td>Gauteng</td>
<td>3 435 378</td>
<td>3.3</td>
<td>5.5%</td>
</tr>
<tr>
<td>Limpopo</td>
<td>1 281 360</td>
<td>4.3</td>
<td>4.0%</td>
</tr>
<tr>
<td>Mogalakwena LM</td>
<td>79 452</td>
<td>4.3</td>
<td>4.0%</td>
</tr>
</tbody>
</table>

Source: Urban-Econ’s calculations based on Quanetc, 2011

Over the years, as indicated in Table 3-2, the rates at which the numbers of households in the secondary and tertiary study areas were increasing have been slowing down, which mirrors the trend observed with respect to population dynamics in these study areas. In the primary study area, the trend though was different – with the population growth rate increasing, the household growth rate was slowing down. When compared with population growth rates, it could be noted that the household growth rate in South Africa was on par with the population growth rate in between 2005 and 2010. In Gauteng, Limpopo and the primary study area, household growth rates were however significantly lower than their population growth rates, which means that the average household size in these areas has been increasing.

The main factors that affect the household growth include, besides the population increase, the change in age structure and incidence rate, or the likelihood of people of a certain age to start a new household. The significant difference between a household growth rate and a population growth rate, though, is usually attributed to the change in age structure.

Changes in age structure and household incidence rate also have an impact on the household size, although the latter is also influenced by many other factors such as culture, traditions, education levels, income levels, etc. Over the years, it has been observed that the size of an average household in the country has been declining. As illustrated in Figure 3-1, the average household size in South Africa in 1995 was 4.4, whilst in 2011 it was 3.8. In the secondary and primary study areas, the average household size also dropped significantly between 1995 and 2011, although it should be noted that in Limpopo and the Mogalakwena LM, the average household size was considerably higher than in Gauteng or South Africa. In the last five years, a slight increase in the average household size in all areas is observed, which could suggest that the trend of the sharp decline in the household size observed between 1995 and 2002 was stopped.

Figure 3-1: Household size dynamics (1995 – 2011)

Source: Urban-Econ’s calculations based on Quanetc, 2011

3.3 Income and expenditure patterns

Income distribution is one of the most important indicators of social welfare, as income is a primary means by which people are able to satisfy their basic needs such as food, clothing, shelter, health, services, etc. Changes in income inflict changes in the standard of living, more specifically: a positive change in income can assist individuals, households, communities and countries to improve living standards.
There is a direct linkage between the household expenditure and economic growth. Increase in household expenditure means a greater demand for goods and services, which means an increase in production and positive change in the size of an economy. As has been seen in 2005-2006 in South Africa, robust increase in disposable income coupled with low interest rates in the country stimulated an increase in consumption by households, in particular durable and semi-durable goods, which in turn had a positive impact on the country’s economy. Knowledge of the volume of the disposable income and the expenditure patterns of households, therefore, can provide vital intelligence with respect to the sectors that are most dependent on the household income and therefore would be most affected in the case of change in household income.

Table 3-3 shows income distribution in study areas as captured in the Community Survey 2007. More recent data, unfortunately, are not available, whilst historical information is not robust and reliable enough to escalate the latest figures and estimate the situation in 2010 with great confidence.

Based on the 2007 figures it could be concluded that the household income situation mirrored some of the patterns observed in Limpopo and other observed in the rest of the country. First of all, the percentage of households earning less than R3 200 per month (R38 400 per annum) in the primary study area was slightly less than in the Province, but considerably bigger than in the rest of the country in 2007. Overall, more than half of households earned less than R3 200 per month in Mogalakwena LM in 2007. At the same time, though the percentage of households without any income at all was considerably lower in the primary study area than in any other study area analysed. From an average household income perspective, an average household in the primary study area earned more or less the same as an average household in the country. This in turn was bigger than in Limpopo but smaller than in Gauteng, which is indicative of their employment profiles.

![Table 3-3: Income distribution (2007)](image)

Source: Urban-Econ calculations based on Community Survey 2007, 2011

Figure 3-2 illustrates the expenditure pattern of households in study areas. It shows that there are slight differences between expenditure patterns of households in the Mogalakwena LM and other study areas, particularly Limpopo. In the primary study area, households tend to spend the same share of their disposable income on services and non-durable goods, whilst in Limpopo households tend to spend more on non-durable goods than on services. The share of disposable income spent by Mogalakwena households on non-durable goods is also greater than the share of expenditure on these goods by households residing in Gauteng and the rest of the country.
Table 3-4 provides more detailed information on the items that households spend the largest share of their income on.

Table 3-4: Dominant expenditure items (2008)

<table>
<thead>
<tr>
<th>Expenditure type</th>
<th>South Africa</th>
<th>Gauteng</th>
<th>Limpopo</th>
<th>Mogalakwena LM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food, beverages and tobacco</td>
<td>26.3%</td>
<td>25.6%</td>
<td>28.3%</td>
<td>27.5%</td>
</tr>
<tr>
<td>Rent</td>
<td>12.4%</td>
<td>11.9%</td>
<td>9.9%</td>
<td>12.4%</td>
</tr>
<tr>
<td>Transport and communication services</td>
<td>9.1%</td>
<td>9.3%</td>
<td>8.0%</td>
<td>8.6%</td>
</tr>
<tr>
<td>Medical services</td>
<td>5.9%</td>
<td>6.1%</td>
<td>5.4%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Personal transport equipment</td>
<td>4.5%</td>
<td>4.8%</td>
<td>4.7%</td>
<td>4.4%</td>
</tr>
<tr>
<td>Clothing and footwear</td>
<td>5.0%</td>
<td>5.0%</td>
<td>5.8%</td>
<td>5.1%</td>
</tr>
</tbody>
</table>

As indicated in Table 3-4, expenditure on food, beverage, and tobacco products is the largest expenditure item amongst households in all areas. A larger portion of Mogalakwena households’ incomes has to be allocated towards paying rent than is the case of households in Limpopo and Gauteng. Primary study area’s households also tend to spend a bigger share of their income on transportation than households in Limpopo. This could be attributed to the remoteness of the Mogalakwena LM with respect to the concentration of economic activities such as Polokwane in Limpopo or Pretoria in Gauteng, which forces people to travel further. Expenditure on personal transport equipment in the primary area is lower than in the secondary and tertiary areas and spending on clothing and footwear is smaller than in Limpopo, but the same as in the country.

3.4 The labour market

Employment is the primary means by which individuals who are of working age may earn an income that will enable them to provide for their basic needs. As such, employment and unemployment rates are important indicators of socio-economic well-being. The following paragraphs examine the study area’s labour market from a number of angles, including employment rate and sectoral employment patterns.

The composition of the labour force in the primary study area, Limpopo, Gauteng and the country as expected to be in 2011 is detailed in Table 3-5. It describes the labour force from the official definition perspective, where the unemployed are people who:

a) did not work during the seven days prior the interview
b) want to work and are available to start work within a week of the interview, and
c) have taken active steps to look for work or to start some form of self-employment in the four weeks prior to the interview.

Table 3-5: Labour force statistics estimate (2011)

<table>
<thead>
<tr>
<th>Indicators</th>
<th>South Africa</th>
<th>Gauteng</th>
<th>Limpopo</th>
<th>Mogalakwena LM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working age population</td>
<td>32 463 489</td>
<td>7 945 008</td>
<td>3 363 420</td>
<td>208 898</td>
</tr>
<tr>
<td>Non-EM</td>
<td>15 380 706</td>
<td>2 965 245</td>
<td>2 093 054</td>
<td>127 012</td>
</tr>
<tr>
<td>Labour Force</td>
<td>17 082 783</td>
<td>4 979 763</td>
<td>1 270 366</td>
<td>81 886</td>
</tr>
<tr>
<td>Employed</td>
<td>12 768 389</td>
<td>3 771 261</td>
<td>888 295</td>
<td>61 442</td>
</tr>
</tbody>
</table>
In 2011, South Africa is expected to have about 32 million people within the working age population. Of these, about 15.4 million are expected to be non-economically active and 17.1 million form part of a labour force. This means that the labour force participation rate in the country will be 52.6% in 2011. The number of employed people in South Africa is expected to be just under 12.8 million people, leaving 4.3 million people or 25.3% of the labour force unemployed.

In Gauteng and Limpopo, the employed population in 2011 is expected to be about 3.8 million and just under 900,000 respectively. The unemployment rate is expected to be lower in Gauteng than in Limpopo, as well as lower than in the country. At the same time, though the labour force participation rate in Gauteng will be two times bigger than that in Limpopo. In Limpopo 37.8% of working age population is expected to comprise of the labour force. This means that only about one out of three people in the working age group in the Limpopo Province participates in the economic activities. A considerable portion of those who are non-economically active are discouraged job seekers, i.e. people who would otherwise look for employment opportunities but decided to stop doing it because of the perception that they would have very little chance to find employment.

The situation in the primary study area is expected to largely mirror that of the Province where it is located. However, the labour force participation rate in Mogalakwena and its unemployment rate is expected to be better than that of Limpopo. This means that households in the primary study area have better access to income, which corresponds with the data provided in Table 3-3. Overall, it is expected that the labour force in the primary study area will equal to 81,886 people in 2011, of which 61,442 will have employment.

### 3.5 Economic production and GDP-R

Interpretation of economic impacts requires a sound understanding of the size of the economy and its dynamics in the past. A number of indicators exists that can describe the economy of a region or an area. The most common variables that are used for the analysis include production and Gross Domestic Product per Region (GDP-R). The former represents the total value of sales of goods and services, or the turnover of all economic agents in a region; whilst the latter, using the output approach, means the sum of value added created by all residents within a certain period of time, which is usually a year. The trend at which the GDP-R has been changing in the past is also referred to as economic growth indicator. It is a measure of both the performance of an area and the well-being of the citizens of an area. Faster economic growth than population growth is taken as an indicator of a healthy economy and an improvement in citizens’ well-being.

Table 3-6 provides an indication of the current estimated production and GDP-R values in the study areas. It shows that business sales in South Africa’s are expected to amount to R5,479 billion in 2011, which equates to R2,475 billion of value added. Limpopo accounted for 7.0% of the national GDP-R in 2011, whilst the primary study area contributed 6.1% to the provincial economy.

<table>
<thead>
<tr>
<th>Study area</th>
<th>Production (R’ml)</th>
<th>GDP-R (R’ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current prices</td>
<td>CAGR 1995-2010</td>
</tr>
<tr>
<td>South Africa</td>
<td>5,479,071</td>
<td>4.6%</td>
</tr>
<tr>
<td>Gauteng</td>
<td>1,802,907</td>
<td>5.0%</td>
</tr>
<tr>
<td>Limpopo</td>
<td>319,748</td>
<td>4.3%</td>
</tr>
<tr>
<td>Mogalakwena LM</td>
<td>19,945</td>
<td>5.2%</td>
</tr>
</tbody>
</table>

Source: Quantec, 2011
European economy in 2003, and the major global financial and local electricity crises in 2008 all had an influence on the dynamics of the national economy one way or another. It seems that the Rand depreciation in 2001 didn’t have any effect on the primary or secondary areas, as this was the time when both of them had significantly higher growth rates than South Africa. Fluctuations in the global and regional economies, as well as the spin-off effects of these trends experienced in the country, also affected the growth prospects of provincial and local municipality’s economies.

Figure 3-3: GDP-R historical trends (1996-2009)

The domestic electricity and global financial crises had a negative impact on the study area’s economies in 2009. As illustrated in Figure 3-3, all of the analysed economies contracted, with the primary study area’s economy being hit the most. This could be explained by the fact that a significant portion of the Mogalakwena economy comprises of the mining and quarrying industry. The electricity and financial crisis experienced in 2008 had a negative impact on the mining industry. As a result, the size of the mining industry has shrunk already in 2008. The peak of the aftermath of the global financial crisis reached South Africa in 2009. This coupled with high interest rates and stricter credit policy had a significant negative impact on the domestic demand. As a result, almost all industries experienced some level of contraction or stagnation, which ultimately reduced the demand for their outputs and had a negative impact on their growth. Sectors that continued growing during this period included construction, community and government services, largely due to the investment and activity taking place in preparation for the 2010 World Cup.

The global economy, as well as South Africa’s economy, is slowly recovering from the turmoil of the past few years. The most recent data suggest that the global economy would grow by 4.2% in 2011 (World Economic Outlook, October 2010). In South Africa the recovery is also evident. During 2010, the national economy has expanded by 4.6% q/q in the first quarter, 2.8% q/q in the second quarter and 2.6% q/q in the third quarter (StatsSA, 2010). The positive trend is expected to continue in the future. Moreover, the achievement of the new economic growth path targets with respect to job creation will require additional investments, which will then propel the growth of the economy even further.

3.6 Structure of economies

The structure of the economy and the composition of its employment provide valuable insight into the dependency of an area on specific sectors and its sensitivity to fluctuations of global and regional markets. Knowledge of the structure and the size of each sector are also important for the economic impact results’ interpretation, as it allows the assessment of the extent to which the proposed activity would change the economy, its structure and trends of specific sectors.
Table 3-7 provides structures of study areas' economies in 2011 illustrating nominal (2011) prices and 2005 prices. It should be noted that the calculation of the structure of the economy in current and constant prices provides different results. This is due to the fact that prices on goods and services do not change proportionally over years. Prices on goods of one sector could grow faster than prices on goods or services in other sectors. The indication of the structure of the economy in basic prices or prices of 2005 as was done in this case illustrates the relative composition of the economy, but excludes the benefits or dis-benefits of that economy that might have been experienced due to price effects. This is why, the presentation of results in nominal prices is also important as it allows the illustration of the economy’s structure taking into account the current market prices and therefore the effects thereof on the income or Gross Operating Surplus. The comparison of the structure of the economy in terms of basic and nominal prices also provides valuable insight into the sensitivity of that economy with respect to changes of commodity prices. An economy that generates a significant share of its GDP-R from certain commodities will most likely have a significantly different structure when compared between nominal and basic prices.

Table 3-7: Structure of the study areas’ economies in 2011

<table>
<thead>
<tr>
<th>Sectors</th>
<th>South Africa</th>
<th>Gauteng</th>
<th>Limpopo</th>
<th>Magalakwena LM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2005 prices</td>
<td>Nominal</td>
<td>2005 prices</td>
<td>Nominal</td>
</tr>
<tr>
<td>Primary sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture, forestry &amp; fishing</td>
<td>2.4%</td>
<td>3.0%</td>
<td>0.4%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Mining &amp; quarrying</td>
<td>6.2%</td>
<td>10.4%</td>
<td>2.0%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Secondary sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>17.9%</td>
<td>16.2%</td>
<td>20.8%</td>
<td>19.5%</td>
</tr>
<tr>
<td>Electricity, gas &amp; water</td>
<td>2.2%</td>
<td>2.4%</td>
<td>2.1%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Construction</td>
<td>3.2%</td>
<td>3.4%</td>
<td>3.9%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Tertiary sector</td>
<td>68.1%</td>
<td>64.6%</td>
<td>70.8%</td>
<td>69.7%</td>
</tr>
<tr>
<td>Trade</td>
<td>13.9%</td>
<td>13.8%</td>
<td>14.3%</td>
<td>14.9%</td>
</tr>
<tr>
<td>Transport, storage &amp; comm.</td>
<td>10.5%</td>
<td>9.7%</td>
<td>9.7%</td>
<td>8.9%</td>
</tr>
<tr>
<td>Finance, insurance, &amp; business</td>
<td>23.4%</td>
<td>21.2%</td>
<td>26.7%</td>
<td>25.3%</td>
</tr>
<tr>
<td>Com. &amp; gov. services</td>
<td>20.3%</td>
<td>19.9%</td>
<td>20.0%</td>
<td>20.6%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Urban-Econ’s calculations based on Quantec, 2011

As indicated in the table above, South Africa’s economy is a service economy, as the biggest share of its GDP-R is created by tertiary sectors, in particular the finance and business services sector and the community and government services sector. The primary sector that includes agriculture and mining contributes the smallest amount to the national economy, although they are strategically important for ensuring food security in the country and uninterrupted business operations.

The structure of Gauteng’s economy is quite similar to the composition of the national economy with the tertiary sector accounting for more than 70% of its GDP-R and the primary sector playing a less prominent role in the economy. The comparison of the structure of the Gauteng economy in basic and nominal terms suggests that price effects do not have a significant impact on the structure of the economy, showing its relative resilience to the significant fluctuations in this perspective. This is largely due to the fact that it does not contain a prominent primary sector, in particular the mining industry, as it is the price of commodities produced by the primary industry that can have a notable effect on the structure of any economy.

Limpopo’s economy, although generating most of its GDP-R from the tertiary sector too, has a different structure with respect to primary and secondary sectors than that of the country’s economy. In constant prices, the primary sector accounts for a quarter of the provincial GDP-R, but in nominal prices its share is significantly higher which indicates that such an economy would be highly sensitive to fluctuations of prices on commodities, particularly those that are being mined in the area. Whilst its primary sector is vast, its
manufacturing sector is small which also indicates that limited processing is taking place in the Province of the raw materials that are being mined in the area.

The structure of the Mogalakwena LM’s economy is different to that of South Africa, but is quite similar to that of Limpopo. It is clear that it is more dependent on the mining sector than any of the other economies. Because of it, its tertiary sector is smaller than the tertiary sector in Limpopo. Following the biggest sector in the municipality – mining – are the community services sector, finance sector and trade.

Figure 3-4 illustrates the structure of the primary study areas’ economies from the employment perspective.

### Figure 3-4: Employment structure (2011)

<table>
<thead>
<tr>
<th></th>
<th>Agriculture, forestry and fishing</th>
<th>Manufacturing</th>
<th>Construction</th>
<th>Transport, storage and communication</th>
<th>Mining and quarrying</th>
<th>Electricity, gas and water</th>
<th>Trade</th>
<th>Finance, insurance, real estate and business services</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>4.4%</td>
<td>4.0%</td>
<td>11.5%</td>
<td>5.8%</td>
<td>21.8%</td>
<td>4.5%</td>
<td>15.9%</td>
<td>29.7%</td>
</tr>
<tr>
<td>Gauteng</td>
<td>1.8%</td>
<td>13.7%</td>
<td>5.4%</td>
<td>21.7%</td>
<td>5.5%</td>
<td>23.3%</td>
<td>8.4%</td>
<td>27.4%</td>
</tr>
<tr>
<td>Limpopo</td>
<td>6.4%</td>
<td>10.2%</td>
<td>6.2%</td>
<td>6.6%</td>
<td>25.0%</td>
<td>3.4%</td>
<td>7.7%</td>
<td>33.8%</td>
</tr>
<tr>
<td>Mogalakwena LM</td>
<td>4.3%</td>
<td>10.8%</td>
<td>8.4%</td>
<td>6.7%</td>
<td>24.1%</td>
<td>3.5%</td>
<td>7.4%</td>
<td>34.4%</td>
</tr>
</tbody>
</table>

Source: Urban-Econ calculations based on Quantec, 2011

The employment structure presented largely corresponds with the structure of the economy with the tertiary sector making the largest contribution towards employment creation in all areas under analysis.

- More than two thirds of people employed in South Africa work in the tertiary sector, in particular the community and government services sector and the trade sector. Agriculture, which accounted for 3% of the national GDP-R in 2010, on the other hand, provided 6.4% of all employment opportunities; whilst the contribution of the mining industry towards the employment in the country was smaller than its contribution towards GDP-R. Nevertheless, both of the sectors are labour-intensive and create a notable number of employment opportunities in the country, particularly in rural areas.

- Employment structure in Gauteng is also dominated by the number of people who are working in the tertiary sector, specifically in the finance sector, trade and community and government services. Its secondary sector creates 19.7% of jobs in the Province, whilst its primary sector creates 2.3% of all employment opportunities.

- Most of the people employed in Limpopo are working in the tertiary sector too, specifically in the finance sector, trade and community and government services. Its secondary sector creates 15.2% of jobs in the Province, whilst its primary sector creates 16.6%.

- The employment composition in the Mogalakwena Local Municipality is quite similar to that of Limpopo with the sectors providing the largest numbers of jobs being the trade, community and government services, and mining sectors. The mining sector, which contributes 35% to the GDP-R (in nominal prices), provides only 10.8% of employment opportunities in the area. At the same time, the trade sector’s employment contribution is greater than its contribution towards GDP-R.

### 3.7 Basic service delivery and access to tenure

Access to basic service delivery and shelter are the indicators that allow understanding the standard of living of the households residing in the study areas. Comprehension of the extent to which households in the area have access to water, sanitation and electricity assists in understanding of the communities’ plight and their needs. At the same time, knowledge of the types of dwellings that households reside in is valuable in
developing a complete profile of the circumstances in which communities are living. All of above creates a baseline against which the potential impacts of the proposed activity could be assessed. All information provided in this section is based on the data presented in StatsSA’s Community Survey 2007.

Table 3-8 provides information on the types of dwellings in which households living in the study areas. It indicates that more than 93% of households in the primary study area were living in formal dwellings. Access to formal dwellings in the primary study area was the highest amongst all study areas analysed. Mogalakwena also had the lowest percentage of households living in information dwellings, such as a shack in a backyard of a formal dwelling or in an informal settlement. This suggests that although local communities do require formal housing, their needs are considerably smaller than those observed in Gauteng, for example, where one out of four households living in an informal dwelling.

Table 3-8: Dwelling types (2007)

<table>
<thead>
<tr>
<th>Item</th>
<th>South Africa</th>
<th>Gauteng</th>
<th>Limpopo</th>
<th>Mogalakwena</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal dwelling</td>
<td>81.3%</td>
<td>72.7%</td>
<td>90.9%</td>
<td>93.6%</td>
</tr>
<tr>
<td>Informal dwelling</td>
<td>14.4%</td>
<td>22.7%</td>
<td>5.6%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Other</td>
<td>4.3%</td>
<td>4.7%</td>
<td>3.5%</td>
<td>1.1%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: StatsSA Community Survey 2007

Table 3-9 provides information on the access of households to electricity, using energy for lighting indicator as a proxy. The information presented in this table suggests that the primary study area’s households have the best access to electricity compared to the other study areas. More than 91% of households in Mogalakwena use electricity for lighting compared to 81.2% in Limpopo and 83.3% in Gauteng. This information correlates with the situation of access to formal dwellings, as a greater access to formal residence would suggest a greater access to electricity.

Table 3-9: Energy for lighting (2007)

<table>
<thead>
<tr>
<th>Item</th>
<th>South Africa</th>
<th>Gauteng</th>
<th>Limpopo</th>
<th>Mogalakwena</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>80.1%</td>
<td>83.3%</td>
<td>81.2%</td>
<td>91.6%</td>
</tr>
<tr>
<td>Other</td>
<td>19.9%</td>
<td>16.7%</td>
<td>18.8%</td>
<td>8.4%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: StatsSA Community Survey 2007

Table 3-10 shows households’ access to water. The situation in this case is quite different to that observed with regard to access to electricity and formal dwellings. Less than half of households in the primary study area as well as in Limpopo itself have access to water inside their dwellings. This is considerably lower than 87% of households living in Gauteng who have access to water inside their dwellings. At the same time, more than 40% of households in both Mogalakwena and Limpopo have access to water from the point outside their yard. This is indicative of the rural nature of these regions, where due to settlement pattern water is quite often provided to the neighbourhood rather than to the dwelling itself. Nevertheless, 13% of households in the primary study area and 16.4% of households in Limpopo still have to rely on other sources of water which are not very reliable, such as water vendor, rain water, etc.

Table 3-10: Access to water (2007)

<table>
<thead>
<tr>
<th>Item</th>
<th>South Africa</th>
<th>Gauteng</th>
<th>Limpopo</th>
<th>Mogalakwena</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water inside dwelling or a yard</td>
<td>69.4%</td>
<td>87.0%</td>
<td>43.6%</td>
<td>45.7%</td>
</tr>
<tr>
<td>Water from point outside the yard</td>
<td>19.2%</td>
<td>10.9%</td>
<td>40.1%</td>
<td>41.3%</td>
</tr>
<tr>
<td>Other water access points</td>
<td>11.3%</td>
<td>2.1%</td>
<td>16.4%</td>
<td>13.0%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: StatsSA Community Survey 2007

Table 3-11 provides information on access by households to sanitation. It indicates that about 4.5% of households in the primary study area had no toilet in 2007. This is lower than the figure reported for the Limpopo Province, but higher than the percentage calculated for Gauteng. Overall, though, it is better than
the situation in the country. Households in the primary study area and Limpopo who had access to toilets largely had access to pit toilets either with ventilation or without. This is again indicative of the type of settlements and dwellings that are found in rural and semi-urban communities.

Table 3-11: Access to sanitation (2007)

<table>
<thead>
<tr>
<th>Item</th>
<th>South Africa</th>
<th>Gauteng</th>
<th>Limpopo</th>
<th>Mogalakwena</th>
</tr>
</thead>
<tbody>
<tr>
<td>No toilet</td>
<td>8.3%</td>
<td>1.6%</td>
<td>12.4%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Bucket system</td>
<td>2.2%</td>
<td>1.0%</td>
<td>0.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Toilet facility</td>
<td>89.6%</td>
<td>97.4%</td>
<td>87.6%</td>
<td>95.5%</td>
</tr>
<tr>
<td>Flush toilet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry toilet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pit toilet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical toilet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: StatsSA Community Survey 2007

4. SUMMARY AND POTENTIAL SOCIO-ECONOMIC IMPACTS

Strategic relevance

The proposed activity involves the extraction of PGMs and refinement thereof to produce Platinum, Nickel and Copper containing alloy. Given the above, the proposed activity will involve Stage 1 and possibly Stage 2 beneficiations activities. The review of the key economic policies and strategies on the national, provincial and district levels suggested that the project represents a strategic economic activity that has been targeted to create new employment opportunities and stimulate economic development:

- The project would have a direct contribution towards the creation of 140 000 jobs within the mining and mineral beneficiation industry set by the New Growth Path.
- The alignment of the proposed activity with the government policy is also evident in the recent approval by government of the mineral beneficiation strategy that aims to promote the development of five key value chains, one of which is the PGMs-based value chain. And although the main focus of the strategy is to develop downstream beneficiation activities, its refining and smelting processes would without doubt provide inputs necessary for the development of these forward linkages.
- From the provincial and district perspective, the project is also considered to be one of the priorities. Both the Limpopo Economic Growth and Development Plan (2009-2014), Waterberg LED (2007) and Waterberg Mining strategy (2006) emphasised the need to make use of the local comparative advantages related to PGM reserves enjoyed by the district and expand their extraction and most importantly their processing into final products. The activity would have the potential to contribute to the achievement of the economic development job creation targets and objectives set for the Province and the District.
- Last but not least is the potential opportunity of the project to make use of the funds set aside by government to fund selected projects. The IDC has set out R22 billion to fund mining and mineral beneficiation activities, whilst R9 billion was assigned to the DBSA to be given as grants for projects that would amongst others support job-seekers.

Brief socio-economic profile

The Mogalakwena Local Municipality, where the proposed activity is to take place, comprises of 342 479 people and 79 452 households, thus representing 6% of the provincial population. Over the last decade, the size of the municipality from the population perspective has been growing at about the same growth rate observed in the rest of the Province, and the country; however unlike the trend observed in the province and the rest of the country, its population growth has been increasing and not declining.
Households residing in the Mogalakwena Local Municipality have relatively the same level of income as the average household in the country and are better off than an average household in the Limpopo Province. A considerably lower percentage of households in the Mogalakwena have no income compared to that of the Limpopo Province. This is related to the fact that the unemployment rate in the Local Municipality is better than the unemployment rate in the Province. All of the above suggests that households residing in Mogalakwena have on average better access to employment opportunities than households in the rest of the Province. This could be explained by the fact that the Local Municipality has a very well developed mining sector and is strategically located between Pretoria and Polokwane.

Households living in the primary study area generally have better access to formal dwellings and electricity. Their access to water and sanitation, however, differs significantly from that observed in the country and in Gauteng. Although most of the households have access to water and sanitation in Mogalakwena, a great share of them have these services outside their dwellings. This is though indicative of the settlement pattern and dwelling structure that are observed in rural areas throughout the country.

The labour market in the primary study area comprises of 61,442 employed and 20,443 unemployed people. It has a bigger labour participation rate (39.2%) than in Limpopo but significantly lower participation rate than in South Africa. This however could be explained by the fact that a significant number of working age population is encouraged job-seekers. These people are not considered to be economically active and are not included in the calculation of the unemployment rate. Therefore, the actual unemployment rates are deceiving and do not reflect the actual need to create new employment opportunities for people in the primary study area, as well as the rest of the country.

The economy of the Municipality is relatively small (R10.7 billion of GDP-R), but since 1996 its average performance was slightly better than in other study areas under analysis, particularly Limpopo. This was attributed to the sharp increase of the mining sector in the area in the beginning of the century and supported by the growth of the transport industry.

The mining sector is the largest sector in the primary-study area’s economy. It contributes 35% to the Municipality’s economy in nominal prices. Such a dependency on mining, however, is not ideal as any fluctuations in commodity prices and demand for commodities would have a notable impact on the local economy. The global recession in 2009 had exactly the same effect on the economy, when the value added of the mining sector dropped by 19%.

From the employment perspective, the sectors that create the majority of jobs in the Municipality are the services sectors, such as community services and trade. Given the employment creation targets set by government in its New Growth Path and assuming that it is matched by investment, the economy of Mogalakwena could be growing at a higher rate in the future than it did over the past few years.

**Expected impacts**

The proposed activity, i.e. mining, is expected to have a positive impact on the local economy by creating employment opportunities and growing its GDP-R. Through indirect and induced effects it is also expected to have a positive impact on the production volumes of supporting industries and sectors that service consumers. At the same time, though, the establishment of mining activities will result in the discontinuation of current agricultural activities on the farm and could have a negative impact on the farms surrounding it. From a social perspective, creation of new employment opportunities will most likely have a positive impact on the standard of living of the affected households. The project though could also create a number of negative socio-economic effects, particularly during construction. These include potential increase of crime in the area, increase of health concerns and potential deterioration of health, noise and dust in the area. Overall, the potential socio-economic impacts that could be predicted at this stage and that will need to be investigated in the specialist study include:
During the construction phase:
- Temporary increase in production and GDP-R in industries supporting the construction
- Impact on balance of payment due to possibility that certain equipment and machinery will be imported
- Temporary employment creation at the construction site
- Temporary increase in government revenue due to the establishment of the mine
- Permanent loss of production created by the current agricultural activities
- Permanent loss of jobs associated with the existing agricultural activities on site
- Influx of job-seekers
- Crime concerns
- Possible negative health impacts associated with migrants
- Temporary increase in households’ income levels

During the operational phase:
- Increase in production and GDP-R due to the mine’s operations
- Permanent employment creation at the mine
- Increase in government revenue
- Skills development
- Health impacts – occupation and in the nearby communities due to noise and dust
- Potential increase in criminal activities
- Improvement of living standards of positively affected households (thought employment)
- Increase in households’ income levels

During the rehabilitation phase:
- Loss of jobs due to the closure of the mine
- Loss of sustainable income due to the closure of the mines
- Temporary increase in production and GDP-R in industries supporting the rehabilitation
- Temporary employment creation at the rehabilitation site
- Potential for establishment of new economic activity and creation of new employment opportunities at the rehabilitated site.

REFERENCES
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South Africa Yearbook, 2009/2010
Sylvania Resources, 2010. Terms of Reference, 2010