

Mining **Future Skills**



MINING QUALIFICATIONS AUTHORITY

FINAL REPORT

**FINAL REPORT**

**FOR**

**A STUDY TO IDENTIFY AND ANALYSE THE SPECIFIC MINING AND  
MINERAL SECTOR (MMS)-RELATED SKILLS DEVELOPMENT NEEDS IN  
THE MPUMALANGA PROVINCE**

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## **EXECUTIVE SUMMARY**

### **Introduction and Background**

The Mining Qualifications Authority (MQA), as a Sector Education and Training Authority (SETA) for the mining and minerals sector (MMS), plays a crucial role in skills development and training. It ensures that both the workforce and communities are equipped with the necessary skills and competencies to meet the current and future needs of the sector. This is achieved through the implementation of various programmes underpinned by the skills demands of the MMS. Central to this is skills planning that integrates local community needs, to ensure that training programmes are tailored to the socioeconomic contexts as well as opportunities found in specific geographical areas. It is in line with these imperatives that the MQA initiated a study to provide insights into the specific mining and mineral sector related skills development needs in mining communities. By identifying the skills needed by communities, the study will help inform strategies that will lead to the implementation of targeted training programmes needed to address the skills gaps in communities.

### **Study Aim and Objectives**

The aim of the study is to provide insights into the specific MMS-related skills development needs in mining communities in Mpumalanga province taking into account its unique economic landscape, minerals resources endowments, and their sectoral challenges. This aim is supported by several objectives, including an assessment of policies, legislation, and strategies that support skills development, as well as an analysis of the socioeconomic landscape of the province. Additionally, the objectives encompass establishing the status of the MMS in the province, highlighting its performance and contribution to the provincial economy. Identifying mining-related skills shortages and assessing skills development and training programs are also key objectives of the study. Given that the economy of the Mpumalanga province is supported by multiple economic sectors, the study also aims to identify cross-sector opportunities for skills development to foster an environment that supports skills transfer and application across sectors.

## **Approach to the Study**

The study employed a mixed-methods approach that involved collection both primary and secondary data. Primary data was collected through surveys, workshops and key informant interviews. A total of 415 surveys were conducted with community members and two workshops held. Additionally, interviews were carried out with representatives from mining companies. Secondary data was gathered through a comprehensive literature review. More so, the study made use of the MQA's Workplace Skills Plans (WSPs) and Annual Training Reports (ATRs) data. The information collected was synthesised to provide understanding of the skills development needs of the province considering both the skills supply and demand.

## **Key Findings and Insights**

The key findings from the study are outlined below, and these are presented to respond to the objectives of the study.

### ***Objective 1 and 2: Analysing the effectiveness of current legislation, policies, and strategies driving skills development in the province as well as assessing the alignment of provincial frameworks with national strategies***

There is alignment between national frameworks, sectoral legislation and strategies and provincial development strategies. All these frameworks are embedded in the country's constitution which upholds the right to education. In terms of the effectiveness of the various frameworks, there is evidence of the implementation of skills development initiatives, which communities continue to benefit from. This have been highlighted in both in literature as well as in the results where programmes implemented by mining companies in response to legislative requirements have been presented. However, there are limitations that were highlighted particularly when it comes to the implementation of Social and Labour Plan which is critical to supporting skills development in the province.

***Objective 3: Analysing the population demographics of the province (e.g., age distribution, gender, and racial representation, educational attainment levels and skillsets of working-age population).***

Understanding the socioeconomic landscape of the population is crucial, as it directly influences the recommendations for skills development and training. To this end, it was important to provide an analysis of the population demographics to ensure that the skills development and training recommendations take into account the characteristics of the community (i.e., in terms of gender, age, racial representation, educational attainment, etc.). The demographic profile of the community members closely mirrors that of the broader population. Female participants were in the majority overall, and in the Ehlanzeni and Nkangala district municipalities. In terms of age distribution, the majority of participants fell within the 26 to 35 age group. Youth (defined as individuals aged 18 to 35) represented the largest proportion of participants in Nkangala and Gert Sibande, with Ehlanzeni being the exception. Regarding educational attainment, most participants have completed matric. However, in Gert Sibande, the highest level of education for most participants was Grade 11. Across all three district municipalities, only a small percentage of participants had post-secondary education.

Unemployment emerged as a significant concern, with over 70% of participants in all district municipalities indicating they were not employed. Female participants and individuals aged 36 to 45 were disproportionately affected. Among those who were employed, the majority worked in the MMS, government services, and agriculture. Notably, in Gert Sibande, a substantial portion of participants—57%—reported being self-employed.

***Objective 4: Establishing a detailed profile of the MMS in the province, including main commodities extracted and processed, size and composition of the existing workforce, types of companies operating in the sector***

The mining sector continues to play an important role in the province's economy, contributing considerably to both economic growth and employment. The province is well endowed with

a variety of mineral resources—some currently being mined, while others remain untapped. Although the sector is experiencing a general decline, there is considerable potential for revitalisation, particularly through the development of small-scale, community-led mining initiatives. For communities, mining remains a cornerstone of economic opportunity. As such, there is continued interest to participate in the sector and to leverage the opportunities within the MMS sector to support local development and livelihoods.

***Objective 5: Analysing the economic performance of the MMS compared to other sectors in the provincial economy including assessing its contribution to GDP, job creation and revenue generation***

Mpumalanga’s economy is underpinned by several key sectors, with mining, utilities, and agriculture making the largest contributions to provincial GDP. Employment patterns, however, are dominated by community services, trade, and finance. The province is also positioning itself for future growth through emerging industries such as renewable energy, critical minerals, new energy vehicles (NEVs), and the broader green economy. At the same time, traditional sectors including agriculture, tourism, and business services continue to play a vital role in driving economic development.

***Objective 6 and 7: Identifying the existing mining-related occupational shortages and skills gaps within the province and reasons thereof as well as identifying the skills mismatches between the skills required by mining companies and the skills available in the community***

The majority of the labour force in province is concentrated in semi-skilled and low skilled occupations. Several occupations have been identified as being in high demand, particularly in fields critical to the mining sector such as engineering and artisan trades. Additionally, a number of roles have been classified as hard-to-fill, with the top three being: General Manager (Mining), Engineering Manager, and Diesel Mechanic. The main barriers to recruitment include a lack of relevant qualifications, insufficient work experience, and delays in recruitment processes. The other jobs expected to be in demand as needed by emerging in

the province include high voltage electricians, automotive mechanics, solar PV installers, horticulture farmers, battery technicians, and others.

***Objective 8 and 9: Assessing the adequacy and effectiveness of existing skills development programmes in addressing provincial needs as well as analysing the capacity offerings of technical colleges, universities, and industry-specific training providers in addressing the skills development in the province***

Assessing the adequacy and effectiveness of existing skills development programmes in addressing the needs of communities is important as it provides insights into what is working and what is not working. The country's skills development objectives, as outlined in various policies and laws, are implemented through multiple platforms. Mpumalanga province has a growing educational landscape that comprises TVETs, CET colleges, and a university, all of which support skills development through its programme offerings that cater for different economic sectors including mining. Several issues were noted with affect skills development in the province. At the basic education level, high dropout rates and a significant proportion of individuals without matric continue to constrain post-school attainment. While provincial institutions currently do not offer mining engineering programmes, plans are underway to introduce them. In-demand courses identified include ICT, Electrical Engineering, Human Resource Management, Entrepreneurship, and Business Management. To respond to emerging industries, institutions are also developing programmes in water management, agriculture, solar PV technology, tourism, and hospitality.

***Objective 10: Identifying the common skills development needs of community members living near mining operations, beyond mining-specific jobs***

The study identified several crucial skills that enable community members to access employment in the mining sector. The most ranked skills include health and safety, engineering skills, and environmental management. Specifically, In Ehlanzeni district municipality, the top three skills identified by community members are technical mining skills, health and safety, and engineering skills. In Gert Sibande district municipality, the top three

skills are health and safety, technical mining skills, and environmental management. Lastly, in Nkangala district municipality, the top skills are health and safety, technical mining skills, and engineering skills. In particular, youth emphasised the importance of technical skills and certifications, entrepreneurship as well as mentorship and leadership skills.

***Objective 11 and 12: Analysing the demand for skills in related sectors such as agriculture, manufacturing, tourism, and service industries***

The need to identify opportunities in other economic sectors in the province is motivated by the recognition that the mining sector has limitations in terms of the broad opportunities it can offer to communities. The economic opportunities in the province were outlined in the discussion that provided an overview of the socioeconomic landscape of the province (i.e., see section 2.2). Mpumalanga province depends on several sector for economic development and the other key sectors (i.e., as measured through GDP) are utilities, agriculture and manufacturing. The economic sectors that offer opportunities in the province include agriculture, construction, and manufacturing. Additionally, the renewable energy sector emerged as a potential area of growth, driven by the just energy transition. A discussion on cross-sector skills is included in the report and among these, health and safety practices are highlighted as the most critical cross-cutting skills across all three district municipalities. Other essential skills include equipment operation and maintenance, as well as leadership and supervisory capabilities. All are deemed critical in terms of enabling participation across different sectors.

***Objective 12: Assessing the need for entrepreneurial and business development skills for local economic empowerment***

The study revealed a strong interest in entrepreneurship among community members, who emphasised the need for targeted programmes to support local business development across the province. This reflects a growing recognition of the broader economic opportunities available beyond traditional employment both within the mining sector and in other emerging industries. To this end, there was recommendations towards training that will provide businesses and entrepreneurship skills to communities.

***Objective 13: Gathering insights on the community and companies' experiences in accessing skills development offerings from the MQA***

It emerged from the study that majority of community members were not aware of skills development programmes that have been implemented in the province. There were mixed sentiments in terms of the alignment of training programmes and the needs of communities. Several barriers to participation were identified, including limited access to information about available training opportunities, high costs associated with training, and the distance to training centres. Community members emphasised the need for improved communication and outreach to raise awareness about available programmes – this recommendation was also echoed by mining companies. Mining companies reported having implemented various training initiatives aimed at addressing community skills needs. However, they also noted that low levels of educational attainment among community members continue to hinder both participation in training and overall employability.

***Objective 14 and 15: Exploring the potential synergies between skills development needs of the MMS for upskilling and reskilling existing workforce for diversification into other sectors as well as identifying potential partners and stakeholders relevant to addressing skills development needs in the province.***

Skills development initiatives in the province have also been supported by various stakeholders, including the Mining Qualifications Authority (MQA). However, the study found that a large portion of community members are unaware of the MQA and its role, highlighting the need for the MQA to strengthen its engagement and visibility within communities. Community members suggested several areas for improvement, including enhanced communication about available training opportunities and the delivery of a broader range of programmes to meet the diverse needs of local populations. To address persistent skills mismatches, it was recommended that mining companies, SETAs, and training providers strengthen their collaboration. Such partnerships are essential to aligning training programmes with current industry demands and ensuring that the skills being developed are both relevant and responsive to labour market needs.

### **Recommendations**

The following recommendations are based on the key findings of the study and are structured according to the SMART framework, ensuring they are specific, measurable, achievable, relevant, and time bound.

#### ***Recommendation 1: Establish stakeholder engagement forum to discuss issues affecting education and skills development in the province.***

Mpumalanga province is facing numerous challenges affecting its education landscape, such as inadequate infrastructure, limited funding, and socio-economic issues that impede students' performance and completion of their studies. A significant concern is the rising number of school dropouts and those who, despite completing matric, are not in employment, education, or training (NEET). A range of interventions is required to address these challenges, and it is proposed that MQA initiates a stakeholder engagement process to collaboratively develop an education and skills development strategy aimed at resolving issues impacting the effective delivery of education and skills development in the province.

<b>Activity</b>	<b>MQA initiates a stakeholder engagement process with relevant stakeholders to develop an education and skills development strategy for Mpumalanga province.</b>
<b>Timeline</b>	The discussions on the state of education in Mpumalanga can commence in 2026. MQA can initiate discussions with its existing partners.

#### ***Recommendation 2: Conduct community site visits as part of its outreach programme***

During the workshops, communities expressed concerns about research studies being conducted and completed without providing feedback to them. This has led to "research fatigue", where communities are hesitant to participate in research studies because they have not resulted in actionable initiatives that benefit them. To this effect, it was recommended that MQA conduct on-site visits to connect directly with communities. Through these visits, MQA can gather ground insights, build trust, and ensure that the feedback on its programmes is incorporated in future research and development initiatives.

<b>Activity</b>	<b>MQA must conduct community site visits as part of its outreach programme</b>
<b>Timeline</b>	These visits can be arranged in areas/communities where research studies have been conducted. These sessions can serve as feedback platforms where key research findings are shared with the communities, and information is provided by MQA on its programmes.

***Recommendation 3: A study to obtain insights on past and existing skills development programmes offering agricultural training in Mpumalanga province.***

The agricultural sector remains a key sector in Mpumalanga province alongside the MMS. Many community members have identified opportunities within agriculture and the skills needed to effectively engage in the sector. The study highlighted several training programmes, revealing that agriculture is central to most skills development initiatives. Given the recommendations for training programmes that offer agricultural skills, there is a need to understand the coverage of past and existing skills development programmes and impact as measured by employability and participation in the agricultural sector. This will place MQA in an informed position allowing it to strategically plan and establish the necessary relationships that are needed to support skills development drawing from both the mining and agricultural sectors. This study will benefit the mining sector by identifying key community projects that they can consider as part of the implementation of their social and labour plans and corporate social responsibilities in communities.

<b>Activity</b>	<b>MQA must initiate a study that will provide insights into past and existing skills development programmes offering agricultural training in Mpumalanga province.</b>
<b>Timeline</b>	This could be a collaborative study with AgriSETA. The study can be considered for 2026/2027 financial year.

***Recommendation 4: A study to assess the skills needs of population in the age group 36 to 45 years in the province***

Unemployment remains a concern in the province. It emerged from the study that most affected are the in the age group 36 to 45 years. A key concern raised by community members is that the majority of skills development initiatives currently implemented tend to focus primarily on youth (i.e., those aged 18 to 35). This is the case as seen in the skills development programmes implemented by mining companies where the majority targeted the youth. While youth-targeted programmes are essential, this narrow focus risks excluding other age groups who are equally in need of upskilling and employment opportunities. To promote inclusive skills development, it is proposed that future interventions adopt a more holistic approach that considers the needs of all age groups.

<b>Activity</b>	<b>MQA must initiate a study that will provide insights into skills interventions needed to support community members beyond the youth demographic</b>
<b>Timeline</b>	This study could be considered for 2026/27 financial year

***Recommendation 5: Assessment of the business and entrepreneurial skills needed by communities in Gert Sibande District Municipality***

The study found that a notable proportion of community members are self-employed, with a particularly strong interest in entrepreneurship observed in the Gert Sibande District Municipality. This highlights the growing importance of small business development as a pathway to job creation. Community members highlighted the need for programmes that support both existing small enterprises. It is recommended that MQA initiate a study that is aimed at assessing the specific needs, challenges, and opportunities for entrepreneurship development within Gert Sibande District Municipality. The overarching goal of the study will be identified specific programmes that can be supported by mining companies through their SLP and CSI commitments that will have positive impact in communities.

<b>Activity</b>	<b>MQA must initiate a study that assesses the business and entrepreneurial skills of existing businesses in Gert Sibande District Municipality</b>
<b>Timeline</b>	The study can be considered for 2026/27 financial year.

***Recommendation 6: Develop an accredited training course on the just energy transition offered to community leaders in Mpumalanga province***

The study established that most community members in the province are not knowledgeable about the just energy transition and its implications for them. Therefore, it is proposed that MQA support the development of an accredited training course for community-based organisations in the province. This course should be designed within the framework of a ‘train-the-trainer’ model, ensuring that local representatives are equipped to educate their communities. The course should cover the fundamentals of the just energy transition, its potential impacts on local economies, and strategies for communities to adapt and benefit from this transition. In addition to community-based organisations, this course can be offered to local government officials to ensure a broader understanding of the just energy transition thereby fostering informed approach to the changes and opportunities that it brings.

<b>Activity</b>	<b>MQA must provide funding for the development of an accredited short course on the just energy transition to be offered to community leaders in Mpumalanga province.</b>
<b>Timeline</b>	The short course can be earmarked for development in 2026 and be piloted in communities in 2027.

***Recommendation 7: Support the development of upskilling and reskilling programmes in the province***

While the MMS remains a critical sector in the province, its contribution to GDP and employment is projected to decline due to the shifts driven by the Just Energy Transition, which calls for a move away from coal. Research has identified coal mining, coal-based power generation, and internal combustion engine (ICE) vehicle manufacturing as high-risk sectors. Consequently, several occupations including electricians, automotive mechanics, and mine workers are vulnerable. There is therefore a need for targeted upskilling and reskilling programmes to enable these workers to transition into emerging industries. It is recommended that MQA support the development of upskilling and reskilling programmes in collaboration with industry stakeholders, educational institutions, and other relevant stakeholders. As an initial step, MQA should convene consultative workshops to engage stakeholders in designing industry-wide upskilling and reskilling strategies, ensuring

alignment with emerging economic opportunities such as renewable energy, critical minerals, and green technologies.

<b>Activity</b>	<b>MQA must convene consultative workshops which is set the foundation for designing industry-wide upskilling and reskilling programmes</b>
<b>Timeline</b>	These workshops can be organised in 2026.

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## LIST OF ABBREVIATIONS AND ACRONYMS

<b>Abbreviation/acronym</b>	<b>Description</b>
<b>4IR</b>	Fourth Industrial Revolution
<b>ARM</b>	African Rainbow Minerals
<b>BIC</b>	Bushveld Igneous Complex
<b>CALS</b>	Centre for Applied Legal Studies
<b>CET</b>	Community Education and Training
<b>CETA</b>	Construction Education and Training Authority
<b>CoS</b>	Centre of Specialisation
<b>DHET</b>	Department of Higher Education and Training
<b>DMR</b>	Department of Mineral Resources
<b>DMRE</b>	Department of Mineral Resources and Energy
<b>ECM</b>	Eastern Chrome Mines
<b>EE</b>	Employment Equity
<b>ETDP</b>	Education, Training and Development Practices Sector Education and Training Authority
<b>EU</b>	European Union
<b>EV</b>	Electric Vehicle
<b>EWSETA</b>	Energy and Water Sector Education Training Authority
<b>FET</b>	Further Education and Training
<b>GDP</b>	Gross Domestic Product
<b>HDISA</b>	Historically Disadvantaged Individual South Africans
<b>HDSA</b>	Historically Disadvantaged South Africans
<b>HRD</b>	Human Resource Development
<b>IDP</b>	Integrated Development Plan
<b>LFPR</b>	Labour Force Participation Rate
<b>LGSETA</b>	Local Government Sector Education and Training Authority
<b>MASDT</b>	Mobile Agri Skills Development and Training
<b>MerSETA</b>	Manufacturing, Engineering and Related Services Sector Education and Training Authority

<b>MICT SETA</b>	Media, Information and Communication Technologies Sector Education and Training Authority
<b>MIDP</b>	Mpumalanga Industrial Development Plan
<b>MMC</b>	Manganese Metal Company
<b>MMS</b>	Mining and Minerals Sector
<b>MPRDA</b>	Mineral and Petroleum Resource Development Act
<b>MQA</b>	Mining Qualification Authority
<b>MRTT</b>	Mpumalanga Regional Training Trust
<b>NDA</b>	National Development Agency
<b>NDP</b>	National Development Plan
<b>NQF</b>	National Qualification Framework
<b>NSDS</b>	National Skills Development Strategy
<b>OIHD</b>	Occupations in high demand
<b>PGMs</b>	Platinum Group Metals
<b>PwC</b>	PricewaterhouseCoopers
<b>RMAA</b>	Red Meat Abattoir Association
<b>SAHRC</b>	South African Human Rights Commission
<b>SAPS</b>	South African Police Service
<b>SAQA</b>	South African Qualification Authority
<b>SEDA</b>	Small Enterprise Development Agency
<b>SETA</b>	Sector Education and Training Authority
<b>SLP</b>	Social and Labour Plan
<b>SMME</b>	Small, Micro and Medium Enterprise
<b>STEM</b>	Science, Technology, Engineering and Mathematics
<b>TVET</b>	Technical and Vocational Education and Training

# 1. INTRODUCTION AND BACKGROUND TO THE STUDY

## 1.1. Introduction

The Mining Qualifications Authority (MQA) is a Sector Education and Training Authority (SETA) for the mining and minerals sector (MMS) in South Africa. It was established in terms of the Mine Health and Safety Act No. 29 of 1996, and it is a recognised SETA in terms of the Skills Development Act No. 97 of 1998 as amended<sup>1</sup>. The MQA's vision is to lead skills development and training in the MMS so as to build a *“competent, health and safety oriented mining and minerals workforce”*. This is achieved through several programmes that are embedded within six strategic objectives which encompass the following:

### Box 1: MQA's strategic objectives

- Promote efficient and effective governance and administration.
- Improve skills development planning and decision-making through research.
- Promote work-based skills development to support transformation in the mining and minerals sector.
- Facilitate access to occupationally directed learning programmes for the unemployed.
- Support mine community training initiatives to access economic opportunities.
- Ensure the delivery of quality learning programmes in the mining and minerals sector.

The need to support mining communities through skills development and training directly responds to the objectives of the Broad Based Socio Economic Empowerment Charter for the Mining and Minerals Sector (i.e., Mining Charter). The Mining Charter is a key policy instrument aimed at transforming the MMS by addressing historical inequalities and promoting socio-economic development. This overarching goal is supported by several objectives, one of which speaks to the need *“utilise and expand the existing skills base for the empowerment of historically disadvantaged persons”* (Government gazette, 2018:12). This is in recognition of the shortage of skills in mining communities which continue to hinder their participation in the mining sector.

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<sup>1</sup> Source: <https://mqa.org.za/company-overview/>. [Accessed: 27 November 2024].

Against this background, the MQA has initiated a study that provides insights into the specific mining and mineral sector (MMS) related skills development needs in mining communities in Mpumalanga Province. By identifying the skills needed by communities, the study will help inform strategies that will lead to the implementation of targeted training programmes needed to address the skills gaps in communities.

## **1.2. Problem statement**

Mpumalanga is well known for its coal mining activities with 80% of the South Africa's coal mined in the province (Statistics South Africa, 2022). According to Minerals Council South Africa (2023), Mpumalanga is amongst the provinces with the largest mining sectors contributing between 20% and 30% to provincial Gross Domestic Product (GDP). Despite this strong economic performance in the mining sector, the province continues to grapple with high levels of unemployment. According to Statistics South Africa (2025), the province lost 43,000 jobs in the first quarter of 2025. This resulted in the unemployment level increasing from 34.7% in Q4:2024 to 35.4% in Q1:2025.

This high unemployment rate has been linked to several factors including educational attainment and skills mismatches. It is concerning that only 7.3% of the population aged 20 years and older have attained post-school education—a decline from 9.1% in 2011 (Statistics South Africa). Furthermore, about 35% of the population hold matric qualification. These low education levels hinder employability, as many individuals lack the foundational and technical skills required by the labour market. This mismatch between existing skills and industry demands also limit access to employment opportunities.

In response, the Mpumalanga Economic Reconstruction and Recovery Plan (MERRP) has prioritised skills development as a key strategy to enhance workforce readiness, improve employability, and stimulate inclusive economic growth. To support this objective, there is a need to understand the current state of skills development in the province. Given its cross-cutting nature, skills development requires coordinated efforts across multiple sectors and stakeholders including government, industry, training institutions, and communities to

ensure that training initiatives are aligned with both local economic needs and national development goals.

### **1.3. Aim and objectives**

The aim of the study is to provide insights into the specific MMS-related skills development needs in mining communities in Mpumalanga province taking into account its unique economic landscape, minerals resources endowments, and their sectoral challenges. The objectives of the study are to:

- Analysing the effectiveness of current legislation, policies, and strategies driving skills development in the province.
- Assessing the alignment of provincial frameworks with national strategies
- Analysing the population demographics of the province (e.g., age distribution, gender, and racial representation, educational attainment levels and skillsets of working-age population).
- Establishing a detailed profile of the MMS in the province, including:
  - Main mining commodities extracted and processed.
  - Size and composition of the existing workforce
  - Types of companies operating in the sector (national, multinationals, small-scale miners).
- Analysing the economic performance of the MMS compared to other sectors in the provincial economy.
  - Assessing its contribution to Gross Domestic Product (GDP), job creation, and revenue generation.
- Identifying the existing mining-related occupational shortages and skills gaps within the province and reasons thereof.
  - Identify the skill mismatches between the skills required by mining companies and the skills available in the community.
- Assessing the adequacy and effectiveness of existing skills development programmes in addressing provincial needs.
  - Analysing the capacity offerings of technical colleges, universities, and industry-specific training providers in addressing the skills development in the province.

- Identifying the common skills development needs of community members living near mining operations, beyond mining-specific jobs.
  - Analysing the demand for skills in related sectors such as agriculture, manufacturing, tourism, and service industries.
  - Assessing the need for entrepreneurial and business development skills for local economic empowerment.
- Gathering insights on the community and companies' experiences in accessing skills development offerings from the MQA.
- Exploring the potential synergies between skills development needs of the MMS for upskilling and reskilling existing workforce for diversification into other sectors.
- Identifying potential partners and stakeholders relevant to addressing skills development needs in the province.

#### **1.4. Significance of the study**

Against the challenges and opportunities in Mpumalanga province, the study provides evidence-based insights that can inform targeted interventions needed to facilitate economic diversification, enhance employability, and promote sustainable community development beyond the life of mining operations. The findings of the study are expected to help bridge the gap between the current skills profile of mining communities and the evolving demands of both the MMS and alternative sectors in the province.

The study is also best positioned to inform the design of skills development programmes that not only meet the immediate needs of the MMS but also prepare communities for opportunities in emerging sectors, thereby reducing dependency on mining activities. This approach is especially crucial given the evolving nature of the MMS as evidenced in Mpumalanga province with the closure of mines and the just energy transition, which are creating labour markets that demand new skills.

## **2. LITERATURE AND POLICY REVIEW**

### **2.1. Introduction**

The chapter presents the literature and policy review covering the theoretical framework underpinning the study. The chapter also discusses the socioeconomic landscape of Mpumalanga province and provides an overview of the current state of the mining and minerals sector in the province. This discussion is followed by a skills analysis which provides insights on the province workforce composition and skills profiles, skills shortages and gaps and highlights key factors contributing to skills gaps in the province. The chapter also provides a landscape of education and training in the province and discusses skills development policies and initiatives implemented in the province aimed at supporting skills development and training.

### **2.2. Socioeconomic landscape for the province**

#### **2.2.1. *Locality***

Mpumalanga province is located on the north-eastern part of the country. It is bordered by Limpopo province to the north and Mozambique and Swaziland to the east. It is the second-smallest province in the country with an area extent of 76 495 km<sup>2</sup>. The province houses three district municipalities, and these are depicted on figure 1. The three district municipalities are Ehlanzeni, Gert Sibande and Nkangala. The province has 17 local municipalities, with seven municipalities located in Gert Sibande district municipality, six in Nkangala district municipality and four in Ehlanzeni district municipality. The capital city of the province is Mbombela also known Nelspruit.



Figure 1: District and local municipalities in Mpumalanga province  
(Municipalities South Africa, n.d)

### 2.2.2. Demographic profile of the province

Mpumalanga province is ranked 6<sup>th</sup> in terms of population size in the country. It follows Limpopo and the Eastern Cape provinces. Mpumalanga has a total population of 5.1 million people (Statistics South Africa, 2024). This increased from 4 million in 2011. According to Statistics South Africa (2024), the population increased by 21% between 2011 and 2022. Mpumalanga’s population account for 8.3% of the country’s population. This increased from a share of 7.8% in 2022 (Statistics South Africa, 2023). According to Statistics South Africa (2023), Mpumalanga is among the provinces with the highest population growth, with a provincial growth rate of 1.7%. This compares higher with the national population growth rate of 1.4%.

Figure 2 shows population according to the district municipalities comparing 2011 and 2022. The largest population is found in Ehlanzeni district municipality which account for 44% of the total population. As seen on the figure, its population increased by 26% - this was the largest population growth in the province. Nkangala district municipality has the second largest

population in the province. It accounts for 31% of the total population. Gert Sibande’s share of the population is 25%. Between 2011 and 2022, its population increased by 19%.

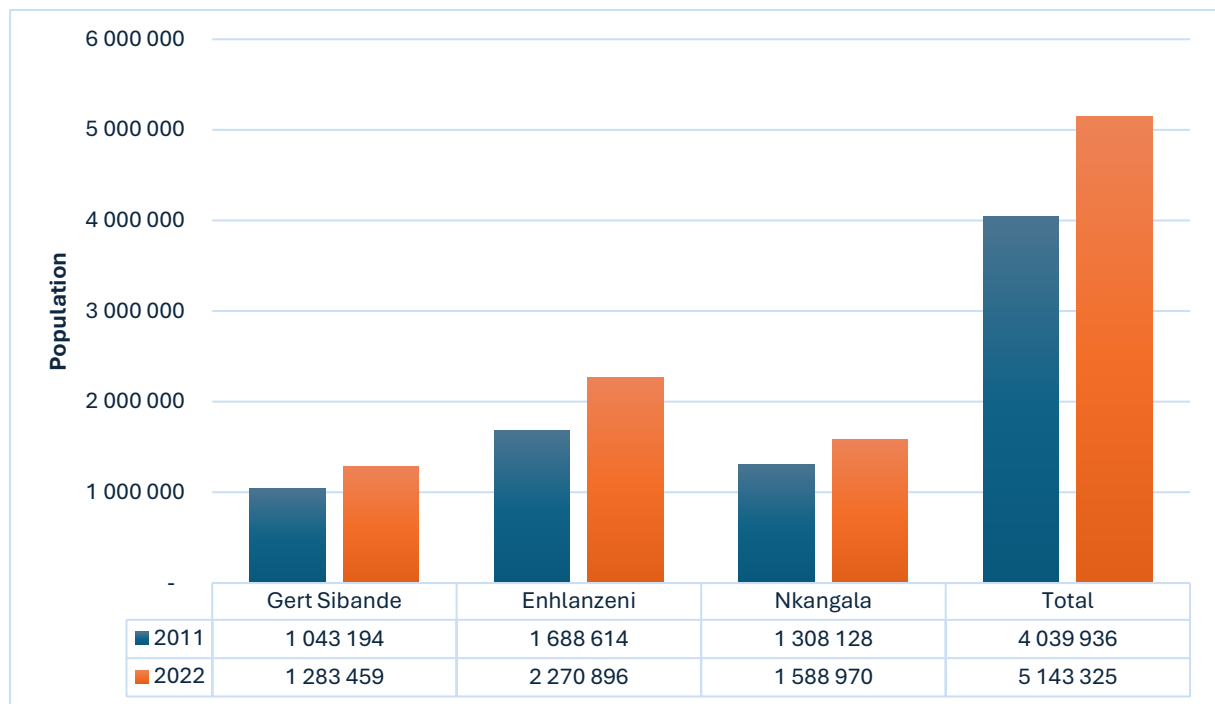


Figure 2: Population by district municipality in Mpumalanga province, 2011 and 2022

(Source: Statistics South Africa, 2024)

The population is dominated by females accounting 52% of the total population. In terms of race, Blacks account for the largest share of the population. About 95% of the total population is Black, followed by White at 3.6% and the remainder includes Coloureds and Indian (Statistics South Africa, 2024a). Figure 3 shows population by gender and age. As seen on the figure, females account for the largest percentage in almost all age cohorts except age 10 to 19 years. A significant percentage of the population is concentrated in the 0 to 4 years, 25 to 29 years as well as 20 to 24 years and 30 to 34 years. According to Statistics South Africa (2023), Mpumalanga has the highest percentage of population in the age group 25 to 34 years in the country. Youth (i.e., 15 to 34 years) account for 36% of the total population. This equates to 1.8 million young people in the province. According to Statistics South Africa (2024c), youth population grew by 47.8% between 1996 to 2022. According to Statistics South Africa (2024), of the population aged 15 to 34 years, about 2.3% are living with disabilities.

Working-age population (i.e., 15 to 64 years) account for 66.4% of the total population. This increased from 64.1% in 2011 (Statistics South Africa, 2023).

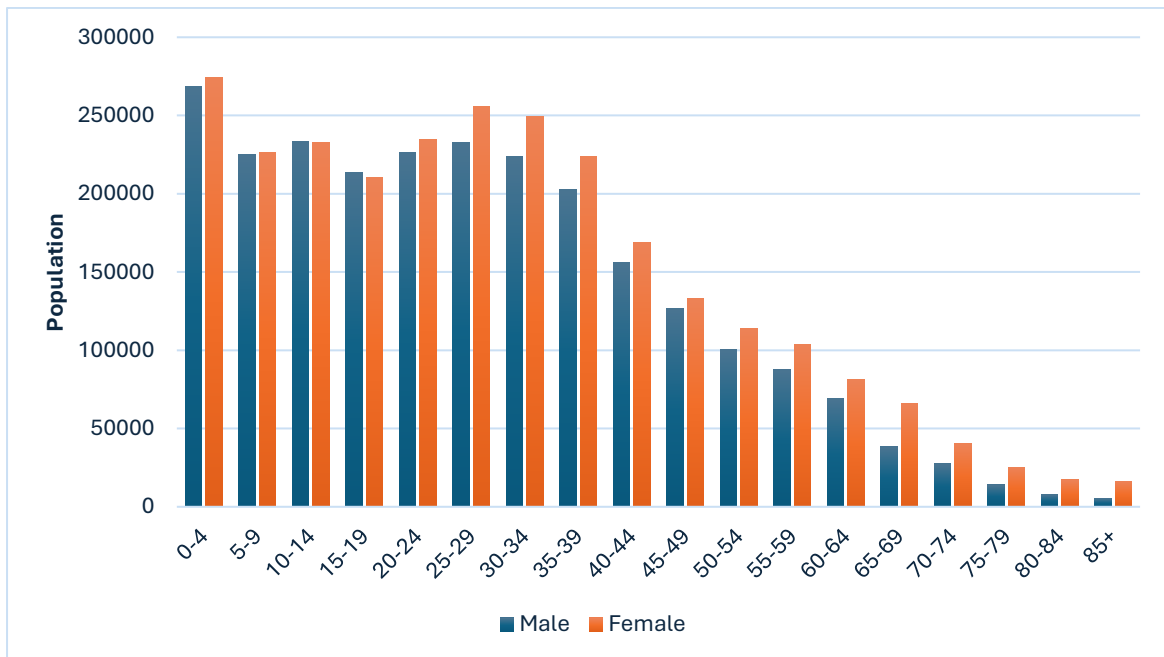


Figure 3: Population by gender and age  
(Source: Statistics South Africa, 2024a)

### 2.2.3. Education profile

Mpumalanga is one of the leading provinces with poor educational backgrounds. According to Sithole (2023), the highest illiteracy rate in country is observed in the Eastern Cape at 15.2% followed by Mpumalanga at 14.7%, and Limpopo 14.1%. Figure 4 shows the education levels amongst the population group aged 20 years and older in the province. As seen on the figure, the majority of the population has completed secondary education and have matric qualification. This cohort constitutes 40.2% of the population. They are followed by those with some secondary education accounting 29.4% of the population. There is still a considerable percentage (i.e., 11.7%) of the population that do not have any formal schooling. Only 7% of the population have tertiary education.

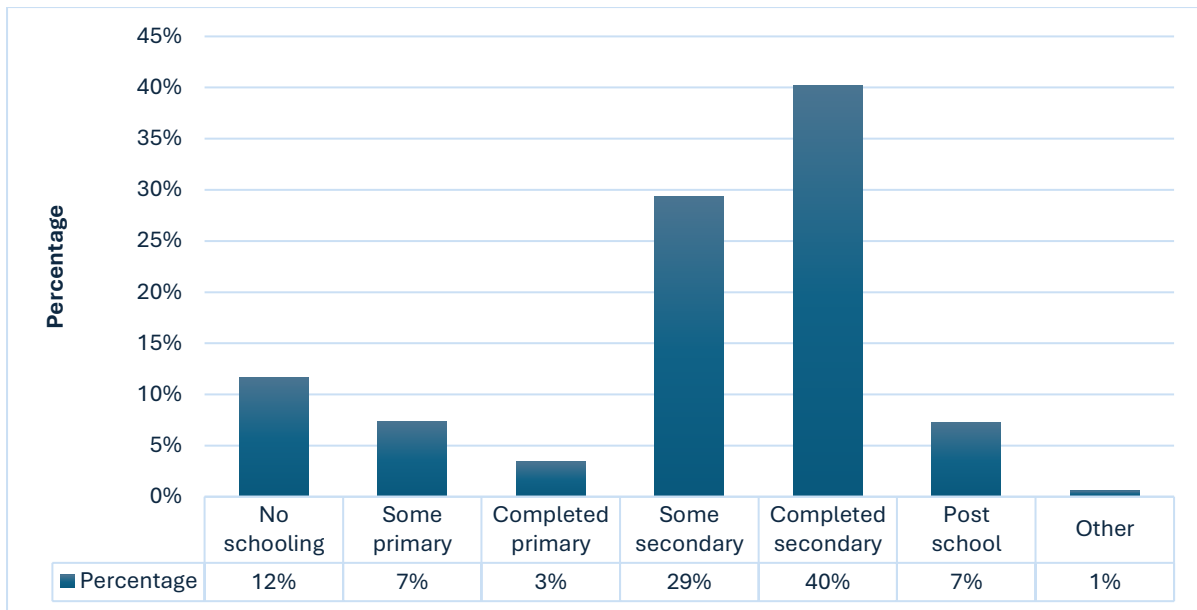


Figure 4: Education levels in Mpumalanga province

(Source: Statistics South Africa, 2024)

Table 1 shows the distribution of population aged 5 to 24 years that are attending an educational institution in Mpumalanga. As seen on the table, while the number of persons who were attending educational institution increased, the overall percentage declined from 74.8% in 2011 to 73.4% in 2022 (i.e., this is calculated as a percentage of the total population in the age group 5 to 24). Ehlanzeni district municipality had the highest percentage of persons attending an educational institution in the province both in 2011 and 2022 at 76.3% and 74% respectively.

Table 1: Population aged 15 to 24 years attending an educational institution

District municipality	2011		2022	
	Number	%	Number	%
Gert Sibande	303,170	73.6%	308,683	71.7%
Nkangala	350,774	73.5%	370,912	73.0%
Ehlanzeni	541,591	76.3%	581,468	74.0%
<b>Mpumalanga</b>	<b>1,195,535</b>	<b>74.80%</b>	<b>1,261,063</b>	<b>73.40%</b>

(Source: Statistics South Africa, 2024)

As noted, only 7% of those that are aged 20 years and above have post school education. Figure 5 shows the distribution of those with higher education by field of study. As seen on the figure, about 26% of this group have qualifications in business management. This is followed by humanities and related field of study as well as engineering and other applied sciences at 25.1% and 21.7% respectively.

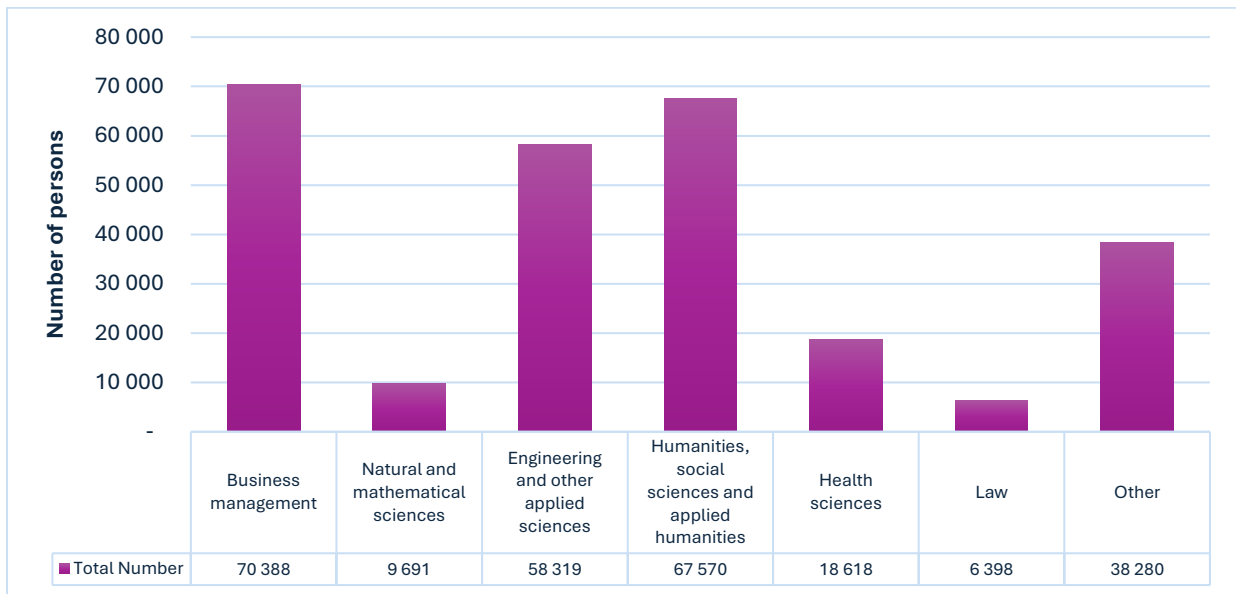


Figure 5: Population aged 20 years and older with post school qualifications  
(Source: Statistics South Africa, 2024)

Figure 6 disaggregates further education attainment by gender. There are significant differences in the field of studies across gender. Females dominate three field of study, namely, business management (i.e., 30%), humanities and related field of study (i.e., 31%) as well as health sciences (i.e., 9%). Over a third (i.e., about 35%) of males are in engineering and related qualifications compared to females (i.e., about 10%). According to Statistics South Africa (2023), about 46 500 persons with engineering and related qualifications are Black. This constitutes the largest share (i.e., 79%) to those with engineering qualifications.

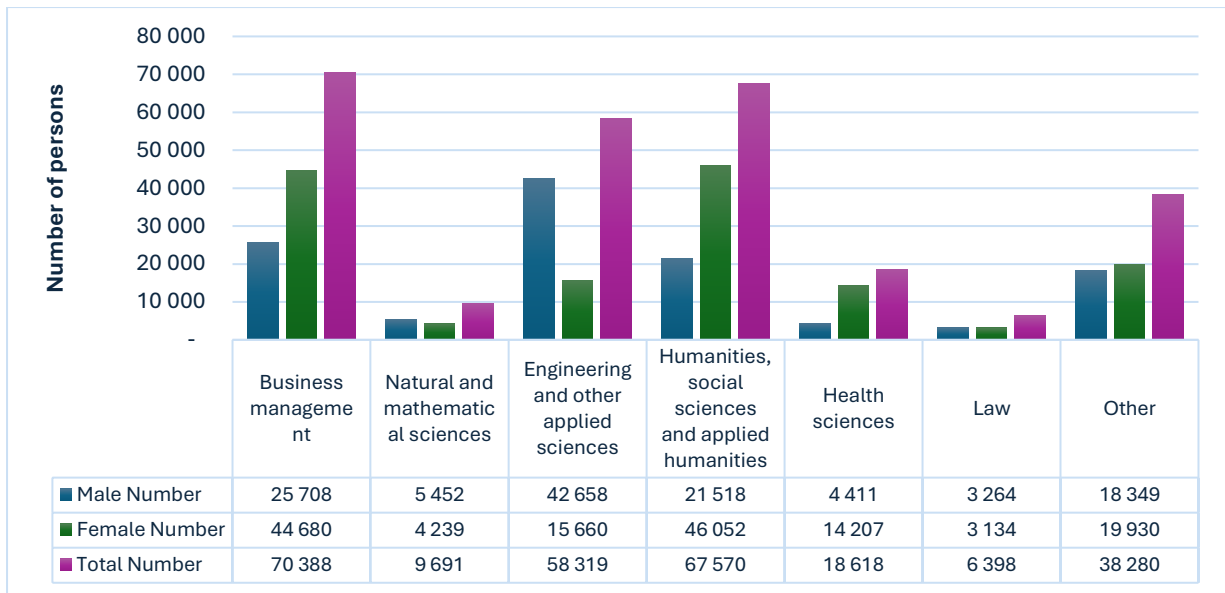


Figure 6: Population aged 20 years and older with post school qualifications by gender

(Source: Statistics South Africa, 2024)

#### 2.2.4. Type of households

Table 2 shows the distribution of households by type of dwelling and headship. The types of households are classified into four, namely, formal dwellings, traditional dwellings, informal dwellings and other. The percentage of the population residing in formal dwellings has increased from 1996 to 2022. A decline in the number of households living in traditional dwellings and informal dwellings is observed on the table. As noted, the table also shows headship and this is classified into two, youth and non-youth headed households. In the report, youth refer to persons aged between 15 and 34 years, while non-youth include those that are 35 years or older. As seen on the table, there is a considerable percentage of youth headed households. It is also seen that there is a higher percentage of youth-headed households that are living on informal dwellings.

Table 2: Distribution of households by type of dwelling and headship

Year	Formal dwelling		Traditional dwelling		Informal dwelling		Other	
	Youth	Non-youth	Youth	Non-youth	Youth	Non-youth	Youth	Non-youth
1996	63.3	67.1	19.7	19.6	16.6	12.8	0.4	0.4
2001	69.2	73.6	11.6	13.6	18.8	12.6	0.3	0.2
2011	80.0	85.5	4.0	4.7	14.9	9.1	1.1	0.7
2022	88.7	93.3	1.8	1.8	9.2	4.8	0.3	0.2

(Statistics South Africa, 2024c)

Youth-headed households deal with several socioeconomic challenges resulting from high school dropout rates because of financial pressures and limited access to tertiary education opportunities. The consequence of this includes limited access to economic opportunities resulting in high poverty and unemployment rates in youth-headed households. According to Statistics South Africa (2023), the average household size in the province is 3.6 and this compares with 3.4 persons as the average household size in the country.

#### **2.2.5. Economic landscape**

There are several economic sectors that contribute to the economy of the Mpumalanga province. Table 3 provides a summary of the performance of the key sectors in the province in 2022. The table shows contribution to the economy of the province both in terms of rand value and percentage share. As seen on the table, the mining sector is the largest industry in the province contributing 30.2% in the GDP of the province in 2022. This translated to R143.7 billion. It is followed by community services (i.e., 17.1%), Trade (i.e., 12.6%), manufacturing (i.e., 12.5%) and finance (i.e., 11.8%). These are the top five economic sectors in the province with a combined value of R401.2 billion.

Table 3: Contribution of key economic sectors in the economy of the province

Economic sector	Value R-billion	% contribution
Agriculture	13.5	2.8
Mining	143.7	30.2
Manufacturing	59.7	12.5
Utilities	27.9	5.9
Construction	9.0	1.9
Trade	60.0	12.6
Transport	24.7	5.2
Finance	56.4	11.8
Community services	81.4	17.1

(Source: Department of Economic Development and Tourism, 2023)

Figure 7 shows the contribution of Mpumalanga’s economic sectors to the country’s corresponding sectors in 2016 and 2022. The mining and utility sectors contributed the largest share in both 2016 and 2022. The contribution of the mining sector in Mpumalanga to the country’s MMS was 22.6% in 2022. This increased slightly from 22.3% in 2016. The utilities sector in the province contributed 14.9% to the national utilities sector. As seen on the figure, the overall contribution of the various economic sectors remained relatively the same in 2016 and 2022 with slight changes seen across sectors. Overall, Mpumalanga’s share of the national GDP was 8% in 2022 (Statistics South Africa, 2023). This increased from 7.7% in 2021 (Statistics South Africa, 2022). Mpumalanga ranked fourth in terms of contribution to national GDP after Western Cape, KwaZulu-Natal and Gauteng reporting 13.9%, 15.9% and 33.1% respectively (Statistics South Africa, 2023).

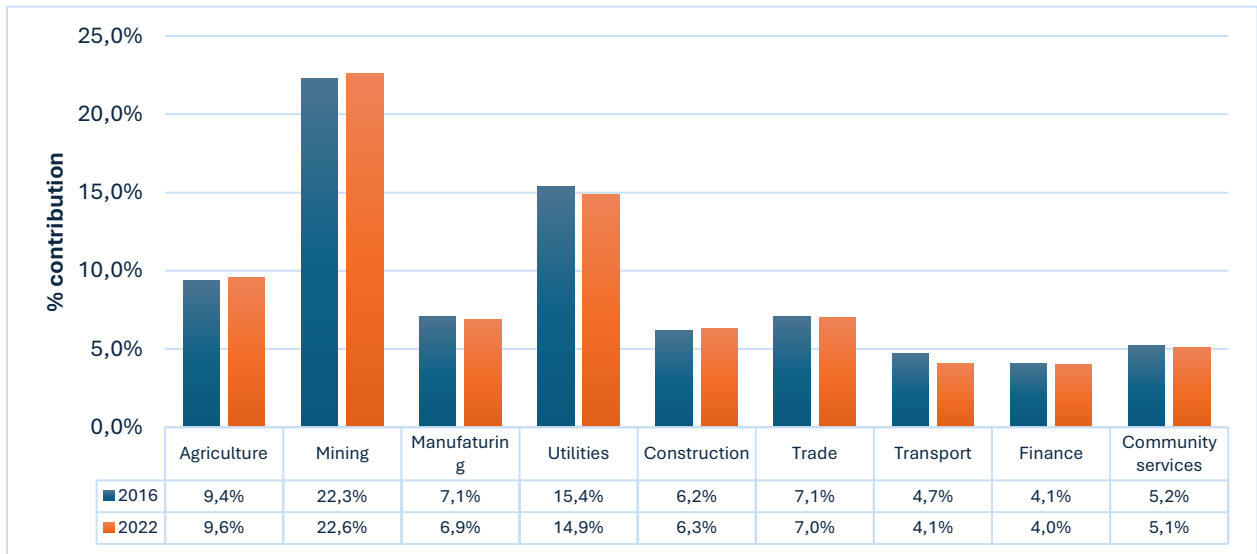


Figure 7: Mpumalanga’s contribution to South Africa’s industries, 2016 and 2022

(Source: Department of Economic Development and Tourism, 2023)

Mpumalanga is also among the leading provinces in terms of contribution to national employment. In 2022Q2, the province accounted for 7% of the national employment. Table 4 provides the characteristics of the workforce in the province. Of the total population, the working-age population was estimated at 3.2 million people in 2024Q2. From this cohort, about 1.2 million were employed in 2024Q2. Total employment in the province increased by 2.9% and this translate to 34,000 finding employment in 2024Q2. In the same quarter, 712,000 people were not employed in the province. The table also provides information covering those that are not economically active.

According to Statistics South Africa (2023a), there are two groups falling under this category, namely, discouraged work-seekers and other group (i.e., not economically active). Discouraged work-seekers are “individuals who are unemployed and willing to work but are not pursuing employment due to several factors including lack of economic opportunities, inability to secure employment matching their skills or a sense of despair about the prospect of finding any form of employment” (Statistics South Africa, 2023a). The other cohort encompasses students, homemakers, individuals who are unwell or have disabilities and those that are either too young or too old to engage in work.

*Table 4: Key characteristics of working-age population in Mpumalanga*

<b>Characteristics</b>	<b>2023Q2</b>	<b>2024Q2</b>
Population (15 -64 years)	3,124,000	3,168,000
Employed	1,158,000	1,192,000
Unemployed	723,000	712,000
Not economically active	1,243,000	1,264,000
Discouraged work seekers	351,000	358,000
Other (not economically active)	893,000	906,000
<b>Rates%</b>		
Unemployment rate	38.4%	37.4%
Labour force participation rate	60.2%	60.1%

(Source: Statistics South Africa, 2024)

The number of discouraged work seekers increased by 7,000 between 2023Q2 and 2024Q2. Those falling under the other category also increased from 893,000 to 906,000 (i.e., 13,000 people). Unemployment rate in the province was 37.4% in 2024Q2. This compared to 38.4% in 2023Q2. There are two measures of unemployment in the country, that are the official and expanded unemployment rate. Official unemployment rate is the percentage of the working-age population that is available to work and is actively looking for employment. The expanded unemployment rate, on the other hand, is a broad measure of unemployment that takes into account those that have stopped looking for employment. The expanded unemployment rate of the province was sitting at 48.7% in 2024Q2.

Labour force participation rate (LFPR) which measures the percentage of working-age population that is employed or seeking employment remained relatively the same in both quarters at around 60%. This compares well with the country's LFPR of 60%. According to the Department of Economic Development and Tourism (2023), in 2023Q1, females accounted for 48.5% of the total number of unemployed individuals, while males constituted 51.5%. Among the unemployed, the youth cohort represented 57.4% of the total in the province.

This was lower than 59.5% which was recorded in 2022Q3 (Department of Economic Development and Tourism, 2023).

According to Statistics South Africa (2024d), amongst the primary factors driving unemployment in the country are limited educational attainment, as well as social and economic disadvantages. Figure 8 plots educational attainment for the percentage of the population that is employed in the province. Two sets of data are presented for 2022Q1 and 2023Q1. The majority of those that are employed in the province have completed secondary education. In 2023Q1, this accounted for 37%, which is relatively the same as 2022Q1. They were followed by those that have some secondary education. A slight decrease in employment is seen in this cohort between 2022Q1 and 2023Q1. About 18% of those employed in 2023Q1 had post school qualifications. As can be seen in the figure, an increase of about 2% is recorded. This is the only increase across all education levels.

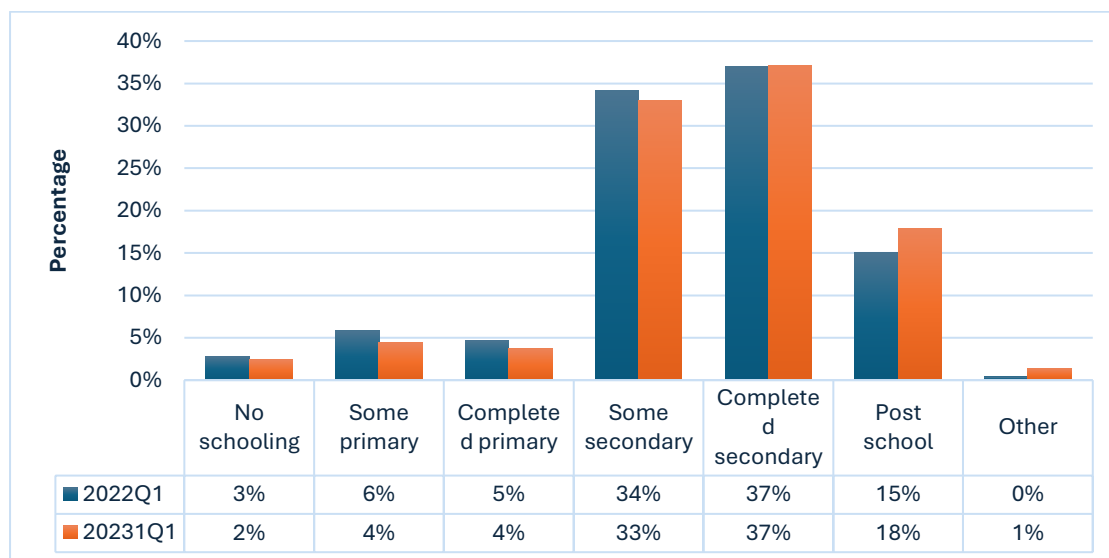


Figure 8: Educational profile of employed persons in Mpumalanga

(Source: Department of Economic Development and Tourism, 2023)

Employment in the province differs across economic sectors. As alluded, from the working-age population of about 3.2 million people, 1.2 million are employed. As seen on the figure, the leading sectors in terms of contribution to employment in the province are community services, trade and finance. Community services accounted for 23.3% of the total

employment in 2023Q1. The trade and finance sectors contributed 20.4% and 11.9% to the provincial employment.

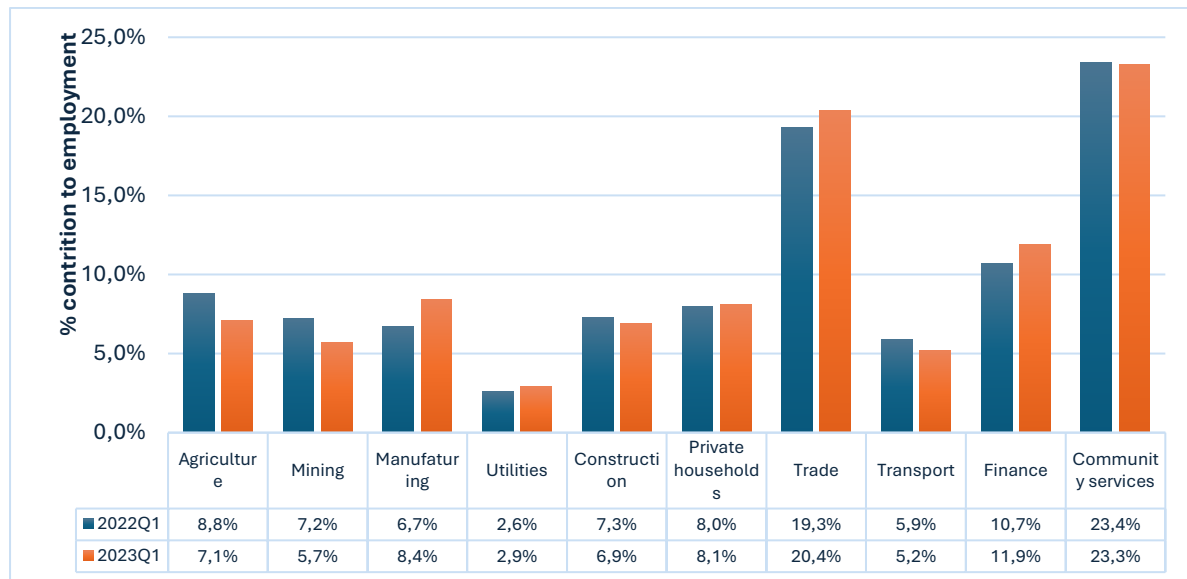


Figure 9: Employment by economic sector in Mpumalanga  
(Source: Department of Economic Development and Tourism, 2023)

While mining and utilities are the largest sectors in terms of contribution to provincial GDP, their share of the total employment was 5.7% and 2.9% respectively in 2023Q1. Employment in the MMS declined from 7.2% to 5.7% during the study period. Table 5 shows employment in the different economic sectors. The mining sector in the province employed 64,958 people in 2023Q1.

Table 5: Employment by economic sector in 2023Q1

<b>Economic sector</b>	<b>2023Q1</b>
Agriculture	80,540
Mining	64,958
Manufacturing	96,182
Utilities	32,931
Construction	78,729
Private households	232,638
Trade	59,226
Transport	135,572
Finance	265,888
Community services	92,944
Other	1,468

(Source: Statistics South Africa, 2023)

Figure 10 depicts net changes in employment across sectors recorded between 2022Q1 and 2023Q1. As seen on the figure, manufacturing reported the largest gain in employment. A total of 23,900 jobs were created during the study period. This was followed by finance and utilities employing 23,243 and 20,258 more people in 2023Q1 compared to 2022Q1. The sectors that reported losses in employment include construction, transport, agriculture and mining. During this period, the mining sector lost 12,936 jobs.

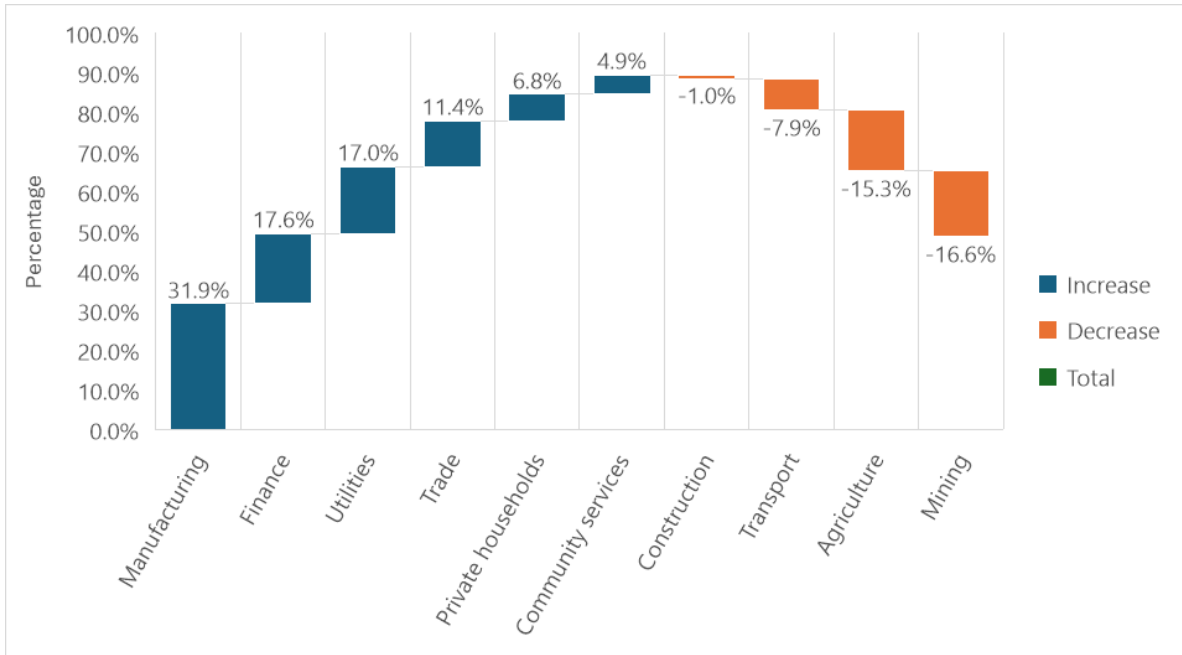


Figure 10: Changes in employment by economic sector  
 (Source: Department of Economic Development and Tourism, 2023)

Figure 11 shows employment in the MMS in the province. As seen on the figure there has been changes in employment in MMS. Nonetheless, the sector’s contribution to employment has remained above the 60,000. There are several factors that have been affecting the performance of the MMS in the province. In particular, coal mining which is the largest subsector in the province has been adversely affected by calls for the just energy transition which is expected to lead to the closure of power station resulting in decreased demand for coal. The sustainability issues emanating from the environmental impacts of coal mining has affected the performance of mining companies with some announcing possible retrenchments. The next sections provide a landscape of the MMS sector in the province.

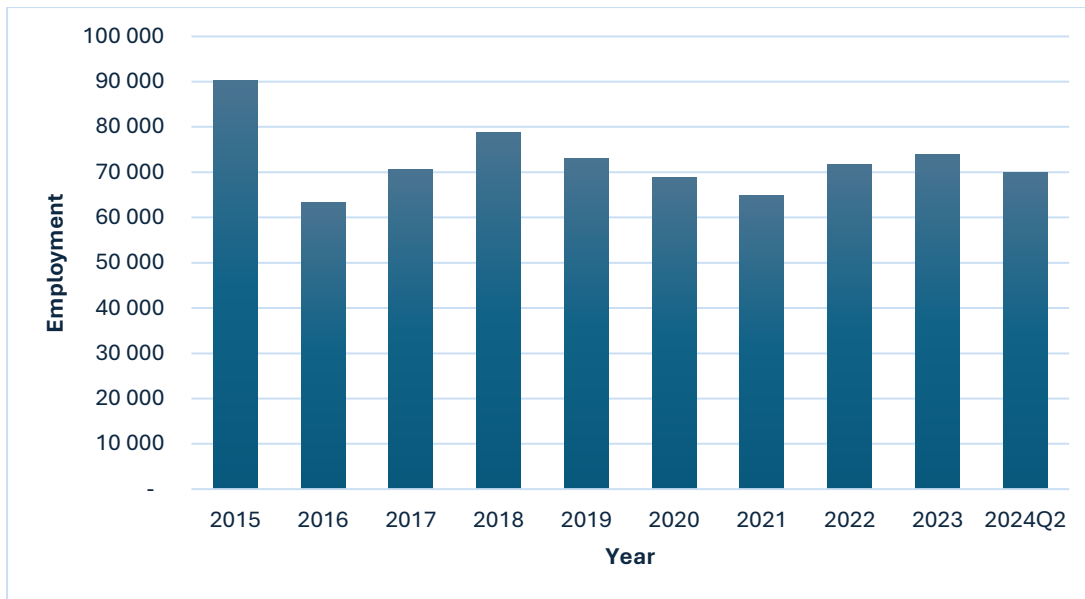


Figure 11: Contribution of the MMS to employment in Mpumalanga  
(Source: MQA, 2021; Statistics South Africa, 2022)

### 2.3. State of the mining and minerals sector in the province

Mpumalanga province is known for its vast coal resources, with over 80% of the country's coal being mined in the province. The geology of the province contains several geological formations. These are summarised in table 6 together with the key minerals that they host. The province is well endowed with several minerals including coal, gold, platinum group metals (PGMs), chromite, vanadium, manganese, and nickel. The province is also rich in a number of industrial minerals and construction materials including sand, stone and aggregate, dimension stone and others. Information on the different minerals is provided below.

Table 6: Geological formations and associated minerals

Geological formation	Key minerals
Karoo supergroup	Coal
Barberton supergroup	Gold, nickel
Witwatersrand supergroup	Gold
Bushveld Igneous Complex	PGMs, chromite, vanadium, magnetite
Transvaal supergroup	Gold

(Source: Chamber of Mines, 2009)

**Coal** – coal deposits in the province are hosted in the Karoo supergroup. These resources are found in several locations in the province including Witbank, Middleburg, Ermelo, Standerton and other locations. According to PwC (2023), coal reserves from operational mines in South Africa are estimated at 5.1 million tonnes. In the report, reserves are mineable portion for a resource. A resource on the other hand, is the concentration of material of economic interest within a deposit. Of the total coal reserves in the country, 48% are housed in Mpumalanga and the remaining 50% is found in Limpopo province. Based on current depletion rates, the life of mine of Mpumalanga coal reserves is 27 years (PwC, 2023).

**Gold** – Mpumalanga has a long history of gold mining with the oldest mine found in the province. While the size of gold mining has declined in the province, there is still considerable reserves that are contributing to the country's gold production output. Gold deposits in the province are found in several locations including Barberton, Evander, Pilgrim's rest and Balfour (Chamber of Mines, 2019). According to PwC (2023), total gold reserves amount to 3.31 million ounces and at the current depletion rates, the province has 16 years left of mining.

**Platinum group metals (PGMs)** – the PGMs include platinum, palladium, rhodium, iridium, ruthenium, and osmium. PGMs are hosted in the Bushveld Igneous Complex which covers Northwest, Limpopo, Gauteng and Mpumalanga provinces. The BIC also hosts other minerals such as chromite, vanadium and others which can be economically mined. PGM deposits are found in the Lydenburg area in the province.

**Chrome** – Mpumalanga also host vast deposits of chrome. Samancor owns several mines in Mpumalanga. The Eastern Chrome Mines (ECM) is situated in the Steelpoort area and includes several mines such as Doornbosch, Lannex, Tweefontein, and Steelpoort. These mines are integral to the province's chrome production and processing capabilities. As of June 2002, Samancor Chrome reported proven reserves of 16.6 million tons and probable reserves of 23.4 million tons. These reserves can be exploited for another 200 years at current extraction rates (Samancor Chrome Mines, 2019). Chrome is an essential input into the production of steel and stainless steel. Mpumalanga is also home to major ferrochrome

production facilities, such as the Ferrometals plant, which is one of the largest ferrochrome producers globally.

**Manganese** - Mpumalanga contributes to manganese production through the Manganese Metal Company (MMC) based in Mbombela. This company produces 99.9% pure electrolytic manganese metal, which is used extensively in the battery sector. The high purity of Mpumalanga's manganese has positioned South Africa as a critical player in the global supply chain, especially for the growing electric vehicle (EV) market. MMC is also exploring new projects to produce battery-grade manganese sulphate monohydrate, which is essential for energy storage technologies, making the province an important region in terms of green transition (Mining Weekly, 2023).

**Nickel** - Nkomati mine hosts one of the largest nickel reserves in the country. The mine has been under care since 2021, but it is expected to resume production due to rising nickel prices, which have increased by 42% year-on-year (McKay, 2022). Despite being on care and maintenance, there is potential for future operations due to the increasing demand for nickel, particularly driven by the electric vehicle (EV) market. African Rainbow Minerals (ARM) is looking at restarting underground mining operations, which could extend the life of the mine by an estimated 15 to 20 years if market conditions improve (Long, 2023).

**Vanadium** – Considerable deposits of vanadium are also found in the province. Vanadium is extracted and processed at the Vanchem facility located in Emalahleni. This facility is operated by Bushveld Minerals and specialises in producing various vanadium products, including ferrovanadium and vanadium pentoxide, which are essential for steel manufacturing and energy storage solutions (Vanchem, 2023).

**Stone and aggregate** - The construction sector benefits from the extraction of stone and aggregate in the province. There are several quarries across the province that produce crusher stones to the sell to construction businesses.

Mining activities in the province is dominated by large-scale mining and both open pit and underground mining methods are used to extract the ore from the ground. Mining activities in the province are concentrated in Witbank (eMalahleni), Middleburg, Ermelo, Secunda, Belfast, Machadadorp, Carolina, Barberton and Lydenburg. Specifically, gold mining takes place in Barberton which is one of South Africa's oldest gold mining regions. Chrome and platinum mining operations which form part of the eastern limb of the BIC are found in the Lydenburg area.

There are also artisanal and small scale mining activities in the province, and these exploit a variety of minerals including gold, coal and industrial minerals and construction materials (i.e., sand, stone and aggregate, dimension stone etc.). As the case across the country, the Mpumalanga is also dealing with illegal mining taking place in the coal and gold subsectors. Illegal gold mining has been reported in Pilgrim's Rest, Sabie, Nelspruit, Ermelo and other areas in the province. In the past year, illegal mining has received attention with government implementing enforcement measures aimed at combatting illegal mining practices. This is taking place alongside calls for government to put in place mechanisms that will allow those working with appropriate licenses to obtain mining permits. This is in line with Artisanal and Small Scale Mining (ASM) Policy that was published for implementation in 2022.

In addition to illegal mining, the MMS sector in Mpumalanga has been adversely affected by several challenges including closure of power stations in support of the Just Energy Transition. Komati power station was decommissioned in 2022 (Eskom, 2022) and this had adverse impacts on communities and the local mining sector. Other key challenges affecting the MMS in the province are environmental impacts of mining, infrastructure constraints and skills shortages particularly in technical roles that are essential in mining operations (Tladi et al, 2024).

#### **2.4. Skills analysis in the province**

As the case across the country, there are skilled, semi-skilled and unskilled labour in the province. Skilled labour refers to work that requires specialized knowledge, training, and expertise. Skilled workers have typically completed formal education, vocational training, and

would have extensive on-the-job experience. Semi-skilled labour includes those that would have completed vocational training, apprenticeships, or acquired skills through extensive experience. Unskilled labour covers those that do not have formal education and training. They typically perform work that is manual, repetitive and can be learnt quickly (Trade and Industrial Policy Strategies, 2008). Figure 12 shows occupational profiles of the labour force in the province.

According to the Provincial Treasury (2015), occupational profile provides a good indicator of the quality of the workforce. As an indicator, it “provides information on the proficiency levels and assists in identifying the shortage of skills in the economy, by matching the demand for labour with its relative supply” (Provincial Treasury, 2015:12). As seen on the figure, the majority of the labour force is concentrated in semi-skilled and low skilled occupations. The skilled occupations include managers, professionals and technical and combined they accounted for 18.4% in 2022Q4. This increased from 15.6% in 2021Q4. The percentage of semi-skilled occupations increased from 47.2% in 2021Q4 to 49.0% in 2022Q4. These include those working in sales and services, craft and related services, plant and machinery, clerks, and skilled agriculture. The unskilled occupations as captured on the table encompass those who are in elementary positions and those working as domestic workers. This cohort accounted 37.1% of the total labour force in 2021Q4. This dropped to 32.5% in 2022Q4. From these insights, it is established that Mpumalanga has a clear shortage of technical and professional skills needed to support the different economic sectors in the province.

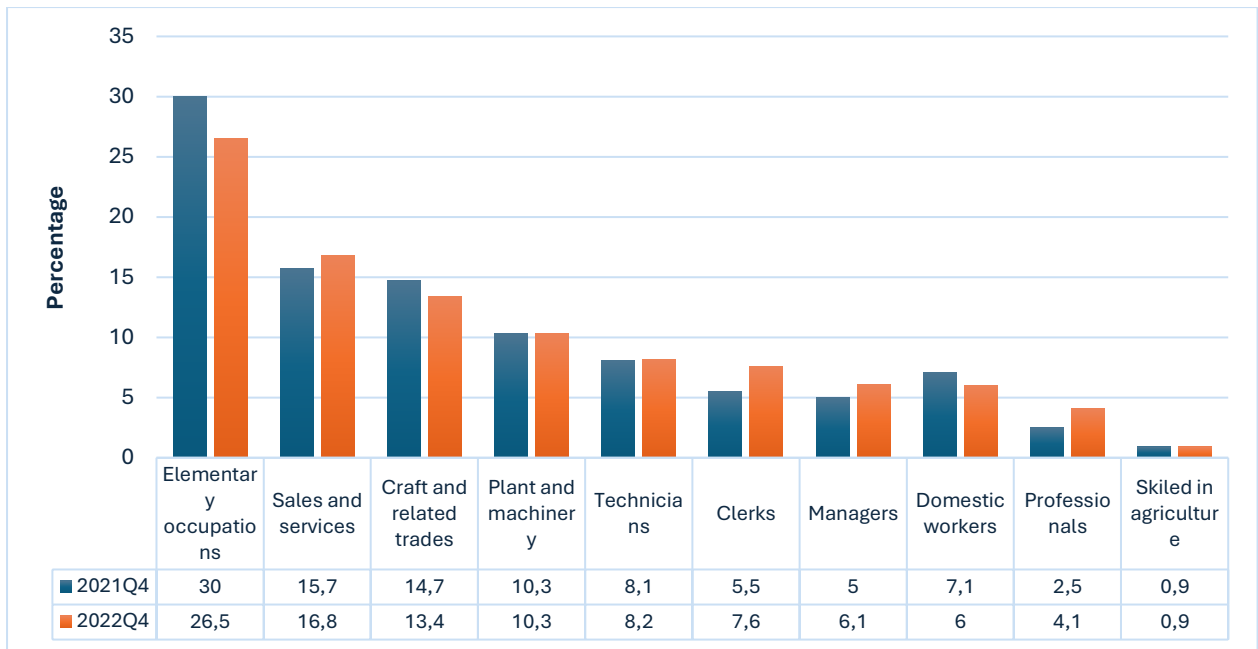


Figure 12: Occupational profile of the labour force in Mpumalanga

(Source: Statistics South Africa, 2023)

Table 7 provides a summary of occupations in high demand (OIHD) in province. These are described as “occupations in high demand refer to those occupations that show comparatively strong employment, wage and vacancy (job advertisement) growth and for which employers are likely to recruit in the medium term” (Department of Higher Education and Training, 2024:6). Having a picture of occupations in high demand is important because it provides insights into skills needed by the economy particularly in South Africa where the labour market is characterised by high levels of skills mismatches (Department of Higher Education and Training, 2024). The OIHD list is also important because it provides a foundation for aligning post-school education and training programme offerings with demand in the labour market.

*Table 7: Occupations in high demand in Mpumalanga province*

<b>Occupations</b>	<b>Number of listed occupations</b>
Trades	25
ICT	5
Education, health and social services	28
Engineering professionals, associate professionals and technicians	12
Management and other	26
Professionals, other	27
Technician, associate professionals, other	18
Clerical support, services and sales workers, other	26
<b>Total occupations</b>	<b>167</b>

(Source: Department of Higher Education and Training, 2024)

A total of 167 occupations in high demand were identified in Mpumalanga province (i.e., see table 7). The leading occupations fall under the trades, education, health and social services, management, professionals and clerical support, services and sales workers. Within the trade category, there is demand for millwrights, transportation electricians, pipe fitters, plumbers, electronic equipment mechanics, telecommunication technicians, welders, fitters and turners, forklift drivers, riggers, diesel mechanics and others. All these trades provide skills that used in the mining and minerals sectors. Under the engineering professionals, associate professional and technicians, the specific occupations that were identified include electronic electrical technicians, energy efficiency engineers, telecommunication engineers, electrical engineers, environmental engineers, energy engineers, industrial engineers, chemical engineers, civil engineers, mechanical engineers and others. Again, these are important occupations that are needed in the mining sector.

## 2.5. Education and training landscape

Mpumalanga has a diverse and growing educational landscape that includes various Technical Vocational Education and Training (TVET) and Community Education and Training (CET) colleges and universities. This region is particularly focused on providing vocational training and higher education to meet the demands of the local economy, especially in fields such as engineering. There are institutions like Ehlanzeni, Gert Sibande, Nkangala, Elangeni, Greenhill Institute, and Secunda FET Colleges that offer diverse programmes tailored to meet industry needs. Additionally, the University of Mpumalanga contributes to higher education by fostering research and academic excellence. Together, these institutions play a crucial role in developing a skilled workforce that supports economic growth in the region. Table 8 depicts the different institutions along with the programmes offered. These programmes equip students with practical, industry-relevant competencies that are needed in the mining sector and other economic sectors.

Skills development and training in the province is also supported by different Sector Education and Training Authorities (SETAs) operating across different economic sectors. In particular, the Mining Qualifications Authority has established partnerships with various TVET colleges in Mpumalanga to enhance their capacity to deliver engineering qualifications. The MQA has entered into a partnership with Nkangala and Gert Sibande TVET colleges (MQA, 2023). These partnerships have culminated into several support including:

- **Funding for skills development:** The MQA allocates discretionary grants to support training initiatives that address specific skills shortages within the mining and minerals sector (MQA, 2023).
- **Centres of Specialisation:** The MQA has established Centres of Specialisation (CoS) at several TVET colleges, which focus on providing high-quality artisan training in engineering fields. These centres are designed to foster partnerships between colleges and employers, ensuring that students receive relevant practical experience alongside their theoretical education (MQA, 2023a).
- **Stakeholder engagement:** The MQA actively engages with stakeholders from the mining sector and educational institutions through forums and workshops. For

example, they hosted a stakeholder forum aimed at enhancing collaboration between employers and training providers to improve skills development outcomes (MQA, 2023a).

- **Increased opportunities for students:** Students benefit from various funding opportunities provided by the MQA for internships and work-based learning programs. This exposure is critical for developing practical skills necessary for careers in engineering (MQA, 2023).
- **Recognition of qualifications:** The MQA's involvement ensures that qualifications obtained from these institutions are recognized within the industry, enhancing employability for graduates.

Several other SETAs are also active in the province including AgriSETA which has implemented various initiatives supporting agricultural skills development, including learnership programmes for emerging farmers focusing on agricultural processing skills training (AgriSETA, 2023). The Manufacturing, Engineering and Related Services SETA (MerSETA) with its office in Witbank also contributes to skills development in the province through apprenticeship programmes and technical skills development, supporting the province's manufacturing sector. There is growing presence of the Energy and Water SETA (EWSETA) as it responds to the skills demands in support of the Just Energy Transition and focus of the training is on renewable energy and water resource management training. The Services SETA continue to support the tourism and hospitality sectors with skills development and training of its workforce. The Construction SETA (CETA) also maintains active involvement in supporting infrastructure development skills through various learnership programmes and artisan training initiatives.

Table 8: Institutions and Mining related programmes

Academic institutions	Names	Programme offerings (i.e., related to engineering)
Universities	University of Mpumalanga (UMP)	Bachelor of Science Honours in Geography
		Bachelor of Arts Honours in Geography
	Tshwane University of Technology (TUT)	Civil engineering
		Electrical engineering
Technical and Vocational Colleges	Ehlanzeni TVET College	Engineering related and design
		Civil Engineering
		Electrical Engineering
	Nkangala TVET College	NCV Engineering Programmes
		Nated engineering Programmes (including mechanical, electrical, and civil engineering)
	Gert Sibande TVET College	Engineering Studies (National Certificate - Vocational) Civil Engineering Construction, Electrical Infrastructure Construction, Engineering and Related Design, Mechatronics
		Engineering Studies (National Certificate – Nated) Mechanical Subjects (N4 - N6), Civil Subjects (N4 - N6), Electrical Subjects (N4 - N6)
		Apprenticeships (Electrician, Mechanical Fitter, Millwright, Welder, Bricklayer, Carpenter, Plumber)
	Elangeni TVET College	Electrical Engineering (N1 - N6)
		Water and Waste Water Treatment Practice (N1 – N3)
		Mechanical Engineering (N1 - N6)
		Civil Engineering (N1 - N6)
	Greenhill Institute of Technology	Mechanical Engineering (Boiler making, Fitting, Diesel Mechanic, Rigging)
		Electrical Engineering (N1 – N6) <ul style="list-style-type: none"> <li>• Heavy Current</li> <li>• Light Current</li> </ul>
		Mining & Construction Short Courses
	Secunda FET College	Mechanical Engineering (N1-N6)
		Electrical Engineering (N1-N6)

While the skills development initiatives implemented by the different SETAs cater for different economic sectors, collectively they SETAs provide:

- Funding for learnership programmes and apprenticeships
- Support for workplace-based learning opportunities
- Provision of bursaries for further education and training
- Implementation of skills programmes targeting different population groups
- Development of occupationally directed training programmes
- Funding for TVET college partnerships and programme development

These interventions contribute towards creating opportunities for the youth through targeted programmes, increasing access to formal qualification and certifications, aligning training and industry needs, and strengthening partnerships between academic institutions and industry. Broadly, these achievements are important in supporting the realisation of the provinces' development objectives.

## **2.6. Skills development policies and initiatives**

This section discusses policies, laws and strategies that support skills development and training. These are presented at three levels taking into account national frameworks, sectoral legislation and strategies and provincial development strategies.

### **2.6.1. National policy and strategy frameworks**

The *Constitution of the Republic of South Africa* sets out the foundation for the country's socioeconomic development by placing its citizens at the centre. The Constitution aims to address the past injustices and in doing so, support the country in building a society that is based on democratic values, social justice, and fundamental human. Specifically, the Bill of Rights enshrines fundamental rights and freedoms for all citizens and ensure that they are enjoyed by various groups within the country. The Bill of Rights promotes equality, human dignity, life, freedom and security, privacy, freedom of expression and others. Section 29 of the Constitution highlights the everyone's right "(a) to a basic education including basic education, and (b) to further education, which the state, through reasonable measures, must make progressively available and accessible" (South African government, 1996:12). This

fundamental right has been realised through various legislative frameworks, one of which is the Skills Development Act (No. 97 of 1998).

The overarching goal of the **Skills Development Act** is to “provide an institutional framework to devise and implement national, sector and workplace strategies to develop and improve the skills of the South African work force” (South African government, 1998). The Act was enacted to address the skills gaps and enhance the overall skill level of the country’s workforce closing the gap between skills supply and demand. Through the Skills Development Act, the National Skills Authority and National Skills Fund were established. More so, sector education and training authorities (SETAs) were formed. There are twenty-one (21) SETAs in the country, and they are mandated to drive skills development in the different economic sectors. The Mining Qualification Authority (MQA) supports skills development in the mining and mineral sector and its mission is to “ensure that the mining and minerals sector has sufficient competent people who will improve health and safety, employment equity and increase productivity standards”.

Skills development in the country is also embedded in the country’s socioeconomic development frameworks. This is because of the direct relationship between skills development and training and the triple challenges affecting the country (i.e., poverty, inequality and unemployment). The government established the **National Skills Development Strategy (NSDS)** whose aim is to support the realisation of the National Development Plan – Vision 2030. The National Skills Development Strategy III aims to address skills gaps and shortages and promote skills development in the workforce. It also aims to improve the efficiency and effectiveness of the skills development system (Department of Higher Education and Training, 2019). The NSDS III is tied to transformational imperatives in the country considering disparities that are seen across race, class, gender, location, age and HIV/AIDS status. In this regard, the NSDS promotes prioritisation of Blacks South Africans, women, youth, rural areas over urban areas, and people living with disabilities.

### **2.6.2. Sector policies and strategies**

The **Mineral and Petroleum Resource Development Act (No. 28 of 2002)** is the primary legislation governing the mining and minerals sector in the country. Its overarching goal is to

ensure equitable access and sustainable development of the country's mineral and petroleum resources (Government gazette, 2002). This is in recognition of the history of mining in the country that is characterised by discriminatory practices and the exploitation of mineral resources without consideration of social and environmental objectives that are key to the country's development agenda. To this end, the MPRDA has been instrumental in ensuring that South Africa's mining sector benefits all its citizens, particularly historically disadvantaged communities. Sector 100 of the Act called government to develop a broad-based socioeconomic empowerment charter (i.e., mining charter) that will facilitate the transformation of the mining sector.

Aligned to the objectives of the MPRDA, the *Mining Charter III* aims to facilitate sustainable transformation, growth and development of the mining sector (Government gazette, 2018). This objective is supported by several areas of intervention covering ownership, procurement, supplier and enterprise development, human resource development (HRD), employment equity (EE), mine community development, and housing and living conditions. Within human resource development, the charter talks to the need to (1) produce skilled, trained and diverse workforce to meet the needs of the mining sector, (2) develop skills that enhance productivity of workforce increasing the employability of disadvantaged South Africans, and (3) develop entrepreneurial skills to improve livelihood and create opportunities outside of mining (Government gazette, 2018).

To support these, mining companies are required to invest a minimum 5% of leviable amount (excluding the statutory skills development levy) on essential skills development activities such as development of science, technology, engineering and mathematics (STEM) skills, adult basic education and training, artisan training, learnerships, bursaries and other skills training initiatives for people in the community which include portable skills training (Centre for Applied Legal Studies, 2017). The MMS has made considerable progress in terms of overall transformation of the sector. In the 2014, an assessment of the mining charter was carried out and amongst the key findings were that the majority of mining communities continue to live in poverty and the participation of Historically Disadvantaged South Africans (HDSAs) remain low. There is therefore a need to move beyond compliance that is necessitated by the

need to safeguard the social licence to operate and implement projects that will leave long-lasting impact on communities.

The Mining Charter is implemented through **Social and Labour Plans** which SLPs outline the strategies that mining companies intend to use for community development, including their approaches to skills training. This framework aims to extend socio-economic benefits not only to workers but also to the host communities and labour sending areas (Benya, 2017). According to Centre for Applied Legal Studies (CALs) (2017), the rationale behind SLPs is to ensure that mining companies offer opportunities for workers and communities to benefit from local mineral resources. The implementation period of projects contained in SLPs is five years and mining companies are required to submit annual reports to the Department of Mineral Resources. The SLP projects need to contribute towards mine community development, human resource development, employment equity, housing and living conditions, and address the impacts of downscaling and retrenchments (Department of Mineral Resources, 2010).

The HRD programmes, specifically, need to accommodate both employees and communities equipping them with the skills that are relevant to mining as well as skills that can be used in other sectors of the economy (Centre for Applied Legal Studies, 2017). In 2016, the South African Human Rights Commission (SAHRC) conducted investigative hearings aimed at understanding the socioeconomic challenges affecting mining-affected communities in South Africa. Amongst the concerns raised was limited compliance on regulatory obligations by mining companies. The delivery of SLP projects was highlighted as one of the issues with the level of compliance recorded at about 30% (SAHRC, 2016).

Another concern that has been directed to SLPs as a tool that is key in supporting local economic development is the misalignment with local strategies, specifically Integrated Development Plans (IDPs). The IDPs are a key component of South Africa's strategy for promoting economic growth, job creation, and sustainable development (de Wet et al., 2020). They integrate economic, social, environmental, and fiscal strategies to allocate resources efficiently, ensuring alignment with community and stakeholder needs over a five-year

period, with annual reviews for adaptation. The main objectives of IDPs include fostering economic growth, improving quality of life, promoting environmental sustainability, and managing fiscal resources effectively. There exists a critical gap between SLPs and IDPs where projects implemented by the mine would be outside the priority projects identified in IDPs. This lack of alignment hinders effective implementation and leaves gaps, particularly in providing training and creating economic opportunities for communities.

Furthermore, it is found that the projects implemented by local municipalities tend to restrict focus to other economic sectors, making it difficult to align training programmes with the demands of the mining sector (Lahiff, 2013). There is therefore a need for mining companies to collaborate with local governments to ensure alignment between SLPs and IDPs and other key strategies supporting both regional and local economic development (van der Watt and Marais, 2021). Engagement with communities is also essential to ensure that programmes respond to the needs of the community.

### **2.6.3. Provincial strategies**

The alignment between national and provincial development strategies is important to ensure policy coherence and to optimise implementation of development programmes. It is also important in terms of facilitating stakeholder coordination and support. While this link is important, provincial and local strategies needs to be tailored to suit the provincial context taking into account the socio-economic landscapes and factor endowments that are often unique to particular localities. Factor endowments are resources that regions can use to support economic activity, such as land, minerals, capital, and labour (Ancheta et al, 2023). Mpumalanga has several strategies that are supporting its socioeconomic development in alignment with the broader national development priorities, and these include Mpumalanga Vision 2030 Implementation Plan Framework, Provincial Spatial Development Framework (PSDF), Mpumalanga Economic Recovery and Reconstruction Plan (MERRP), Revised Provincial 2019-24 Medium Term Strategic Framework (MTSF) and District Development Model (Office of the Premier, 2023).

The ***Mpumalanga Vision 2030 Strategic Implementation Framework*** was established in line with the country's national development plan (NDP). The framework describes the province's

approach to attaining the objectives of the NDP considering the provincial context (Data World, 2018). The Vision has identified priority areas, and these focuses on employment and economic growth, education and training, health care as well as social protection.

***Mpumalanga Economic Growth and Development*** is another key strategy that underpins socioeconomic development in the province. It is supported by several objectives including job creation, inclusive and shared growth of a diversified economy, spatial distribution, integration of regional economies, sustainable human development, environmental sustainability. The ***Mpumalanga Industrial Development Plan (MIDP)*** was implemented by the Department of Economic Development and Tourism in 2015. It aims to promote industrialisation in the province by establishing industrial centres of competence supported by key economic sectors in the province. These include mining and metal technology, forestry, petrochemical, and agro-processing industries (Data World, 2018).

Skills development and training is critical in the attainment of the province's socioeconomic development objectives. The province's development objectives which are tied to industrial diversification, agricultural modernisation, and tourism growth, depend on a skilled workforce that is capable of driving innovation and productivity. To this end, skills development initiatives are important in terms to addressing the challenges of poverty and unemployment while simultaneously supporting key growth sectors including mining, agriculture, manufacturing, and emerging industries in the green economy.

#### **2.6.4. Skills development initiatives**

Several skills development initiatives have been implemented in Mpumalanga province to equip individuals with the knowledge and expertise needed to access employment opportunities and contribute to local economic growth. By focusing on key economic sectors such as mining, construction, agriculture, education, and renewable energy, these programmes target critical skills gaps to address the skills mismatches between supply and labour market demand. The skills development and training programmes implemented in the province include:

- **Mpumalanga Regional Training Trust (MRTT)**

Mpumalanga Regional Training Trust (MRTT) is part of the Mpumalanga Provincial Government. It was established to provide training and skills development programmes in the province (Provincial Government of South Africa, n.d). Because of the socioeconomic challenges facing Mpumalanga, MRTT's programmes target mostly out-of-school, and underprivileged youth from financially disadvantaged communities (Provincial Government, 2024). The training interventions implemented by MRTT cover a wide range of offering including training on boiler making, motor mechanics, welding, electrical work, hospitality. The overarching goal of programmes is to address skills shortages in the construction sector and equip beneficiaries with necessary skills needed for employment in infrastructure development projects.

- **Thungela Education Initiative**

The Thungela Education Initiative emanated from a collaboration between Thungela and Mpumalanga Department of Education. This mechanism was established with the aim of improving access to quality education for learners in the foundation and intermediate phases (i.e., grade R to 4). The education support is also extended to education in various schools in the province. This is a five-year initiative with an investment of R160 million. It is expected to benefit two of the four district municipalities in Mpumalanga where Thungela operations are located. The roll-out of this initiative will commence in the first quarter of 2024 and this will include amongst other components, improving school readiness, enhancing literacy and numeracy, elevating the skills of educators and school management teams, and refurbishing infrastructure to support optimal teaching and learning (Thungela Resources, 2024).

- **Mobile Agricultural Skills Development and Training (MASDT)**

Mobile Agri Skills Development and Training (MASDT) was established in 2005 as a training service provider in the agricultural sector in Mpumalanga (Innovation Bridge Portal, n.d). It has changed its structured and operates as a non-profit company that offers a wide range of services to farmers in the province. It supports emerging farmers through mobile training solutions and skills development and training. MASDT has a private Further Education and Training (FET) College that is registered with the Department of Higher Education and is accredited by AgriSETA and UMALUSI as a private service provider. Through the college, it offers South African Qualifications Authority (SAQA) credit bearing courses, non-credit

bearing courses and short courses in fruit packaging and grading, plant production, animal production, handling of agricultural products, health and safety, and other areas. In addition to the formal training, MASDT has implemented several key initiatives in Mpumalanga to support emerging farmers over the last five years, and these include (Red Meat Abattoir Association, 2024):

**Agri Incubation Programme:** This was supported by Small Enterprise Development Agency (SEDA). This six-year initiative was aimed at training and mentoring 178 crop farmers and 20 livestock farmers through a three-year incubation process. As part of the programmes, farmers received guidance in farm planning, marketing, and production. The programme resulted in 190 permanent jobs.

**Mixed Farming Incubation:** This project was funded by British American Tobacco (BAT-SA) and was aimed at supporting small-scale farmers in areas like Buffelspruit and Badplaas. The project created 88 full-time jobs and 796 part-time jobs, benefiting around 5,000 people indirectly.

**Land Reform Mentorship Support:** MASDT collaborated with the Department of Rural Development and Land Reform to mentor and support six land reform projects in Mpumalanga, enhancing their business and agricultural practices.

**NDA Production Project:** This project was supported by the National Development Agency (NDA), and it was established to assist farmers in Nkomazi and Bushbuckridge to produce tomatoes and butternuts. MASDT provided training, mentoring, and market access alongside funds for infrastructure and production inputs.

- **Ehlanzeni TVET College 4IR Learnership Programme**

The Ehlanzeni TVET College, Forge Academy and Labs, Media Information and Communication Technologies Sector Education and Training Authority (MICT SETA) implemented the learnership programme focusing on fourth industrial revolution (4IR). This programme aimed to equip students with 4IR skills, including IT fundamentals, robotics, 3D printing, augmented reality, artificial intelligence, and digital business creation. The programme targeted unemployed youth, and this was at the back of the Mpumalanga's development objectives which speak to the need to promote entrepreneurship and innovation to address community challenges (ITWeb, 2024).

- **Tourism Monitors Programme**

The South Africa's Department of Tourism, South African Police Service (SAPS), Mpumalanga Parks and Tourism Agency, and the Tourism Safety Forum established the Tourism Monitors Programme. Through this initiative, unemployed youth were trained in tourism safety, customer care, and basic guiding skills. The overarching goal of the programme is to enhance tourism safety at attractions and sites while providing employment. The programme also includes accredited skills training in security practices and safety management (South African Government, 2024).

- **Mining Qualifications Authority Programmes**

The Mining Qualifications Authority plays a vital role in driving skills development within South Africa's mining sector. The MQA facilitates a range of initiatives, such as the Internship and Work Experience Programmes, which aim to provide young graduates and students with hands-on industry experience (Mining Qualifications Authority, 2024). These programmes focus on areas like engineering, geology, and environmental management, addressing the sector's critical skills gap. By partnering with mining companies, MQA ensures that these initiatives align with industry demands, fostering a sustainable workforce. The MQA has implemented and supported several initiatives in Mpumalanga.

- **The Renewable Energy Specialisation Skills Development Programme**

The Renewable Energy Specialisation Skills Development Programme was launched in Standerton, and it aims to equip 100 unemployed women and 15 TVET lecturers with the skills required for the renewable energy sector. This programme is led by the Energy and Water Sector Education and Training Authority (EWSETA) and Power Africa. The project targeted women and youth and offered them essential skills needed to leverage opportunities in the growing green economy in the province so as to support inclusive economic participation (The Citizen, 2023). The project's beneficiaries obtained training in Electrical Engineering: Renewable Energy at NQF Level 3.

- **Just Energy Transition (JET) Projects**

There are several projects that have been implemented in the province which focusses on the Just Energy Transition. These projects are supported by multiple international funders from Germany, France, Denmark, and the European Union (EU). The objective of most of these programmes is two-fold and include focus reskilling workers impacted by the coal transition

and developing the renewable energy workforce (Engineering News, 2024). The projects are targeting mostly workers in coal-dependent sectors, entrepreneurs, and municipalities undergoing energy transitions.

While there is a growing footprint of skills development and training in the province, there remain challenges particularly in terms of balancing between the challenges and opportunities that come with the just energy transition. Amongst the key challenges is the loss of employment which will have adverse effects on the socioeconomic landscape of the province. These impacts are expected to be counteracted by the opportunities that will come with renewable energy projects. As such, it is important that skills development and training is at centre of the energy transition to enable communities in the province to leverage the emerging JET opportunities.

## **2.7. Conclusion**

The chapter provided insights into the socioeconomic landscape and highlighted the state of the mining sector in the province. The chapter also provided an analysis of existing skills in the province with insights into education and training offerings and skills development and training initiatives that have been implemented. Mpumalanga has seen significant population growth, surpassing the national average. The demographic profile is dominated by females and youth. The province is amongst the provinces characterised by poor educational background with a considerable percentage of the population having no formal education. Because of this, unemployment and poverty levels remain high in the province.

There are several economic sectors that the province depends on for socioeconomic development and mining is amongst the key sectors. The other key sectors are agriculture and manufacturing sectors. Amongst the key concerns in the province is the decline in labour participation rate, and this is a factor of the skills mismatch between the available workforce and the demands of the job market. The majority of the labour force in the province are semi-skilled and low skilled leading to Mpumalanga having a shortage of technical and professional skills needed to support the different economic sectors in the province. To this end, there is a need for education and skills development programmes to address the skills gaps and needs in the province. Mpumalanga has a diverse and growing educational landscape that includes

TVETs, CETs, and a university. More so, several skills development initiatives have been implemented and so there is an existing footprint that is needed to support skills development and training for increased impact in the province.

### 3. APPROACH TO THE STUDY

#### 3.1. Introduction

Research methodology is a systematic approach used to address research problems through the collection, analysis, interpretation, and presentation of data. The selection of an appropriate methodology is guided by the study's objectives, ensuring accurate data collection and analysis to address the research questions. This chapter outlines the methodology employed in the study, covering research design, data collection and analysis methods, research reliability and validity, ethical considerations, and study limitations.

#### 3.2. Research design

The study adopted the mixed methods approach because it presents a framework that integrates quantitative and qualitative methods of data collection and analysis. This design was chosen because of its ability to provide a comprehensive understanding of the research problem by combining numerical data with detailed contextual insights. According to Wasti et al (2022), quantitative and qualitative research methods are tailored to address different types of questions, gather specific type of data, and provide particular types of answers. The use of both methods allows for a more balanced and nuanced understanding of the research problem, combining statistical analysis with in-depth insights.

#### 3.3. Data collection methods

Informed by the objectives of the study, several methods data collection methods were used and these included literature review, surveys, community workshops, focus groups discussions and key informant interviews.

- 1) **Literature review** - Desktop research was conducted to gather relevant literature for the study. Various data sources were utilised, including peer-reviewed papers, reports, online materials, and grey literature. These sources encompassed sector skills plans, social and labour plans, economic development plans, integrated development plans, and other relevant reports.
- 2) **Community surveys** – Surveys were completed, and these were administered to community members in the various locations within the province. A total of 415 surveys were completed. The surveys were administered by fieldworkers who were

recruited within the province. The involvement of local community members as fieldworkers helped ensure a better understanding of the local context and facilitated more effective communication with community members. More so, the fieldworkers that led data collection have existing footprint within their communities and this assisted with data collection. The surveys were completed online using Microsoft forms as well as on hard copy forms for community members who were either not comfortable with online surveys and/or did not have access to a cellphone that can be used to complete the survey online. Voluntary sampling technique was used to facilitate the completion of surveys where eligible participants (i.e., those above the age of 18 years) volunteered to take part in the study.

- 3) **Community workshops** - Two community workshops were hosted in Mpumalanga. The first workshop took place on the 9<sup>th</sup> of January 2025 in Komati village in Middleburg. This is a community that hosted Komati power station which was decommissioned in 2022. The workshop was attended by 27 participants, representing diverse demographic profiles including, women, youth, men, community leaders, a ward councillor, police commander, a church bishop, current and former miners, and members of various community formations. The second workshop was hosted in Middleburg on the 10<sup>th</sup> of January 2025. The workshop was attended by 36 community members, representing mix of participants from diverse demographic groups, including women, men, youth, and teenage girls. Strategic stakeholders included environmental activists, youth and women leaders, young artists, former ward councillors, civil society organisations such as MEJCON (i.e., Mining and Environmental Justice Community Network of South Africa), and Mpumalanga Assembly of the Unemployed as well as the Mpumalanga Basic Income Grant Campaign Task Team.
- 4) **Focus group discussions** – The community workshops included facilitated discussions where questions were posed to community members in an open forum, as well as focus group discussions where issues were addressed by homogenous groups. This was done in line with the intersectionality approach, ensuring that the perspectives of specific groups were captured, giving them the opportunity to make recommendations on programs that directly address their needs. In both workshops, the focus groups

were constituted according to gender and age, ensuring that diverse perspectives were represented.

- 5) **Key informant interviews** – Interviews were conducted with representatives from mining companies. Although the initial target was to complete 30 interviews across mining companies, TVET, and CET colleges, only 4 interviews were successfully conducted with mining companies. Despite the low response rate, the interviews that were completed yielded valuable insights that complemented the data collected in the study.

The selected research instruments proved to be effective in terms of collecting data that provided insights into skills development needs of communities in Mpumalanga province.

### **3.4. Data analysis methods**

The quantitative data was analysed using Microsoft Excel to establish frequencies and percentages, providing insights into the distribution and trends within the data. The qualitative data was analysed content analysis where key themes were extracted as guided by the key questions that were posed.

### **3.5. Research reliability and validity**

Research reliability and validity are important measures in research that ensure the quality and trustworthiness of the research and findings being presented. There are various methods that can be used to establish validity and reliability of quantitative and qualitative research. In this study, reliability and validity will be established through the use of the triangulation method. There are different triangulation methods – data triangulation (i.e., the use of multiple data), investigator triangulation (i.e., involves multiple researchers collecting and analysing the data), theory triangulation (i.e., application of multiple theories to test the findings) and methodological triangulation (i.e., the use of different approaches to collect and analyse data) (UNAIDS, n.d; Heale and Forbes, 2013). This research study used multiple sources of data (i.e., secondary and primary data) as well as different investigators to collect, analyse and cross check the data.

### **3.6. Ethical considerations**

The study was conducted in line with the University's research requirements. During the research, ethical requirements were followed.

### **3.7. Challenges encountered during data collection**

Several challenges were experienced during data collection and these included:

- Some community members were reluctant to participate in the survey, citing a lack of interest in training programmes. This was emanating from concerns over the outcomes of most training projects, which they felt often failed to lead to tangible improvements in their community. To this effect, some community members wanted timelines in terms of the implementation of the recommendations that emanate from the study. This was addressed by explaining the role of the universities in conducting research and ensuring that the findings are communicated to relevant stakeholders for action.
- In terms of surveys, some community members were not comfortable with completing them online, and so, hard copies were made available to the fieldworkers to use.
- In the workshop, some community members were not comfortable sharing their insights in English and so they were allowed to communicate in their language that they were comfortable with. In this instance, fieldworkers had to assist the project team with translation.
- Key informant interviews – Of the 192 emails sent, only 10% responded. Of those who replied, just four interviews were successfully completed. Several respondents indicated that they had already participated in similar research and were unwilling to engage again. Others were unable to attend scheduled interviews due to work-related scheduling conflicts.

### **3.8. Conclusion**

The purpose of the chapter was to discuss the methodology employed in the study. A mixed methods research design was adopted for the study, incorporating both quantitative and qualitative methods of data collection and analysis. Specifically, data was gathered through literature review, surveys, community workshops and focus group discussions. The research was conducted in line with ethical requirements ensuring that consent was obtained from the participants prior to taking part in the study. Overall, the research design and supporting

methods facilitated data collection and analysis that effectively addressed the study's objectives. The next chapter presents the results and discusses key findings emerging from the study.

## 4. RESULTS AND KEY FINDINGS

### 4.1. Introduction

This chapter presents the results which are organised into three sections. The first section provides a profile of the community, including their socioeconomic status. Establishing the socioeconomic status of community members within the province is crucial for skills development, as it helps identify the specific needs and challenges faced by the community. The second section provides insights into the skills needs of community members within the province. It also highlights the programmes required to enhance their skill levels and to facilitate their participation in the mining sector and other key areas of the economy. The third section discusses the skills gaps and demands within the mining sector, emphasising the areas where additional training and development are needed to meet industry requirements.

### 4.2. Community profiling

#### 4.2.1. Geographic locations

This analysis is based on 415 surveys completed in the province. Mpumalanga has three district municipalities and data collection took place in all three municipalities. Figure 13 shows the participation levels in three district municipalities. Of the total surveys, Nkangala district municipality had the highest participation with 45% and it is followed by Gert Sibande and Ehlanzeni district municipalities with 28% and 27% respectively.

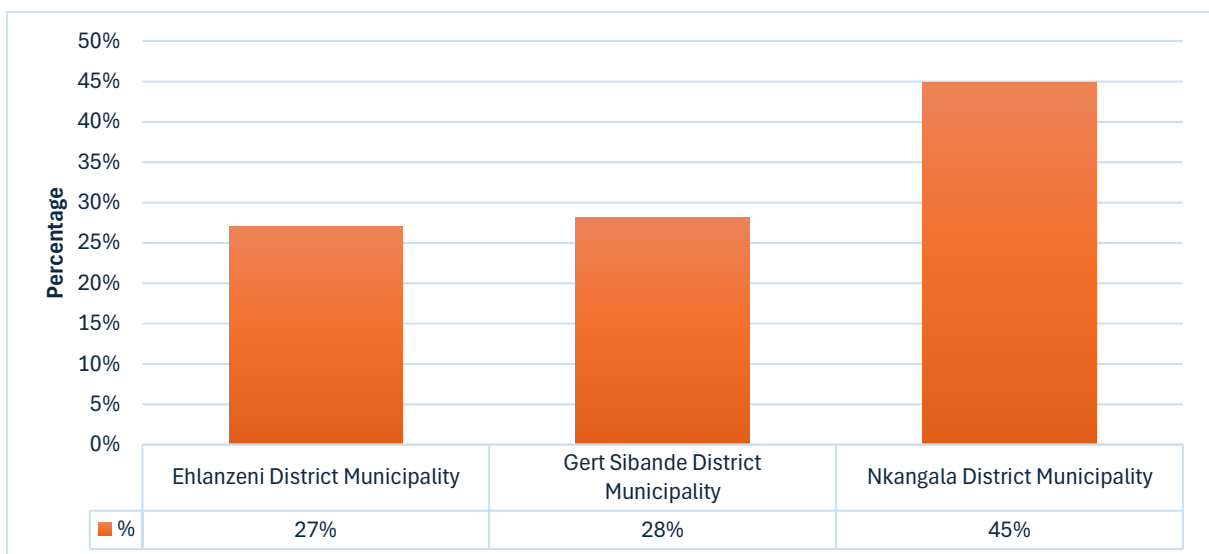


Figure 13: District municipalities where data collection took place

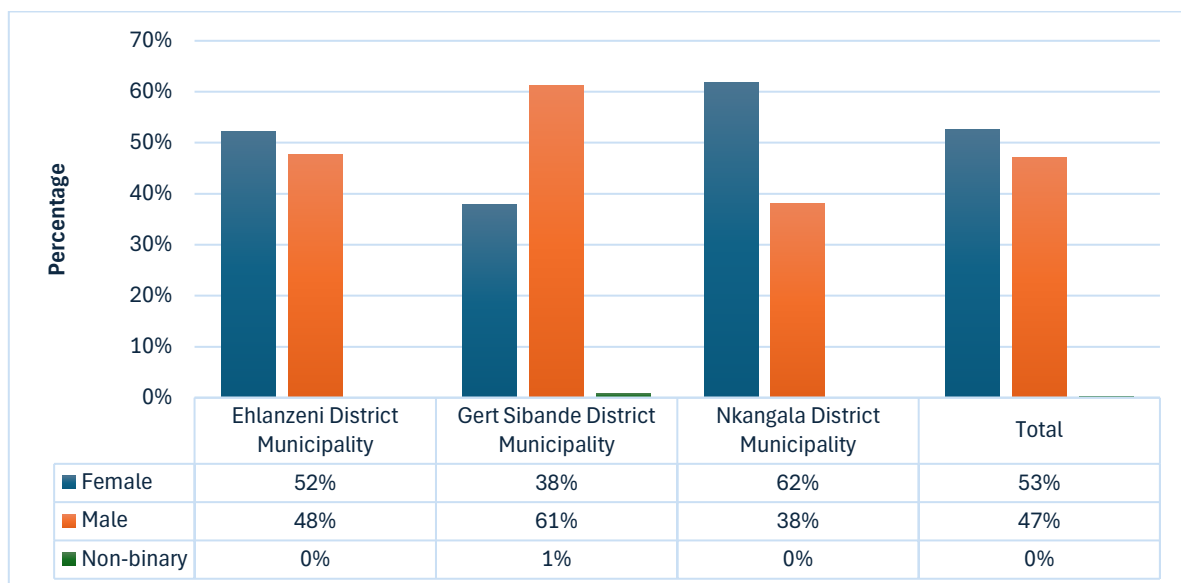
The difference in the participation rate is as a result of accessibility, which was determined by the fieldworkers' reach and presence in the communities. While this is the case, there is adequate representation across the three district municipalities to obtain insights on the skills development needs of communities across the province's three geographic locations.

#### 4.2.2. Demographics

As noted, skills development needs of communities are closely aligned to their socioeconomic profile. The factors such as gender, age distribution, employment status and others have a bearing on the skills profile of different population groups. Therefore, understanding the demographics is important to ensure that targeted programmes are designed that effectively provides for the skills needs of communities. The demographics presented in the subsection include gender, racial representation, age distribution, education levels, and disability.

##### ***Gender and racial profile***

Figure 14 shows total participation by gender across the three district municipalities. Of the total participants, most are female, accounting for 53%, while the remaining 47% are male. The gender distribution observed in the study aligns with the population profile, where females constitute the largest share, accounting for 52% of the total population. While this is the case, the gender profiles vary across the municipalities.



*Figure 14: Gender distribution by district municipality*

Ehlanzeni and Nkangala have more females than males, whereas Gert Sibande has a higher number of males than females. Overall, there is adequate gender representation across the municipalities, which is essential for providing balanced insights on the skills needs of different cohorts. In terms of racial representation, all participants were Black.

### **Age distribution**

In terms of age, the largest share across three district municipalities is captured in the age group 26 to 35 years, and they are followed by those in the 36 to 45 years. Overall, youth (i.e., aged 18 to 35 years) accounted 56% of the total participants. The highest percentage of young people is also recorded in Nkangala and Gert Sibande district municipalities accounting for 69% and 56% respectively. In Ehlanzeni district municipality, youth accounted for 35% of the total community members that participated in the survey. The largest percentage was constituted by those in the age group 36 to 45 years representing 46% of the participation level. Overall, there is representation across the different age cohorts ensuring a balanced insights across different groups.

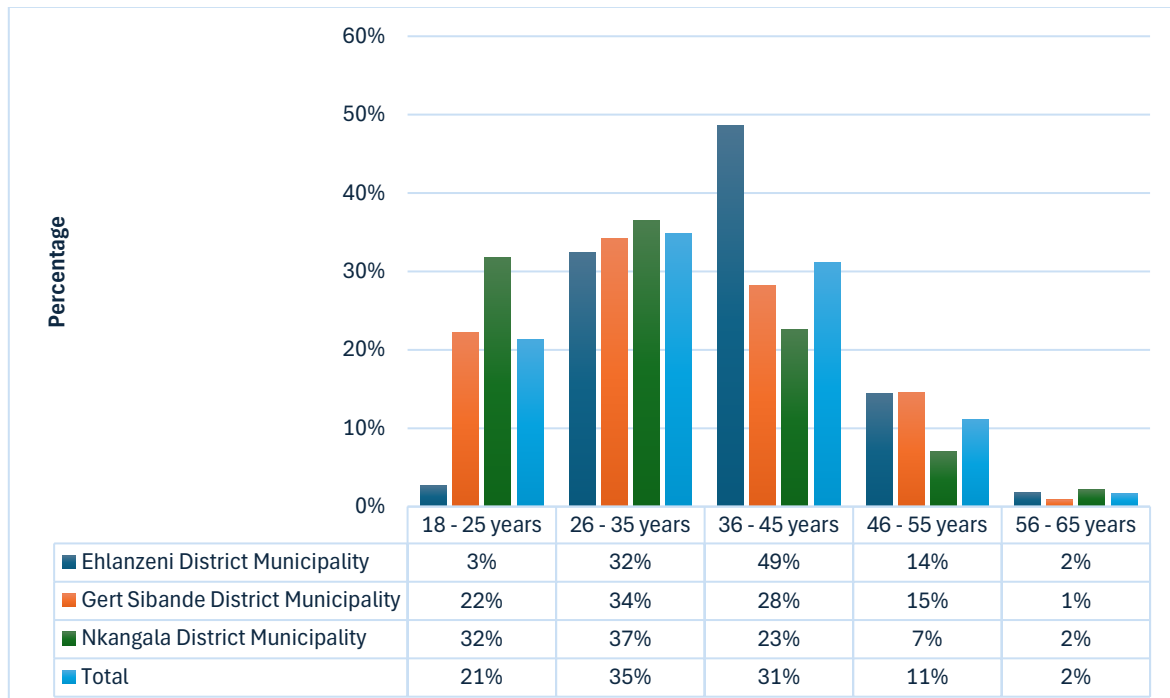


Figure 15: Age distribution

## Education levels

The level of education is another key demographic factor that has a bearing on skills development interventions needed to support the socio-economic development of communities. Figure 16 shows the education levels of the community members that participated in the study. From the combined data, it is seen that most of the participants (i.e., 42%) have matric qualification. They are followed by those who have grade 11 and equivalent phases as their highest level of study. The same education profiles are seen in Ehlanzeni and Nkangala district municipalities where most participants have matric. In the case of Gert Sibande, more participants have grade 11 (i.e., and equivalent) than matric qualifications. Across all three district municipalities, there are small percentages (i.e., less than 10%) of the participants with post-school qualifications (i.e., Higher certificates, Diploma, Bachelor's Degrees and associated qualifications).

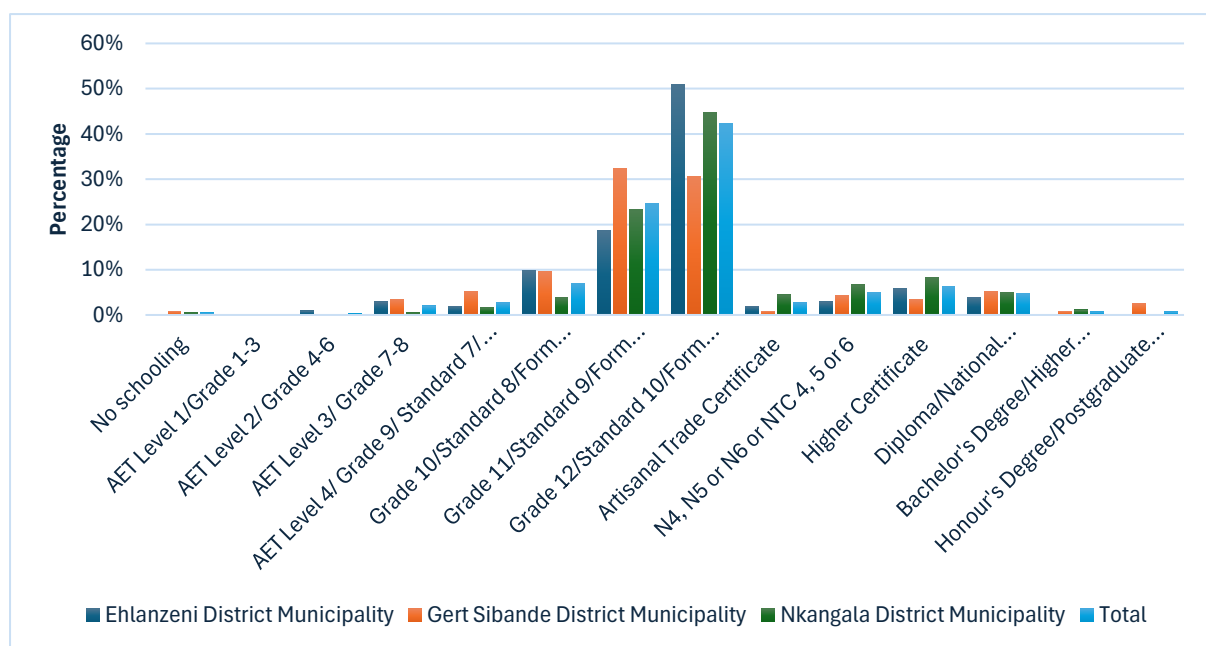


Figure 16: Education levels

There concerns on the levels of education in the province were raised at the workshops. In Komati village, in particular, the participants highlighted that there are only two primary schools in the area and upon finishing elementary schooling, the learners have to attend high school outside of the community. With the closure of the Komati power station, many families do not afford to pay for transport, and this has led to an increasing number of learners dropping out of school. This was shared by one community member:

*“Children travel either to Witbank, which is 42km or Middleburg, 39km to school and will be exhausted by the time classes finish. A bus was provided for children to travel school, but they pay” (Community workshop, 2025).*

Another youth participant highlighted:

*“Few years ago, there were no school drops but these days, virtually every home has a school-drop out” (Community workshop, 2025).*

The state of basic education in the province was also the focus of the discussion and how this affected the educational attainment amongst community members in the province. There was a consensus in the discussions that effective skills development at the tertiary level relies on a solid foundation established during basic education, and so it is important that that efforts are made to strengthen and improve the quality of basic education to ensure students are well-prepared for higher learning. One participant noted that:

*“Our own government do not have a budget for grade R. We can’t talk about tertiary skills development with poor basic education” (Community workshop, 2025).*

More so, introducing career guidance to learners from the early stages of education was deemed essential to help learners choose subjects that align with their interests and future areas of study in tertiary institutions. One community member highlighted that:

*“Career guidance at elementary level is critical in raising awareness and supporting learners in identifying their areas of strength which would then inform career choices related directly to the mines or other economic sectors” (Community workshop, 2025).*

The other factor that is affecting the levels of education in the province is the cost of higher education. The participants raised concerns about the high costs of courses by TVETs. It was also mentioned that there was a training college in Komati which offered vocational training; it was closed down some years ago and today, learners travel long distance for post-school

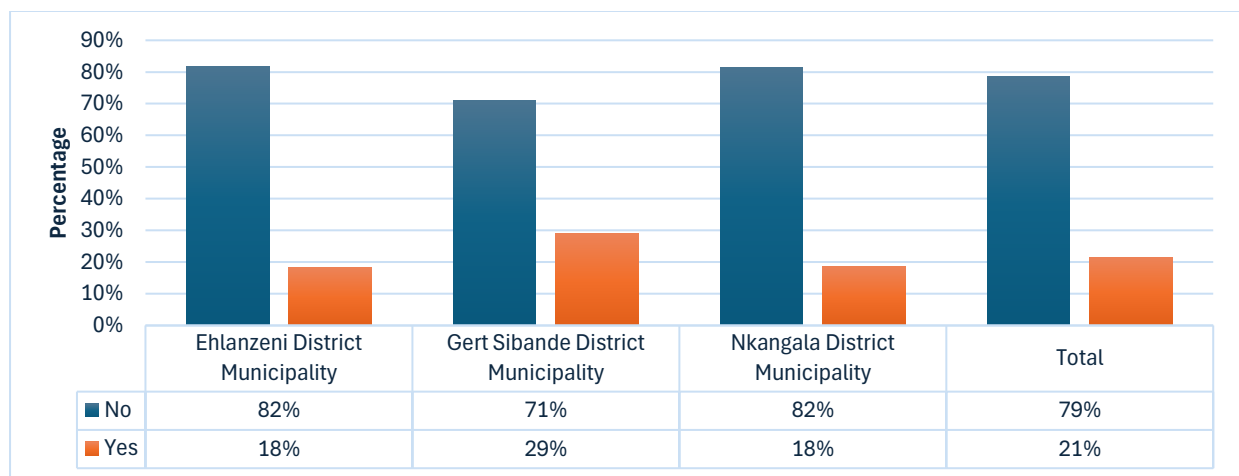
tertiary training. Unfortunately, many cannot afford the high costs of accommodation in either Middleburg or Emalaheni, the nearest towns where TVET colleges are located.

**Disability status**

As part of building the demographic profile of communities in the province, participants were asked if they were living with any disability. Only 1% of the participants are living with a disability. In terms of the type of disability, they indicated mobility impairment, visual impairment and developmental disability.

**4.2.3. Employment status**

A key component of the study was determining the employment status of community members, and this is shown in figure 17. Of the total participants, 79% indicated that they were unemployed while only 21% were working at the time of the survey. While the employment profiles differ, the percentages of those who are not working are significantly high in all municipalities.



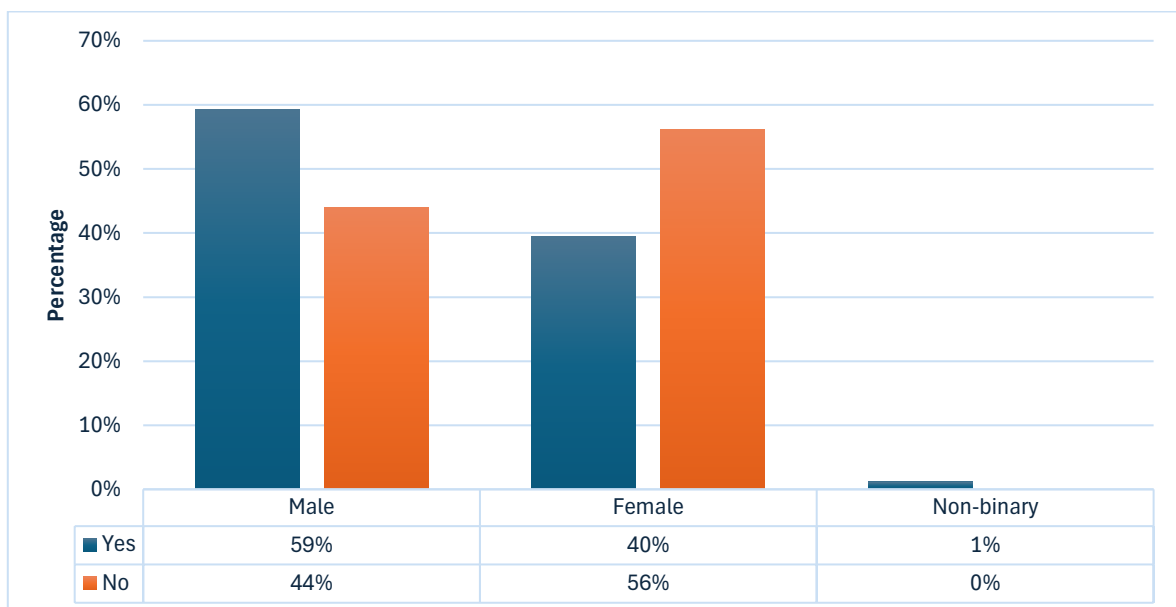
*Figure 17: Employment status by district municipality*

The high levels of unemployment are attributed to the closure of mines as experienced in the province. The closure of Komati power station also had negative impacts on employment in surrounding communities. Many community members lost their jobs and now suffer from hunger and mental health problems after the mines closed, as they were dependent on mining-related skills for their livelihoods. During the workshop, one community member highlighted:

*“Where we grew up; only knew about the mines and power station as sources of employment; the honest truth is that we are all lost; we do not have the skills. We are surrounded by many mines but end up accepting whatever is offered to put food on the table” (Community workshop, 2025)*

### **Employment by gender**

Figure 18 illustrates employment status by gender. It is evident that females are the most affected by unemployment, comprising 56% of the community members who are not working. In all three district municipalities, the percentage of females who are not working exceeds 80% of the total female participants, with the highest percentage observed in the Nkangala district municipality.



*Figure 18: Employment status by gender*

### **Employment by age**

Figure 19 depicts employment status by age. According to the figure, only 9% of individuals aged 18 to 25 years are employed. The highest employment percentages are observed in the age groups 26 to 35 years and 36 to 45 years, accounting for 40% and 31% respectively. In the Ehlanzeni district municipality, the majority of employed participants (53%) are in the age group 36 to 45 years. In the Gert Sibande district municipality, 33% of employed individuals are in the age group 36 to 45 years, while in the Nkangala district municipality, 56% of employed individuals are in the age group 26 to 35 years.

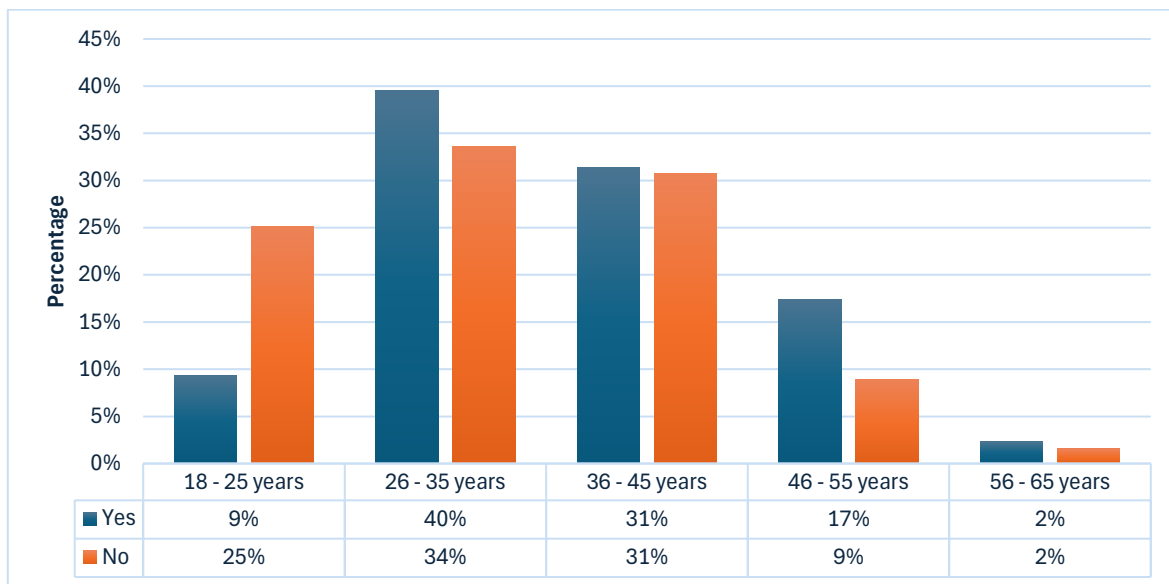


Figure 19: Employment status by age

### Employment type

Figure 20 shows the type of employment for those that are working. Most of the community members that are working are employed full time (i.e., 33%) and some are on contract employment (i.e., 35%). This is the case in Gert Sibande and Nkangala district municipalities. In the case of Ehlanzeni, most of the participants (i.e., 57%) indicated that they are self-employed.

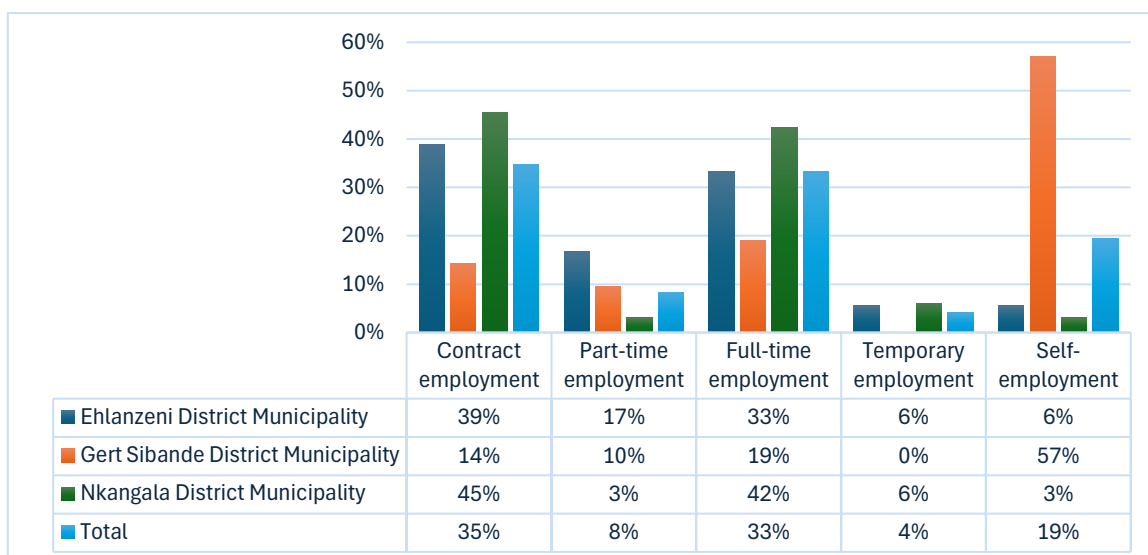


Figure 20: Type of employment amongst those working

### Employment by economic sector

Figure 19 illustrates the economic sectors in which they are employed. Most of the community members are working in the mining sector (i.e., 34%), followed by general government services (i.e., 21%) and the agriculture sector (i.e., 14%).

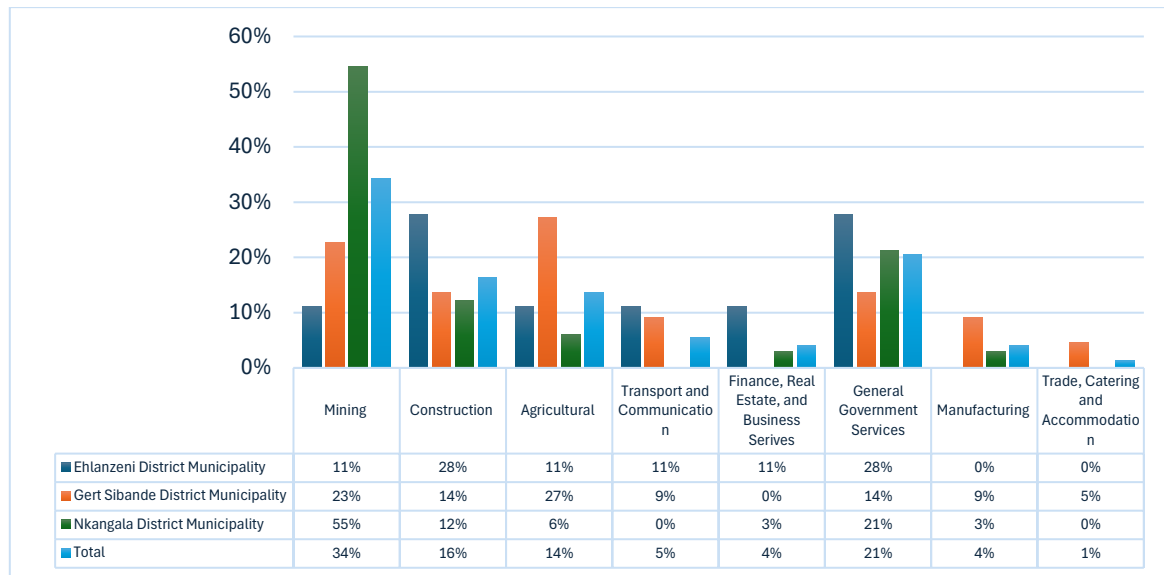


Figure 21: Employment by economic sectors

The contribution of various economic sectors to employment varies across the district municipalities. In Ehlanzeni, the majority of workers are employed in construction and general government services. Conversely, in Gert Sibande, most workers are engaged in the mining and agricultural sectors. In Nkangala, a higher percentage of the population is employed in the mining sector as well as in general government services.

Of those working in the mining sector, about 32% are employed as general workers and only a few are working as either engineers or artisans (i.e., see figure 22). This profile reflects the education levels amongst community members where only a small percentage has post-matric qualifications.

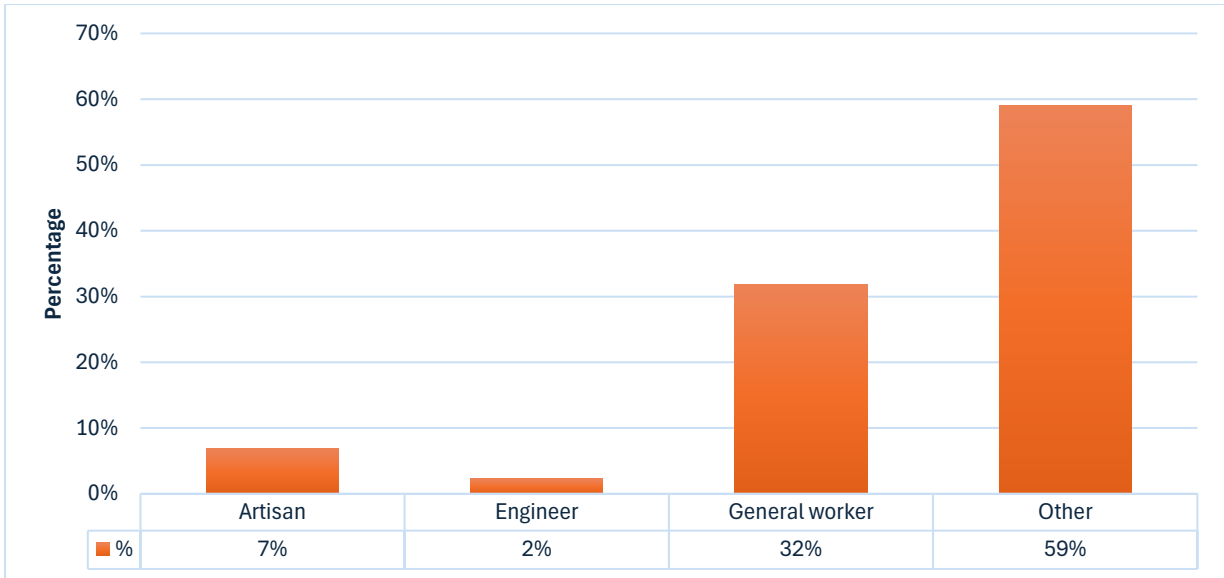


Figure 22: Occupations of community members employed in the mining sector

The other category includes occupations such as operators, blasting assistants, administrators, safety officers, drivers and others. These occupations are illustrated on a word cloud in figure 23 (i.e., the larger words indicate more frequently mentioned occupations).



Figure 23: Word cloud showing occupations of community members working in the MMS

The community members were asked about the difficulties in finding employment in mining operations. As seen in figure 24, the majority of community members indicated that it is difficult to secure employment in the mining sector. This is across all three district municipalities.

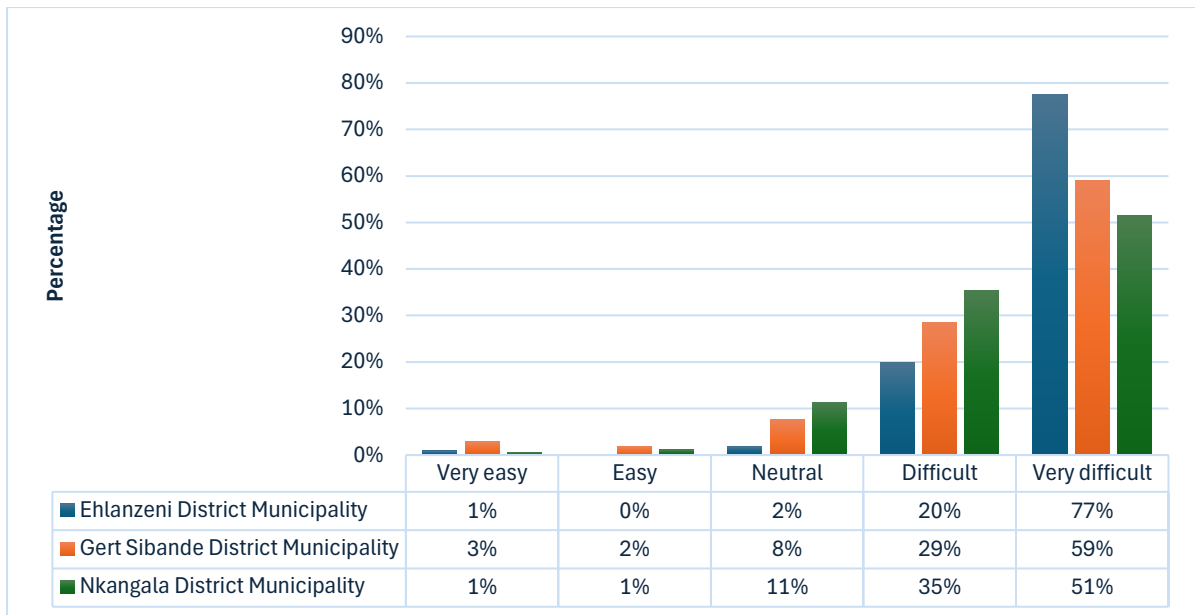


Figure 24: Levels of difficulty in finding employment in the MMS

### 4.3. Establishing skills needs of the community members

#### 4.3.1. Skills needed by community members

This section discusses the skills needed by communities to participate in the mining sector as well as other economic sectors in the province. In addition to the questions posed about the MMS, community members were asked about the skills that they needed to improve their employability in the sector. Their responses are depicted in figure 25.

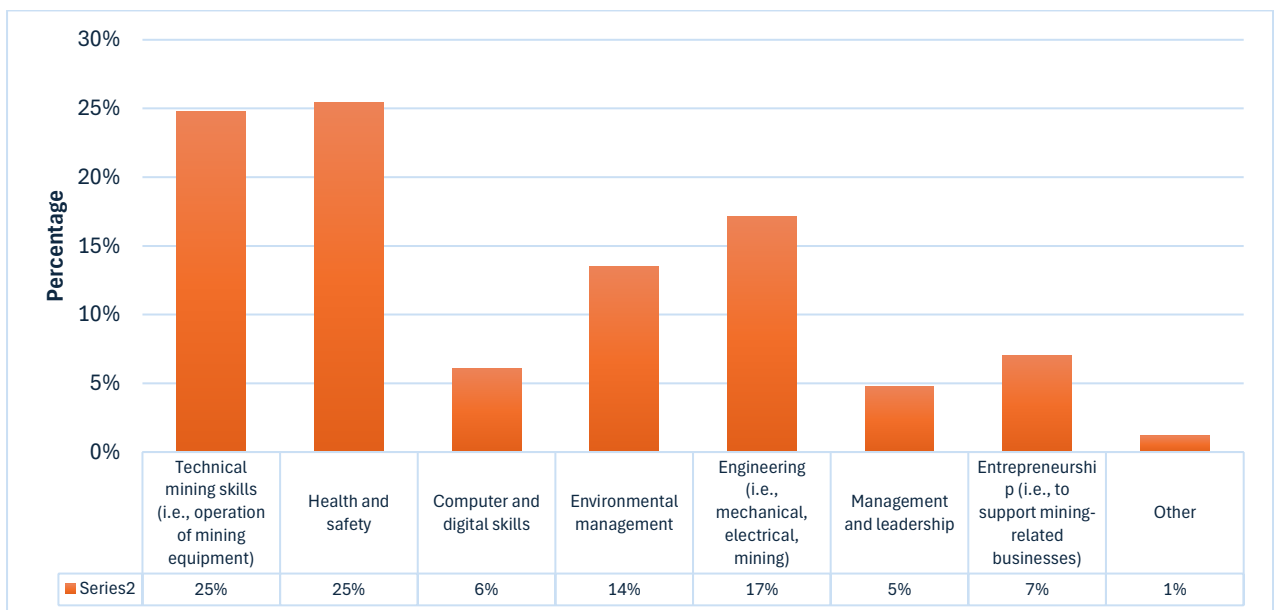


Figure 24: Most skills needed by community members

Most of the community members (i.e., both 25%) have identified technical mining skills as well as health and safety skills as critical skills needed to increase their participation in the mining sector. A considerable percentage of community members identified the need for engineering skills (17%), and environmental management skills (14%) to improve their job prospects in the sector. In Ehlanzeni district municipality, the top three skills identified by community members are technical mining skills (i.e., 47%), health and safety (i.e., 33%) and engineering skills (i.e., 12%). In Gert Sibande district municipality, the top three skills are health and safety (i.e., 26%), technical mining skills (22%) and environmental management (i.e., 21%). Lastly, in Nkangala district municipality, the top skills are health and safety (i.e., 22%), technical mining skills (i.e., 19%) and engineering skills (i.e., 18%).

Numerous skills were also highlighted by community members during the workshops. These include entrepreneurial and business skills. This was noted by a community member:

*“We need assistance in entrepreneurial skills and paper work. At times we do have the papers but not so sure where to start” (Community workshop, 2025).*

The other skills include agricultural skills, beautician skills, recycling, and manufacturing skills (i.e., to learn how to manufacture agricultural products), fashion design and embroidery skills, and carpentry skills. In addition, the need for skills training in solar systems was also highlighted as more opportunities are becoming available from renewable energy projects in the province. The community members also spoke about environmental skills in recognition of the negative impacts of mining on the environment and communities. This was expressed by one community member:

*“Not everyone can be employed by the mines, but skills development can open new opportunities such environmental scientist such as snake catchers” (Community workshop, 2025).*

The discussion on environmental skills led to communities talking about the just energy transition (JET). When asked about the JET, it became clear that most communities were not knowledgeable about it. Therefore, there is a need for an educational campaign that raises

awareness and provides information about JET to community members. One community member highlighted:

*“We are running away from coal and there are many opportunities, but we don’t have skills” (Community workshop, 2025)*

The need for skills beyond mining was also reiterated during the workshops. Specifically, skills that will support communities with addressing the challenges that they are facing

This was expressed by one community member:

*“We cannot focus on mining only, how about skills and staff shortages in our hospitals? We need nursing skills training to alleviate the crisis in public clinics and hospitals” (Community workshop, 2025).*

Communities also highlighted the need for training programmes that offer soft skills to community-based organisations that have programmes on gender-based violence. The following were highlighted:

*“GBV is pervasive among mine host communities and there is need to train professionals to prevent it and support survivors” (Community workshop, 2025).*

*“As a Chaplain, I believe we need mental health skills and psychology skills. We have children involved in drugs and we are dealing with the consequences and aftermath of all the problems triggered by mining. People of Komati need to heal” (Community workshop, 2015)*

*“There is need for healing and poverty alleviation skills programme to rebuild community trust and cohesion” (Community workshop, 2025).*

The need for soft skills training to support lobbying, and negotiations was also highlighted to enable communities to meaningfully participate in Social and Labour Plans (SLP) and Integrated and Development Processes (IDP) processes. It was highlighted by community

members that effective engagement with stakeholders is fundamental to enhancing community development ensuring that they are represented in interventions. It was noted that these skills can be provided through capacity-building workshops conducted in collaboration with community-based organisations (CBOs). The workshops can adopt a ‘train-the-trainer’ model where CBOs are trained to acquire the necessary skills and knowledge, which they can then pass on to other community members.

#### 4.3.2. Priority areas for skills development

In the survey, the participants were asked to identify the priority areas for skills development in the province. The community responses are presented in figure 26. Most of the community members (i.e., 29%) indicated the need for programmes that prepare youth for mining careers. A sizeable percentage (i.e., 23%) of the participants highlighted the need for programmes aimed at developing alternative skills to increase participation across key economic sectors in the province. The other area of focus identified by a considerable percentage of community members (i.e., 22%) is programmes that support local businesses increasing their participation in the MMS. The need for upskilling current mine workers also emerged as a key focus area, considering the evolving technological advancements and the demand for *new* skills in the mining sector.

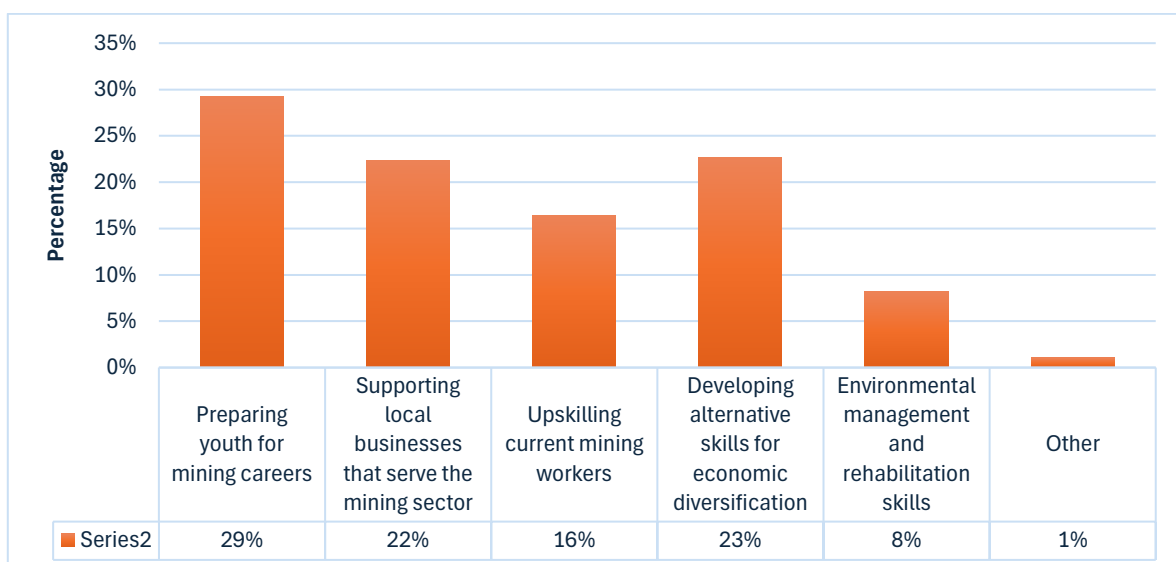
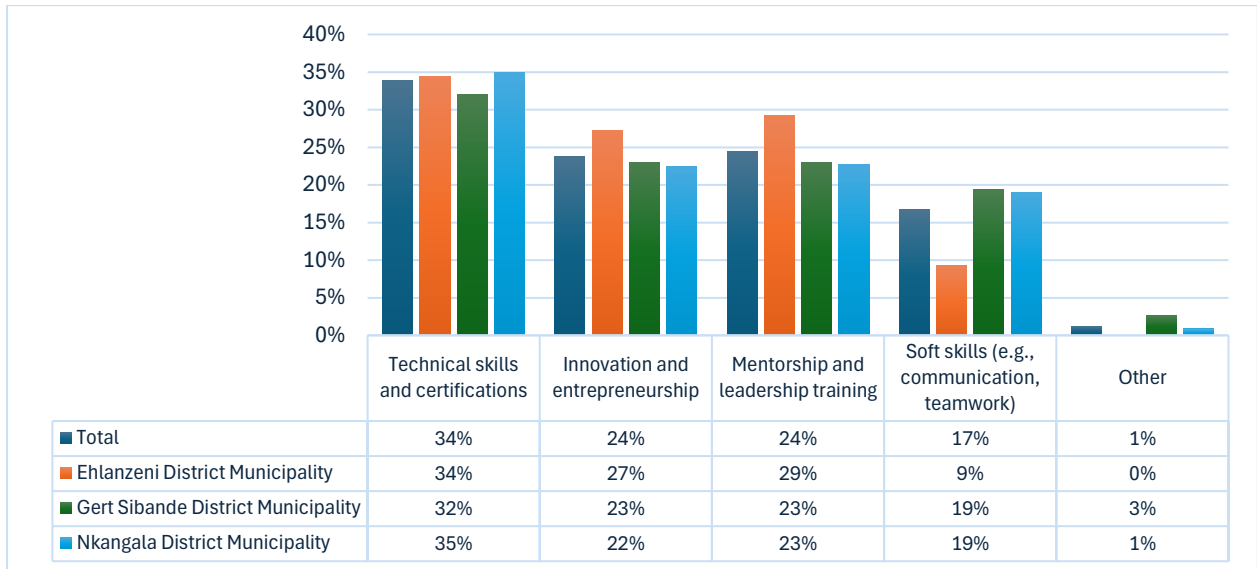


Figure 25: Proposed focus areas for skills development in the province

The responses above were disaggregated according to district municipalities to establish if there are any major differences. It emerged that the top three focus areas are the same across

all three district municipalities (i.e., preparing youth for mining careers, developing alternative skills for economic diversification, and supporting local businesses that serve the mining sector). With most community members indicating the need for youth-tailored programmes, they were asked to identify specific skills that need to be prioritised to support youth development in the province (i.e., see figure 27).



*Figure 26: Skills needed to support youth development*

Overall, about 34% of the community members highlighted the importance of technical skills and certifications to support youth participation in the mining sector. Additionally, a considerable percentage (i.e., both 24%) emphasised the need for skills in innovation and entrepreneurship, as well as mentorship and leadership. As depicted on the figure, the responses were fairly consistent across the three district municipalities. Notably, a considerable percentage of participants also identified soft skills as crucial, with the exception of Ehlanzeni district municipality, where only 9% of the participants felt the same.

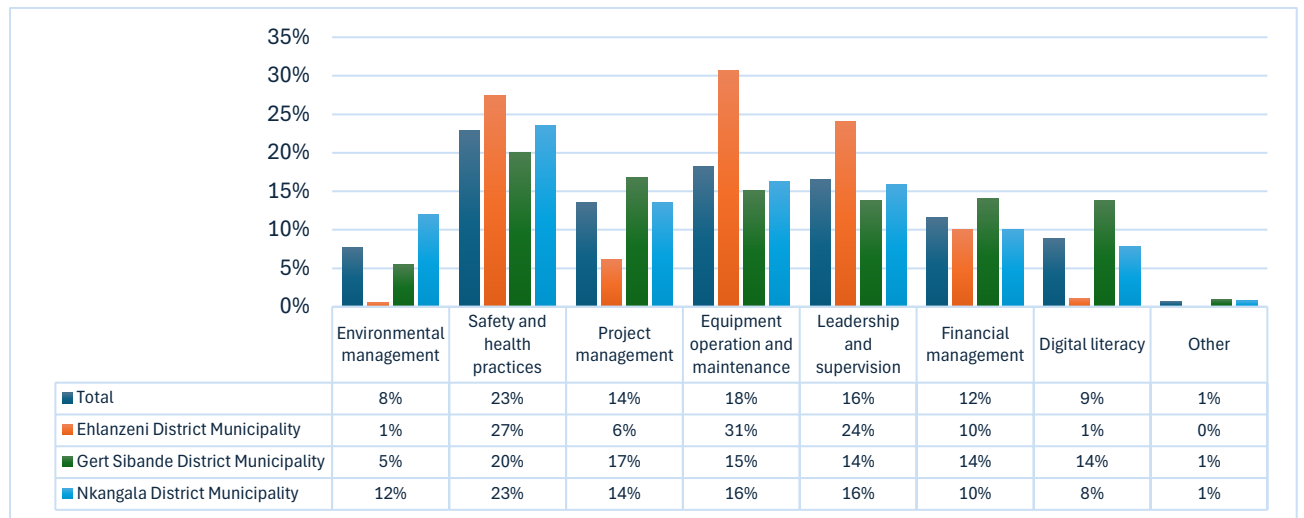
Aligned with the skills noted by community members during the workshops, the programmes covering the following were recommended:

- There is need for training on environmental conservation, agricultural development, tourism, occupational health and safety, and just energy transition initiatives.
- There is a need for career expos, practical training, and affordable short courses to inspire interest in mining and other downstream sectors.
- Young people need digital innovation hubs where they will be taught how to operate advanced technologies, including Artificial Intelligence (AI).
- There is a need for incubation programmes to impart skills and support existing local businesses in the province. These programmes should provide training in areas such as business management, enterprise development, financial planning, marketing, and technology. Additionally, they should offer mentorship and management training to help entrepreneurs navigate challenges and grow their businesses.
- There is a need for a dedicated training programme that should aim to equip communities with relevant energy transition skills, and this must be facilitated by the MQA in collaboration with other strategic partners.
- There is need for reskilling training programmes as many skilled workers that were employed by the mines were left without jobs after mine closures. It was highlighted that a considerable percentage of ex-miners include those with artisan certification, and they are struggling to find alternative employment.
- The youth need programmes that focusses on arts and crafts, entertainment skills (i.e. radio, podcasts, social media), AI and digital innovation, digital marketing, and business funding to support entrepreneurial ventures in beauty therapy, salons, nail bars, and massage.

#### **4.3.3. Cross-sector skills**

As alluded, developing skills that will support economic diversification emerged as another priority area in the survey in all three district municipalities. In addition to mining related skills, the following cross-sector skills were identified by community members. As observed on the figure, skills related to safety and health practices emerges as the top cross-sector skills

across all three district municipalities. The other skills that are identified relates to equipment operation and maintenance as well as leadership and supervision.



*Figure 27: Cross-sector skills identified by communities*

These skills are deemed important to enhance the employability of communities in key economic sectors in the province. The economic sectors that offer opportunities in the province include agriculture, construction, and manufacturing (i.e., see figure 29). Additionally, the renewable energy sector is emerging as a significant area of growth, driven by the just energy transition. This shift is leading to an increasing number of renewable energy businesses to meet the growing demand for sustainable energy solutions providing opportunities for skills development. In addition to identifying key economic sectors, community members were asked which sector collaborations would benefit the province. The responses are shown in figure 30.

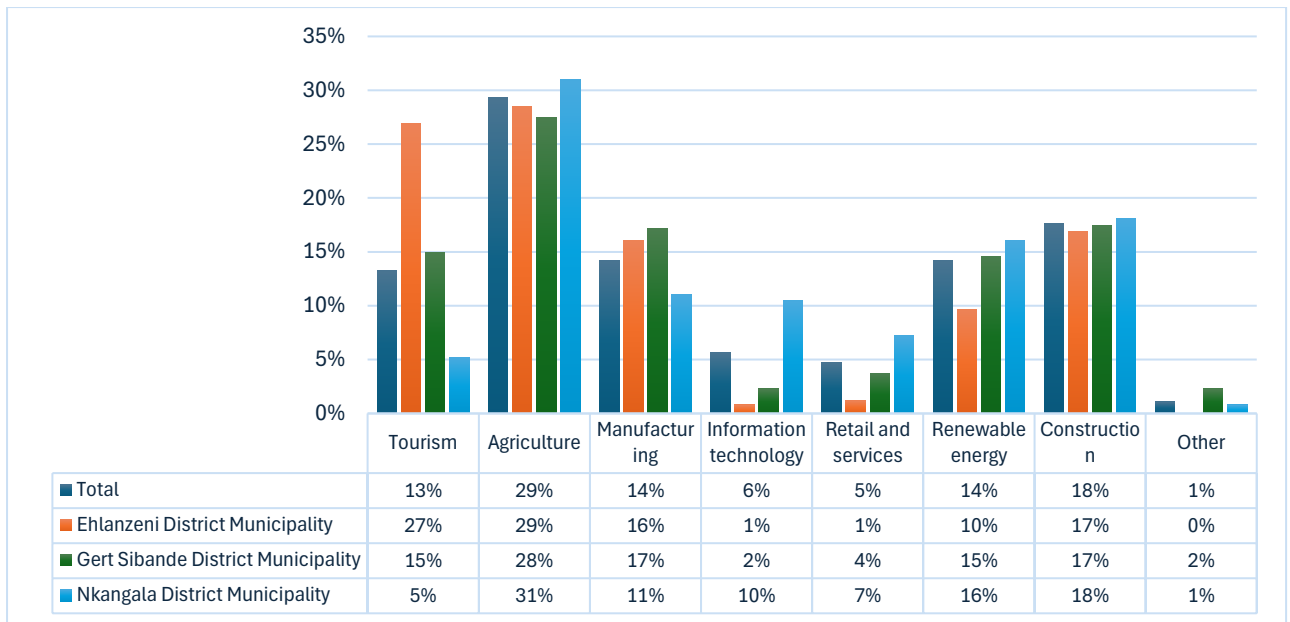


Figure 28: Key economic sectors as identified by community members

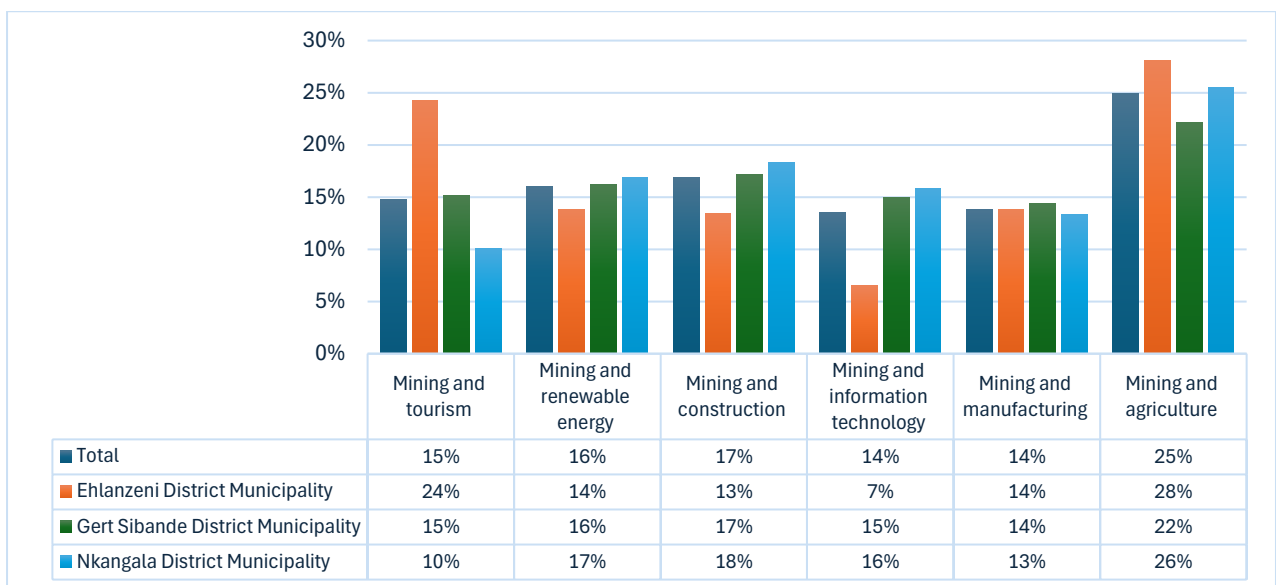


Figure 29: Cross sector collaborations for skills development

It is recommended that the mining sector establish relationship with the agricultural sector given the contribution of both sector to the economy of the province for increased impact of skills development and training initiatives. The other key collaborations as highlighted by community members include mining and construction, as well as renewable energy and tourism. In Ehlanzeni district municipality, the top two proposed collaborations are mining and agriculture and mining and tourism. In both Gert Sibande and Nkangala district

municipalities, the top collaborations are mining and agriculture as well as mining and construction.

#### 4.3.4. Skills development and training programmes

Several questions were posed to gather the perspectives of community members on the skills development and training programmes implemented in the province. This was done to assess the effectiveness of these programmes in addressing the skills needs of the communities. Additionally, specific questions were directed at community members to solicit their views on the MQA and its role in skills development within the mining sector.

The first question posed to community members was whether they were aware of any training programmes implemented by mining companies in their community or province. As illustrated in figure 31, only 27% of community members were aware of such programmes. The majority, 73%, were not aware of any MMS-related training programmes. When looking at district municipalities, over 90% of participants in the Ehlanzeni district municipality reported being unaware of any programmes, compared to 76% in the Gert Sibande district municipality. Notably, the highest awareness of MMS-related training programmes was in the Nkangala district municipality

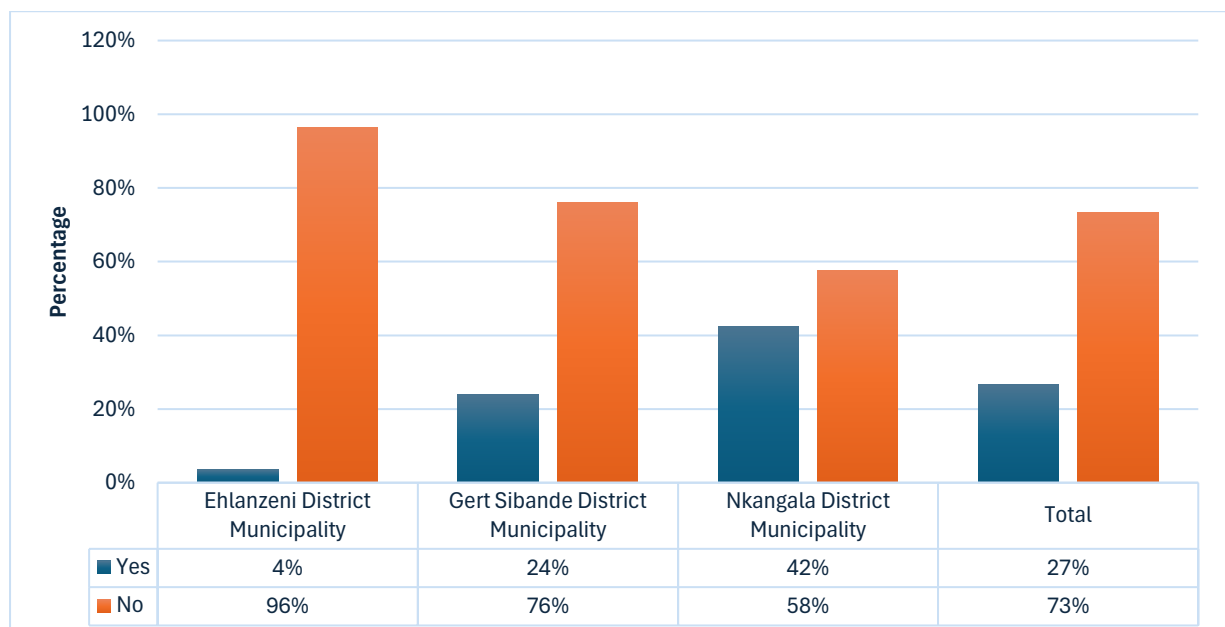


Figure 30: Awareness of MMS-related training programmes

Those that were aware of the programmes were asked about the level of alignment between the programmes that have been delivered and the skills needs of communities. Figure 32

shows their responses, and as can be seen 25% agree while 27% disagree that the training programmes catered for the needs of community members. A considerable portion of participants, particularly in the Ehlanzeni district municipality, were unsure, with 45% indicating they did not know.

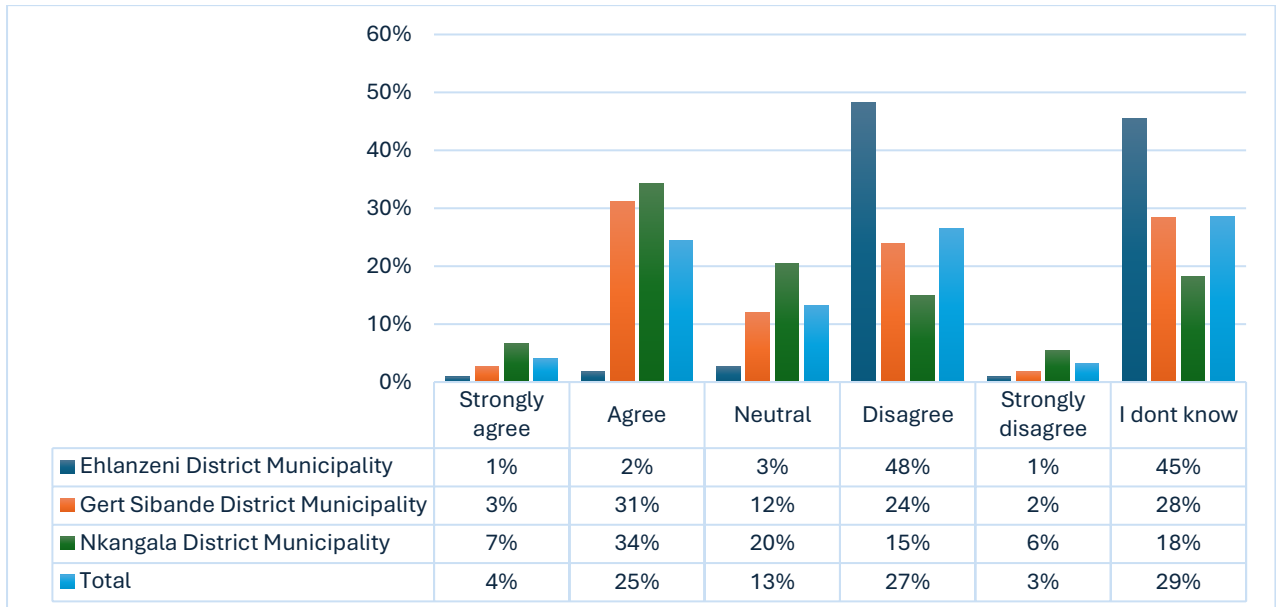


Figure 31: Alignment between training programmes and community skills needs

The survey findings were supported during the workshop with community members raising concerns that they are often not adequately consulted before the implementation of programmes. In particular, community members raised concerns about SLP projects. This was highlighted:

*“[In Komati Village] mines have closed down and left without fulfilling the SLPs more so the responsibility of re-skilling to ensure re-deployment in other sectors for those retrenched” (Community workshop, 2025).*

Another issue that was reiterated was the misalignment between SLPs and IDPs which contains strategic priorities for development. This misalignment often leads to the implementation of projects that fail to meet community needs. Additionally, the lack of community participation in the IDP process, especially among the youth who are unaware of key skills development interventions, was highlighted as a significant concern. Community-centred skills development was emphasised, and this must be supported by meaningful

consultations during the development of SLPs and IDPs ensuring the plans include relevant skills that the communities need.

Another aspect that was raised with community members in the survey was on the accessibility on the training programmes. Overall, 44% of the participants raised that it was *very difficult to access* training programmes, while only 3% shared that it was *easy to access*. While the responses are different across district municipalities, most of the participants hold the same view that accessing training programmes is difficult.

Participants identified several barriers to entry, as shown in Figure 33. The top three factors affecting participation in training programmes are the lack of information about the programmes, the high cost of training, and the distance to training centres. In all three district municipalities, the lack of information about training programmes was ranked high.

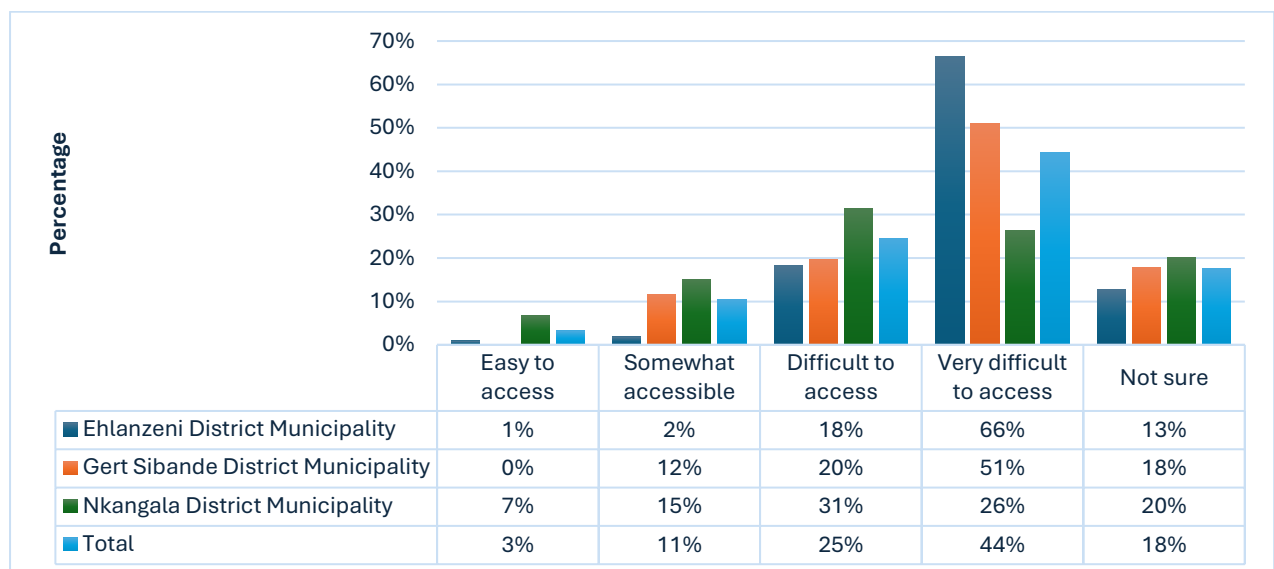
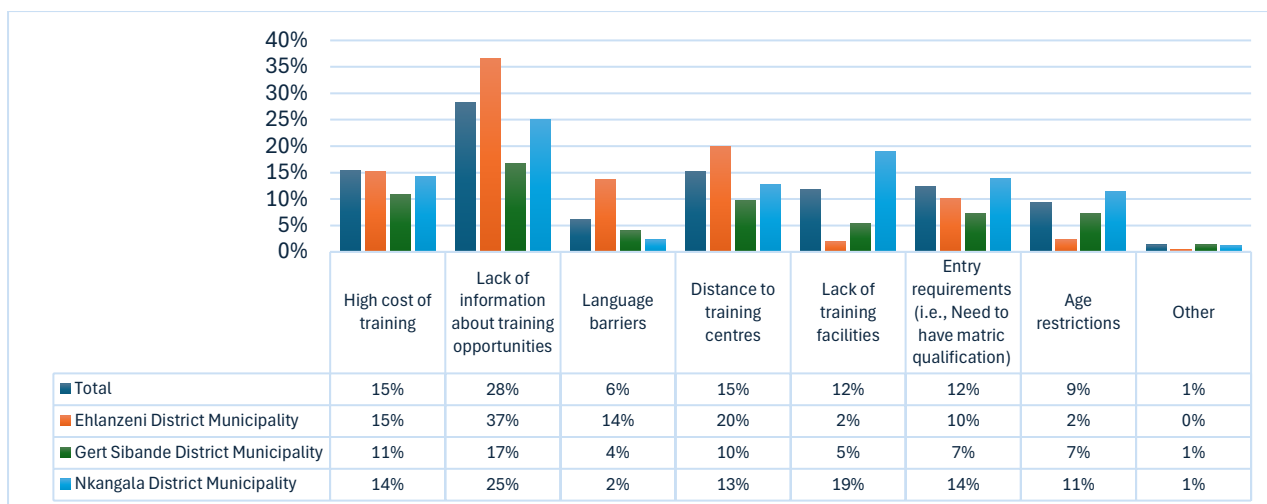
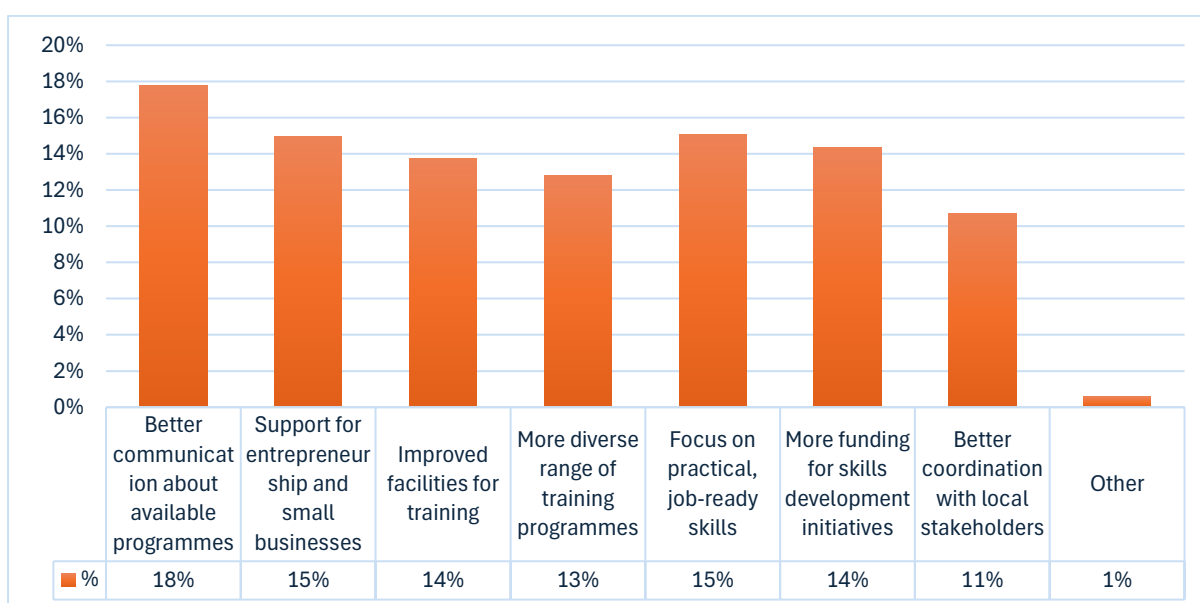


Figure 32: Levels of difficulty in accessing training programmes



*Figure 33: Barriers of entry when accessing training programmes*

In discussing these challenges, several areas for improvement were identified. As shown in Figure 35, a considerable percentage of community members (15%) emphasised the need to enhance communication about training programmes. Other suggested improvements include implementing training programmes that support entrepreneurship and small businesses, as well as those that offer practical and on-the-job training. Additionally, there is a need to improve training facilities and increase funding to support skills development.



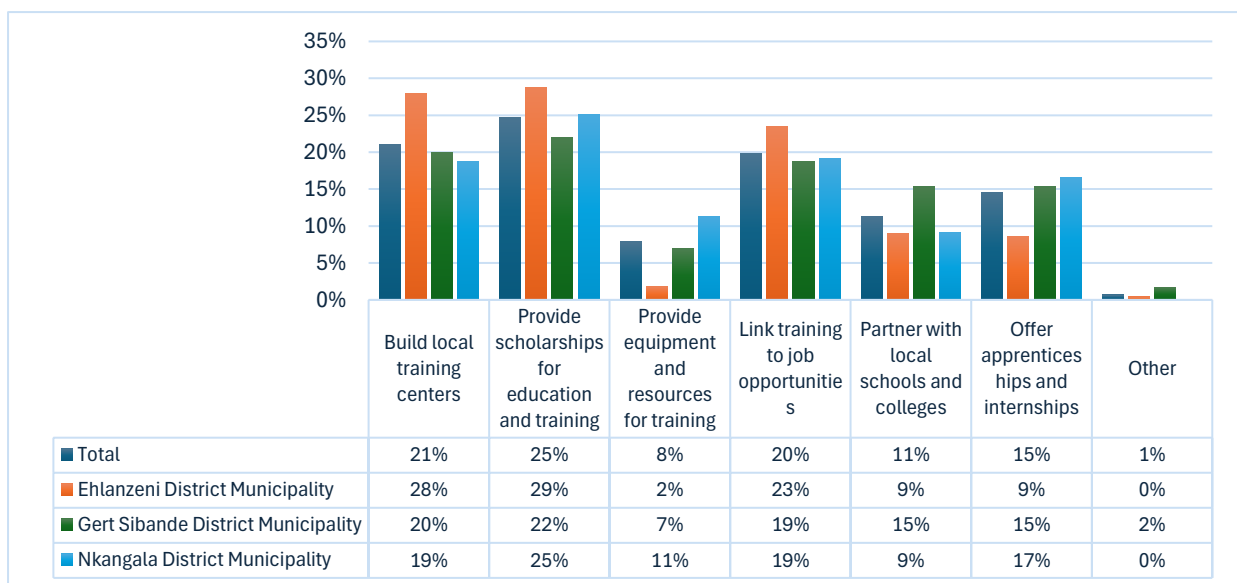
*Figure 34: Suggested areas of improvement*

Several recommendations were also made by community members during the workshops. It was proposed that abandoned buildings and infrastructure left by mines be repurposed into skills development facilities. These were raised by community members:

*“We are not skilled; why not convert the mining infrastructure into skills development facilities for example” (Community workshop, 2025).*

*“It’s unfair to travel long distances for skills training. So, our strong recommendation is to bring the skills here and this place will never degenerate into a white elephant” (Community workshop, 2025)*

In addition to implementing these areas of improvement, community members emphasised that skills development should be supported by several interventions, as shown in Figure 36. These include providing scholarships for education and training, building training centres, and linking training to job opportunities. These three interventions were the most frequently highlighted by participants across all district municipalities.



*Figure 35: Additional avenues to support skills development*

The need for practical training for students who have completed their programmes in TVETs, and CETs was highlighted in the workshop. This was noted:

*“We need more practical trainings than theories including Innovation Centres where a Black child is shown how to operate machines, technology and AI” (Community workshop, 2025).*

As mentioned, the role of the MQA in skills development is crucial, particularly for communities hosting mining operations where the lack of skills remains a challenge. Several questions were posed to participants to gather their views on the MQA and its role in skills development. Participants were asked if they were familiar with the MQA. As shown in Figure 37, only 38% of participants were familiar with the MQA, while 14% were somewhat familiar. The majority of participants were not familiar with the MQA. In terms of district municipalities, only 5% of participants in the Ehlanzeni district municipality were familiar with the MQA. The highest familiarity was observed in the Gert Sibande district municipality, followed by the Nkangala district municipality.

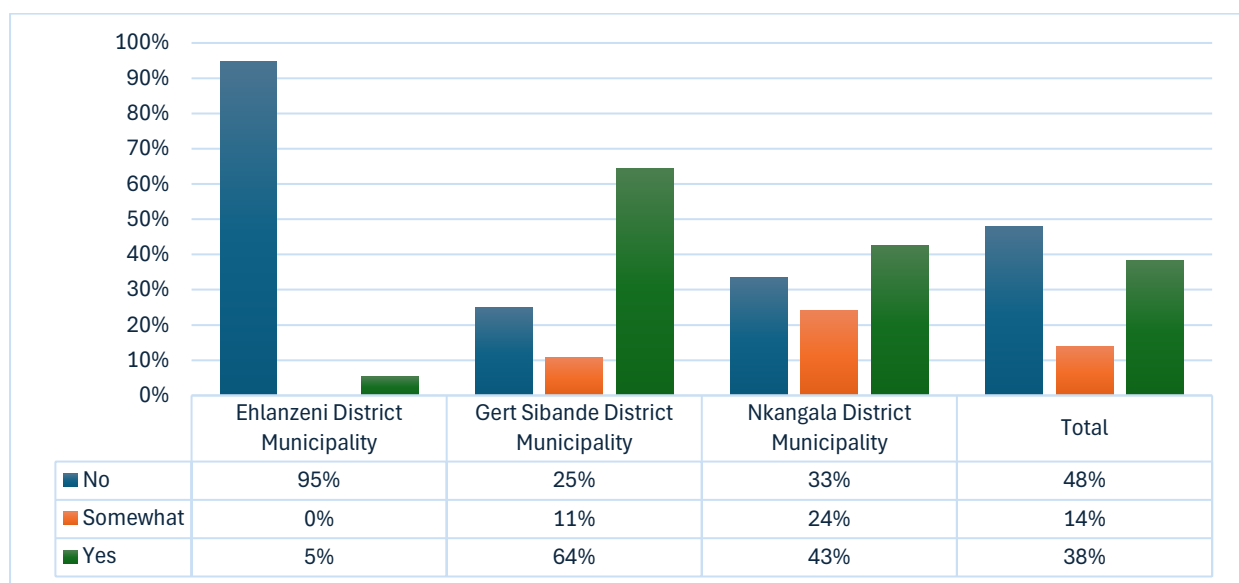


Figure 36: Familiarity of community members with MQA

Increasing the footprint of MQA in mining communities is important and so, several areas of improvement were suggested by communities. These are depicted in figure 38 below. Overall, it is recommended that MQA looks at providing variety of training programmes to address the diverse skills needs of communities. There is also a need for improved communication on available training programmes. Community members also pointed out the need for stipends or financial support for beneficiaries during training, as well as better alignment between training programmes and job market needs to increase the number of beneficiaries entering the labour market after completing their training

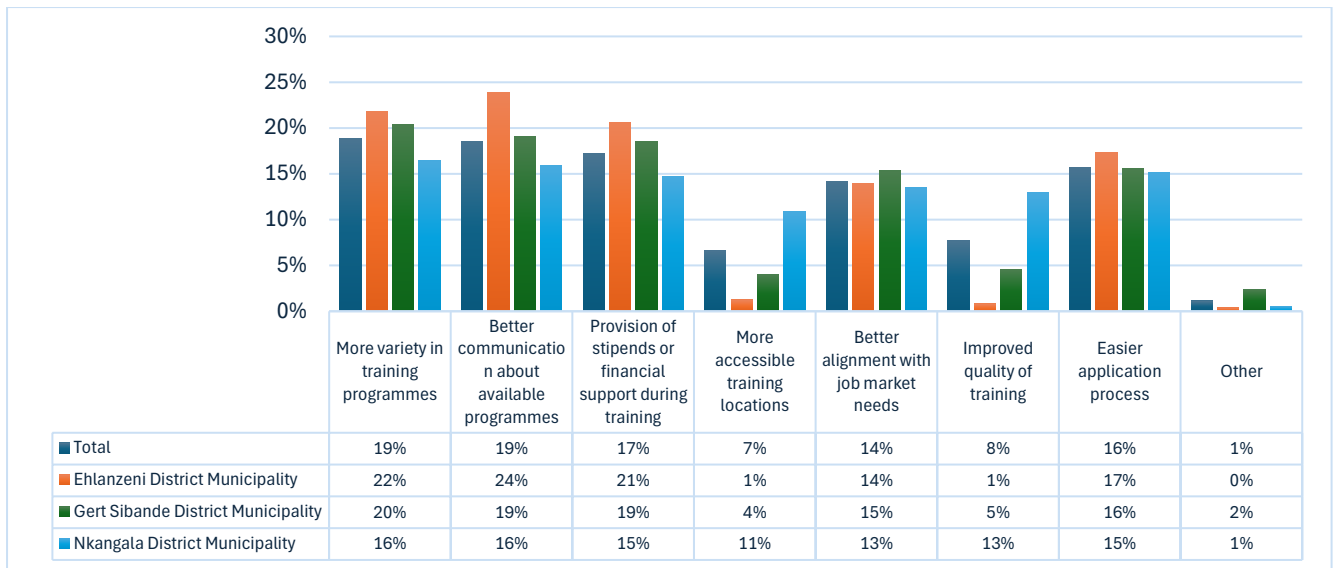


Figure 37: Suggested areas of improvement for MQA

- It is recommended that MQA conduct on-site visits to better understand local challenges related to skills deficits among local communities which hinder their employability in the mining sector and overall participation in the economy.
- Communities reiterated the need for a clear programme of action to address skills development needs of communities, and this must be devised through collaboration with the ward councillor and relevant stakeholders including the MQA.
- There is a need for stronger partnerships between MQA, mines, local municipalities, and educational institutions to improve skills training and employment opportunities.
- There are already programmes that are running in the province and so, it is important for MQA to establish working relationships with CBOs that are leading these programmes.

#### 4.4. Identifying the skills gaps in the MMS

This section presents an analysis of the Workplace Skills Plan (WSP) and Annual Training Reports (ATRs) data, focusing on hard-to-fill vacancies, top-up skills, and community training programs. Hard-to-fill vacancies are defined as "occupations that an employer was unable to fill within 12 months or took longer than 12 months to find a suitably qualified and experienced candidate" (DHET, 2019, cited in MQA, 2023). In contrast, top-up skills refer to skills gaps that typically require short training interventions (DHET, 2019, cited in MQA, 2023).

Both hard-to-fill vacancies and top-up skills highlight skills gaps and serve as proxies to understand the skills demand in the mining sector. Additionally, the training programmes implemented by mining companies indicate priority areas for training, thereby reflecting the demand for specific skills. By analysing these programmes, the areas where training is needed can be identified to meet the industry's requirements and align them with the skills needs of the community.

##### 4.4.1. Hard-to-fill vacancies

Table 9 shows the occupations that mining companies in Mpumalanga province classified as hard-to-fill vacancies. The table uses colour coding to indicate the number of companies reporting each occupation: 5 to 10 companies coded "blue", 11 to 20 companies coded "orange", and more than 20 companies coded "green". As seen on the table, the top three occupations that are difficult to fill are General Manager Mining, Engineering Manager and Diesel Mechanic.

Table 9: Hard-to-fill vacancies in the MMS in Mpumalanga province

Specialisation/Occupation	OFO Code	Reason/s for the challenge
Human Resource Manager	2021-121201	Lack of relevant experience,
Training Manager	2021-121202	Poor remuneration, lack of relevant experience, lack of relevant qualification
Engineering Manager	2021-132104	Poor remuneration, unsuitable job location, lack of relevant experience
Chief Surveyor (Mining)	2021-132202	Lack of relevant qualifications, lack of relevant experience
Mining Engineer	2021-214601	Lack of relevant qualifications
Electrical Engineer (Mines)	2021-215101	Lack of relevant qualifications, lack of relevant experience, slow recruitment processes

<b>Specialisation/Occupation</b>	<b>OFO Code</b>	<b>Reason/s for the challenge</b>
Bulldozer Operator	2021-734203	Lack of relevant qualifications, lack of relevant experience, poor remuneration
Diesel Mechanic	2021-653306	Lack of relevant experience
Fitter (including Machining)	2021-653303	Unsuitable job location, lack of relevant qualifications, unsuitable job location
Boilermaker	2021-651302	Lack of relevant qualifications, lack of relevant experience, slow recruitment processes
Mine Safety Officer	2021-325705	Lack of relevant qualifications, lack of relevant experience
General Engineering Supervisor (GES)	2021-312103	Lack of relevant qualifications, lack of relevant experience
Mine Manager	2021-312101	Poor remuneration, unsuitable job location, equity considerations
General Manager Mining	2021-132201	Lack of relevant experience, lack of relevant experience
Training Officer	2021-242401	Lack of relevant experience, slow recruitment processes
Chief Safety Officer Mining	2021-226302	New or emerging job not defined before, slow recruitment processes
Electrical Engineer (Mines)	2021-215101	Lack of relevant qualifications, lack of relevant experience, slow recruitment processes

Several reasons have been cited as contributing to challenges of recruitment and these include lack of relevant experience, lack of relevant qualifications, slow recruitment processes, poor remuneration, unsuitable job location, and equity considerations. These challenges are mapped in figure 39 to show the extent to which they contribute to the difficulty in filling these positions. The lack of relevant qualifications, followed by lack of relevant experience and slow recruitment processes constitute the largest factors impacting recruitment. Poor remuneration and unsuitable job location also account for a considerable portion of reasons for hard-to-fill vacancies.



Figure 38: Reasons for hard-to-fill vacancies

#### 4.4.2. Top-up skills

Table 10 provides a summary of the occupations where skills gaps have been identified, as reported by 5 or more companies. The table uses colour coding to indicate the number of companies reporting each occupation: 5 to 10 companies coded “blue”, 11 to 20 companies coded “orange”, and more than 20 companies coded “green”. The most skills gaps are identified amongst shift supervisor (Mining) including Mine Overseer, Mine Manager and other related occupations. Between 11 and 20 companies also reported skills gaps amongst Team Leaders and related occupations and Engineering Foreman.

Table 10: Top-up skills

Specialisation/Occupation	OFO Code	Generic Skillset
Human Resource Manager	2021-121201	Leadership, interpersonal, legal, governance and risk
Mining Engineering Manager	2021-132104	Management, leadership, planning, organising, technical (job-specific)
Training Officer	2021-242401	Mine production process, technical (job-specific), computer literacy
Shift Supervisor (Mining), Mine Overseer (Production) and related	2021-312101	Mine production process, technical (job-specific), planning and organising, supervisor, first-aid, problem-solving, communication (oral), leadership, management, computer literacy, legal, governance and risk, project management, teamwork, interpersonal

<b>Specialisation/Occupation</b>	<b>OFO Code</b>	<b>Generic Skillset</b>
Team Leader (Mining) and related	2021-312102	Mine production process, technical (job-specific), planning and organising, supervisor, first-aid, problem-solving, communication (oral), leadership, management, computer literacy
Engineering Foreman	2021-312103	Production management, supervisor, technical (job-specific), problem-solving, planning and organising, communication (oral), teamwork, office administration, leadership, computer literacy
Production Plant Supervisor	2021-312201	First-aid, supervisor, technical (job-specific), leadership, problem solving, planning and organising, communication (oral), production management, operations management
Engineering Planner	2021-312202	Project management, technical (job-specific), financial management, interpersonal, leadership, planning and organising
Administration Clerk / Officer	2021-411101	Communication (written), communication (oral), office administration
Administration Officer	2021-441903	Advanced IT and software, computer literacy, communication, customer service skills
Boilermaker	2021-651302	First-aid, supervisor, technical (job-specific, problem solving, teamwork, planning and organising, communication (oral)
Fitter (including Machining)	2021-653303	First-aid, supervisor, technical (job-specific, problem solving, planning and organising, communication (oral)
Diesel Mechanic	2021-653306	First-aid, supervisor, technical (job-specific, leadership, problem solving, planning and organising, communication (oral)
Electrician (Engineering)	2021-671101	First-aid, supervisor, technical (job-specific, problem solving, planning and organising, communication (oral)
Millwright	2021-671202	First-aid, supervisor, technical (job-specific, problem solving, planning and organising, communication (oral)

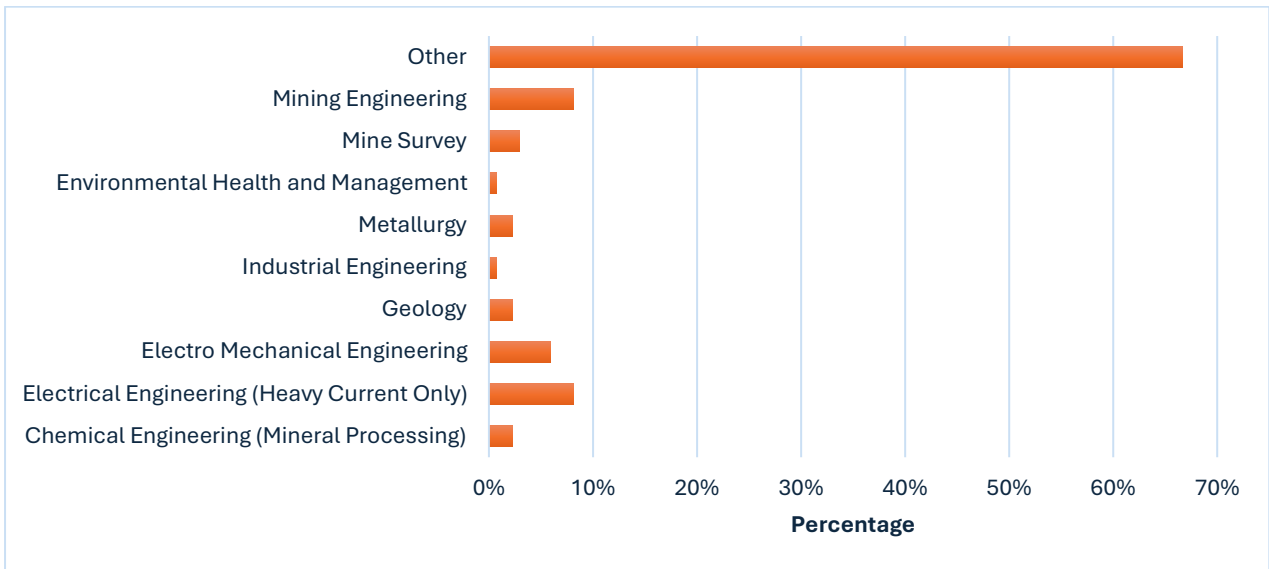
Specialisation/Occupation	OFO Code	Generic Skillset
Auto Electrician	2021-671208	First-aid, supervisor, technical (job-specific, problem solving, planning and organising, communication (oral)

#### 4.4.3. Community skills development and training programmes

Table 11 provides the training programmes that have been delivered by mining companies in 2024. A total of 613 programmes has been captured. As seen on the table, bursaries accounted for the largest share (i.e., 22%), followed by internships (12%) and learnerships (11%).

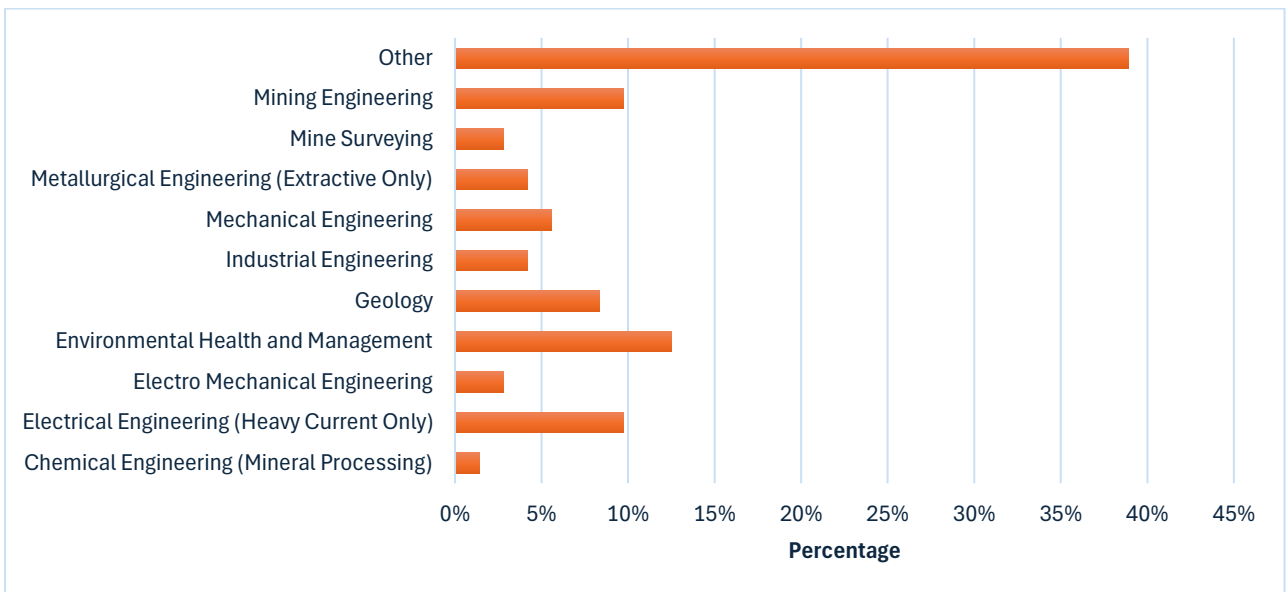
Type of programme	No.	%
Adult Education and Training	43	7%
Bachelors Degree	11	2%
Bursary	135	22%
Work Placement	26	4%
Certificate	47	8%
Internship	72	12%
Job Specific Development Programme	17	3%
Learnership	66	11%
National Certificate	6	1%
Operator Licence/Renewal	15	2%
Short Course	62	10%
Skills Programme	39	6%
Trade	30	5%
Work Placement	26	4%
Other	18	3%
<b>Total</b>	<b>613</b>	<b>100%</b>

Figure 39 illustrates the distribution of bursaries by area of study. Approximately 33% of the bursaries were awarded for mining-related qualifications, while the remaining 67% were allocated to various other fields, including finance, management, commerce, education, accounting, agriculture, and other disciplines. This finding is significant as it demonstrates that mining companies are investing in bursaries beyond the mining sector, thereby supporting participation in diverse areas of the economy.



*Figure 39: Bursaries awarded by mining companies by area of study*

Figure 40 displays the distribution of internships awarded by mining companies. Approximately 61% of these internships are in mining-related fields, with Environmental Health and Management, Electrical Engineering (Heavy Current Only), and Mining Engineering being the most common. The remaining 39% of internships are in disciplines outside of mining, as detailed in Figure 41.



*Figure 40: Internships awarded by mining companies*

Figure 41 shows that the remaining internships were awarded in various fields, including management, human resources, safety, engineering (i.e., specifically industrial and civil engineering), finance, and other disciplines.



Figure 41: Internships awarded by mining companies in other disciplines

Figure 42 illustrates the learnerships awarded by mining companies. The majority of these learnerships are in trades such as Diesel Mechanic, Electrical, Rigging Ropesman, and Millwright and other trades. The learnerships were also awarded to those with National Certificate in different study areas including Business Administration, Mechanical Engineering, Information Technology, Blasting Operations and others.

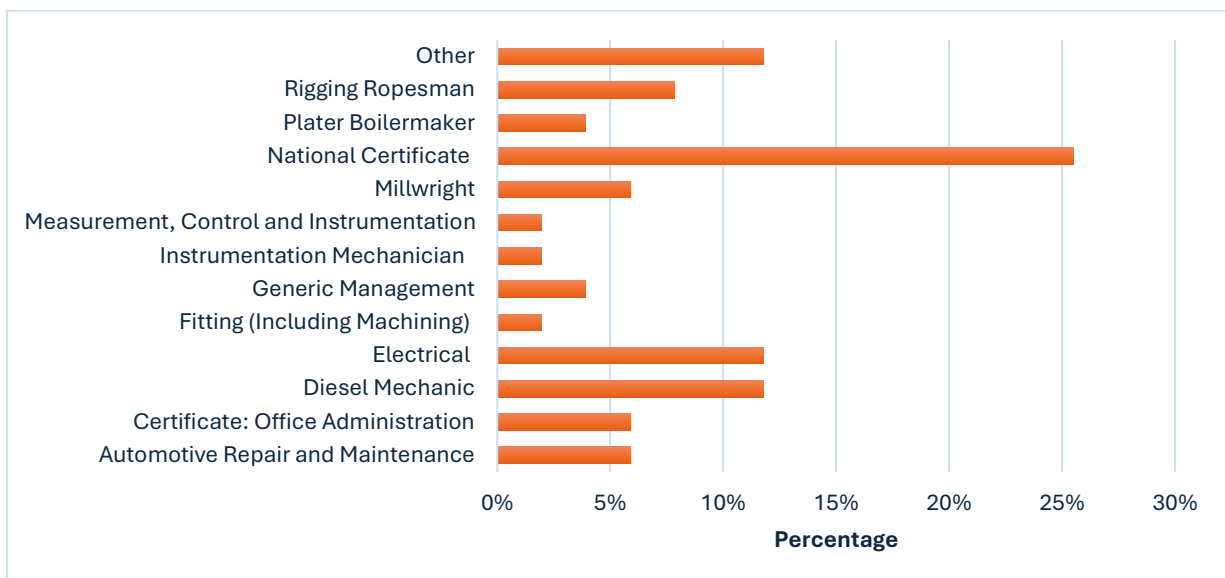


Figure 42: Learnerships awarded by mining companies

#### **4.4.4. Key insights from representatives of mining companies**

The key informant interviews with representatives of mining companies addressed various aspects of skills needs and gaps in the province. The following insights were gathered from these interviews:

##### **1) *What employment opportunities are there for communities within the MMS?***

It was noted that there are opportunities for communities in the MMS both in terms of employment and skills development. A wide range of jobs are available including positions as surface and underground operators, artisans, general workers, miners, machinery maintenance, learning practitioners and managers. It was highlighted in the interview that the Social and Labour Plan made provision for hosting communities to be employed in the mines. More so, communities are prioritised in terms of skills development wherein they are trained for employment in the mines. One participant mentioned artisan training where learners are recruited from the community and trained on different trades such as electricians, fitters, diesel mechanics and others. Some of the learners subsequently employed by the mines after completing their training. SLP projects are also extended to Small and Medium Enterprises (SMEs) where communities are trained on how to register businesses and also, access opportunities in the mines. One participant highlighted:

*“Some women were trained to produce mine PPE and machinery was provided for the business” (Key Informant Interview, 2025)*

##### **2) *What skills are required to leverage these opportunities?***

Several skills were noted by the participants, and these include skills related to machinery and equipment operation particularly for underground operations. It was highlighted that some mines are struggling with facilitators, assessors and moderators based on the training that is required. The artisan skills were also highlighted with concern that the training that they receive is generic and artisan exiting the programme often lack job-specific training.

**3) What would you say are the skills lacking from communities that are hindering them from accessing employment opportunities in the mines?**

The interview highlighted that basic education and fundamental skills such as reading, writing, and mathematics are problematic among community members. It was noted that many community members struggle with comprehension, making it difficult for them to read and understand training materials or grasp the concepts being taught. More so, a considerable percentage of community members do not have matric, and it is a requirement for entry-level jobs. The other gaps identified include the competency of SMEs, particularly in understanding the requirements of mining companies and the quality of their products and services.

**4) What would you say are the most skills needed by mining operations?**

The following is a list of skills that were mentioned in the interviews:

<ul style="list-style-type: none"><li>• Plant controllers</li><li>• Machine operators</li><li>• Drivers with a license</li><li>• Operator skills (Underground mining)</li><li>• Maintenance</li><li>• Roof bolting</li><li>• Artisans</li><li>• Fitters</li><li>• Human Resource Officers</li></ul>	<ul style="list-style-type: none"><li>• Fitters</li><li>• Riggers</li><li>• Diesel mechanics</li><li>• Condition monitoring</li><li>• Automation</li><li>• Instrumentation technicians</li><li>• Auto mechanic technicians</li><li>• Mining Engineers</li><li>• Mine Managers</li></ul>
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In addition to listing these skills/occupations, the following remarks were made:

*“In the training space, there is need for qualified and trained human resources development officers and coordinators. Such individuals need to have moderator and assessor qualifications plus a trade as well as a diploma or degree in human resources development or human resources management” (Key Informant Interview, June 2025)*

*In the future, probably may require people to be adaptive in the machinery that is used and be conversant with computers, data analysis, new machinery that will be out there and be an adaptable person” (Key Informant Interview, June 2025)*

*“The market is flooded by other trades with decreasing relevance. Changes are coming so quickly, and the industry didn’t really consider the requirements” (Key Informant Interview, June 2025)*

**5) *What are your hard to fill vacancies? What is the reason why you are struggling to fill these vacancies?***

The hard-to-fill vacancies mentioned include Engineers, Mine Managers, Auto Electricians, and experienced Millwright Technicians, as reflected in the WSP-ATR data presented above. Additionally, participants highlighted challenges in recruiting training facilitators, assessors, and moderators. The difficulties in recruitment are attributed to several factors, including an unwillingness to relocate to remote areas, lack of experience, and lack of relevant qualifications.

**6) *Do you have any programmes aimed at addressing the skills gaps in communities?***

As previously noted, mining companies are implementing a variety of community-focused programmes. These include portable skills training in areas such as garment making, basic welding, plumbing, construction, and crop farming. Other initiatives highlighted in interviews encompass adult education and training, artisan development, community CADET training, workplace experiential learning, operator training for upskilling artisans and miners, and soft skills development. Additionally, some companies offer targeted support for individuals without a matric certificate and provide bursaries for post-school education. Despite the breadth of these initiatives, it was noted that certain mining companies—particularly smaller ones—do not offer any skills development programmes for local communities.

**7) *What would you say are some of the challenges associated community skills?***

Several issues were noted by participants during the interview and one participant highlighted that learners participated in training programmes often drop-out and do not complete the programmes. This has negative impact on the training programmes and impact thereof. The other concerns emanate from poor educational backgrounds of community members where a considerable percentage do not have matric. This was highlighted in the interview:

*“The first point of departure is when people cannot speak, read or write English. The main challenge is the reducing literacy levels (in South Africa) and schooling standards” (Key Informant Interview, June 2025)*

Additional concerns are brought by community leaders who through illegal activities and extortion negatively affect the participation in skills development programmes. It was emphasised that individuals are often exploited in their pursuit of employment opportunities.

**8) How does the company engage with communities to understand skills needs?**

It was noted that mining companies engage with communities primarily through public participation meetings and advertisements when opportunities arise within the mines. Some companies have established Corporate Social Investment (CSI) departments dedicated to maintaining communication with community members. Additionally, stakeholder engagement officers are often appointed to facilitate regular interactions with communities, providing a platform for residents to express their needs and concerns. However, interviews revealed that some mining companies often lack formal mechanisms or platforms to assess and respond to community needs. This came out in the interview:

*“We don’t have time to go to find out what the skills gaps are – it’s not our job to do this skills gap assessment. Department of education must do this work” (Key Informant Interview, June 2025)*

The mining companies have working relationships with accredited training providers. Some have agreements with TVETs that lead some of the training programmes. Some companies have formal agreements with TVETs to deliver specific training programmes. However, several companies indicated that they do not currently have partnerships or collaborative arrangements with external stakeholders.

**10) How can the skills mismatch be addressed to ensure that there is alignment between skills available in communities and skills needed by mining operations?**

In order to address skills mismatches, it is recommended that mining companies, SETAs, and training providers strengthen their collaboration. Such partnerships will help align training programmes with current industry needs and ensure that the skills being developed are relevant and responsive to labour market demands. It was raised that grants must be directed to training that is needed and be equitably distributed. There is also a need to align training with provincial plans instead of national plans. There is also a need to increase awareness about training opportunities in mining companies in communities.

**4.4.5. Key insights from representatives of Post-School Education and Training (PSET)**

The key informant interviews with representatives of PSET institutions addressed various aspects of skills needs and gaps in the province. The following insights were gathered from these interviews:

- The institutions that participated in the study currently do not offer formal mining qualifications; however, they indicated plans to introduce mining-related courses in response to the province's economic landscape, where the Minerals and Mining Sector (MMS) remains a key contributor to employment and development. While this is the case, they do offer courses that enable participation in the MMS – in particular, trade-level courses (e.g., welding, boiler making, electricians, millwright, fitter and turner) which are in demand. It was noted that enrolment in these courses is normally full. This enrolment comes with the benefit of a 3-year stipend.
- Although increased enrolment in these trade programmes supports the national goal of producing 30,000 artisans annually, many students end up pursuing qualifications that do not match their interest. This misalignment is driven by economic hardships and the absence of career guidance, resulting in learners choosing any available opportunity rather than one suited to their skills and interests. More so, recruiting students into the right qualifications remains a challenge for training institutions.
- The other courses that are in high demand include Information and Communication Technology (ICT), Electrical Engineering, Human Resources Management, Entrepreneurship, and Business Management. The interest in these courses is driven by the province's limited employment opportunities, which compel students to pursue

qualifications that enable self-employment and entrepreneurial ventures as viable alternatives.

- While Electrical Engineering remains one of the most popular programmes, participants expressed concern about an oversupply of electricians in the market. Its popularity is attributed to the relative ease of obtaining the qualification (i.e., according to students) compared to other trades and the availability of funding from multiple SETAs. In contrast, millwright training is identified as a scarce skill with limited funding support.
- Beyond these courses, several programmes are gaining traction due to emerging economic opportunities in the province, including water management, agriculture, solar photovoltaic (PV) technology, tourism, and hospitality.
- Additional economic opportunities in the province are being created by small, medium, and micro enterprises (SMMEs), many of which operate as subcontractors to mines and power stations. The participants noted a growing trend of learners from TVET colleges being absorbed by these SMMEs, highlighting their increasing role in providing employment and practical experience for graduates.
- Several skills gaps were noted by PSET institutions, and among them resulting from the slow pace of curriculum approval processes, which causes qualifications to lag behind industry needs. This misalignment remains a major concern, as programmes often fail to fully address labour market requirements. Participants noted that it typically takes two to three years for new qualifications to be approved, and by the time this process is complete, industry demands have often shifted, leaving graduates underprepared for emerging opportunities.
- Additionally, many programmes lack soft skills such as writing, communication, and computer literacy, focusing instead on purely technical competencies. Within engineering qualifications, another gap is the absence of training on cultural awareness, values, and diversity, skills that are necessary for workplace engagements. As one participant noted, *“an engineer may have technical skills but not understand how to engage with people in the workplace.”*
- With the introduction of new trade qualifications, it remains uncertain whether they will adequately address the gaps previously associated with NCV programmes. A key

concern raised by institutions is that these trade courses require only a Grade 9 entry level, resulting in very young learners enrolling. Many of these students may lack the maturity and readiness for the technical rigor and workplace exposure demanded by industry, creating challenges for successful training and placement.

- Another aspect raised by the participants was that the courses offered at the college are developed by the Quality Council for Trades and Occupations (QTCO). This limits the institution's flexibility to adapt programmes quickly to evolving industry needs, as colleges cannot independently redesign or modify qualifications.
- The misalignment between qualifications and provincial economic priorities remains a concern. For example, issues were raised about the employability of students in fields such as sociology, philosophy, and English, which do not align well with the province's labour market needs.
- In order to ensure that programmes respond to the needs of the labour market, advisory committees comprising of multiple stakeholders have been established by academic institutions. These committees bring industry-related experience which is integrated into teaching and learning as case studies. The academic institutions also have working relationships with professional bodies who ensure that courses are aligned with industry needs. These professional bodies are also invited to review the course material and assess labs and other learning facilities within institutions. With an increasing number of graduate students being absorbed by SMMEs, colleges it has become important to establish working relationships with them.
- Several programmes incorporate a Work-Integrated Learning (WIL) component such as those in hospitality, agriculture, and social work. The WIL ensures that students gain practical exposure through placements in relevant industries and community settings. This experiential learning approach bridges the gap between theory and practice, equipping graduates with hands-on experience that aligns with industry requirements and enhances their employability. There are challenges in WIL placements, and so institutions are exploring innovative alternatives such as virtual reality (VR) simulations to replicate workplace environments and deliver practical learning experiences.
- As part of supporting self-employment, institutions are establishing entrepreneurship hubs that encourage students to develop business ventures aligned with community

needs. These hubs provide support for ideation, proposal development, and access to funding, fostering an entrepreneurial mindset among graduates.

- In addition, academic institutions participate in industry forums, such as the Mining and Energy Forum which serve as critical platforms for engagement with sector stakeholders. These forums enable institutions to stay informed about industry developments, emerging trends, and evolving skills requirements – aspects that are critical in ensuring that education programmes are relevant.
- To close the knowledge gaps in existing programmes, institutions are developing Short Learning Programmes. These targeted courses are designed to address emerging skills needs that are not yet covered in formal curricula, for example People Analytics in Human Resources – this will offer the “*skills of the future*”. The other programmes that are being developed will focus on renewable energy, as an emerging industry in the province. The Short Learning Programmes vary in length but are typically designed to be delivered in two to five days for in-person programmes, or 6 months to one year for online courses.
- Institutions provide limited community-focused training outside their mainstream programmes, with most initiatives being ad hoc and dependent on available resources. Examples include computer literacy training, capacity-building sessions on climate change and adaptation, exam preparation support for matriculants, and local research projects aimed at supporting evidence-based planning and decision-making. Institutions also participate in stakeholder engagements, such as forums on the Just Energy Transition, to raise awareness and share knowledge with communities.
- Several challenges were noted as affecting skills development in the province and chief among this is the lack of integration in terms of planning and delivery. There is an inventory of qualifications that continue to be offered that are not relevant in the labour market. The political uncertainty around the Just Energy Transition continues to hinder proactive skills planning. There is poor coordination between government, SETAs, and training institutions and this results in fragmented efforts.
- Additional barriers include gaps in the skills pipeline caused by shortages of qualified trainers and reliance on other provinces. Mid-career workers (ages 35–45) are often overlooked in favour of youth-focused initiatives, leaving a significant segment without

upskilling opportunities. More so, job losses from mine closures have created social instability and resistance to change, compounding the challenges of transitioning to new economic opportunities.

- Proposed solutions for the province include – integrated planning between government, SETAs, and training institutions, remains important to ensure that training and education programmes are informed by economic opportunities in the province. There is a need for the province to invest in future skills, these are skills needed to support participation in emerging sectors – renewable energy, digitalisation, beneficiation, critical minerals and others.
- There is also a need to improve the sharing of skills development information across stakeholders. It was highlighted that MQA, as a key sector education and training authority, should take the lead in facilitating access on reliable information on skills supply and demand. This evidence base would enable stakeholders to align programmes with market needs, scale up training initiatives, and maximise the impact of skills development efforts across the province.
- It was also highlighted that there is need for targeted training programmes at catering for different needs of the province. There is a need to develop programmes that incorporate Recognition of Prior Learning (RPL) and micro-credentials, enabling workers to gain formal recognition for existing competencies so as to acquire specialised skills quickly.
- Additionally, there is an opportunity to explore how existing programmes and disciplines can be integrated to create holistic, multi-disciplinary offerings that combine technical expertise with soft skills, digital literacy, and socio-economic awareness.
- There is also a need to develop awareness training programmes for traditional leaders. They require targeted education on critical issues such as climate change and overarching government policies, including the Just Energy Transition. This will enable them to understand their role and establish a clear positionality within these frameworks.
- The final question posed to participants focused on the type of support required by PSET institutions. A key recommendation was that the MQA should facilitate data

sharing with TVET colleges to enable alignment of programme offerings with both industry and community needs. One participant noted that although SETAs and TVET colleges report to the same government ministry, their activities remain poorly coordinated. Institutions also highlighted the need for funding to support research and the development of targeted interventions, particularly through Short Learning Programmes. Furthermore, it was emphasised that MQA should support integrating social dimensions and social impact considerations into technical programmes.

#### **4.5. Conclusion**

This chapter provided an overview of the community profile, focusing on key socioeconomic indicators such as demographics including gender, race, age, and education levels. It also presented the skills needs within the province from the perspectives of communities, highlighting priority areas for skills development, cross-sector skills and training programmes needed to enable participation in both the MMS and other sectors of the economy. The chapter also examined skills gaps, with particular attention to hard-to-fill vacancies, top-up skills, and community-based training initiatives implemented by mining companies. Additionally, the chapter incorporated stakeholder perspectives on these issues, offering a comprehensive view of the current skills development landscape in Mpumalanga province.

## 5. OVERALL FINDINGS AND KEY INSIGHTS

The key findings from the study are outlined below, and these are presented to respond to the objectives of the study.

### ***Objective 1 and 2: Analysing the effectiveness of current legislation, policies, and strategies driving skills development in the province as well as assessing the alignment of provincial frameworks with national strategies***

There is alignment between national frameworks, sectoral legislation and strategies and provincial development strategies. All these frameworks are embedded in the country's constitution which upholds the right to education. In terms of the effectiveness of the various frameworks, there is evidence of the implementation of skills development initiatives, which communities continue to benefit from. This has been highlighted in both literature as well as in the results where programmes implemented by mining companies in response to legislative requirements have been presented. However, there are limitations that were highlighted particularly when it comes to the implementation of Social and Labour Plan which is critical to supporting skills development in the province.

### ***Objective 3: Analysing the population demographics of the province (e.g., age distribution, gender, and racial representation, educational attainment levels and skillsets of working-age population).***

Understanding the socioeconomic landscape of the population is crucial, as it directly influences the recommendations for skills development and training. To this end, it was important to provide an analysis of the population demographics to ensure that the skills development and training recommendations take into account the characteristics of the community (i.e., in terms of gender, age, racial representation, educational attainment, etc.). The demographic profile of the community members closely mirrors that of the broader population. Female participants were in the majority overall, and in the Ehlanzeni and Nkangala district municipalities. In terms of age distribution, the majority of participants fell

within the 26 to 35 age group. Youth (defined as individuals aged 18 to 35) represented the largest proportion of participants in Nkangala and Gert Sibande, with Ehlanzeni being the exception. Regarding educational attainment, most participants have completed matric. However, in Gert Sibande, the highest level of education for most participants was Grade 11. Across all three district municipalities, only a small percentage of participants had post-secondary education.

Unemployment emerged as a significant concern, with over 70% of participants in all district municipalities indicating they were not employed. Female participants and individuals aged 36 to 45 were disproportionately affected. Among those who were employed, the majority worked in the MMS, government services, and agriculture. Notably, in Gert Sibande, a substantial portion of participants—57%—reported being self-employed.

***Objective 4: Establishing a detailed profile of the MMS in the province, including main commodities extracted and processed, size and composition of the existing workforce, types of companies operating in the sector***

The mining sector continues to play an important role in the province's economy, contributing considerably to both economic growth and employment. The province is well endowed with a variety of mineral resources—some currently being mined, while others remain untapped. Although the sector is experiencing a general decline, there is considerable potential for revitalisation, particularly through the development of small-scale, community-led mining initiatives. For communities, mining remains a cornerstone of economic opportunity. As such, there is continued interest to participate in the sector and to leverage the opportunities within the MMS sector to support local development and livelihoods.

***Objective 5: Analysing the economic performance of the MMS compared to other sectors in the provincial economy including assessing its contribution to GDP, job creation and revenue generation***

Mpumalanga's economy is underpinned by several key sectors, with mining, utilities, and agriculture making the largest contributions to provincial GDP. Employment patterns, however, are dominated by community services, trade, and finance. The province is also positioning itself for future growth through emerging industries such as renewable energy, critical minerals, new energy vehicles (NEVs), and the broader green economy. At the same time, traditional sectors including agriculture, tourism, and business services continue to play a vital role in driving economic development.

***Objective 6 and 7: Identifying the existing mining-related occupational shortages and skills gaps within the province and reasons thereof as well as identifying the skills mismatches between the skills required by mining companies and the skills available in the community***

The majority of the labour force in province is concentrated in semi-skilled and low skilled occupations. Several occupations have been identified as being in high demand, particularly in fields critical to the mining sector such as engineering and artisan trades. Additionally, a number of roles have been classified as hard-to-fill, with the top three being: General Manager (Mining), Engineering Manager, and Diesel Mechanic. The main barriers to recruitment include a lack of relevant qualifications, insufficient work experience, and delays in recruitment processes. The other jobs expected to be in demand as needed by emerging in the province include high voltage electricians, automotive mechanics, solar PV installers, horticulture farmers, battery technicians, and others.

***Objective 8 and 9: Assessing the adequacy and effectiveness of existing skills development programmes in addressing provincial needs as well as analysing the capacity offerings of technical colleges, universities, and industry-specific training providers in addressing the skills development in the province***

Assessing the adequacy and effectiveness of existing skills development programmes in addressing the needs of communities is important as it provides insights into what is working and what is not working. The country's skills development objectives, as outlined in various policies and laws, are implemented through multiple platforms. Mpumalanga province has a

growing educational landscape that comprises TVETs, CET colleges, and a university, all of which support skills development through its programme offerings that cater for different economic sectors including mining. Several issues were noted with affect skills development in the province. At the basic education level, high dropout rates and a significant proportion of individuals without matric continue to constrain post-school attainment. While provincial institutions currently do not offer mining engineering programmes, plans are underway to introduce them. In-demand courses identified include ICT, Electrical Engineering, Human Resource Management, Entrepreneurship, and Business Management. To respond to emerging industries, institutions are also developing programmes in water management, agriculture, solar PV technology, tourism, and hospitality.

***Objective 10: Identifying the common skills development needs of community members living near mining operations, beyond mining-specific jobs***

The study identified several crucial skills that enable community members to access employment in the mining sector. The most ranked skills include health and safety, engineering skills, and environmental management. Specifically, In Ehlanzeni district municipality, the top three skills identified by community members are technical mining skills, health and safety, and engineering skills. In Gert Sibande district municipality, the top three skills are health and safety, technical mining skills, and environmental management. Lastly, in Nkangala district municipality, the top skills are health and safety, technical mining skills, and engineering skills. In particular, youth emphasised the importance of technical skills and certifications, entrepreneurship as well as mentorship and leadership skills.

***Objective 11 and 12: Analysing the demand for skills in related sectors such as agriculture, manufacturing, tourism, and service industries***

The need to identify opportunities in other economic sectors in the province is motivated by the recognition that the mining sector has limitations in terms of the broad opportunities it can offer to communities. The economic opportunities in the province were outlined in the discussion that provided an overview of the socioeconomic landscape of the province (i.e., see section 2.2). Mpumalanga province depends on several sector for economic development

and the other key sectors (i.e., as measured through GDP) are utilities, agriculture and manufacturing. The economic sectors that offer opportunities in the province include agriculture, construction, and manufacturing. Additionally, the renewable energy sector emerged as a potential area of growth, driven by the just energy transition. A discussion on cross-sector skills is included in the report and among these, health and safety practices are highlighted as the most critical cross-cutting skills across all three district municipalities. Other essential skills include equipment operation and maintenance, as well as leadership and supervisory capabilities. All are deemed critical in terms of enabling participation across different sectors.

***Objective 12: Assessing the need for entrepreneurial and business development skills for local economic empowerment***

The study revealed a strong interest in entrepreneurship among community members, who emphasised the need for targeted programmes to support local business development across the province. This reflects a growing recognition of the broader economic opportunities available beyond traditional employment both within the mining sector and in other emerging industries. To this end, there was recommendations towards training that will provide businesses and entrepreneurship skills to communities.

***Objective 13: Gathering insights on the community and companies' experiences in accessing skills development offerings from the MQA***

It emerged from the study that majority of community members were not aware of skills development programmes that have been implemented in the province. There were mixed sentiments in terms of the alignment of training programmes and the needs of communities. Several barriers to participation were identified, including limited access to information about available training opportunities, high costs associated with training, and the distance to training centres. Community members emphasised the need for improved communication and outreach to raise awareness about available programmes – this recommendation was also echoed by mining companies. Mining companies reported having implemented various training initiatives aimed at addressing community skills needs. However, they also noted that

low levels of educational attainment among community members continue to hinder both participation in training and overall employability.

***Objective 14 and 15: Exploring the potential synergies between skills development needs of the MMS for upskilling and reskilling existing workforce for diversification into other sectors as well as identifying potential partners and stakeholders relevant to addressing skills development needs in the province.***

Skills development initiatives in the province have also been supported by various stakeholders, including the Mining Qualifications Authority (MQA). However, the study found that a large portion of community members are unaware of the MQA and its role, highlighting the need for the MQA to strengthen its engagement and visibility within communities. Community members suggested several areas for improvement, including enhanced communication about available training opportunities and the delivery of a broader range of programmes to meet the diverse needs of local populations. To address persistent skills mismatches, it was recommended that mining companies, SETAs, and training providers strengthen their collaboration. Such partnerships are essential to aligning training programmes with current industry demands and ensuring that the skills being developed are both relevant and responsive to labour market needs.

## **6. CONCLUSION AND RECOMMENDATIONS**

### **6.1. Conclusion**

The objective of the study was to understand the MMS-related skills development needs in Mpumalanga province. Amongst the key concerns in the country is that poverty and unemployment levels in mining provinces remain high, despite the significant contribution of mining to the economy. Mpumalanga is characterised by its rich mineral resources and a

significant mining sector, yet it faces challenges such as high unemployment and poverty rates. Addressing these issues is important and one avenue is through skills development to enhance the employability and economic participation of communities within the province.

The study employed a mixed-methods approach, including a literature review, surveys, and community workshops. Through the surveys and workshops, direct perspectives from community members were gathered, which was crucial for understanding their challenges, specific needs, and suggestions for effective skills development programmes. A total of 328 surveys were completed across the province. Additionally, two community workshops were held, providing diverse community groups with platforms to share their views on the skills development needs that should be addressed in the province.

It was found that most community members in the province are familiar with the various skills development policies and laws. While this is the case, there is a concern about the effectiveness of these frameworks as the majority of the population face challenges poverty and unemployment. Limited skills further exacerbate these issues, hindering communities' ability to leverage opportunities in various economic sectors. A large portion of the working-age population is semi-skilled or unskilled and therefore, there is a need for training programmes that address the skills gaps in the province particularly in fields critical to the mining sector—such as engineering and artisan trades. Additionally, a number of roles have been classified as hard-to-fill, with the top three being: General Manager (Mining), Engineering Manager, and Diesel Mechanic. The main barriers to recruitment include a lack of relevant qualifications, insufficient work experience, and delays in recruitment processes.

Participation in other economic sectors also require cross-sector skills such as digital literacy, project management, health and safety, business and entrepreneurial skills and others. These skills can be offered through TVETs and CET colleges within the province. More so, there are training offerings provided by different stakeholders including the MQA. It was found in the study that MQA has a footprint in the province, however, there is a need to improve communication about its programmes. There is also a need to address the barriers affecting

the accessibility of training programmes which encompass the lack of training facilities, high cost of training and distance to training. Participation in training programmes is also affected by low educational backgrounds amongst community members.

These issues can be addressed through stronger partnerships between the MQA, mines, local municipalities and educational institutions as they are in the centre of community skills development. Such partnerships are essential to aligning training programmes with current industry demands and ensuring that the skills being developed are both relevant and responsive to labour market needs.

## **6.2. Recommendations**

The following recommendations are based on the key findings of the study and are structured according to the SMART framework, ensuring they are specific, measurable, achievable, relevant, and time bound.

### ***Recommendation 1: Establish stakeholder engagement forum to discuss issues affecting education and skills development in the province.***

Mpumalanga province is facing numerous challenges affecting its education landscape, such as inadequate infrastructure, limited funding, and socio-economic issues that impede students' performance and completion of their studies. A significant concern is the rising number of school dropouts and those who, despite completing matric, are not in employment, education, or training (NEET). A range of interventions is required to address these challenges, and it is proposed that MQA initiates a stakeholder engagement process to collaboratively develop an education and skills development strategy aimed at resolving issues impacting the effective delivery of education and skills development in the province.

<b>Activity</b>	<b>MQA initiates a stakeholder engagement process with relevant stakeholders to develop an education and skills development strategy for Mpumalanga province.</b>
<b>Timeline</b>	The discussions on the state of education in Mpumalanga can commence in 2026. MQA can initiate discussions with its existing partners.

***Recommendation 2: Conduct community site visits as part of its outreach programme***

During the workshops, communities expressed concerns about research studies being conducted and completed without providing feedback to them. This has led to “research fatigue”, where communities are hesitant to participate in research studies because they have not resulted in actionable initiatives that benefit them. To this effect, it was recommended that MQA conduct on-site visits to connect directly with communities. Through these visits, MQA can gather ground insights, build trust, and ensure that the feedback on its programmes is incorporated in future research and development initiatives.

<b>Activity</b>	<b>MQA must conduct community site visits as part of its outreach programme</b>
<b>Timeline</b>	These visits can be arranged in areas/communities where research studies have been conducted. These sessions can serve as feedback platforms where key research findings are shared with the communities, and information is provided by MQA on its programmes.

***Recommendation 3: A study to obtain insights on past and existing skills development programmes offering agricultural training in Mpumalanga province.***

The agricultural sector remains a key sector in Mpumalanga province alongside the MMS. Many community members have identified opportunities within agriculture and the skills needed to effectively engage in the sector. The study highlighted several training programmes, revealing that agriculture is central to most skills development initiatives. Given the recommendations for training programmes that offer agricultural skills, there is a need to understand the coverage of past and existing skills development programmes and impact as measured by employability and participation in the agricultural sector. This will place MQA in an informed position allowing it to strategically plan and establish the necessary relationships that are needed to support skills development drawing from both the mining and agricultural sectors. This study will benefit the mining sector by identifying key community projects that they can consider as part of the implementation of their social and labour plans and corporate social responsibilities in communities.

<b>Activity</b>	<b>MQA must initiate a study that will provide insights into past and existing skills development programmes offering agricultural training in Mpumalanga province.</b>
<b>Timeline</b>	This could be a collaborative study with AgriSETA. The study can be considered for 2026/2027 financial year.

***Recommendation 4: A study to assess the skills needs of population in the age group 36 to 45 years in the province***

Unemployment remains a concern in the province. It emerged from the study that most affected are the in the age group 36 to 45 years. A key concern raised by community members is that the majority of skills development initiatives currently implemented tend to focus primarily on youth (i.e., those aged 18 to 35). This is the case as seen in the skills development programmes implemented by mining companies where the majority targeted the youth. While youth-targeted programmes are essential, this narrow focus risks excluding other age groups who are equally in need of upskilling and employment opportunities. To promote inclusive skills development, it is proposed that future interventions adopt a more holistic approach that considers the needs of all age groups.

<b>Activity</b>	<b>MQA must initiate a study that will provide insights into skills interventions needed to support community members beyond the youth demographic</b>
<b>Timeline</b>	This study could be considered for 2026/27 financial year

***Recommendation 5: Assessment of the business and entrepreneurial skills needed by communities in Gert Sibande District Municipality***

The study found that a notable proportion of community members are self-employed, with a particularly strong interest in entrepreneurship observed in the Gert Sibande District Municipality. This highlights the growing importance of small business development as a pathway to job creation. Community members highlighted the need for programmes that support both existing small enterprises. It is recommended that MQA initiate a study that is aimed at assessing the specific needs, challenges, and opportunities for entrepreneurship development within Gert Sibande District Municipality. The overarching goal of the study will

be identified specific programmes that can be supported by mining companies through their SLP and CSI commitments that will have positive impact in communities.

<b>Activity</b>	<b>MQA must initiate a study that assesses the business and entrepreneurial skills of existing businesses in Gert Sibande District Municipality</b>
<b>Timeline</b>	The study can be considered for 2026/27 financial year.

***Recommendation 6: Develop an accredited training course on the just energy transition offered to community leaders in Mpumalanga province***

The study established that most community members in the province are not knowledgeable about the just energy transition and its implications for them. Therefore, it is proposed that MQA support the development of an accredited training course for community-based organisations in the province. This course should be designed within the framework of a ‘train-the-trainer’ model, ensuring that local representatives are equipped to educate their communities. The course should cover the fundamentals of the just energy transition, its potential impacts on local economies, and strategies for communities to adapt and benefit from this transition. In addition to community-based organisations, this course can be offered to local government officials to ensure a broader understanding of the just energy transition thereby fostering informed approach to the changes and opportunities that it brings.

<b>Activity</b>	<b>MQA must provide funding for the development of an accredited short course on the just energy transition to be offered to community leaders in Mpumalanga province.</b>
<b>Timeline</b>	The short course can be earmarked for development in 2026 and be piloted in communities in 2027.

***Recommendation 7: Support the development of upskilling and reskilling programmes in the province***

While the MMS remains a critical sector in the province, its contribution to GDP and employment is projected to decline due to the shifts driven by the Just Energy Transition, which calls for a move away from coal. Research has identified coal mining, coal-based power generation, and internal combustion engine (ICE) vehicle manufacturing as high-risk sectors.

Consequently, several occupations including electricians, automotive mechanics, and mine workers are vulnerable. There is therefore a need for targeted upskilling and reskilling programmes to enable these workers to transition into emerging industries. It is recommended that MQA support the development of upskilling and reskilling programmes in collaboration with industry stakeholders, educational institutions, and other relevant stakeholders. As an initial step, MQA should convene consultative workshops to engage stakeholders in designing industry-wide upskilling and reskilling strategies, ensuring alignment with emerging economic opportunities such as renewable energy, critical minerals, and green technologies.

<b>Activity</b>	<b>MQA must convene consultative workshops which is set the foundation for designing industry-wide upskilling and reskilling programmes</b>
<b>Timeline</b>	These workshops can be organised in 2026.

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