

MINING QUALIFICATIONS AUTHORITY

## SECTOR SKILLS PLAN FOR THE MINING AND MINERALS SECTOR

2005-2010

UPDATED 31 AUGUST 2009

## STAKEHOLDER ENDORSEMENT

This is the second skills plan for the Mining and Minerals Sector. It is submitted to the Minister of Labour in partial compliance with the requirements of the Skills Development Act of 1998. It has been prepared by the Mining Qualifications Authority, which was registered as a Sector Education and Training Authority for this sector on 20 March 2000. The Sector Skills Plan is hereby endorsed by duly authorised representatives of the State, employer organisations and employee organisations in this national economic sector. It will be reviewed annually.

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## **FOREWORD**

This Skills Plan is a ground-breaking document in the Mining and Minerals Sector partly because of its extensive involvement of key role players in its formulation and partly because of its comprehensive scope which covers all training disciplines and all occupational levels. Indeed everyone in the sector will be affected by the provisions and implications of this plan. The prevailing spirit of partnership will be more needed during its implementation.

This document is essential reading for every decision maker in the industry whether they are from management, trade unions, government, learning provider or professional body. It should inform and guide the processes for skills planning in every workplace as specified in this document.

It should be noted that once again the need for training in Health and Safety has been identified as one of the top priorities virtually for all commodities and work processes in this sector, which reinforces the importance of implementing the skills strategy in view of the provisions of the Mine Health and Safety Act of 1996. It should also be noted that the skills strategy should be implemented in the context of the Employment Equity Act of 1998.

This Sector Skills Plan was written in 2004 and originally pertained to the period covered by National Skills Development Strategy II (NSDS II) – i.e. the period 2005 to 2010. However, NSDS II has been extended to 2011 and this current update of the SSP has been adapted to more accurately reflect the employment and skills development situation in the sector in 2009.

In conclusion, companies are urged to plan their skills development initiatives around the skills priorities indicated in this plan in order to benefit from the skills grants. Everyone is encouraged to take advantage of opportunities which are now opening up throughout the sector in particular the learnership system.

Mr T Gazi  
MQA Chairperson

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## ACRONYMS AND ABBREVIATIONS

ATR	Annual Training Report
BEE	Black Economic Empowerment
CLAS	Cement, Lime, Aggregates and Sand
DME	Department of Minerals and Energy
DoHET	Department of Higher Education and Training
DoL	Department of Labour
ETQA	Education and Training Quality Assurer
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GTZ	German Technical Co-operation
HDSA	Historically Disadvantaged South African
HSRC	Human Sciences Research Council
MMS	Mining and Minerals Sector
MQA	Mining Qualifications Authority
NQF	National Qualifications Framework
NSDS	National Skills Development Strategy
OFO	Organising Framework for Occupations
PGMs	Platinum Group Metals
QCTO	Quality Council for Trades and Occupations
RPL	Recognition of Prior Learning
SAQA	South African Qualifications Authority
SDL	Skills Development Levy
SETA	Sector Education and Training Authority
SGB	Standards Generating Body
SIC	Standard Industrial Classification
SMME	Small, Medium and Micro Enterprises
SSP	Sector Skills Plan
WSP	Workplace Skills Plan

## EXECUTIVE SUMMARY

The MQA prepared a Sector Skills Plan (SSP) for the Mining and Minerals Sector for the period April 2005 to March 2009 (the period covered by NSDS II). In 2005 the Department of Labour announced that it would require SETAs to update their SSPs annually and in 2009 the term covered by NSDS II was extended. This document is an update of the SSP for the period 1 April 2010 to 31 March 2011 and will be submitted to the DoL on 31 August 2009.

### *Profile of the Sector*

The Mining and Minerals Sector is a core component of the South African economy. In 2008 the Mining Industry's contribution to gross domestic product (GDP) was 8,6 %. The Mining Sector dominates the JSE Securities Exchange and by the end of 2007 it accounted for approximately 35% of total market capitalisation. In March 2009 the Mining Sector employed approximately 6,0 % of the workers in the formal sector of the economy.

The majority of coal mines are situated in Mpumalanga (79 %). Diamond mining is concentrated in the Northern Cape (43 % of operations). Gold mining operations are spread across the Free State (43%) and North West (29%), Gauteng (15%) and Mpumalanga (7 %). The mining of PGMs is largely limited to the North West (66 %) and Limpopo (23 %) provinces. The mining of other metals and enterprises involved in the production of cement, lime, aggregates and sand (CLAS) are spread across all provinces. The operations of organisations that provide services incidental to mining are concentrated in the North West Province (33 %), and in Gauteng (26 %). The majority of jewellery manufacturers are based in Gauteng (62 %) and in the Western Cape (11 %).

By March 2009 the MMS employed approximately 556 000 people. This includes approximately 145 000 contractors employed in the mining industry. The majority of employees work in the PGM and Gold Mining Subsectors – 34 % and 29 % respectively. The coal mines employ 12 % of the workers, diamond mines employ 3 % and 10 % are employed in the Subsector Other Mining.

Most of the workers in the MMS (71 %) are employed in very large organisations (i.e. organisations with more than 5 000 employees) and another 28 % are employed in organisations that employ between 150 and 4999 people. Only 2 % of the Sector's employees can be found in small and medium-sized organisations.

North West is the province with the largest concentration of workers – 43 %. This is followed by Limpopo (17%), Mpumalanga (16%), Gauteng (10%), the Free State (9%) and the Northern Cape with 3 %. Only small components of the Sector are located in the the Western Cape (1 %), KwaZulu-Natal (1 %) and the Eastern Cape (0.3 %).

The majority of workers in the Sector (81 %) are African men. The second largest group is white men (12 %). Africans constitute 86 % of the total workforce, whites 12 %, coloureds 1 % and Indians less than 1 %. Seven per cent of the workers in the Sector are women. Most of the subsectors employ mainly Africans. The majority of workers are employed in the two occupational categories Plant and Machine Operators and Assemblers (37 %) and Labourers and Related Workers (35 %).

### *Economic trends in the Sector*

While the rest of the South African economy grew at a steady pace over the period 1994 to 2008, the mining industry experienced eight years of contraction in this period, with the worst decline in production in 2008. The steep decline in output seen in 2008 is the result of various factors including the closure of mines and shafts owing to safety incidents, curtailment of electricity supply, infrastructure constraints, bottlenecks in the goods and services procurement pipeline into the mines, regulatory constraints – especially environmental permits – and shortages of appropriately skilled human capital, together with the global economic recession which is currently causing a decline in the demand for commodities such as diamonds and PGMs.

### *Factors that influence change in the Sector*

A very important factor in the future of the MMS is the fact that it is an export industry and that it sources a large amount of its investment in the international capital markets. This places the industry in the global environment and exposes it to external forces such as international

competition in the commodity markets, international (mostly dollar denominated) commodity prices and exchange rate fluctuations.

Technology plays a dual role in the MMS. On the one hand mechanisation and other labour-saving technologies reduce the demand for labour. On the other hand it facilitates exploration and mining that otherwise would have been impossible. Technology also plays a role in extending the lifespan of some mines and in creating new mining opportunities and thus it stimulates the creation of employment.

HIV/AIDS is a serious issue with which the MMS has to deal. The effect of HIV/AIDS on employment will be, to some extent, contained by the preventative and curative interventions of the industry. HIV/AIDS has a dual effect on employment. Loss of productivity and increased costs may affect the profitability and viability of operations, while increased mortality and permanent incapacity may increase the need to replace workers. Other health issues that impact on the Sector is the occurrence of occupational diseases that result from mining activities and work injuries.

Skills development in the Sector is strongly influenced by the many changes in the education and training environment that have been taking place over the last decade. NSDS II which spans the period 1 April 2005 to 31 March 2010 (and which is now extended) spells out the skills development agenda for this period. The strategy specifically shapes the way in which the Sector deals with the identification of scarce and critical skills, the way in which it aligns skills development with EE, BBBEE and Mining Charter requirements, the way in which it supports small levy-paying companies and BEE firms and its identification and support of institutes of occupational excellence. The introduction of the Quality Council for Trades and Occupations and the move of the SETAs to the new Department of Higher Education and Training will further shape the skills development arena.

The Sector is furthermore undergoing an intense transformation process. Despite the predominance of historically disadvantaged South Africans (HDSAs) in the workforce of the MMS, until recently HDSAs have been largely excluded from ownership of mining operations. This has led to the various legislative interventions by government aimed at the equitable distribution of the benefits derived from the country's mineral resources. Probably the most important of these interventions was the promulgation of the Mineral and Petroleum Resources Development Act in 2002 and the Broad-Based Socio-Economic Charter for the South African Mining Industry that was a direct requirement of the Act. The Charter, which was accepted by all the social partners is binding on the Sector and has become a major driving force for change. The Charter sets out specific human resources development objectives and therefore it directs skills development in this Sector.

The danger inherent in mining activities has led to this Sector being highly regulated by health and safety legislation. This includes regulations regarding the competencies that workers in different position should possess as well as general health and safety training required on a regular basis. This means that certain elements of training in this Sector are prescribed and that the Sector has to give preference to them. This is reflected in the qualifications developed for and in the training priorities set by the Sector.

### ***The demand for skills***

Chapter 2 of the SSP deals with the demand for labour in the Sector, starting with an analysis of current employment. The occupational and educational profile of workers reflects the nature of work in the Sector. This Sector is relatively labour intensive and employs large numbers of workers with low educational levels. The majority of its workforce is Black men. However, in the managerial, professional and technician levels white men still form a large portion of the workforce and for this reason future demand for labour will of necessity be racially and gender biased.

Chapter 2 also describes employment trends in the Sector. The MMS experienced two decades of contraction up to 2001. Over the period 2002 to 2008 most of the subsectors (with the exception of Gold Mining) recovered and increased employment. However, job losses started occurring again in 2008 and it is estimated that almost 50 000 jobs may be at risk in the next year or so. The expected decline in employment stems from various factors of which the most important is the current global economic crisis. Therefore, the possible decline of the Sector (or parts thereof) is a reality that needs to be faced and that needs to be addressed in the skills development strategies of the Sector.

The effect of deaths and permanent incapacity as a result of illness and injury on the demand for labour can be quite dramatic. The demand scenarios presented in this chapter show that, if factors such as HIV/AIDS are not contained, the Sector may need to employ up to 10 000 new workers per year to replace current workers – even if the Sector contracts by 2% per year.

The critical skills needs clearly reflect the effect of health and safety regulations on the Sector. They also reflect the need for ABET and HIV/AIDS awareness.

### ***The supply of skills***

The supply of skills to the MMS is discussed in Chapter 3 of the SSP. The supply of skills is viewed from different perspectives: the current supply or the stock of skills available to the Sector, (this includes the people currently employed as well as those who are unemployed and available for work), the flow of new skills into the Sector and the development of skills in the work environment.

The decline in employment that took place over the last two decades created excess capacity in the labour market leaving large numbers of previous employees of the MMS unemployed. The March 2001 Labour Force Survey recorded almost 140 000 unemployed mineworkers. As employment increased the number of unemployed mine workers decreased and in March 2008 the LFS reported only 30 000 unemployed mine workers. This figure increased slightly to just more than 34 000 in June 2009.

The number of new graduates in the fields of study relevant to the MMS had grown substantially from 1999 to 2006, with the highest average annual increase (13%) in chemical engineering. This is followed by metallurgical engineering (8%), electrical engineering (7%) and geology (7%). The transformation of the higher education sector is also visible in the educational statistics. By 2006 the majority of graduates in all the relevant fields were black. Substantial numbers of women are also graduating in fields of study that historically have been male dominated. However, it will take time for this transformation to have a significant effect on the pool of professionals available in the labour market. Higher education in the fields of study relevant to the MMS is supported by bursary schemes of employers as well as that of the MQA.

The skills development provision of the MMS is comprehensive and covers many aspects. The MQA has registered a wide spectrum of learnerships and the uptake of these learnerships is substantial. Another important training offering is skills programmes. These programmes provide workers (especially those at lower educational levels) with the opportunity to obtain recognition for some of the skills attained in the work environment. Skills programmes are also important vehicles for training in terms of health and safety requirements.

### ***Scarce skills and critical skills needs***

Chapter 4 deals with scarce and critical skills needs and the skills development priorities of the MMS. The skills priorities that will guide the interventions of the MQA over the planning period are influenced by a variety of factors. The first priority is to address scarce skills in the Sector. One of the most important indicators of scarcity is positions that employers cannot fill over an extended period of time. Information regarding these positions is collected on a regular basis in the WSPs submitted to the MQA. In the 2009/2010 submissions the positions that could not be filled due to the scarcity of skills amounted to 1 234 (0.3% of total employment) – a marked decrease from the 8 301 positions (1.4% of total employment) reported in the previous year. Most of the skills shortages occurred in the occupational categories Technicians and Trade Workers (665 vacant positions), Professionals (267 vacant positions) and Machine Operators and Drivers (227 vacant positions).

Of the positions that employers reported as unfilled due to scarcity 26% were ascribed to a lack of suitably skilled people in the labour market (absolute scarcity), while 60% were unfilled because of relative scarcity. Relative scarcity could result from people's unwillingness to work outside urban areas or a particular industry or it could mean that there were people in the process of acquiring the necessary skills but due to the length of their training they would not be available in the short term. A lack of candidates with the requisite skills from the designated groups (blacks, women, people with disabilities) could also result in a relative scarcity of particular skills.

The analysis of the WSP information showed that the number of employees in the MMS who required additional training in critical skills areas amounted to 14 336 or 2.5% of total employment.

Apart from addressing scarce skills and critical skills needs, training priorities in the MMS also include mine health and safety, the development of mining communities and communities in labour sending areas, supporting beneficiation in local areas through skills development and the training and development of retrenched employees or employees who stand to be retrenched.

***Other NSDS objectives***

In Chapter 5 of the SSP a number of specific NSDS objectives are discussed and indications are given of how the MQA contributes to the attainment of these objectives. The objectives include support to small levy paying and non-levy paying firms, support to small businesses and entrepreneurial endeavours, adult basic education and training, the implementation of national standards of good practice and stakeholder capacity building. All these objectives have received attention from the MQA prior to the development of this SSP – in fact, some of the issues have been receiving attention since the establishment of the SETA.

## **INTRODUCTION**

The Mining Qualifications Authority (MQA) was established by the Mine Health and Safety Act of 1996, and was registered as a Sector Education and Training Authority (SETA) in terms of the Skills Development Act (Act 97 of 1998). Section 10(1)(a) of the Skills Development Act requires all SETAs to prepare Sector Skills Plans for their respective Sectors. Accordingly the MQA has prepared a Sector Skills Plan (SSP) for the Mining and Minerals Sector for the period April 2005 to March 2009 (the period covered by NSDS II). In 2005 the Department of Labour announced that it would require SETAs to update their SSPs annually and in 2009 the term covered by NSDS II was extended.

This document is an update of the SSP for the period 1 April 2010 to 31 March 2011 and will be submitted to the DoL on 31 August 2009.

## **PROCESS AND METHODOLOGY**

This original SSP was developed through a broad-based consultative process. This consultation started with various research projects that were aimed at identifying the training priorities, skills needs and problems experienced in specific subcomponents of the MMS, namely the Jewellery Manufacturing Subsector, the Cement Lime Aggregates and Sand (CLAS) Subsector and in Small Scale Mining. Each of these research projects included interviews with stakeholders in the Sector-components as well as workshops in which research findings and the interpretation of research data were verified. In addition to these research processes, the information provided by employers in their Workplace Skills Plans (WSPs) and Annual Training Reports (ATRs) were analysed annually.

The development of the SSP itself involved a consultative process in which the analysis component of the SSP was presented to and debated by stakeholders and in which stakeholders made inputs with regard to the content of the actual plan. This process involved three workshops with the MQA's Sector Skills Planning Committee (now called Skills Planning and Research Committee) and four workshops with representatives from the various subsectors. The process also involved consultation with the Department of Minerals and Energy who signed off on this SSP. Finally the SSP was scrutinized and debated by the MQA Board.

In this update all statistical information was updated. The SSP was also re-written to satisfy the DoL's new requirements (e.g. the inclusion of a list of scarce and critical skills). Consultation in the Sector took place through the SSP committee, the EXCO and Board of the MQA.

The occupational information presented in this SSP update is given according to two occupational classification systems. In the first three chapters the main occupational categories of the Standard Occupational Classification (SOC) are used. This was necessary because the profile of the sector is based on the employment information provided by employers in the 2007/2008 WSPs. In that year the SOC was still used in the WSPs and the data was received in such a format that conversion to another classification system was not possible. In Chapter 4 scarce skills and critical skills needs are reported according to the Organising Framework for Occupations (OFO). This reporting is required by the DoL and the occupational information provided by employers in the WSPs could be coded to the OFO.

## **REVIEW OF THE FIRST SSP**

The original SSP development process involved a critical evaluation of the first SSP (April 2001 to March 2005). The intention was to build upon the experience gained through the first process, to identify the strengths and weaknesses of the first process and of the first SSP document and to improve the second SSP accordingly. This review revealed that some of the targets set in the first SSP were reached fairly early in the planning cycle. This was especially true of participation of large and medium-sized organisations in the grant schemes. The bursary scheme was also successful and targets were exceeded fairly early in the period. Specific projects and interventions varied in terms of successfulness.

A major weakness of the first SSP development process was that although a great deal of information on the Sector was collected in a very short period of time before submitting the first

SSP, this information was not properly digested and utilised in the setting of objectives and targets for the period 2001 to 2005. This resulted in unrealistic targets being agreed upon and an inability on the part of the Sector and the MQA to deliver on those targets.

## **OUTLINE OF THE CURRENT SSP**

The SSP for the period 2005 to 2011 is based on an assessment of the Sector profile as well as factors that impact on the Sector in general and more specifically on skills development. Chapter 1 therefore starts with a short description of the profile of the Sector and an analysis of the factors that influence change in the Sector.

In the Chapter 2 the demand for skills in the Sector is analysed. This analysis includes a more in-depth analysis of the employment profile of the Sector as well as employment trends. Chapter 3 deals with the supply of skills to the Sector, starting with the current supply (people employed in the Sector and those who are unemployed) and continuing with the supply of new skills and the training and development of the current workforce.

Chapter 4 brings together the demand and supply analysis of the previous chapters and lists the skills that are scarce in the Sector as well as the critical skills needs of the current labour force. Chapter 5 outlines possible small business and entrepreneurial opportunities in the Sector and other NSDS priorities.



# 1 PROFILE OF THE SECTOR

## 1.1 INTRODUCTION

The Mining and Minerals Sector is a core component of the South African economy. Although the primary sectors (Mining and Agriculture) have declined relative to the secondary and tertiary sectors over the past two to three decades, the Mining Industry remains a large contributor to the development of South Africa. In 2007 the Mining Industry's contribution to total fixed investment was 8,9 % and for 12.1% of total private sector investment. If the multiplier effects are taken into account, mining helped generate about 18% of total investment in the economy. Real mining investment grew by 42.8% in 2006 and a further 25.5% in 2007.<sup>1</sup>

In 2008 the Mining Industry's contribution to gross domestic product (GDP) was 8,6 %, <sup>2</sup> however, the indirect multiplier effects and the induced effect of mining take the contribution of the Sector close to 20% of total GDP.

The Mining Sector dominates the JSE Securities Exchange and by the end of 2007 it accounted for approximately 35% of total market capitalisation. In 2007 mineral exports accounted for 30 % of the value of total South African merchandise exports.<sup>3</sup>

The MMS also remains a major provider of formal employment in the country. In March 2009 the Mining Sector employed approximately 6,0 % of the workers in the formal sector of the economy.<sup>4</sup> The development of its workforce does not only benefit the Sector, but also contributes to the general upliftment of the skills base of the South African workforce.

This chapter provides an overview of the Mining and Minerals Sector as it has been defined for the purposes of the Skills Development Act (Act 97 of 1998). It describes the industrial coverage of the Sector and the employers and the employees that fall within the Sector. The chapter also discusses some of the most important factors that influence change in the Sector.

## 1.2 INDUSTRIAL COVERAGE

The MMS, as demarcated by the Department of Labour (DoL) in 1999 for the purpose of the skills development legislation, encompasses all mining activities covered by the Standard Industrial Classification (SIC) codes 21000 to 29000, as well as a small component of manufacturing, namely the manufacturing of cement, lime and plaster (SIC code 34240), jewellery manufacturing (SIC code 39210) and the cutting and polishing of diamonds (SIC code 39212) and of other precious and semi-precious stones (SIC code 39219).

In order to facilitate the analysis of data covering such a wide spectrum of SIC codes, organisations in the Sector have been categorised into the following nine subsectors:

- Coal Mining
- Gold Mining
- Platinum Group Metals (PGMs) Mining
- Diamond Mining
- Other Mining
- Cement, Lime, Aggregates and Sand (CLAS)
- Services Incidental to Mining

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<sup>1</sup> Chamber of Mines, Annual Report, 2007/2008.

<sup>2</sup> Calculated from Statistics South Africa, Statistical Release PO441, First Quarter 2009.

<sup>3</sup> Chamber of Mines, Annual Report, 2007/2008.

<sup>4</sup> Calculated from: Statistics South Africa, Quarterly Employment Statistics, Statistical Release PO277, March 2009.

- Diamond Processing and
- Jewellery Manufacturing

The SIC codes included in each of the subsectors can be seen in Annexure A.

Although the Department of Labour has defined the sectors to be served by the respective SETAs, organisations have some choice regarding the SETA with which they want to register. A number of organisations not strictly involved in mining activities as such, but closely associated with the Sector, have chosen to register with the MQA. They include organisations involved in research and development in the field of mining and mineral extraction, and organisations that render services to mining houses, for example catering services, payroll services, the hiring of equipment and shaft sinking. All these organisations are grouped in the Subsector “Services Incidental to Mining”.

### 1.3 PROFILE OF EMPLOYERS IN THE SECTOR<sup>5</sup>

#### 1.3.1 Total number of employers in the Sector

The total number of “employers” in the Sector can be defined and calculated in various ways. One indication of the number of employers is the total number of organisations that are registered for and that pay the Skills Development Levy (SDL). In the 2008/2009 financial year 1 327 organisations<sup>6</sup> paid levies to the MQA<sup>7</sup>. However, the number of levy-paying organisations reflects only the larger and more formal components of the Sector as many smaller organisations are exempted from paying the SDL. Furthermore, the SDL reflects the way in which organisations have structured themselves for tax purposes. This structure does not necessarily correspond with the physical operations in the Sector. One physical operation may be registered under various SDL numbers while some companies may register several physical operations under one SDL number.

Other data sources, for example the database of mining operations held by the Department of Minerals and Energy (DME) defines organisations in terms of physical operations.

A study commissioned by the MQA estimated the total number of jewellery manufacturers to be 2 350. This estimate was based on the number of gold licenses issued for jewellery manufacturing in SA by the South African Police Service.<sup>8</sup> However, there is no information available on the holders of these gold licences. In the 2008/2009 financial year 110 jewellery manufacturing firms paid the SDL to the MQA.

There are about ten cement manufacturing plants in South Africa<sup>9</sup>. Furthermore, a total of 142 organisations (defined in terms of SDL numbers) that render services to the MMS have paid levies and have submitted WSPs to the MQA in the 2008/2009 financial year and are therefore considered to be part of the Sector.

For the purpose of this SSP the total number of employers and employees was estimated by combining various data sources. The data sources used and the way in which the estimates were done are described in Annexure B.

#### 1.3.2 Geographic distribution of operations

The organisations that submitted WSPs to the MQA for the 2007/2008 financial year reported that they had a total of 2 123 physical operations spread across the country. The geographic distribution

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<sup>5</sup> The profile presented in this chapter is based on information obtained from a variety of data sources. All available data sources have been evaluated and those that provide the best information on each subsector have been selected. In many instances it was necessary to use combinations of data sources to arrive at the best estimates of the sector. The data sources and methods used are discussed in more detail in Annexure B.

<sup>6</sup> In this particular context the term “organisation” refers to an entity registered under one SDL number.

<sup>7</sup> Information obtained from the MQA financial system as on 16 July 2009.

<sup>8</sup> Human Sciences Research Council and Povey Mulvenna and Associates, A Skills Analysis of the Jewellery Manufacturing and Gemstone Processing Industries in South Africa, MQA and GTZ, Johannesburg, May 2003.

<sup>9</sup> Human Sciences Research Council, A Skills Analysis of the Cement, Lime, Aggregates and Sand (CLAS) Sector in South Africa, MQA, Johannesburg, 2004.

of operations can be seen in Table 1.1. The majority of coal mines are situated in Mpumalanga (79 %). Diamond mining is concentrated in the Northern Cape (43 % of operations). Gold mining operations are spread across the Free State (43%) and North West (29%), Gauteng (15%) and Mpumalanga (7 %). The mining of PGMs is largely limited to the North West (66 %) and Limpopo (23 %) provinces. The mining of other metals and enterprises involved in the production of cement, lime, aggregates and sand (CLAS) are spread across all provinces. The operations of organisations that provide services incidental to mining are concentrated in the North West Province (33 %), and in Gauteng (26 %). The majority of jewellery manufacturers are based in Gauteng (62 %) and in the Western Cape (11 %).

**Table 1.1 Provincial distribution of operations according to subsector**

Province		EASTERN CAPE	FREE STATE	GAUTENG	KWAZULU-NATAL	LIMPOPO	MPUMALANGA	NORTHERN CAPE	NORTH WEST	WESTERN CAPE	Total
Coal Mining	N	0	2	11	4	0	66	0	0	1	84
	%	0	2	13	5	0	79	0	0	1	100
Gold Mining	N	0	83	30	2	6	14	2	56	2	195
	%	0	43	15	1	3	7	1	29	1	100
PGM Mining	N	0	0	9	0	22	1	0	63	0	95
	%	0	0	9	0	23	1	0	66	0	100
Diamond Mining	N	0	1	20	2	5	0	36	4	15	83
	%	0	1	24	2	6	0	43	5	18	100
Other Mining	N	2	9	68	8	26	32	15	23	26	209
	%	1	4	33	4	12	15	7	11	12	100
CLAS	N	33	30	107	43	26	31	30	70	112	482
	%	7	6	22	9	5	6	6	15	23	100
Services Incidental to Mining	N	3	35	221	11	91	181	14	278	10	844
	%	0	4	26	1	11	21	2	33	1	100
Diamond Processing	N	0	0	18	2	2	0	0	0	0	22
	%	0	0	82	9	9	0	0	0	0	100
Jewellery Manufacturing	N	6		68	4	9	7	1	2	12	109
	%	6	0	62	4	8	6	1	2	11	100
<b>Total</b>	<b>N</b>	<b>44</b>	<b>160</b>	<b>552</b>	<b>76</b>	<b>187</b>	<b>332</b>	<b>98</b>	<b>496</b>	<b>178</b>	<b>2 123</b>
	<b>%</b>	<b>2</b>	<b>8</b>	<b>26</b>	<b>4</b>	<b>9</b>	<b>16</b>	<b>5</b>	<b>23</b>	<b>8</b>	<b>100</b>

Sources: Calculated from MQA database of companies that that submitted WSPs for Year 8.

## 1.4 PROFILE OF EMPLOYEES IN THE SECTOR<sup>10</sup>

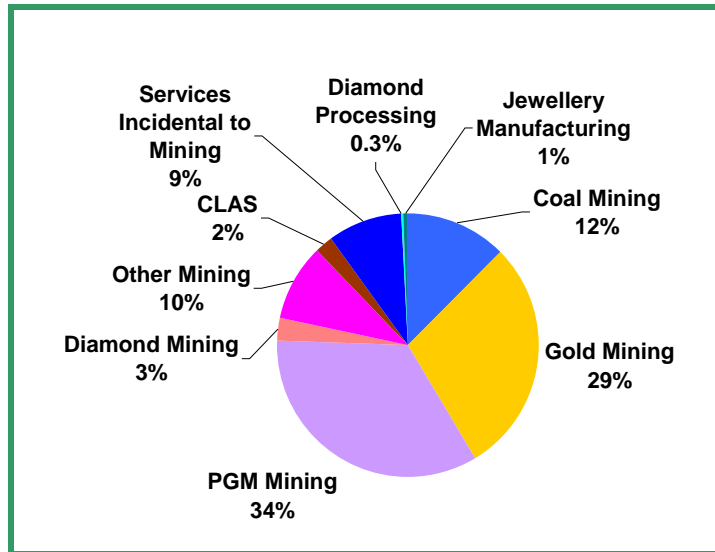
### 1.4.1 Employment according to subsector

By March 2009 the MMS employed approximately 556 000 people. This includes approximately 145 000 contractors employed in the mining industry. Contractors are included in all the profile information presented in this chapter as well as in the employment figures presented in Chapters 2 and 3 of this SSP update.

The distribution of employees across the different subsectors can be seen in Figure 1.1. The majority of employees work in the PGM and Gold Mining Subsectors – 34 % and 29 % respectively. The coal mines employ 12 % of the workers, diamond mines employ 3 % and 10 % are employed in the Subsector Other Mining. Employment in the CLAS Subsector comprises 2 % of all employees and Services Incidental to Mining 9 %.

Diamond Processing is currently estimated at 0.3% of total employment and Jewellery Manufacturing at 1 %. However, information on Jewellery Manufacturing is incomplete, mainly because a substantial component of this subsector functions as informal operations. Thus, the actual numbers of employees in this subsector may be somewhat higher.

**Figure 1.1**  
Total employment and distribution of employees according to subsector: 2009



Sources: Calculated from: DME Employment Statistics March 2009 and the MQA database of companies that paid levies and that submitted WSPs for Year 8.

### 1.4.2 Employment according to organisation size

Most of the workers in the MMS (71 %) are employed in very large organisations (i.e. organisations with more than 5 000 employees) and another 28 % are employed in organisations that employ between 150 and 4999 people. Only 2 % of the Sector's employees can be found in small and medium-sized organisations. In all the subsectors the majority of workers are employed in large organisations (with 150 and more employees). (See Table 1.2.)

<sup>10</sup> The employment figures and profile presented in the first SSP (for the period 2000 to 2005) cannot be directly compared with those presented in the second SSP (for the period 2005 to 2010), for the following reasons:

- In the first SSP contractors had been excluded from the estimate of total employment. In the second SSP contractors are included and are reflected in the data.
- The estimate of total employment presented in the first SSP did not include the cement manufacturing component of the Cement, Lime, Aggregates and Sand (CLAS) Subsector. Subsequent to the first SSP the WSP submissions of the cement manufacturing firms increased substantially and therefore they are represented in the current figures.
- Estimates of employment in the Diamond Processing and Jewellery Manufacturing Subsectors were refined in the period between the two SSPs.

Employment figures presented in the first few updates of the second SSP may also differ from those presented in this current update, because in 2007 the levy threshold was lifted from a payroll of R250 000 per annum to R500 000 per annum. As a result many of the smaller organisations stopped paying the SDL and their information is excluded from the employment estimates. The subsector that is most affected is Jewellery Manufacturing.

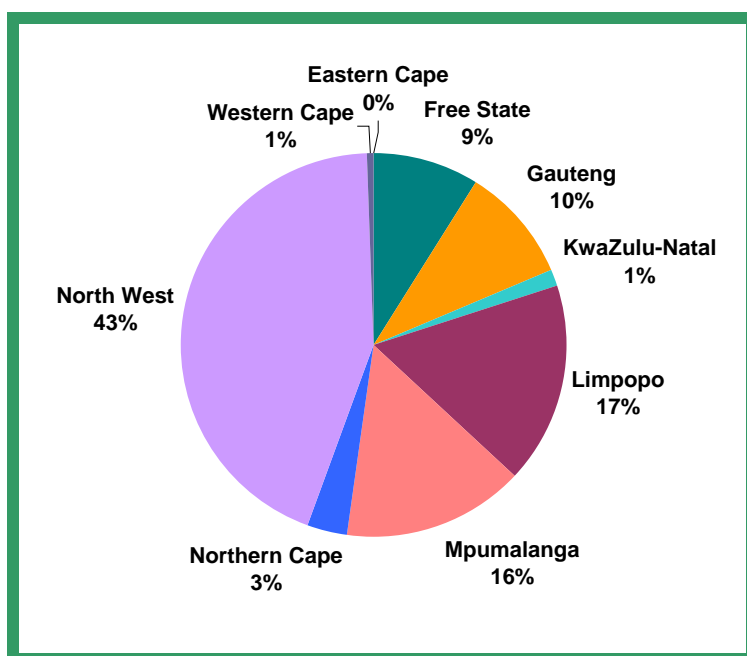
**Table 1.2 Employment in different sized organisations according to subsector**

Subsector	Organisation size (number of employees)								Total	
	0-49		50-149		150-4999		5000+			
	N	%	N	%	N	%	N	%	N	%
Coal Mining	332	0	512	1	51 391	75	16 548	24	68 783	100
Gold Mining	165	0	207	0	17 717	11	143 768	89	161 857	100
PGM Mining	0	0	148	0	8 628	5	180 374	95	189 149	100
Diamond Mining	0	0	0	0	7 520	51	7 238	49	14 758	100
Other Mining	850	2	1 632	3	31 455	60	18 888	36	52 826	100
CLAS	609	5	985	8	11 239	88	0	0	12 833	100
Services Incidental to Mining*	511	1	841	2	22 543	45	26 326	52	50 221	100
Diamond Processing	159	9	541	29	1 149	62	0	0	1 848	100
Jewellery Manufacturing	1 057	31	348	10	1 973	58	0	0	3 377	100
<b>Total</b>	<b>3 683</b>	<b>1</b>	<b>5 213</b>	<b>1</b>	<b>153 614</b>	<b>28</b>	<b>393 142</b>	<b>71</b>	<b>555 652</b>	<b>100</b>

Sources: Calculated from: DME Employment Statistics March 2009;  
MQA database of companies that paid levies and that submitted WSPs for Year 8.

### 1.4.3 Geographic distribution of employees

**Figure 1.2 Geographic distribution of employees: 2009**



North West is the province with the largest concentration of workers – 43 %. This is followed by Limpopo (17%), Mpumalanga (16%), Gauteng (10%), the Free State (9%) and the Northern Cape with 3 %. Only small components of the Sector are located in the the Western Cape (1 %), KwaZulu-Natal (1 %) and the Eastern Cape (0.3 %). (See Figure 1.2.)

The provincial distribution of employees in the nine subsectors can be seen in Table 1.3.

Sources: Calculated from: DME Employment Statistics, March 2009;  
MQA database of companies that paid levies and that submitted WSPs for Year 8.

**Table 1.3 Provincial distribution of employees according to subsector: 2009**

Subsector		Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalanga	Northern Cape	North West	Western Cape	Total
	N										
Coal Mining	N	0	809	369	2 406	0	65 199	0	0	0	68 783
	%	0	1	1	3	0	95	0	0	0	100
Gold Mining	N	0	39 863	12 318	36	918	10 584	1 289	96 841	9	161 857
	%	0	25	8	0	1	7	1	60	0	100
PGM Mining	N	0	0	2 090	0	78 363	0	0	108 696	0	189 149
	%	0	0	1	0	41	0	0	57	0	100
Diamond Mining	N	0	48	2 023	1 985	1 244	0	7 761	1 180	517	14 758
	%	0	0	14	13	8	0	53	8	4	100
Other Mining	N	163	4 973	22 611	402	5 915	1 908	6 910	8 366	1 578	52 826
	%	0	9	43	1	11	4	13	16	3	100
CLAS	N	424	1 778	2 075	1 743	1 465	1 766	994	2 068	519	12 833
	%	3	14	16	14	11	14	8	16	4	100
Services Incidental to Mining	N	14	627	11 124	163	5 069	6 051	371	26 691	112	50 221
	%	0	1	22	0	10	12	1	53	0	100
Diamond Processing	N	0	0	986	725	138	0	0	0	0	1 848
	%	0	0	53	39	7	0	0	0	0	100
Jewellery Manufacturing	N	92	0	1 530	94	30	702	328	5	596	3 377
	%	3	0	45	3	1	21	10	0	18	100
<b>Total</b>	<b>N</b>	<b>694</b>	<b>48 100</b>	<b>55 125</b>	<b>7 554</b>	<b>93 141</b>	<b>86 210</b>	<b>17 651</b>	<b>243 847</b>	<b>3 331</b>	<b>555 652</b>
	<b>%</b>	<b>0</b>	<b>9</b>	<b>10</b>	<b>1</b>	<b>17</b>	<b>16</b>	<b>3</b>	<b>44</b>	<b>1</b>	<b>100</b>

Sources: Calculated from: DME Employment Statistics, March 2009; MQA database of companies that paid levies and that submitted WSPs Year 8.

#### 1.4.4 Population group and gender distribution of employees

The population group and gender distribution of employees in the Sector are indicated in Table 1.4. The majority of workers in the Sector (81 %) are African men. The second largest group is white men (12 %). Africans constitute 86 % of the total workforce, whites 12 %, coloureds 1 % and Indians less than 1 %. Seven per cent of the workers in the Sector are women. Most of the subsectors employ mainly Africans. The exceptions are Diamond Mining that employs a substantial number of coloured workers and Jewellery Manufacturing that employs relatively large numbers of coloured and Indian workers. The population group composition of the subsectors is closely linked to the geographical areas where operations are located.

#### 1.4.5 Occupational distribution of employees

The occupational distribution of employees is depicted in Table 1.5. The majority of workers are employed in the two occupational categories Plant and Machine Operators and Assemblers (37 %) and Labourers and Related Workers (35 %).

**Table 1.4 Population group and gender distribution of employees according to subsector**

Subsector		African			Coloured			Indian			White			Total		
		M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot
Coal Mining	N	48 991	4 220	53 211	334	115	449	314	102	417	12 680	2 026	14 706	62 319	6 464	68 783
	%	71	6	77	0	0	1	0	0	1	18	3	21	91	9	100
Gold Mining	N	137 077	7 803	144 880	857	207	1 064	196	119	315	13 719	1 879	15 598	151 849	10 008	161 857
	%	85	5	90	1	0	1	0	0	0	8	1	10	94	6	100
PGM Mining	N	162 689	7 758	170 447	452	95	548	134	120	255	14 998	2 902	17 900	178 273	10 876	189 149
	%	86	4	90	0	0	0	0	0	0	8	2	9	94	6	100
Diamond Mining	N	7 015	583	7 597	3 212	715	3 927	176	85	262	2 170	802	2 972	12 573	2 185	14 758
	%	48	4	51	22	5	27	1	1	2	15	5	20	85	15	100
Other Mining	N	40 788	1 930	42 718	1 900	325	2 224	100	54	154	6 422	1 307	7 729	49 211	3 615	52 826
	%	77	4	81	4	1	4	0	0	0	12	2	15	93	7	100
CLAS	N	8 845	538	9 383	609	70	679	211	59	270	2 025	476	2 501	11 690	1 143	12 833
	%	69	4	73	5	1	5	2	0	2	16	4	19	91	9	100
Services Incidental to Mining	N	42 823	1 382	44 205	192	88	280	72	73	145	4 620	971	5 591	47 707	2 514	50 221
	%	85	3	88	0	0	1	0	0	0	9	2	11	95	5	100
Diamond Processing	N	282	1 015	1 297	163	90	253	19	10	29	203	67	269	666	1 182	1 848
	%	15	55	70	9	5	14	1	1	2	11	4	15	36	64	100
Jewellery Manufacturing	N	1 316	584	1 900	217	283	501	87	61	148	495	334	829	2 115	1 262	3 377
	%	39	17	56	6	8	15	3	2	4	15	10	25	63	37	100
<b>Total</b>	<b>N</b>	<b>449 825</b>	<b>25 812</b>	<b>475 638</b>	<b>7 936</b>	<b>1 988</b>	<b>9 924</b>	<b>1 310</b>	<b>684</b>	<b>1 994</b>	<b>57 332</b>	<b>10 764</b>	<b>68 096</b>	<b>516 404</b>	<b>39 248</b>	<b>555 652</b>
	<b>%</b>	<b>81</b>	<b>5</b>	<b>86</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>2</b>	<b>12</b>	<b>93</b>	<b>7</b>	<b>100</b>

Sources: Calculated from: DME Employment Statistics, March 2009;  
MQA database of companies that paid levies and that submitted WSPs for Year 8.

**Table 1.5 Occupational distribution of employees according to subsector**

Subsector		Senior Officials, Managers and Owner Managers	Professionals	Technicians and Associated Professionals	Clerks	Service Workers, Shop and Market Sales Workers	Agricultural and Fishery Workers	Craft and Related Trade Workers	Plant and Machine Operators and Assemblers	Labourers and Related Workers	Apprentices and Section 18 (1) Learners	Total
Coal Mining	N	654	3 077	5 251	4 295	916	0	12 875	28 489	11 692	1 535	68 783
	%	1	4	8	6	1	0	19	41	17	2	100
Gold Mining	N	1 062	2 233	8 306	8 681	789	0	16 008	45 101	77 738	1 941	161 857
	%	1	1	5	5	0	0	10	28	48	1	100
PGM Mining	N	1 182	3 009	9 267	5 717	5 942	0	12 373	81 174	67 839	2 645	189 149
	%	1	2	5	3	3	0	7	43	36	1	100
Diamond Mining	N	395	832	1 588	1 063	1 158	11	1 455	5 281	2 802	173	14 758
	%	3	6	11	7	8	0	10	36	19	1	100
Other Mining	N	1 004	1 162	3 679	1 885	474	4	5 192	23 932	14 311	1 184	52 826
	%	2	2	7	4	1	0	10	45	27	2	100
CLAS	N	343	374	863	899	308	1 873	4 604	3 322	198	49	12 833
	%	3	3	7	7	2	15	36	26	2	0	100
Services Incidental to Mining	N	2 933	1 131	1 719	1 326	307	28	2 589	19 121	20 877	190	50 221
	%	6	2	3	3	1	0	5	38	42	0	100
Diamond Processing	N	63	29	192	161	13	0	1 080	107	163	42	1 848
	%	3	2	10	9	1	0	58	6	9	2	100
Jewellery Manufacturing	N	264	151	137	278	212	0	846	730	626	132	3 377
	%	8	4	4	8	6	0	25	22	19	4	100
<b>Total</b>	<b>N</b>	<b>7 899</b>	<b>11 998</b>	<b>31 001</b>	<b>24 305</b>	<b>10 118</b>	<b>1 916</b>	<b>57 022</b>	<b>207 257</b>	<b>196 246</b>	<b>7 891</b>	<b>555 652</b>
	<b>%</b>	<b>1</b>	<b>2</b>	<b>6</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>10</b>	<b>37</b>	<b>35</b>	<b>1</b>	<b>100</b>

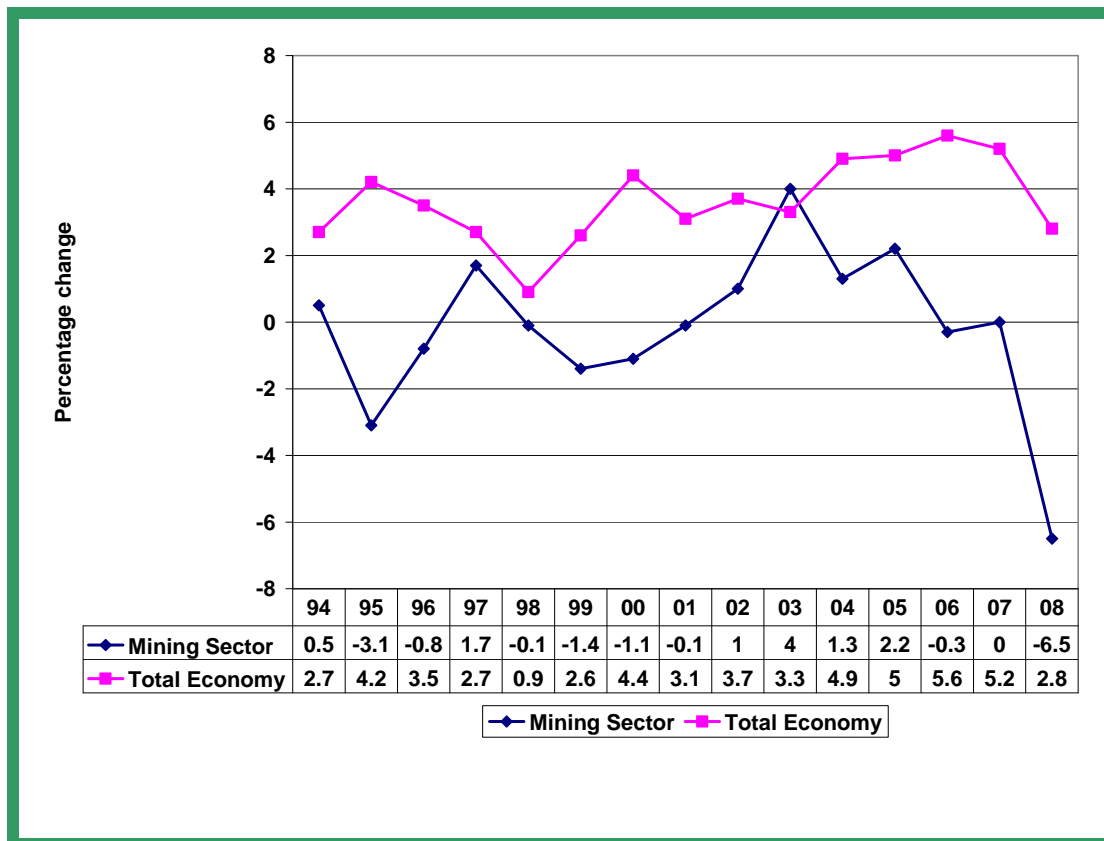
Sources: Calculated from: DME Employment Statistics, March 2009;  
MQA database of companies that paid levies and that submitted WSPs for Year 8.



## 1.5 ECONOMIC TRENDS IN THE SECTOR

The Mining Sector experienced harsh economic conditions since 1994. While the rest of the South African economy grew at a steady pace, the mining industry experienced eight years of contraction, with the worst decline in production in 2008. The reasons for the decline since 2006 include “the closure of various mines and shafts owing to safety incidents, curtailment of electricity supply as a result of Eskom using demand market participation agreements, infrastructure constraints (rail, port, housing and roads), bottlenecks in the goods and services procurement pipeline into the mines, regulatory constraints – especially environmental permits – and shortages of appropriately skilled human capital.”<sup>11</sup> The steep decline in output seen in 2008 is the result of these factors together with the global economic slow down which is currently causing in a decline in the demand for commodities.

Figure 1.3 Percentage change in GDP in mining and in the total economy 1994 to 2008



Source: Statistics SA, Statistical Release PO441, First Quarter 2009

## 1.6 FACTORS THAT INFLUENCE CHANGE IN THE SECTOR

### 1.6.1 Policy and legislation

The MMS is a relatively regulated environment with various policy documents and Acts of Parliament impacting on the way in which it operates. Although the Sector is affected by the total legislative and policy environment, it is more directly affected by legislation and policies that regulate mineral rights and ownership of mining operations, employment equity and black economic empowerment, health and safety, environmental conservation and rehabilitation and education and skills development.

<sup>11</sup> Chamber of Mines, Annual Report 2007/2008.

**a) Mineral rights and ownership of mining operations**

In South Africa, ownership of mineral rights is currently held either by the State or by the private sector. Government has stated that its long-term objective is for all mineral rights to be vested in the State, with due regard to constitutional ownership rights and security of tenure.<sup>12</sup>

Mineral rights and ownership are regulated through the Mineral and Petroleum Resources Development Act, Act 28 of 2002. The objectives of this Act very strongly emphasises the State's custodianship of mineral and petroleum resources and government's intention to ensure that these resources are utilised in the best interest of the country and its people. The Act also gives effect to Government's intention to transform the MMS – especially in terms of providing access to historically disadvantaged South Africans and spreading the benefits of mineral and petroleum resources in a more equitable manner<sup>13</sup>

The Mineral and Petroleum Royalty Act was signed into legislation in 2008. This Act deals with the financial implications of the Mineral and Petroleum Resources Development Act i.e. the State's imposition of royalties on the extraction of minerals by private companies. Another important act that deals with mineral rights and ownership is the Mining Titles Registration Amendment Act of 2003.<sup>14</sup>

The new structuring and organisation of mineral rights and mine ownership will shape the industry in the years to come and will influence access and entry into the Sector. An important requirement for the successful participation of a broader part of South African society in the MMS is the development of the human resources capacity and skills base of new entrants to the Sector.

**b) Black economic empowerment and employment equity**

The issue of Black economic empowerment and employment equity is an extension of the ownership issues discussed above. Since 1994 a number of Acts pertaining to the issues of social transformation, the eradication of the effects of previous discriminatory legislation and practices, Black economic empowerment and employment equity have been promulgated. This includes, for example, the Employment Equity Act (Act No 55 of 1998), the Preferential Procurement Framework Act (Act No 5 of 2000) and the Broad-Based Black Economic Empowerment (BEE) Act (Act No 53 of 2003). This legislation, together with the provisions of the Mineral and Petroleum Resources Development Act compels the MMS to change its profile and to substantially enhance equity in and access to the Sector. The latter Act goes further by declaring that: "To ensure the attainment of Government's objectives of redressing historical, social and economic inequalities as stated in the Constitution, the Minister [of Minerals and Energy] must within six months from the date on which this Act takes effect develop a broad-based socio-economic empowerment Charter that will set the framework, targets and time-table for effecting the entry of historically disadvantaged South Africans into the mining industry, and allow such South Africans to benefit from the exploitation of mining and mineral resources."<sup>15</sup>

The *Broad-Based Socio-Economic Empowerment Charter for the South African Mining Industry (Mining Charter)* was developed in 2002 and was, after an intense consultation process accepted by Government, employers and labour. The Charter was accepted by Parliament in October 2002. The Charter covers a wide range of areas for transformation including human resources development, employment equity, migrant labour, mine community and rural development, housing and living conditions, procurement, ownership and joint ventures, beneficiation, licensing and financing. Together with the Charter, a scorecard was developed for the measurement of companies' progress towards the objectives set out in the Charter.

The Mining Charter states that the South African labour market does not produce enough of the skills required by the mining industry and that stakeholders should work together in addressing the

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<sup>12</sup> Makwinzha, T P, Mwape, P and Van Averbek, N, South Africa's Minerals Industry – General Review, Department of Minerals and Energy, 2000.

<sup>13</sup> Section 2, Mineral and Petroleum Resources Development Act, Act 28 of 2002.

<sup>14</sup> Chamber of Mines, Annual Report, 2003.

<sup>15</sup> Section 100 (2)(a), Mineral and Petroleum Resources Development Act, Act 28 of 2002.

skills gap. The Charter then specifies the steps companies and the government should take to deal with the problem. The first step is the formulation of comprehensive skills development strategies that include a skills audit. The Charter also specifies that stakeholders should address the skills gap by undertaking to ensure provision of scholarships. It furthermore sets the targets for learnerships. The Charter also states that stakeholders through the MQA shall undertake to provide skill training opportunities to miners during their employment in order to improve their income earning capacity after mine closure and that companies should undertake to offer every employee the opportunity to become functionally literate and numerate. In terms of employment equity it sets the target of 40 % historically disadvantaged South Africans (HDSAs) in management and to increase the participation of women in mining to 10 %.

The human resources development objectives cited above are only illustrations of the overall transformation of the Sector that the Charter intends to bring about. However, the overall spirit of the Charter will provide the impetus for skills development in the Sector over the period covered by this SSP. The MQA has adopted a strategy to support the skills development objectives of the Mining Charter (See Annexure C for more detail on this strategy.) The Charter will be revised in 2009.

### **c) *Occupational health and safety***

Mining is an inherently risky activity and the industry world-wide has a record of recurring accidents (and occasional disasters) and a high incidence of occupational disease. South Africa has very large, deep and labour-intensive mines, and a workforce with low levels of education and a high degree of illiteracy which has led to relatively high accident rates. Until the early 1990s South Africa's problems were compounded by a typically hierarchical and racial organisation of management on the mines, which hindered effective dialogue between management and workers around improvements in safety (and in productivity).<sup>16</sup>

In the early nineteen nineties the National Union of Mineworkers (NUM) began to press for a commission of enquiry into health and safety. The new government supported the concept, and the Leon Commission was established. The resulting report had a lasting impact on the industry. It has resulted in the establishment of a new legal and regulatory environment governing health and safety, as well as tripartite (government-labour-employer) structures and processes for implementation. The report also increased the pressures on companies and management to improve the health and safety record of the industry. The Leon Commission's most important contribution was the identification of entrenched production practices as a critical stumbling block to progress on underground safety. The report cited low skill levels, illiteracy, poor communication and workers' lack of authority as problems. It also suggested that Fanakalo was unsuited as a means of communication other than for the transmission of commands. The richer kind of communication about conditions at the work place and potential hazards could not occur through this medium. The Commission strongly recommended the adoption of a uniform work place language and educational programmes for the lower skilled workers. It furthermore contended that the safety record would improve only if some responsibility and the attendant skills to deal with this were devolved down to the production worker, and if new and safer technologies were adopted. Many of the proposals of the Commission have become law.<sup>17</sup>

The most important legislation regarding mine health and safety is the Mine Health and Safety Act (Act 29 of 1996) and subsequent amendments. The Act aims to provide for protection of the health and safety of employees and other persons at mines<sup>18</sup>.

An important development in the area of health and safety was the Mine Health and Safety Audit ordered by former president Thabo Mbeki. The audit was conducted by the Department of Minerals and Energy the audit was largely directed at establishing whether mines have the necessary staff, structures, policies, processes and procedures in place to address health and safety. This includes the appointment of competent managers, engineers and other professionals; the establishment of

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<sup>16</sup> University of Cape Town, A Perspective on the South African Mining Industry in the 21st Century, [www.bullion.co.za](http://www.bullion.co.za), p.24.

<sup>17</sup> Ibid.

<sup>18</sup> Preamble, Mine Health and Safety Act, Act 29 of 1996.

structures such as health and safety committees; systems to assess health and safety risk and act on the outcomes of these risk assessments; and the development of standards for work and measures to ensure implementation.<sup>19</sup>

One section of the audit dealt specifically with health and safety training. The aim of this section was to check whether all employees are trained adequately before they are assigned tasks. The auditors assessed this by examining employee training records in relation to both job functions and health and safety. The mean level of compliance for OHS training was 65%, slightly below the mean for all audit categories.

The emphasis on occupational health and safety in the MMS and the obligations imposed by the Mine Health and Safety Act (and subsequent amendments and regulations) compels the Sector to give preference to health and safety training as well as basic education and training to workers with low levels of literacy. This is clearly reflected in the training priorities of the Sector discussed in later chapters of this SSP. The regulations to the Act also specify the competency requirements for certain key positions in the Mining Industry. These requirements form the basis of various unit standards developed for the MMS.

#### **d) Environmental conservation and rehabilitation**

Environmental conservation and the rehabilitation of areas where mining or exploration took place are regulated through various acts and government policies. The Minerals Act (Act 50 of 1999) places the responsibility for rehabilitation on the holder of a prospecting permit or mining authorization. The DME has specific policies regarding financial provision for rehabilitation upon the closure of a mining operation.<sup>20</sup>

Although environmental protection is of paramount importance and is generally supported by the industry, it has an economic impact on the Sector – especially on small businesses operating in areas that are regarded as ecologically sensitive. Environmental considerations may limit the lifespan of certain operations and rehabilitation costs can become the last cost factor that drives a company out of business. In some instances there is an inherent conflict between the need for job creation through mining activities and the need to protect the environment.

### **1.6.2 The availability of mineral resources**

A major factor in the future of the MMS is the availability of mineral resources. It is well known that South Africa is richly endowed with mineral resources. "South Africa has the world's largest resources of platinum-group- metals (87,7 percent) of world total, manganese (80 percent), chromium (72,4 percent), gold (40 percent) and alumino-silicates. South Africa also accounts for over 40 percent of the global production of the following mineral commodities: ferrochromium, platinum-group-metals (PGMs) and vanadium. It is also the world's leading producer of chrome ore, vermiculite and alumino-silicates, and is among the top three producers of gold, manganese ore, titanium minerals and fluorspar."<sup>21</sup>

As mineral reserves are non-renewable, the depletion of mineral resources may lead to contraction of the industry. This may be specifically true of the gold mining industry that has been plagued by diminishing economic reserves and consequent cost controls.<sup>22</sup> Annual gold production decreased by approximately 57 % over the period 1994 to 2007<sup>23</sup> and is bound to continue on a downward path as most of the remaining gold reserves occur at depths underground that prohibit the economical mining thereof. The economical mining of a commodity is obviously also linked to other

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<sup>19</sup> Centre for Sustainability in Mining and Industry, Analysis of the Results of the Presidential OHS Audit, Report submitted to the Chairperson of the Mine Health and Safety Council, November 2008.

<sup>20</sup> Department of Minerals and Energy, Policy Concerning Financial Provision for the Rehabilitation of Land Disturbed by Mining Activities, [www.dme.gov.za](http://www.dme.gov.za).

<sup>21</sup> P Mwape, MJ Roberts, E Mokwena, L Musi, T Tjatjje, M Mnguni, P Mashaba, PG Kwata, Part One: South Africa's Mineral Industry- General Review, Department of Minerals and Energy, .South Africa's Mineral Industry, 2007/2008, p. 5.

<sup>22</sup> South Africa Yearbook, 2003/2004.

<sup>23</sup> Calculated from Chamber of Mines, South African Mining Industry – Statistical Tables 2008.

factors such as available technology, the supply of electricity, the commodity price and the exchange rate.<sup>24</sup>

The Coal Mining subsector is faced with a similar situation. Coal deposits that are of export quality are limited and mining for the export market in the Witbank Highveld Coal Field may start to decline in a few years' time.<sup>25</sup>

Despite the relatively negative outlook for gold and coal mining the total situation is not only negative. In terms of its total resource base some commentators contend that the South Africa is not over-explored and that there remains considerable potential for the discovery of other world-class deposits in areas which have not yet been exhaustively explored.<sup>26</sup>

A product that needs special attention is Platinum Group Metals (PGMs). The PGM family consists of six chemically similar elements: platinum, palladium, rhodium, ruthenium, osmium and iridium. These metals have excellent catalytic qualities, resistance to corrosion, chemical inertness and high melting points. Their special qualities make them ideal for a number of specialist applications and an integral part of everyday life. They are the unseen components in about one in every four manufactured products. PGMs are extremely rare and occur mainly in three areas: South Africa, Russia and North America. South Africa is estimated to have 87% of the world's known PGM reserves, with Russia second at 8.3% and the United States third at 2.5%.<sup>27</sup>

The scarcity and the increasing demand have made PGMs one of South Africa's most strategic commodities. The PGMs Subsector is probably the part of the MMS with the largest growth and employment creation potential as production tends to be very labour intensive. Mechanisation in this subsector may stifle employment creation.

A major factor in the prevention of a run-out of mineral reserves is the development and implementation of new technologies in exploration, mining and mineral extraction. Another factor is the more receptive foreign investment climate that has made it easier to prospect large and remote regions<sup>28</sup>.

### **1.6.3 Commodity markets and prices and the exchange rate**

The MMS is highly sensitive for fluctuations in local and international economic and market conditions. The local markets for mining and mineral products are relatively small and for this reason most of our mining production is exported. The profitability of operations is directly affected by world commodity prices, the exchange rate as well as input costs. The volatility displayed by the rand in the last decade has had a profound impact on export industries including the mining industry. The weakening of the rand in 2001 and 2008 obviously benefited the mining industry while the relatively strong rand between 2002 and 2007 had an adverse effect.<sup>29</sup> The exchange rate also affects the cost of production in dollar terms.

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<sup>24</sup> South Africa 's underground gold resource base is estimated to be 45 000 tonnes. The Chamber of Mines developed some estimates of the future life of the gold mines in South Africa based on data from certain parts of the Witwatersrand basin where geological conditions are accounted for. According to their estimates of this area, over the past decade the average cut-off grade was 4 grams per tonne which implies that some 35 per cent of the ore-body was uneconomic to mine. If this information is applied to the total resource base of about 45 000 tonnes and assuming that about 20 000 tonnes of gold are uneconomic to mine because they are beyond the technology frontier of the industry (which is currently at 4 000 metres below the surface), then the total resource base underground is really 25 000 tonnes of gold. Based on data for the past decade, some 65 per cent was economically recoverable, that means that about 16 250 tonnes can be mined. Taking cognisance of ore depletion and assuming no new mines are developed in the interim, at current rates of production the defined ore reserve will last for about 40 years. However, the cut-off grades are directly linked to market conditions and increase with decreases in the gold price (see Section 1.5.3). Source: Chamber of Mines, Chamber's Memorandum to the National Treasury on the Draft Mineral and Petroleum Royalty Bill, [www.bullion.org.za](http://www.bullion.org.za).

<sup>25</sup> Personal interview with Mr Johann Beukes, Manager Coaltech 2020, Miningtech, CSIR Johannesburg 04/08/2004.

<sup>26</sup> Makwinzha, T P, Mwape, P and Van Averbek, N, South Africa's Minerals Industry – General Review, Department of Minerals and Energy, 2000.

<sup>27</sup> Chamber of Mines, Annual Report, 2007/2008

<sup>28</sup> University of Cape Town, op cit.

<sup>29</sup> Chamber of Mines, op cit.

Figure 1.4 Rand dollar exchange rate: 1999 – 2008



Source: South African Reserve Bank

The CLAS Subsector which includes the quarrying and processing of limestone, as well as the downstream manufacture of cement and lime products is only indirectly influenced by changes in the international arena, as its products are mostly sold into the domestic market. This subsector is dependent on the local construction industry, which in turn is affected by interest rates and by infrastructural development by Government. The Dimension Stone Industry exports the bulk of its production.<sup>30</sup>

For the Diamond Processing and Jewellery Manufacturing Subsectors the volatility of the local currency is particularly problematic as raw materials are bought at international (dollar denominated) prices and sold at a later stage. Thus the risk of holding materials and stock is high for these businesses that are generally small in size.<sup>31</sup>

#### 1.6.4 Industry structure, work organisation and technology

The MMS has seen dramatic changes in technology and work organisation in the past decade. Many of these changes were the result of South Africa's re-entry into the international arena. The corporate and governance structures that had evolved over many decades were unacceptable to the international investment community who re-entered South Africa. Management and workplace practices were way behind international standards and the Sector experienced immense pressure to shed the image of association with an exploitative and racially discriminatory regime. There was also an urgent need to modernise the industry. Restructuring has taken place and/or is underway at several levels: mining house, mining company and workplace. The aim of this restructuring is to develop a leaner, more focused and internationally competitive industry.<sup>32</sup> The effect of restructuring on employment and skills needs requires further research and close monitoring in order to align skills development to changes in the industry.

<sup>30</sup> Human Sciences Research Council, A Skills Analysis of the Cement, Lime, Aggregates and Sand (CLAS) Sector in South Africa, MQA, 2004.

<sup>31</sup> Human Sciences Research Council and Povey, Mulvenna and Associates, A Skills Analysis of the Jewellery Manufacturing and Gemstone Processing Industries in South Africa, MQA and GTZ, Johannesburg, May 2003.

<sup>32</sup> University of Cape Town, op cit.

Part of the restructuring is the tendency to outsource non-core activities to other, often smaller, companies. This has led to the proliferation of smaller organisations that provide services to the mining industry. In some instances even the core functions of mining are outsourced to other specialised mining companies.

Technological changes have had a profound effect on the MMS and have greatly enhanced the efficiency of the industry. Technological advancements impact on every aspect of the mining process. For example, new technologies such as satellite imaging and information technology have revolutionised exploration. Electromagnetic spectrum analysis of the target landmass gathered from satellites is now the first stage of many exploration efforts, enabling geologists to home in on promising areas, which are then supplemented by geomagnetic information gathered from aircraft and, ultimately, exploratory drilling. The general availability of electromagnetic and geological data has removed a massive scale barrier to exploration. The exploration business was transformed by the entry of a myriad of small exploration companies, or 'juniors', often consisting only of a few geologists and a small budget. Exploration costs have fallen with the use of satellite images and information technology. Cost-effective and global exploration has led to deposits being found more quickly. Once core samples are gathered and analyzed, the raw data is manipulated via computer. Geographical information systems allow a wide range of geological and other attributes to be mapped accurately at dramatically reduced cost.<sup>33</sup>

Engineering design has been revolutionised through computer-aided design and engineering techniques. For example it has become possible to design and simulate an entire plant through three-dimensional modelling.

Computer modelling of a mine and its geological features now enable a mine planner to minimise ground instability and maximise ore recovery. In the past the equations were so complex, and calculations took so long, that this technique could not be used for daily mine planning. Advances in computer technology now make these techniques feasible for daily problem-solving. The techniques have led to reduced rockburst problems and increased ore recovery rates.

Advances in biotechnology, chemistry and mechanical engineering have cumulatively made reduction plants, where the mineral is extracted from the mineral-bearing rock, more efficient. These improvements have been large enough to change the financial viability of projects spanning many minerals.<sup>34</sup>

Technological developments have opposite effects on the demand for labour. On the one hand the mechanisation and computerisation of processes may reduce the demand for labour. On the other hand technology saves jobs, for example by improving exploration, facilitating mining at deeper levels and lengthening the lifespan of some of the mines.

Small-scale Mining is fairly widespread in South Africa and has grown in the last ten years. It therefore warrants special attention. The term "Small Scale Mining" refers to small production companies, but it may also include special service companies. Small-scale miners are involved in the mining of all mineral commodities but are distinguished on the basis of the scale of operations and the level of technology deployed. The degree of participation of small-scale miners in the mining of a particular commodity depends on the availability of deposit, and the ease of mining, processing and extraction of the commodity. Small-scale miners are attracted to small deposits that are unsuitable for exploitation by large mining companies as well as the reprocessing of tailing dumps left behind by large mining companies. The uncomplicated processing requirements of commodities such as sand and clay for brick making also attract small-scale miners.<sup>35</sup>

At this stage the level of technology deployed by small-scale miners is low and outdated and a substantial amount of work is required to raise operations to the level of profitable and properly

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<sup>33</sup> University of Cape Town, op cit.

<sup>34</sup> University of Cape Town, op cit.

<sup>35</sup> Human Sciences Research Council, Skills and Training Analysis in the Small-Scale Mining and Minerals Sub-Sector, MQA, 2004.

managed operations. It often involves the use of adapted or very old equipment. Miners, particularly informal miners, often practice very unsafe mining and mineral extraction methods.<sup>36</sup>

### **1.6.5 Infrastructure and electricity supply**

The electricity crisis that occurred in the first months of 2008 highlighted the link between mining production and infrastructural provision of the country – specifically the provision of electricity. The industry was reduced to a 50% electricity supply level for the period 25 to 31 January 2008, which effectively shut down most of the mines. The Chamber of mines estimates that those lost days resulted in a R12-billion loss in mineral sales, production and wages. The Chamber furthermore warned that “the key problems for mining companies, especially the deep-level gold and platinum group metals (pgm) mines, is the fact that electricity is not only an integral part of their production processes, but crucial to a safe environment for workers underground. On average, over 50% of the electricity used by deeplevel mines is for cooling, venti-lation and pumping, which cannot be switched off or reduced. So the drop in electricity supply to 90% of normal, means that a 10% reduction has to come from the 50% of electricity used for production.”<sup>37</sup>

### **1.6.6 Social factors**

#### **a) HIV/AIDS**

The exact prevalence of HIV/AIDS and the quantitative impact of the infection on human resources in the MMS are still difficult to gauge. It is estimated that up to 30 % of the industry’s workers are living with HIV/AIDS.<sup>38</sup> The Sector is a high-risk environment. The use of migrant labour, single-sex hostels and the severing of family structures contribute to the spread of the infection. The hard physical work required of mine workers plus the risk of occupational disease may speed the onset of illness among HIV-positive workers.<sup>39</sup>

In the long-term HIV/AIDS will impact on the profitability of organisations. Cost will be driven up by increased medical costs and other employee benefits (e.g. death benefits), the cost of replacing employees who die or who retire on medical grounds and the training of new recruits. Productivity may be affected by increased absenteeism, reduced ability of workers to perform physically strenuous work and sagging morale of workers who are affected by the illness and death of their colleagues.<sup>40</sup>

The stakeholders involved in the MMS recognise the seriousness of the situation and the risks that the pandemic holds for the Sector. In 2003 two important developments took place in the industry’s efforts to deal with HIV/AIDS. Major mining companies took a decision to provide anti-retroviral treatment to mineworkers with HIV/AIDS and, under the auspices of a Tripartite HIV/AIDS Committee for the Mining Industry, a summit was organised to consolidate and strengthen partnerships in the fight against HIV/AIDS<sup>41</sup>. At the summit employers, labour and the state reaffirmed their commitment to strengthen strategies to prevent the disease and to put into place strategies (including medical treatment) in order to optimise the situation of those workers already infected.

#### **b) Occupational disease and injury**

It is not only HIV/AIDS that impacts on the health of mine workers. The very nature of mining activities contributes to the development of occupational diseases such as tuberculosis. Furthermore, work-related injuries occur frequently in the mining environment – between 4 000 and

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<sup>36</sup> Ibid.

<sup>37</sup> Chamber of Mines, Annual Report 2007/2008.

<sup>38</sup> Chamber of Mines, Bringing the Underground AIDs Fight to Surface, [www/http.bullion.org.za](http://www.bullion.org.za), published 2003/06/20.

<sup>39</sup> Elias, R. and Taylor, I. HIV/AIDS, The Mining and Minerals Sector and Sustainable Development in Southern Africa, MMSD, 2002.

<sup>40</sup> Sunter, C. and Whiteside, A. AIDS – The Challenge for South Africa, Human and Rousseau Tafelberg, Cape Town, 2000.

<sup>41</sup> Chamber of Mines, Annual Report, 2003.



5 000 workers are injured in mining accidents each year.<sup>42</sup> Reduced work capacity and disability are often the result of work-related diseases or injuries. These problems pose very specific challenges to the Sector such as the retraining and redeployment of these workers.

### **c) *Migrant labour***

The MMS is a sector that makes extensive use of migrant labour. Labour is not only sourced from rural areas and poor parts of the country, such as the Eastern Cape, but also from neighbouring countries. Lesotho and Mozambique are the largest providers of foreign labour to the MMS in South Africa. In the Mining Charter stakeholders in the MMS undertook to ensure that no discrimination occurs against foreign migrant workers. This implies that these workers are entitled to the same training and development opportunities as local workers.

The migrant labour system also created a unique relationship between the MMS and labour sending areas. Many areas that are situated far from mining activities are essentially dependent on the MMS for economic survival. These areas are severely affected by the contraction of the MMS. This in turn has extended the mining companies' social responsibility to these areas – especially if they are in South Africa. In the Mining Charter stakeholders, in partnership with all spheres of government, undertook to co-operate in the formulation of integrated development plans for communities where mining takes place *and for major labour-sending areas*, with special emphasis on development of infrastructure.<sup>43</sup>

### **d) *Local community involvement***

Apart from labour sending areas far a field, companies in the MMS also have a close relationship with the communities surrounding mining activities. In many areas, mining is the predominant economic activity. This leads to the communities' dependency on a single activity that can be potentially disastrous should the mines close or downscale. Many mining towns have experienced economic collapse when mine closures occurred. This has led to increased poverty and migration of people.

On the positive side, many mining companies are involved in development projects and in supporting organisations in their surrounding areas. This involvement include the development of basic skills for economic activity, support to schools and learners at school level, HIV/AIDS awareness programmes, ABET programmes and SMME development programmes, to name a few.

Overall, many organisations in the MMS have developed a strong sense of social responsibility and remain committed to the development of local communities – also as part of their commitment to the Mining Charter.

Over and above the social responsibility and community involvement developed by mining companies over time, it has also become a legal requirement of the Mineral and Petroleum Resources Development Act of 2002 to submit to the Department of Minerals and Energy a social and labour plan before mining or production rights will be granted.

"A social and labour plan requires applicants to develop and implement:

- Comprehensive human resources development programmes;
- Local economic development programmes; and
- Processes to address situations that may negatively affect the employment of workers.

Human resources development programmes aim at promoting employment and the advancement of the social and economic welfare of the workers.

Local economic development focuses on how the mine or production operation will address the socio-economic needs of the area within which it operates and the area from where it sources its workforce. This is not the corporate social investment that companies have been involved with all along, but rather what the mine or production operation would leave behind.

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<sup>42</sup> South African Yearbook, 2003/2004.

<sup>43</sup> Mining Charter, Section 4.4.

Processes pertaining to the management of downscaling or retrenchments include processes or mitigation that the operation would put in place should jobs be lost.”<sup>44</sup>

### **1.6.7 Changes in the education and skills development environment**

Educational and skills development legislation and policy have become major forces in driving and steering skills development in the Sector. The Skills Development Act (Act 97 of 1998), the Skills Development Levies Act (Act 9 of 1999) and the SAQA Act (Act 58 of 1998), together with other legislation and policy has brought about enormous changes in the way in which skills development has been handled in South Africa in general and specifically in the MMS. Only a few aspects of the impact are highlighted:

- The establishment of SETAs has created a platform where all stakeholders in the respective sectors can consider relevant issues, plan strategies and work together towards the attainment of mutual goals. In the MMS the MQA with its tripartite structures (committees and subcommittees where employers, labour and government are represented) has become the conduit for a more coordinated approach to skills development.
- The imposition of the Skills Development Levy and the introduction of the grant schemes through which levies can be reclaimed have compelled organisations to put in place systems and procedures to systematically plan and report on their training initiatives. The number of organisations that claim grants from the MQA has increased steadily over the years and in 2007/2008 those that claimed mandatory grants (i.e. those that submitted WSPs and ATRs) represented approximately 70 % of the workers in the Sector.<sup>45</sup>
- A number of new qualifications have been designed for the MMS. Most of these qualifications are at NQF levels 1 to 4 and provide for the upgrading of the formal qualifications of the bulk of the MMS’s workforce who is, for historical reasons, poorly educated. Many of these qualifications and the attending training provision utilises the unit-standard basis of qualifications provided for in the NQF to cater for the special needs of employers and learners in the MMS. One example of this is the development of skills programmes that are short enough to fit into the demanding work environment and that lead to credits that may incrementally build up to full qualifications.
- Many education and training providers have applied for accreditation with the MQA and by doing so ensure that the training provided in the Sector is of an acceptable standard to the industry.

In 2008 and 2009 several changes occurred in terms of skills development legislation and institutional arrangements that will impact on the MQA and the skills development activities of the Sector.

In June 2007 the Ministers of Education and Labour introduced the Quality Council for Trades and Occupations (QCTO) in the Joint Policy Statement on the Review for the National Qualifications Framework (NQF). The QCTO was legally established through the Skills Development Amendment Act in 2008. The main function of the QCTO is to manage and coordinate the qualifications in a newly established occupational qualifications framework in terms of their development, provision, assessment and impact. According to the Act an occupational qualification is defined as a qualification associated with a trade, occupation or profession resulting from work-based learning. This new legislation has a direct impact on all the qualifications and learnerships currently registered by the MQA. It probably means that when they reach their registration end dates all the qualifications will have to be re-written as occupational qualifications in the format prescribed by the QCTO. New learnerships that lead to the new qualifications will also have to be registered.

Another important aspect of the new legislation is that qualifications that will be registered on the occupational qualifications will be directly linked to the occupations that are contained in the Organising Framework for Occupations (OFO). The general purpose of the framework is to align all skills development activities in South Africa.

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<sup>44</sup> Department of Minerals and Energy, [http://www.dme.gov.za/minerals/minreg\\_social.stm](http://www.dme.gov.za/minerals/minreg_social.stm), accessed 24 August 2009.

<sup>45</sup> EE Research Focus, Analysis of Workplace Skills Plans and Annual Training Reports: Year 8, MQA, June 2008.

At the time of writing this SSP update the exact role that SETAs will play with regard to the development and quality assurance of occupational qualifications was still uncertain, but, as SETAs are already positioned to interact with and serve particular sectors, it is relatively certain that they will play a pivotal role in this regard. The re-alignment of qualifications with the new qualifications framework and the OFO and the re-writing and registration of qualifications and learnerships will require a concerted and collaborative input from role players in the MMS.

Another factor that will influence skills development in the SETA environments is the splitting of the Department of Education into a Department of Basic Education and a Department of Higher Education and Training (DoHET) by the President Jacob Zuma after he took office in May 2009. This was followed by a decision of government to move the management of the SETA system from the DoL to the DoHET. At the time of writing this SSP update the movement of the relevant units in the DoL to the DoHET was still underway. Changes in policy direction may be imminent and will become clear in the period covered by this SSP update

As mentioned in the introduction of this SSP update, the National Skills Development Strategy (NSDS) for the period 1 April 2005 to 31 March 2010 has been extended and this SSP update has to incorporate the NSDS II objectives and targets. Many of the NSDS objectives and targets have already been incorporated into the Sector's skills development initiatives. Specific aspects of the strategy relevant to the functioning of the MQA are:

- *The need to systematically identify critical and scarce skills, to disseminate information and to support the development of these skills*<sup>46</sup>

Although the MMS over time has put in place systems for the development of critical and scarce skills (e.g. bursary schemes, apprenticeships and learnerships) the NSDS requires a systematic quantification and monitoring of these skills needs. This requirement compelled the MQA to put in place research and monitoring processes that carefully track scarce and critical skills information over time. Most of this is done through the mandatory grant application forms (WSPs and ATRs) and the MQA Management Information System.

- *Alignment of skills development with EE, BBBEE and charter compliance*<sup>47</sup>

The sector's own commitment to the Mining Charter and to EE and BBBEE has been discussed in previous sections of this chapter. The NSDS links the WSP grant structure to these initiatives.

- *Support for small levy-paying companies and BEE firms*

The NSDS requires SETAs to reach out to small levy-paying organisations in their sectors and to support skills development in these organisations. It also requires SETAs to increase the number of small BEE firms and BEE co-operatives supported by skills development. Although the MQA has already instituted several initiatives to support small firms, especially BEE firms in the Sector, a concerted effort is required in order to reach the NSDS target of 40% of small organisation supported.

- *Direct SETA support for Institutes of Occupational Excellence*

The NSDS requires SETAs to specifically identify and support institutional education and training providers that excel in their areas of provision or who have the potential to develop as centres of excellence. These initiatives have the potential of having a very positive impact on the provision of education and training in the Sector.

## 1.7 CONCLUSIONS

Although the relative contribution of the MMS to the economy has decreased, the Sector remains an important contributor to GDP, exports and formal employment in South Africa. The Sector currently employs more than half a million workers many of whom are employed in occupations that do not require high levels of education. The Sector thus plays an important role in providing employment

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<sup>46</sup> Department of Labour, National Skills Development Strategy 1 April 2005 – 31 March 2010, March 2005, Objective 1.

<sup>47</sup> Ibid, Objective 2.

to members of the labour force (especially Black<sup>48</sup> men) who haven't had the opportunity to attain high levels of education. However, the need for a better educated workforce has developed over time and this is posing very specific challenges that need to be addressed by the Sector.

This chapter analysed the factors that influence change in the Sector. One of the most alarming realities that the Sector faces is the run-out of gold reserves that can be economically mined and export quality coal reserves. The profitability of mining operations depends on a combination of factors including the quality and depth of deposits, the total cost of production, international commodity prices and the exchange rate. In recent years a relatively large percentage of gold mining operations have become marginal and may close if market conditions don't improve dramatically. This may have a profound effect on employment in the MMS. Although growth in other Sectors such as PGMs Mining may counter the effect on total employment, the downscaling in gold production may lead to large-scale job losses in gold producing areas.

The Sector is furthermore undergoing an intense transformation process. Despite the predominance of Historically Disadvantaged South Africans (HDSAs) in the workforce of the MMS, until recently HDSAs have been largely excluded from ownership of mining operations. This has led to the various legislative interventions by government aimed at the equitable distribution of the benefits derived from the country's mineral resources. Probably the most important of these interventions was the promulgation of the Mineral and Petroleum Resources Development Act in 2002 and the Broad-Based Socio-Economic Charter for the South African Mining Industry that was a direct requirement of the Act. The Charter, which was accepted by all the social partners is binding on the Sector and has become a major driving force for change. The Charter sets out specific human resources development objectives and therefore it directs skills development in this Sector.

The danger inherent in mining activities has led to this Sector being highly regulated by health and safety legislation. This includes regulations regarding the competencies that workers in different positions should possess as well as general health and safety training required on a regular basis. This means that certain elements of training in this Sector are prescribed and that the Sector has to give preference to them. This is reflected in the qualifications developed for and in the training priorities set by the Sector.

A very important factor in the future of the MMS is the fact that it is an export industry and that it sources a large amount of its investment in the international capital markets. This places the industry in the global environment and exposes it to external forces such as international competition in the commodity markets and in terms of attracting foreign investment, international (mostly dollar denominated) commodity prices and exchange rate fluctuations. These forces tend to increase the pressure for productivity gains and to stifle the demand for labour.

Technology plays a dual role in the MMS. On the one hand mechanisation and other labour-saving technologies reduce the demand for labour. On the other hand it facilitates exploration and mining that otherwise would have been impossible. Technology also plays a role in extending the lifespan of some mines and in creating new mining opportunities and thus it stimulates the creation of employment.

HIV/AIDS is a serious issue with which the MMS has to deal. The effect of HIV/AIDS on employment will be, to some extent, contained by the preventative and curative interventions of the industry. HIV/AIDS has a dual effect on employment. Loss of productivity and increased costs may affect the profitability and viability of operations, while increased mortality and permanent incapacity may increase the need to replace workers. Other health issues that impact on the Sector is the occurrence of occupational diseases that result from mining activities and work injuries.

Skills development in the Sector has been strongly influenced by the many changes in the education and training environment that took place over the last decade. NSDS II which spans the period 1 April 2005 to 31 March 2010 (and which is now extended) spells out the skills development agenda for this period. The strategy specifically shapes the way in which the Sector deals with the identification of scarce and critical skills, the way in which it aligns skills development with EE, BBBEE and Mining Charter requirements, the way in which it supports small levy-paying companies

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<sup>48</sup> Black refers to African, coloured and Indian.

and BEE firms and its identification and support of Institutes of Occupational Excellence. The introduction of the QCTO and the move of the SETAs to the new DoHET will further shape the skills development arena.

## 2 THE DEMAND FOR SKILLS IN THE SECTOR

### 2.1 INTRODUCTION

The demand for skills in the Mining and Minerals Sector is first of all analysed by looking at current employment. The occupational structure of current employment provides insight into the types of skills employed in the Sector, while the population group and gender distributions bear evidence of the transformation that has taken place in the Sector and the transformation needs that still exist.

This chapter also analyses historical employment trends with a view to identifying the direction in which employment is moving. This trend analysis is based on statistical information collected by the DME and covers the largest part of the Sector. (Unfortunately, there is no historical statistical information available on certain components of the CLAS subsector and the subsectors Services Incidental to Mining, Diamond Processing and Jewellery Manufacturing.)

Vacancy rates are analysed with a view to identifying areas in which there is already an excess demand (or skills shortages). Estimates of the numbers of employment positions that will have to be filled over the next five years are also presented in this chapter. These estimates were developed taking into consideration a few possible growth scenarios and replacement demand.

The chapter concludes with an exposition of critical skills areas and with a summary of the demand for labour in the specific occupational categories employed in the Sector.

### 2.2 CURRENT EMPLOYMENT

Total employment in the MMS is currently estimated at approximately 556 000 people, or 6,0 % of total formal sector employment in South Africa.

#### 2.2.1 Occupations in the Sector

The occupational distribution of workers in the Sector has been indicated in Table 1.6 and is summarised again in Table 2.1.

**Table 2.1 Occupational distribution of employees in the MMS 2009**

Occupational category	N	%
Senior Officials, Managers and Owner Managers	7 899	1
Professionals	11 998	2
Technicians and Associated Professionals	31 001	6
Clerks	24 305	4
Service Workers, Shop and Market Sales Workers	10 118	2
Agricultural and Fishery Workers	1 916	0
Craft and Related Trade Workers	57 022	10
Plant and Machine Operators and Assemblers	207 257	37
Labourers and Related Workers	196 246	35
Apprentices and Section 18 (1) Learners	7 891	1
<b>Total</b>	<b>555 652</b>	<b>100</b>

Sources: Calculated from: DME Employment Statistics, April 2009;  
MQA database of companies that paid levies and that submitted WSPs for Year 8.

The demand for highly skilled workers is relatively low. Only 9 % of the total workforce is employed in the managerial, professional and technician categories (i.e. occupations that mostly require a tertiary education). The Sector employs approximately 2 % of the people with tertiary educational qualifications in the country<sup>49</sup>. Although highly skilled workers form a relatively small component of

<sup>49</sup> Total number of people with tertiary education qualifications employed in the MMS compared with the total number of employed people with tertiary education qualifications in the LFS September 2004.

the total workforce in the industry, their skills are critically important. Professionals and Technicians are employed in the following technical skills areas: Mining Engineering, Metallurgy, Chemical Engineering, Geology, Electrical Engineering, Mechanical Engineering, Analytical Chemistry, Mine Surveying and Jewellery Design and Manufacturing. Professionals are also employed in non-line function areas such as Accounting, Financial Management, Human Resources Management and Information Technology.

Clerical Workers and Service Workers, Shop and Market Sales Workers constitute 4 % of the total workforce. Craft and Related Trade Workers (including artisans) form 10 % of the total workforce of the MMS. These workers are typically trained through Further Education and Training Institutions (Technical Colleges) and through apprenticeships and learnerships. The artisan occupations that occur most frequently in the mining components of the MMS are: Diesel Mechanics, Electricians, Fitters, Fitters and Turners, Instrument Mechanics, Millwrights, Plater/Boilermakers, Plater/Welders, Rigging Ropesmans.

A very large proportion of the workforce (37 %) works as Plant and Machine Operators and Assemblers. This category of workers includes a wide range of specific occupations that are linked to the technology and equipment used in the industry. Training for this category of workers is shorter than that of artisans and is mostly done in the industry – either on-the-job or through specialised training providers. Labourers and Related Workers constitute 35 % of the workforce. These occupations do not require high levels of education, but industry-specific knowledge is necessary.

### **2.2.2 Population group and gender**

Africans form the majority of the MMS's workforce. They are also the majority in all the occupational categories, with the exception of Senior Officials, Managers and Owner Managers where they constitute 34 % of the workers, Professionals (27 %) and Technicians and Associated Professionals (41 %). These three occupational categories are dominated by whites. (See Table 2.2.)

**Table 2.2 Occupational distribution of workers according to population group 2009**

Occupational category		Population group				
		African	Coloured	Indian	White	Total
Senior Officials, Managers and Owner Managers	N	2 662	163	205	4 868	7 899
	%	34	2	3	62	100
Professionals	N	3 224	316	384	8 074	11 998
	%	27	3	3	67	100
Technicians and Associated Professionals	N	12 618	988	421	16 974	31 001
	%	41	3	1	55	100
Clerks	N	16 393	1 150	366	6 396	24 305
	%	67	5	2	26	100
Service Workers, Shop and Market Sales Workers	N	8 192	380	67	1 479	10 118
	%	81	4	1	15	100
Agricultural and Fishery Workers	N	1 045	104	32	735	1 916
	%	55	5	2	38	100
Craft and Related Trade Workers	N	32 778	1 884	369	21 990	57 022
	%	57	3	1	39	100
Plant and Machine Operators and Assemblers	N	199 313	3 357	79	4 507	207 257
	%	96	2	0	2	100
Labourers and Related Workers	N	192 801	1 280	54	2 110	196 246
	%	98	1	0	1	100
Apprentices and Section 18 (1) Learners	N	6 612	302	16	960	7 891
	%	84	4	0	12	100
<b>Total</b>	<b>N</b>	<b>475 638</b>	<b>9 924</b>	<b>1 994</b>	<b>68 096</b>	<b>555 652</b>
	<b>%</b>	<b>86</b>	<b>2</b>	<b>0</b>	<b>12</b>	<b>100</b>

Sources: Calculated from: DME Employment Statistics, April 2009;  
MQA database of companies that paid levies and that submitted WSPs for Year 8.

The nature of work in the MMS as well as certain past discriminatory practices has led to women being underrepresented in the Sector. The gender composition of the respective occupational categories can be seen in Table 2.3. Eight per cent of Legislators, Senior Officials, Managers and Owner Managers are women. In the category Professionals 20 % are women and 14 % of Technicians and Associated Professionals are women. The only occupational category of which women form a substantial part, is Clerks (40 %).



**Table 2.3 Occupational distribution of workers according to gender 2009**

Occupational category	Male		Female		Total	
	N	%	N	%	N	%
Senior Officials, Managers and Owner Managers	7 287	92	612	8	7 899	100
Professionals	9 551	80	2 447	20	11 998	100
Technicians and Associated Professionals	26 644	86	4 357	14	31 001	100
Clerks	14 680	60	9 625	40	24 305	100
Service Workers, Shop and Market Sales Workers	8 286	82	1 831	18	10 118	100
Agricultural and Fishery Workers	1 887	98	29	2	1 916	100
Craft and Related Trade Workers	54 201	95	2 821	5	57 022	100
Plant and Machine Operators and Assemblers	202 776	98	4 481	2	207 257	100
Labourers and Related Workers	184 370	94	11 875	6	196 246	100
Apprentices and Section 18 (1) Learners	6 722	85	1 169	15	7 891	100
<b>Total</b>	<b>516 404</b>	<b>93</b>	<b>39 248</b>	<b>7</b>	<b>555 652</b>	<b>100</b>

Sources: Calculated from: DME Employment Statistics, April 2009; MQA database of companies that paid levies and that submitted WSPs for Year 8.

The occupations in which the 39 000 women in the Sector are employed, can be seen in Figure 2.1. Thirty per cent work as Labourers and Related Workers, 25% as Clerks, 11% as Plant and Machine Operators and Assemblers and 11% as Technicians and Associated Professionals. Eleven per cent of the women in the Sector work as Professionals and 7% are Craft and Related Workers.

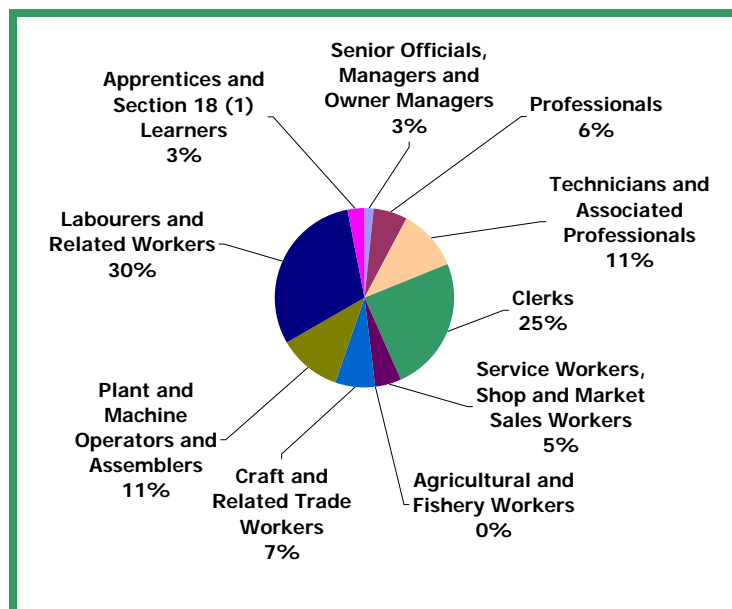
A detailed breakdown per occupation, population group and gender can be seen in Annexure D.

### 2.2.3 Educational levels

The educational qualifications of workers in the Sector to a large extent correspond with the occupational composition of the Sector. The majority of workers (62 %) have left school at grade 9 or lower or have never attended school. A substantial proportion of workers (24 %) have no formal schooling. Thirty eight per cent have some formal schooling in the General Education and Training (GET) band. Only 31 % have qualified in the Further Education and Training (FET) band and only 8 % have higher education qualifications.

Of particular interest to this Sector is the number of workers who can benefit from ABET. If those who have already attained ABET level 4 or higher are excluded, then approximately 55 % of the total workforce are potential candidates for ABET.

**Figure 2.1 Occupations of women in the Sector 2009**



Sources: Calculated from: DME Employment Statistics, April 2009; MQA database of companies that paid levies and that submitted WSPs Year for Year 8

**Table 2.4 Educational qualifications of the workforce 2009**

Qualification level	N	%	NQF Band	N	%
No Schooling	111 673	20			
Pre-ABET	21 505	4		24	133 178
Grade 3/ABET 1	29 112	5	GET	38	209 716
Grade 4	18 553	3			
Grade 5/ABET 2	26 817	5			
Grade 6	28 031	5			
Grade 7/ABET 3	40 062	7			
Grade 8	29 580	5			
Grade 9/ABET 4	37 562	7			
Grade 10	40 628	7	FET	31	170 359
Grade 11	34 994	6			
Grade 12	94 737	17			
Certificates	27 686	5	HET	8	42 399
First 3-year Degrees and Diplomas	10 467	2			
Honours and 4-year Degrees and Higher Diplomas	3 222	1			
Doctoral and Master's Degrees	1 025	0			
<b>Total</b>	<b>555 652</b>	<b>100</b>		<b>100</b>	<b>555 652</b>

Sources: Calculated from: DME Employment Statistics, April 2009  
MQA database of companies that paid levies and that submitted WSPs for Year 8

#### 2.2.4 People with disabilities

The MMS employs relatively small numbers of people with disabilities, partly because of the physical nature of the work. In the 2000/2001 and in the 2001/2002 WSPs employers were required to report the number of disabled people employed. In both years only 62 % of the organisations provided this information and on average disabled workers formed 1,3 % of the employees of these organisations.<sup>50</sup>

### 2.3 EMPLOYMENT TRENDS AND PATTERNS

#### 2.3.1 Mining

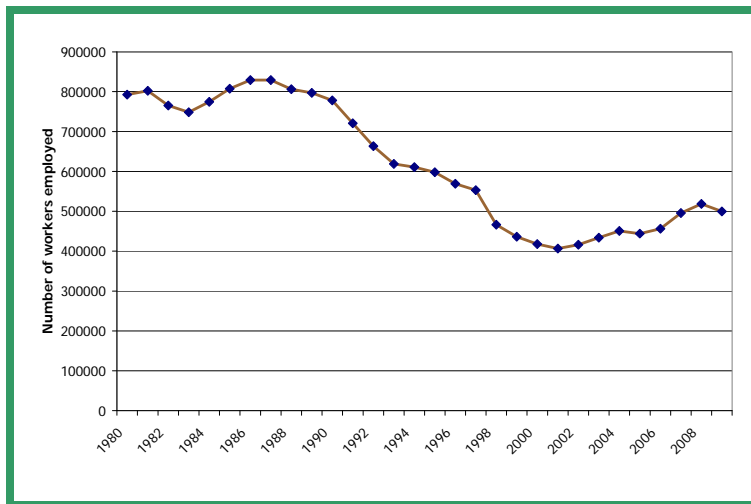
Employment in mining started to decline in the middle nineteen eighties and continued on a downward path until 2001. In 1986 and 1987 the industry still employed more than 800 000 workers. By 2001 this figure has dropped to 400 000.

<sup>50</sup> Human Sciences Research Council, Analysis of Workplace Skills Plans and Training Reports – Mining and Minerals Sector, MQA, March 2002.

(see Figure 2.2.) The massive decline in employment can be ascribed mainly to the decline in employment in the gold mining subsector. In 1986 and 1987 the gold mines employed more than 550 000 workers. From 1988 employment declined steadily to just more than 160 000 in 2009.

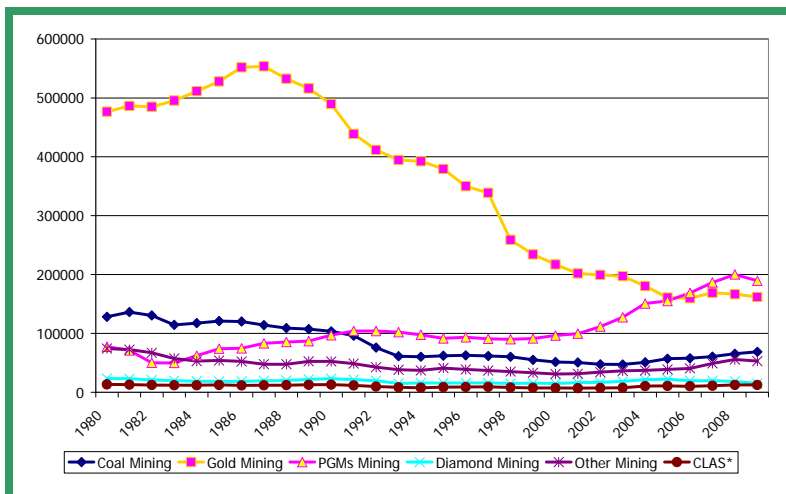
Although gold mining had the most dramatic effect on the total Sector, most of the other subsectors also shed labour since the early nineteen eighties (although many recovered slightly over the last five years). The decline in employment in Coal Mining started in 1981 when the subsector employed 130 000 workers. This figure

**Figure 2.2 Employment trends in Mining: 1980 – 2009**



Source: Department of Minerals and Energy, Employment Statistics.

**Figure 2.3 Employment trends per subsector 1980 - 2009**



\*Cement manufacturing excluded

Source: Department of Minerals and Energy, Employment Statistics.

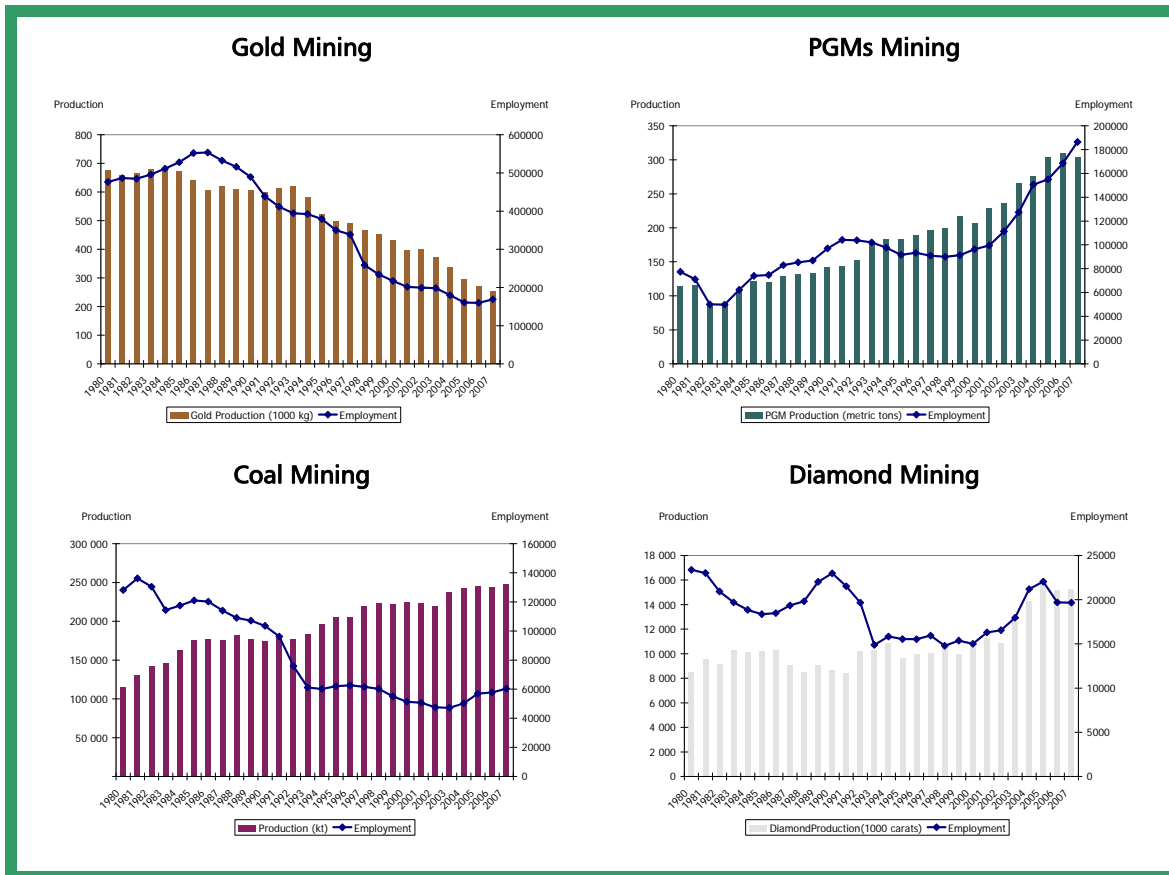
steadily over the last two decades is PGM Mining. This subsector employed only 77 000 people in 1980. By 2009 this figure had grown to almost 190 000.

The decline in employment experienced over the last two and a half decades can, to a large extent, be attributed to productivity gains and the introduction of labour saving technologies and a decline in gold production. Figure 2.4 illustrates the relationship between production and employment in four of the subsectors: Gold Mining, PGMs Mining, Coal Mining and Diamond Mining. In Gold Mining production and employment declined steadily over time. In PGMs Mining employment increased with an increase in production. However, while coal production almost doubled in the period, employment declined substantially until 2003. Thereafter it increased again as production increased. The output of diamond mines remained more or less the same between 1980 and 1993, while employment declined substantially. From 1994 to 2001 production and employment remained more or less the same while both production and employment increased substantially from 2001 to 2005. In 2006 and 2007 there was a decline again.

dropped to 47 000 in 2003, but increased again to 69 000 in 2009. Similarly, employment in Other Mining dropped from 74 000 in 1980 to 31 000 in 2000. However, employment in this subsector increased again to 53 000 in 2009. In Diamond Mining employment dropped from 23 000 to 15 000 between 1980 and 2009. The CLAS Subsector (cement manufacturing excluded) employed 13 000 people in 1980. Employment in this subsector declined to just more than 7 000 in 2002, but it increased again to more than 12 000 in 2009. The only component of mining that has been growing

The steep productivity gains and the resultant job losses observed in the nineteen nineties were necessitated by a combination of factors among which South Africa's re-entry into the international arena and its concomitant exposure to international capital markets and international competition, changes in the demand for mining products and a decline in commodity prices. The productivity gains were made possible by various changes in the Sector, for example flattened management structures and improved management practices, restructuring of mining houses and improved work organisation. (See Sections 1.5.3 and 1.5.4.)

Figure 2.4 Employment and production trends: 1980 - 2007



Source: Department of Minerals and Energy

At this stage there is no statistical data available on the way in which these changes have impacted on the occupational and skills composition of labour demand in the Sector. However, one of the changes that took place is the central (at mine house or group level) provisioning of high level skills such as engineering, geological, metallurgical, accounting, legal and treasury skills. By centralising these skills mining companies are able to maximise their utilisation. Thus, although large-scale productivity gains in a sector are normally associated with an increase in the demand for professional and technical skills, the MMS has to some extent contained this growth in demand.<sup>51</sup>

In terms of the operational management of mines several changes have been taking place over the last decade. The traditional layers of management that previously existed in South African mines proved to be cumbersome and to impede communication. Many mines have now flattened their

<sup>51</sup> It must be noted that some of the mining companies have elected to register their centralized professional services in the Financial and Accounting Services Sector. This means that employment of professionals in the MMS is understated and that changes in the demand for professional services and skills shortages don't reflect in the MQA data (e.g. in the WSPs.)

hierarchical structures and have devolved a large amount of the responsibility for the day-to-day running of activities to the level of the work team. An important new position that emerged is that of the “crew leader”. This position is a combination of the qualified miner of the past and that of a team leader – the highest position that a Black worker could previously attain. This position requires a blasting certificate as well as a considerable amount of leadership skill.

The responsibilities of work teams have also increased. One of the characteristics of the work team is that team members have multiple tasks and are multi-skilled. This provides flexibility so that team members can utilise their time underground maximally: team members can monitor each other’s work and they can cope more easily with absences. Teams also have much more autonomy and decision-making responsibility in the execution of their tasks. In general these changes necessitate higher levels of literacy of workers as well as higher levels of production and business skills.<sup>52</sup>

Although the MMS traditionally demanded relatively low educational levels, this is changing quite rapidly. Companies nowadays require at least some education from new recruits.

### **2.3.2 Small-scale Mining**

Small-scale Mining has been growing over the last decade. The growth of this part of the Sector is to some extent the result of survivalist activities undertaken by people who don’t find employment in the larger and more formal part of the Sector. Although small-scale mining cannot become the panacea for the unemployment caused by the downscaling of large mines, it has the potential to absorb some of the labour shed by large mines and to give access to people previously excluded from the mining industry. The DME recognises the potential of the small-scale mining sector and has instituted various support mechanisms. It was estimated that by 2009/2010 approximately 35 projects supported by the Department would create 2 000 new employment opportunities.<sup>53</sup>

### **2.3.3 CLAS**

In Section 2.3.1 it was pointed out that the CLAS Subsector (cement manufacturing excluded) employed 13 000 people in 1980 and that employment in this subsector declined to an all-time low of just more than 7 000 in 2002. Over this 22-year period the Sector has experienced reduction in sales, fluctuations in the demand for its products and consequent rationalisation and closures of operations that resulted in these job losses. Employment in this subsector increased substantially between 2003 and 2009 – to the extent that by 2009 it almost reached the 1980 level again.

The viability of the CLAS Subsector is largely dependent on activities within the Construction and Building Industries. These Industries are in turn sensitive to several factors such as government policies and spending on infrastructure, the economic cycle, interest rates and investor confidence. In very recent times production increased again – largely helped by increased government spending on infrastructure development.

### **2.3.4 Diamond Processing and Jewellery Manufacturing**

Diamond Processing and Jewellery Manufacturing constitute only about 1 % of employment in the MMS. However, it is generally seen as a potential growth area. Currently South Africa supplies about 20 % of the world’s rough diamonds, but employs only 0,1 % of the diamond processing workers in the world. South Africa produces 18,2 % of the gold sold in the world, but manufactures only 0,001% of the world’s gold jewellery. During the nineteen nineties South Africa’s jewellery manufacturing grew on average by 5,4 % per year while jewellery manufacturing around the globe increased on average by 7,7 % per annum.<sup>54</sup>

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<sup>52</sup> University of Cape Town, op cit.

<sup>53</sup> Department of Minerals and Energy, South Africa’s Mineral Industry, 2007/2008.

<sup>54</sup> Human Sciences Research Council, A Skills Analysis of the Jewellery Manufacturing and Gemstone Processing Industries in South Africa, MQA and GTZ, Johannesburg, May 2003.

Several national interventions are underway to stimulate our jewellery manufacturing industry. One such intervention is the development of a directory of jewellery manufacturers in South Africa by the Department of Minerals and Energy.<sup>55</sup>

However, at this stage no significant growth has yet realised. In fact, participants in the HSRC study on this Subsector were of the opinion that major job losses occurred in the industry between 2001 and 2003 – as much as 30 %. This was confirmed by the participants in the SSP development workshop held with this Subsector in 2004. Unfortunately there is no statistical information available to verify this opinion. The participants in the SSP development workshop ascribed this downward trend to large-scale mechanisation of jewellery manufacturing (especially by foreign owned companies) and the lack of co-ordination between and support for the small independent jewellery manufacturers in the country.

### 2.3.5 Effect of the current economic recession

It is inevitable that the current global economic recession will impact on employment in the MMS. Although the full impact still remains to be seen, evidence of retrenchments and rising unemployment in mining communities were already evident at the time of writing this SSP update. A study commissioned by the MQA at the beginning of 2009 estimated that approximately 48 000 employees are vulnerable to job loss. According to this study the diamond sector has been dealing with downscaling since the middle of 2008, and it is still ongoing. Individuals and communities in the diamond mining areas are badly affected. The job losses in platinum are considerable, and in this sector retrenchments may not yet be completed. The study furthermore found that contractor employees are worst hit, being three times more likely to be retrenched than their directly-employed counterparts. The communities from which contractors come have been or will be adversely affected. This includes the labour sending areas in Mozambique. The provinces most affected thus far are North West, Limpopo, and the Northern Cape.<sup>56</sup>

## 2.4 VACANCIES

Skills shortages or the scarcity of specific skills normally manifest in vacancies or positions for which employers cannot find suitable candidates. Skills shortages are reported annually in organisations WSPs. The number of vacancies reported over the last four years can be seen in Table 2.5. In the 2009/2010 year there was a marked decline in the numbers – probably because of the downsizing of the sector in reaction to the current economic recession.

**Table 2.5 Long-term vacancies reported in the MMS 2006/2007 to 2009/2010**

Year	Vacancies*	Vacancies as % of total employment
2006/2007	12 422	2.6
2007/2008	7 424	1.5
2008/2009	8 301	1.4
2009/2010	1 234	0.3

\* Numbers based on vacancies reported in the WSPs of that particular year and weighted to the total MMS.

Source: WSPs/ATRs submitted to the MQA.

In the WSPs employers are also asked to provide their perspectives on the reasons why they cannot find suitable candidates for their vacancies. The majority of employers cited a combination of reasons for the scarcity of skills. One of the most important reasons is the unavailability of historically disadvantaged individuals – not necessarily a general shortage of the specific skills. However, some employers were of the opinion that the skills that they were looking for were

<sup>55</sup> Department of Minerals and Energy, South African Minerals Beneficiators – Diamond and Jewellery Manufacturers, [http://www.dme.gov.za/pdfs/minerals/D5\\_2007\\_beneficiation.pdf](http://www.dme.gov.za/pdfs/minerals/D5_2007_beneficiation.pdf), accessed 24 August 2009.

<sup>56</sup> Teba Development, Data Collection on Recent, Current & Planned Retrenchments in the Mining Sector. A report compiled for the Human Resource Development Committee of the Minerals & Mining Development Board and the Mining Qualifications Authority. June 2009.

generally in short supply, while others said that the geographical placement of their operations discouraged people to apply for positions in their organisations.

## **2.5 FUTURE EMPLOYMENT SCENARIOS**

As part of the original SSP, which was written in 2004 employment demand projections were made for the five-year period 2005 to 2010. These projections provided for a positive, a neutral and a negative scenario. In this SSP update the projections are made for the one-year period only – from 2010 to 2011.

### **2.5.1 Growth in employment**

As indicated in Chapter 1 the future of many mines hinge on a number of external factors such as international demand and commodity prices and the exchange rate of the rand as well as production factors such as the supply of electricity. The Gold Mining Subsector, which also faces the run-out of reserves that can be profitably mined, is specifically at risk and the downward trend in production and employment is likely to continue. However, this decline may be countered by growth in the other subsectors – especially the PGM Subsector which has now become the largest employer in the industry. The smaller components of the MMS, namely Small-scale Mining and Jewellery Manufacturing may grow slightly. However, these increases are small compared to the effect of changes in employment of the larger subsectors.

Over the period 2004 to 2009 employment has grown on average by 2% per year. A very positive scenario for 2010 to 2011 would be an increase of 2%, while a negative scenario would be a decrease of 2%.

### **2.5.2 Replacement demand**

The need to replace workers in the Sector stems from various factors. The first is the age distribution and possible retirement of workers. According to the age distribution of mine workers observed in the Labour Force Survey (LFS) of March 2009, approximately 1% of mine workers will reach retirement age (age 60) or will be beyond this age by 2010.<sup>57</sup>

Workers will also have to be replaced because of death and permanent disability. HIV/AIDS may play a significant role in this regard. In Chapter 1 it was indicated that HIV infection in this Sector is estimated to be around 30 %. It is furthermore estimated that 10 % of the people who are HIV positive are AIDS sick<sup>58</sup>. That means that approximately 15 000 workers (3 % of the workforce) are already incapacitated as a result of the infection. Mortality rates and replacement demand may soar over the next four years. However, this will depend on the effectiveness of preventative and treatment programmes. Replacement demand may also be increased by occupational diseases and work-related accidents.

Replacement demand is lastly the result of workers moving out of the Sector to find employment in other sectors of the economy. At this stage there are no sector-wide statistics available on labour turnover. However, some participants in the SSP preparation workshops were of the opinion that the Sector tends to loose high level skills and that the replacement demand is especially high in the professional and technician occupational categories. Other participants maintained that turnover tends to be high among HDSAs in these occupational categories but that it is relatively low among white professionals and technicians – a situation that hampers the transformation of the Sector.

### **2.5.3 Positions that need to be filled**

As the discussions above indicate, it is very difficult to project the future demand for labour in the MMS. However, despite all the uncertainties cited in the previous sections, rough estimates of the number of positions that will need to be filled under certain assumptions have been made. Three possible scenarios were constructed for this purpose. The three scenarios are:

- A positive scenario with relatively high growth in the Sector and relatively low mortality

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<sup>57</sup> Calculated from Statistics South Africa, Labour Force Survey, March 2009.

<sup>58</sup> Chamber of Mines, The Contribution of the Mining Industry, 1994 – 2004, [www/http.bullion.org.za](http://www.bullion.org.za). 15/04/2004.

- A neutral scenario in which it is assumed that the Sector will not grow or decline over the projection period and that mortality rates will be moderate
- A negative scenario that assumes that the Sector will contract and that mortality will be high.

The assumptions used in the construction of three possible scenarios are summarised in Table 2.6 below. Two variables have been changed in the construction of the scenarios, namely the *total employment growth* in the Sector and mortality rates. Mortality rates were assumed to increase as educational levels decrease. They are also higher for workers who work underground or perform physical work in mining operations and who are therefore more exposed to accidents and to occupational diseases.<sup>59</sup>

Vacancy rates in the various occupational categories were assumed to be as reported in the WSPs submitted in 2007/2008. The numbers of employees who will retire in the period were calculated on the basis of the ages of workers in the Mining Sector reported in the LFS of June 2009.

The results of the projections are summarised in Table 2.7. Under the positive scenario the total number of positions that will have to be filled over the one-year period is 25 850. Under the neutral scenario, there will be a need for 16 200 new entrants into the sector in order to replace workers who will retire or who may die. Under the negative scenario there will be a need for 7 730 new workers.

Overall the projections should be regarded as relatively conservative. They completely ignore the possibility that people may leave the Sector to find employment elsewhere – a situation which is believed to impact on the skilled occupations such as Professionals and Technicians.

At this stage there is no information available on the specific occupations that make up each occupational category (e.g. the number of engineers in the specific disciplines, accountants etc that make up the category “Professionals”). It is therefore not possible to give more detail with regard to the number of people that will be needed over the planning period.

**Table 2.6 Assumptions used in the construction of employment scenarios**

Assumptions	Occupational category	Scenario		
		Positive	Neutral	Negative
Total growth in employment		2% pa	0% pa	-2% pa
Mortality over one-year period (Higher mortality rates assumed for occupations with lower educational levels who have higher exposure to HIV infections, who are more exposed to work-related accidents and to occupational diseases)	Legislators, Senior Officials, Managers and Owner Managers	3%	4%	5%
	Professionals	3%	4%	5%
	Technicians and Associated Professionals	3%	4%	5%
	Clerks	3%	4%	5%
	Service Workers, Shop and Market Sales Workers	4%	5%	6%
	Agricultural and Fishery Workers	4%	5%	6%
	Craft and Related Trade Workers	5%	6%	7%
	Plant and Machine Operators and Assemblers	6%	8%	10%
	Labourers and Related Workers	6%	8%	10%
Vacancies	Percentage reported in WSPs submitted for year 8			
Employees who will retire	Percentage employees in sector who will reach retirement age in five-year period as			

<sup>59</sup> There are no mortality rates available for the different occupational groups. However, based on figures reported by Statistics South Africa approximately 1.1% of the people of working age died in 2002. (Statistics South Africa, Mortality and Causes of Death in South Africa 1997 to 2003, Statistical Release PO309.3, February 2005.) The mortality assumptions were guesstimates based on this figure.



	reported LFS of June 2009.
Movement out of the sector	No movement out of the sector assumed

**Table 2.7 Projections of the total number of positions that will have to be filled 2010 - 2011**

	Positive Scenario	Neutral Scenario	Negative Scenario
Legislators, Senior Officials, Managers and Owner Managers	380	240	100
Professionals	1 440	1 210	980
Technicians and Associated Professionals	2 160	1 600	1 030
Clerks	880	450	20
Service Workers, Shop and Market Sales Workers	390	210	60
Agricultural and Fishery Workers	140	100	70
Craft and Related Trade Workers	2 690	1 680	820
Plant and Machine Operators and Assemblers	9 440	5 800	2 680
Labourers and Related Workers	8 340	4 910	1 960
<b>Total</b>	<b>25 850</b>	<b>16 200</b>	<b>7 730</b>

## 2.6 CRITICAL SKILLS

The term "*critical skills*" refers to particular skills required for a particular occupation, or the qualitative deficiencies that may exist or develop in the skills apparatus of the existing workforce. Critical skills needs may exist because of insufficient education and training people have before they enter the labour market or they may develop as a result of external factors such as changes in legislation, changes in the business environment, or technological changes.

In the WSPs submitted for the 2007/2008 financial year employers were required to specify the critical skills needs of their workforce. The critical skills needs and the numbers of people who needed training in each area can be seen in Table 2.8. The area in which the largest number of people (12 412) needed training is Mining skills (including blasting certificate and rock breaking). Most of the critical skills needs listed in this area refer to the legislative requirements with which underground mine workers have to comply and are linked to safety requirements in the mines. These skills needs are addressed through skills programmes – especially those that lead to the Competent Person A and B designations. The second largest need is for ABET and life skills.<sup>60</sup>

**Table 2.8 Skills priorities identified by employers**

Critical skills	Number of people who needed training
Mining skills (including blasting certificate and rock breaking)	12 417
Adult basic education and training (ABET) and life skills	6 304
Management, leadership and supervisory skills	3 762
Artisan skills/learnerships	1 377
Occupational health and safety and environmental awareness	1 194
Operator skills.	1 090
Financial management skills	1 075
Technical skills	808
Computer skills (at different levels)	690
Cutting	321
Problem solving	307
Communication and interpersonal skills	238
Machine maintenance	201

<sup>60</sup> EE Research Focus, Analysis of Workplace Skills Plans and Annual Training Reports Year 8.

Legal compliance and knowledge of legislation	166
Business skills and the development of a commercial focus	165
Team building	156
Human resources development skills	154
Assessor skills	148
Driving skills	132
Project management skills	105
Human resources management and industrial relations	103
Management of diversity and people skills	86
Financial management	56
Engineering skills	53
CAD Design	26
Jewellery manufacturing	26
Marketing skills and customer service orientation	26
Other technical skills	22
Accounting and bookkeeping	14
Surveying	13

Only critical skills areas in which more than 10 people needed training were included in this table.

Source: EE Research Focus, Analysis of Workplace Skills Plans and Annual Training Reports Year 8.

The study undertaken by the MQA into the skills needs of the small-scale mining operations shed more light on the critical skills needs of this component of the Sector. The study revealed that small-scale miners tend to have different skills needs from those of bigger mines. Very small and informal miners and those at the margin identified the following critical skills:

- business skills, i.e. drawing of business plans, running a business;
- skills in obtaining finance and accessing product markets;
- skills in operating within the legal framework, especially the case for the informal miners; and
- the ability to take advantage of and benefiting from the current black economic empowerment strategy.

The formal, better-organised small-scale miners identified a whole host of skills that are and would continue to be in demand in the near future. These skills relate to different business areas and commodities that are mined and are summarised below.<sup>61</sup>

Core business area	Skills	Commodity
<b>Mining</b>	Transport	Sand stone, diamond, service providers and contractors, quarry, kaolin mining, copper recovery
	Environment	
	Surveying	
	Ventilation	
	Ground stability	
	Mine planning	
	Safety	
	Statutory requirements	
	Sampling	
<b>Financial management</b>	Recording income and expenditure	Marine diamond, salt mining, diamond mining
	Financial planning	
	Developing budgets	
	Stock control	
<b>Human resources management</b>	Monitoring and motivating staff	Copper recovery, sand stone mining, diamond mining
	Managing discipline	
	Managing grievances	

<sup>61</sup> Human Sciences Research Council, Skills and Training Analysis in the Small-Scale Mining and Minerals Sub-Sector, MQA, Johannesburg, 2004.

Core business area	Skills	Commodity
<b>Marketing</b>	Managing remuneration	Salt mining, diamond mining, copper recovery
	Regulations compliance	
	Product promotion Market assessment	
<b>Environment</b>	Developing EMP	Copper recovery, kaolin mining, sand stone mining, diamond mining, marine diamond mining
	Managing EMP	
	Statutory regulations	
	Rehabilitating environment	
	Awareness training	
<b>Literacy and numeracy (ABET)</b>	Developing training strategy	Salt mining, gold ore mining
	Implementing training	
	Monitoring results	
	Functional literacy	
<b>Geology</b>	Sampling	Sand stone mining, kaolin mining, gold ore mining, and copper recovery.
	Chemical analyst	
	Ore resource delineation	
	Mapping	
	Grade control	

## 2.7 CONCLUSIONS

This Chapter started with a description of current employment in the MMS. The occupational and educational profile of workers reflects the nature of work in the Sector. This Sector is relatively labour intensive and employs large numbers of workers with low educational levels. The majority of its workforce is Black men. However, in the Managerial, Professional and Technician levels white men still form a very large portion of the workforce. In Chapter 1 the Sector's commitment to the targets set out in the Mining Charter has been emphasised. The current profile of the Sector highlights the fact that future demand for labour will of necessity be racially biased. That means that the demand for labour should not only be seen in terms of total numbers, but in terms of the numbers of Black people needed to attain employment equity targets. Similarly, the Sector needs to look constructively and creatively at the employment of larger numbers of women.

The MMS experienced two decades of contraction up to 2001. Over the period 2002 to 2008 most of the subsectors (with the exception of Gold Mining) recovered and increased employment. However, job losses started occurring again in 2008 and it is estimated that almost 50 000 jobs may be at risk again. Uncertainty about future employment stem from factors identified in Chapter 1, namely the availability (or run out) of mineral resources coupled with changes in commodity markets, commodity prices and the exchange rate. The electricity supply problems that started to manifest in 2008 as well as the current global economic crisis also have a serious impact on the Sector. Therefore, the possible decline of the Sector (or parts thereof) is a reality that needs to be faced and that needs to be addressed in the skills development strategies of the Sector. In the Mining Charter the MMS has already acknowledged its responsibility to train people for employment beyond the mining industry.

The effect of deaths and permanent incapacity as a result of illness and injury on the demand for labour can be quite dramatic. The demand scenarios presented in this chapter show that, if factors such as HIV/AIDS are not contained, the Sector may need to employ up to 10 000 new workers per year to replace current workers – even if the Sector contracts by 2% per year.

The critical skills identified in this chapter clearly reflect the effect of health and safety regulations on the Sector. They also reflect other issues highlighted in Chapter 1, for example the need for ABET and HIV/AIDS awareness.

## **3 THE SUPPLY OF SKILLS TO THE SECTOR**

### **3.1 INTRODUCTION**

The main aim of this chapter is to describe the supply of skills to the Mining and Minerals Sector. The supply of skills is viewed from different perspectives: First of all, it necessary to consider the current supply or the stock of skills available to the Sector. This includes the people currently employed as well as those who are unemployed and available for work in the Sector. As a result of the cyclical nature of employment in the MMS, the number of unemployed people who were previously employed in mining and who have some of the skills necessary for work in the MMS also change over time. This issue is explored in this chapter.

Secondly, the chapter also looks at the flow of new skills into the Sector. Of particular importance is the education and training of Professionals, Technicians and Artisans. In many instances the training of these occupational groups takes place before the learners take up permanent employment in the Sector. It is therefore necessary to ensure that bursary schemes and other incentive schemes are sufficient to provide an adequate flow of learners through the educational system and into the Sector. The education and training of these occupational groups also take several years and it is therefore necessary to take a long-term view with regard to the development of their skills.

A third aspect of skills supply that is dealt with in this chapter is the development of skills in the work environment. The profile of the Sector sketched in the previous two chapters clearly indicates the predominance of the occupational categories Plant and Machine Operators and Assemblers and Labourers and Related Workers in the Sector. These categories of workers are typically trained for their specific positions after entering into employment contracts. Their training thus becomes the responsibility employers. The same applies to Clerks and Sales Workers. At the same time all categories of workers need to stay abreast with changes in the work environment and with health and safety regulations. Consequently, in-service training is a large and important aspect of the supply of skills to the MMS.

### **3.2 CURRENT SUPPLY**

#### **3.2.1 Current employment**

The stock of skills available to the Sector consists of the people currently employed as well as those that are unemployed but available for work. The previous chapters gave an overview of the people currently employed in the MMS. Most of the workers have relatively low educational levels. It is estimated that 24 % have no formal schooling, 38 % have some formal schooling in the General Education and Training (GET) band, 31 % have qualified in the Further Education and Training (FET) band and only 8 % have higher education qualifications.

The changed organisation structures and nature of work referred to in Chapter 2 have brought about the need for a more educated workforce. The educational composition of the workforce can be changed only through new recruitment and by engaging current employees in ABET programmes.

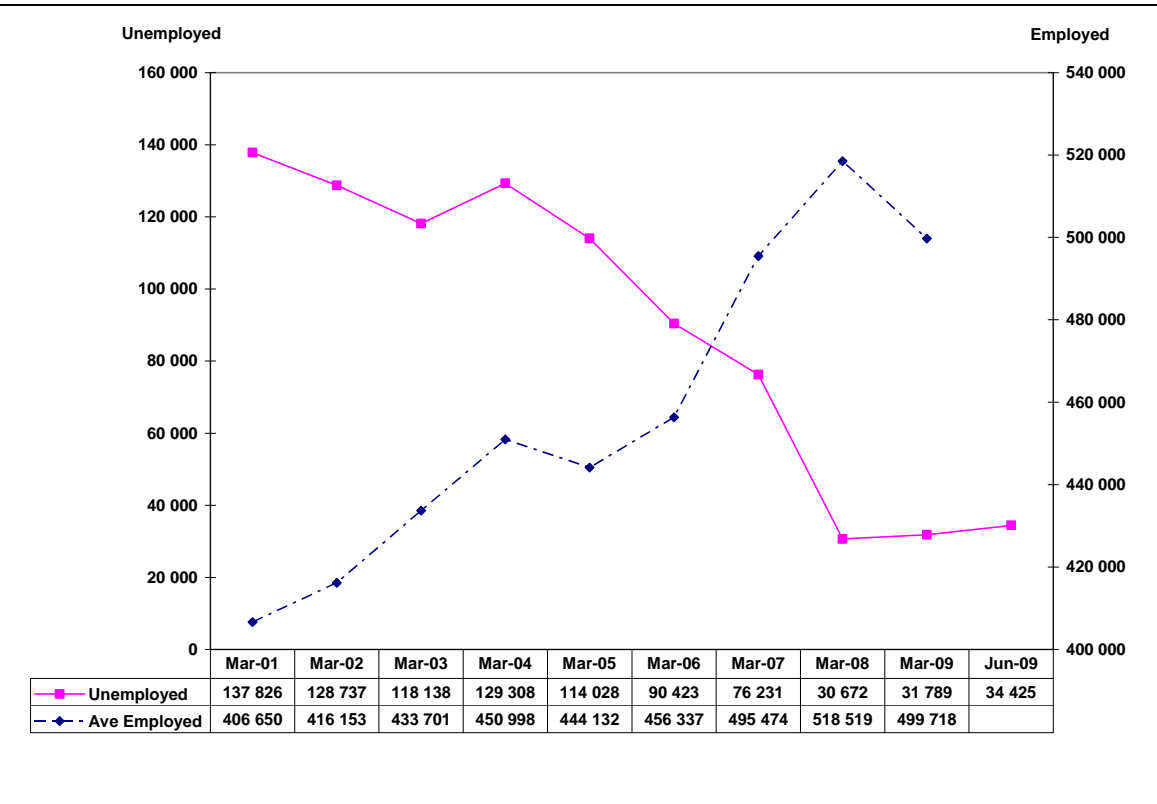
Another aspect of the educational profile of the current workforce that needs to be mentioned is the fact that many workers have attained certain skills and literacy levels that are not reflected in their educational qualifications. For this reason the recognition of prior learning is very important – especially in times when mines are reducing workers and workers have to find employment elsewhere.

#### **3.2.2 Unemployment**

The decline in employment that took place over the last two decades created excess capacity in the labour market leaving large numbers of previous employees of the MMS unemployed. The March

2001 Labour Force Survey recorded almost 140 000 unemployed mineworkers.<sup>62</sup> As employment increased the number of unemployed mine workers decreased and in March 2008 the LFS reported only 30 000 unemployed mine workers. This figure increased slightly to just more than 34 000 in June 2009, despite the fact that employment in the mines decreased by approximately 20 000 towards the end of 2008 and in the first quarter of 2009 (Figure 3-1). One of the possible reasons why the reduction in employment is not directly reflected in the unemployment statistics is that mines tend to first reduce the number of contractors that they employ, many of whom are foreign nationals, who may return to their countries of origin after termination of their contracts.

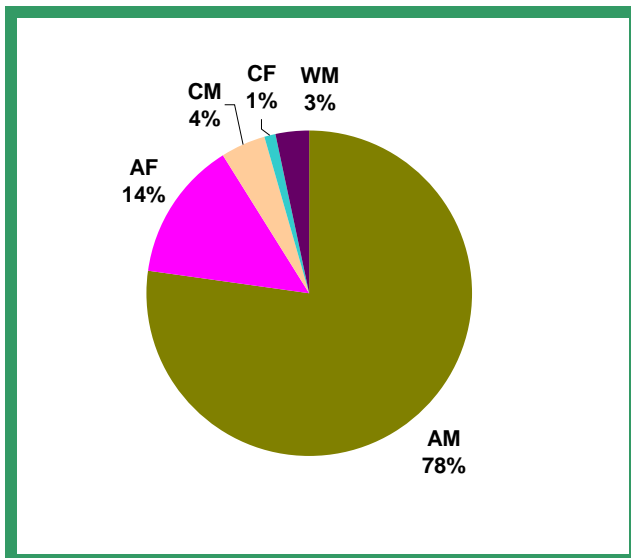
**Figure 3-1 Unemployed Mine Workers 2001 to 2009**



Sources: Unemployment of mine workers calculated from StatsSA, LFSs of Feb/March 2001 to 2008 and the Quarterly LFSs of March and June 2009  
 Employment figures in Mining provided by the DME – average number of workers employed per year. The March 2009 figure is the average number of workers employed in the first three months of 2009.

<sup>62</sup> The term “unemployed mineworker” refers to a person who is currently unemployed but whose previous work was in the Mining Industry. The expanded definition of unemployment was used to determine unemployment figures among workers previously employed in this Industry. This means that people who were not working and who were available for work but who were not actively looking for employment in the 4 weeks preceding the survey (i.e. discouraged work seekers) were included in the definition.

**Figure 3-2 Population group and gender of unemployed mine workers**



Source: Calculated from the LFS, June 2009

According to the Quarterly LFS of June 2009 the majority of unemployed mineworkers (78%) are African men. African women constitute 14% of the unemployed, coloured men 4%, coloured women 1% and white men 3%. The LFS did not find any unemployed Indians or white women who previously worked in the Mining Industry.

The provincial distribution of unemployed mineworkers over the period 2001 to 2009 can be seen in Table 3.2. In the first four years a large percentage of unemployed mine workers were found in the Eastern Cape. However, it seems as if these workers were either re-absorbed in the industry from 2006 onwards or that they found employment elsewhere. The other province that is mostly affected by the unemployment of mine workers in North West. In March 2009 32% of the unemployed mine workers recorded by the

LFS resided in North West. In June 2009 this figure had increased to 41%.

**Table 3-1 Provincial distribution of unemployed mineworkers**

Province	March 2001	March 2002	March 2003	March 2004	March 2005	March 2006	March 2007	March 2008	March 2009	June 2009
<b>Percentage of unemployed mine workers</b>										
Eastern Cape	32	23	32	25	27	14	24	2	6	6
Free State	12	11	8	8	14	12	7	4	17	10
Gauteng	7	11	11	7	10	16	8	13	11	4
KwaZulu-Natal	8	12	5	14	5	7	9	0	0	8
Limpopo	8	8	11	7	12	12	10	10	10	10
Mpumalanga	7	9	7	9	8	8	7	25	17	12
North West	23	21	23	28	19	24	27	35	32	41
Northern Cape	2	3	2	3	4	5	5	11	8	7
Western Cape	1	2	2	0	1	2	3	1	0	2
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Sources: Calculated from StatsSA, LFS March 2001 to 2008 and the Quarterly LFS of March 2009 and June 2009

### 3.3 THE SUPPLY OF NEW SKILLS TO THE SECTOR

#### 3.3.1 Higher education and training

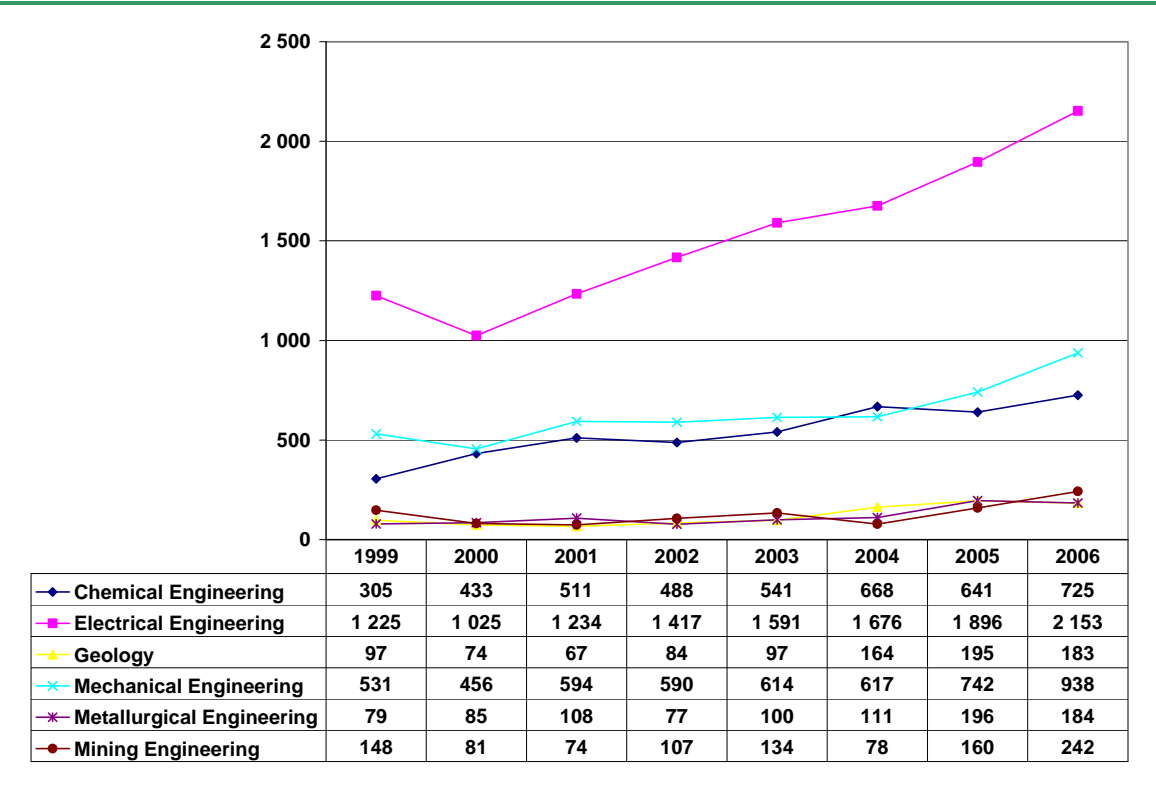
The fields of study relevant to this Sector have been identified in Chapter 2 as Mining Engineering, Metallurgy, Chemical Engineering, Geology, Electrical Engineering, Mechanical Engineering, Analytical Chemistry, Environmental Management, Mine Surveying and Jewellery Design and Manufacturing.

Mining Engineering is offered at the Universities of the Witwatersrand, Pretoria and Johannesburg and UNISA. Mine Surveying is offered at the University of Johannesburg. Jewellery design and manufacturing are offered at the University of Stellenbosch and at four universities of technology. The other fields of study are each offered at a number of institutions. The student output in entry-

level engineering qualifications (three-year diplomas, three-year and four-year first degrees) over the period 1999 to 2006 can be seen in Figure 3.3.

Output increased substantially in all fields of study, with the highest average annual increase (13%) in chemical engineering. This is followed by metallurgical engineering (8%), electrical engineering (7%) and geology (7%). However, these increases were not sufficient to alleviate the overall shortages experienced in these fields in the country. The MMS competes with the rest of the economy for many of these skills, for example Mechanical and Electrical Engineering. It is only Mining Engineering that is specific to the MMS.

**Figure 3-3 Total number of entry-level qualifications awarded in the relevant fields of study 1999 to 2006.**

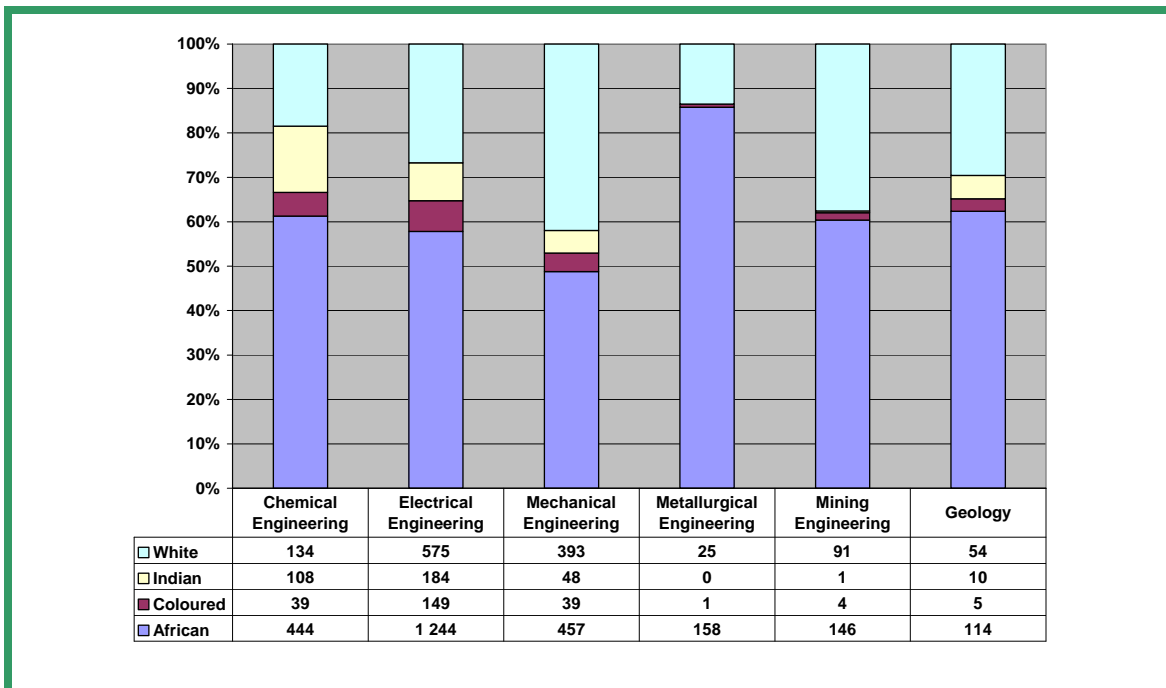


Source: Department of Education, HEMIS, Table 2.13, 1999 to 2006

Another matter of concern to the MMS, is the racial and gender representivity among new entrants and the transformation of some of the occupational fields. Figure 3-4 illustrates the population group composition of the 2006 graduates who qualified from universities and universities of technology in the relevant fields. In all fields of study the majority of graduates were black (African, Coloured and Indian). The field with the lowest black representation was mechanical engineering with just less than 60% black graduates.

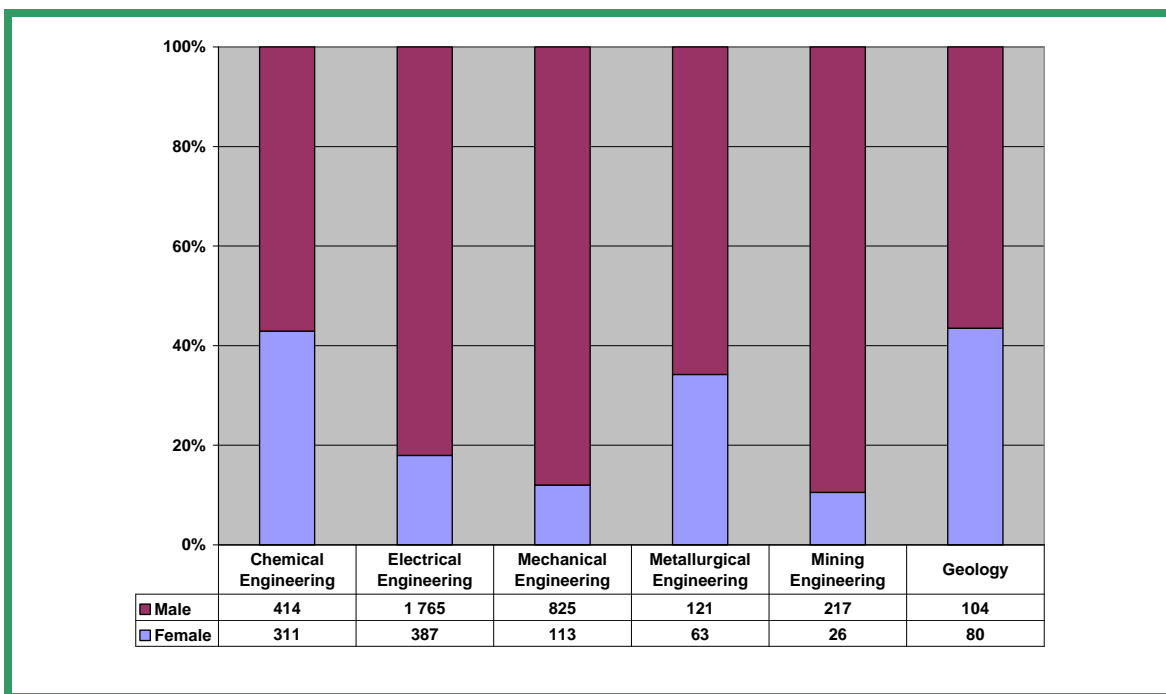
Figure 3-5 shows the gender distribution of the 2006 graduates. In some of the fields of study women formed a substantial percentage: In Chemical Engineering and Geology women formed 43% of the total and in Metallurgical Engineering they formed 34%. Substantial numbers of women are also starting to qualify in electrical and mechanical engineering.

Figure 3-4 Population group distribution of graduates\* according to field of study : 2006



\*Graduates include people who qualified with national diplomas, three and four-year first degrees  
 Source: calculated from Department of Education, HEMIS, Table 2.13, 2006

Figure 3-5 Gender distribution of graduates\* according to field of study: 2006



\*Graduates include people who qualified with national diplomas, three and four-year first degrees  
 Source: calculated from Department of Education, HEMIS, Table 2.13, 2006



Organisations in the MMS strongly support higher education. In 2006/2007 the organisations that submitted ATRs to the MQA provided 1 211 bursaries to people who were not in their employ. The largest numbers of bursaries were given for study in the fields of Mining Engineering (229 bursaries) and Mechanical Engineering (166 bursaries). Other fields that were also supported with relatively large numbers of bursaries are Electrical Engineering (135 bursaries) and Metallurgy (100 bursaries).<sup>63</sup>

Employers also provide study assistance, in the form of bursaries and loans, to employees who want to improve their qualifications. The organisations that submitted ATRs for 2006/2007 awarded 5 196 bursaries to their own employees. Relatively large numbers of bursaries were awarded to employees to study in the field of engineering – electrical engineering (637 bursaries), mining engineering (479 bursaries), and mechanical engineering (421 bursaries). Another 625 bursaries were used for studies in human resources and 517 in the field of accounting or finances.<sup>64</sup>

The MQA also has a bursary scheme for tertiary studies. The bursaries awarded over the period 2002 to 2009 in the respective fields of study can be seen in Table 3.4. The figures refer to the number of awards made per year for studies in that particular year. The total number of awards was 1 346. The bursary scheme was discontinued in 2006 and 2007 but re-introduced in 2008.

**Table 3-2 Bursaries awarded by the MQA 2002 to 2009**

Discipline	2002	2003	2004	2005	2006	2008	2009	Total
Analytical Chemistry	9	3	9	43	1	3	1	69
Geology and Mining Geology	15	6	27	51	4	140	8	251
Electrical Engineering	12	10	24	77		91	5	219
Mechanical Engineering	18	14	16	60	1	63	14	186
Metallurgical Engineering							85	85
Metallurgy	10	19	13	23	1	50		116
Jewellery Design	32	6	15	11		28	16	108
Electro Mechanical	0	1	2	7				10
Mining Engineering	24	25	34	19		38	109	249
Industrial Engineering	0	0	0	14				14
Mine Surveying	0	0	1	1			6	8
Environmental Engineering	0	0	1	11				12
Engineering Related Design						16		16
Other	0	1	1			1		3
<b>Total</b>	<b>120</b>	<b>85</b>	<b>143</b>	<b>317</b>	<b>7</b>	<b>430</b>	<b>244</b>	<b>1 346</b>

Source: Statistics from 2002 to 2005 provided by Career Wise, Institution contracted to administer the MQA's Bursary Scheme at that time and from 2006 onwards the MQA data system.

### 3.3.2 Learnerships

Learnerships is an important mechanism for the training of new entrants to the MMS. At the time of writing this SSP update, the MQA had more than 90 learnerships registered with the Department of Labour. These learnerships spanned NQF levels 1 to 4.

In the 2006/2007 financial year the MQA awarded 1 365 qualifications through learnerships and in the 2007/2008 year 4 284.<sup>65</sup>

<sup>63</sup> EE Research Focus, Analysis of WSPs and ATRs Year 8, 2009

<sup>64</sup> EE Research Focus, Ibid, 2009.

<sup>65</sup> Information obtained from the MQA's data system.

## **3.4 TRAINING AND DEVELOPMENT OF THE CURRENT WORKFORCE**

### **3.4.1 Qualifications developed by the MQA**

By August 2009 the MQA had 106 registered qualifications with SAQA. These qualifications range from NQF level 1 to level 4. The qualifications, unit standards, learnerships and skills programmes developed by the MQA are specifically developed to support regulatory requirements. These requirements emanate from the Regulations of the Mine Health and Safety Act that prescribes the competency requirements of people in certain positions in the Mining Industry.

### **3.4.2 Management and supervisory development**

Managers and supervisors in the MMS need a combination of industry-specific knowledge and understanding, technical knowledge of and skills in the functional area to be managed as well as supervisory and management skills. In most instances managers and supervisors are drawn from the workforce (who already have the technical and functional knowledge) and are developed through combinations of formal training programmes such as MBA programmes, short courses, and in-service training.

### **3.4.3 Skills programmes**

A skills programme is a structured training programme that comprises an agreed cluster of unit standards (credits towards a registered qualification.) It goes further than a qualification in that the design of the programme may specify the sequence in which the unit standards must be achieved and the practical (workplace) experience that forms part of the programme. A skills programme, when completed, may constitute credit towards a NQF registered qualification. This means that some or all of the unit standards in the skills programme form part of the list of unit standards comprising a qualification. Credits obtained during the course of a skills programme will thus constitute credits towards the qualification.<sup>66</sup>

Skills programmes form an important part of the training and development of the occupational groups Plant and Machine Operators and Assemblers and Labourers and Related Workers. By August 2009 the MQA had registered 111 skills programmes – many of which provide learning towards the competencies specified in the mine health and safety regulations. In 2006/2007 the MQA awarded 38 196 skills certificates and in 2007/2008 41 639.

### **3.4.4 ABET**

The need for ABET in the MMS has been stated in the previous chapters. The educational profile portrayed in Section 2.2.3 indicates that more than half of the workers in the Sector are at qualification levels lower than ABET Level 4. These workers can benefit from ABET programmes.

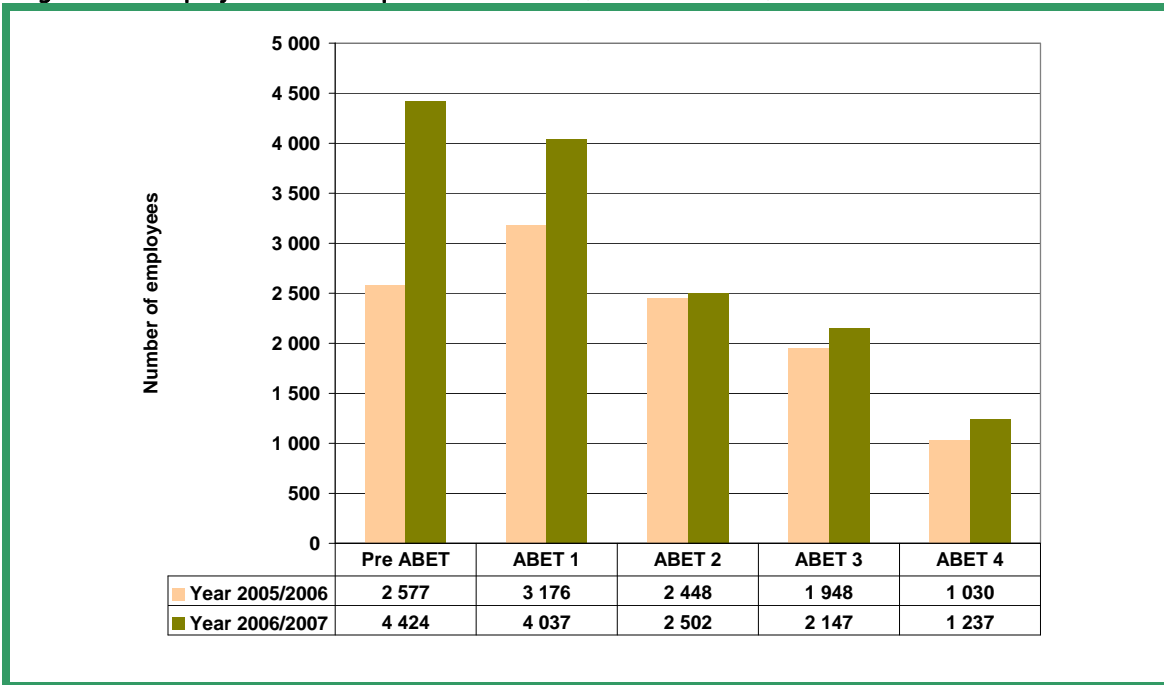
Employers that submitted ATRs in respect of year 2006/2007 reported that more than 14 000 workers had completed ABET programmes (at different levels) in that year. These workers constituted 6.7% of all the workers with an educational level below NQF Level 1 (ABET Level 4). The workers who had completed ABET in the previous year constituted 5.6% of those with an educational level below NQF Level 1.

Most of the 2006/2007 ABET learners (91.4%) completed ABET levels 1 to 3. Only 6.6% completed ABET Level 4. Figure 3-6 shows the numbers of ABET learners who had completed programmes in 2005/2006 and in 2006/2007. At pre-ABET level and at ABET Level 1 there was a substantial increase in the numbers of learners. There were also slight increases at ABET levels 2 to 4.

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<sup>66</sup> <http://www.mqa.org.za/division.asp?contID=54&mdivID=11>

**Figure 3-6 Employees who completed ABET: 2005/2006 and 2006/2007**



Source: EE Research Focus, Analysis of WSPs and ATRs Year 8, 2009

2008-2009 information provided in Annexure F.

### 3.4.5 In-service training

In-service training forms another very important component of skills development in the MMS. In-service training spans a wide array of skills areas and skills needs and take place through a variety of training methods that range from structured courses offered in classroom-type environments to informal on-the-job training. In-service training is generally not linked to formal qualifications.

The percentage of payroll spent on training is a good measure of the extent of employers' involvement in training. The combined training budget of all the organisations that submitted mandatory grant applications in Year 8 amounted to R 1.7 billion. This is 3.8% of their estimated payroll. In Year 7 the budgeted amount for training was 3.6% of payroll.

The range of areas in which organisations in the MMS train their employees is reflected in the WSPs and ATRs submitted to the MQA. In each WSP, employers are asked to identify the five most important strategic skills development priorities for their organisations. These priorities are then used when they report on the training planned for and provided in the particular year. Training priorities in the MMS include the following broad areas: technical skills in mining, technical skills in jewellery manufacturing, management, leadership and supervisory skills, health, safety and environmental awareness and skills, social skills, computer skills, business skills, administrative skills and human resources management and development. If the total number of people trained in each subcategory is taken as an indicator of the importance of a skills priority area, then health and safety and environmental awareness is the most important priority in the Sector. This is followed by technical skills in mining and management, leadership and supervisory skills.

## 3.5 CONCLUSIONS

The downsizing that occurred in the MMS up to 2001 left more than a hundred thousand workers unemployed. However, most of them were re-absorbed in the industry and by 2009 the number of unemployed mine workers had dropped to approximately 30 000. Although retrenchments started

to occur again in the first two quarters of 2009, the effect has not worked through to the unemployment statistics and higher levels of surplus labour can be expected in the next year or two.

The number of new graduates in the fields of study relevant to the MMS has grown substantially from 1999 to 2006. The transformation of the higher education sector is also visible in the educational statistics. By 2006 the majority of graduates in all the relevant fields were black. Substantial numbers of women are also graduating in fields of study that historically have been male dominated. However, it will take time for this transformation to have a significant effect on the pool of professionals available in the labour market.

The skills development provision of the MMS is comprehensive and covers many aspects. The MQA has registered a wide spectrum of learnerships and the uptake of these learnerships is substantial. Another important training offering is skills programmes. These programmes provide workers (especially those at lower educational levels) with the opportunity to obtain recognition for some of the skills attained in the work environment. Skills programmes are also important vehicles for training in terms of health and safety requirements.

## **4 SCARCE AND CRITICAL SKILLS**

### **4.1 INTRODUCTION**

The skills needs in the MMS emanate from the factors that impact on the MMS as described in Chapter 1, the labour demand and supply analysis presented in Chapters 2 and 3, the skills development needs and responsibilities that originate from the Mining Charter and the National Skills Development Strategy, the Mining Sector's obligations in respect of the agreements reached at the Growth and Development Summit and its obligations in respect of the health and safety legislation that control the work environment in the Sector.

This chapter starts with a summary and interpretation of the supply and demand analysis presented in the previous two chapters. It then continues with an outline of the skills development priorities of the Sector. These priorities are first of all expressed in terms of the scarce skills of the sector and secondly in terms of the critical skills identified. Other priorities that are not directly linked to scarce or critical skills are also highlighted.

The chapter lastly identifies a few institutional and other constraints that have an effect on skills needs and that impact on skills development in the Sector.

In this chapter the OFO is used in the discussion of occupations and the identification of specific scarce and critical skills. (Please refer to the section on process and methodology (page vii) for an explanation of the use of occupational classification systems in this SSP update.)

### **4.2 EVALUATION OF DEMAND AND SUPPLY**

The overall situation with regard to the demand for and supply of skills in the specific occupational categories is summarised in Table 4.1. The table summarises the evidence of imbalances in the current labour market, the special factors that influence the demand for skills and the main sources of education and training. The table also contains comments on the overall responsiveness of the education and training system to the demand for skills and the problems that still remain.

**Table 4-1 Summary of demand for and supply of skills in the Sector**

Occupational Group	Imbalances in the labour market	Special factors influencing demand	Main sources of education and training	Responsiveness of supply to demand	Problems that still remain
Managers	Small number of scarce skills identified by employers <ul style="list-style-type: none"> <li>▪ Production/Operations Managers</li> <li>▪ Mine overseers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Replacement due to retirement</li> <li>▪ Racial profile has changed, but need for transformation may continue at top management levels</li> </ul>	<ul style="list-style-type: none"> <li>▪ Tertiary education and MBA courses</li> <li>▪ Management development courses</li> <li>▪ Special executive training programmes</li> </ul>	<ul style="list-style-type: none"> <li>▪ Training opportunities sufficient</li> </ul>	<ul style="list-style-type: none"> <li>▪ Availability of HDSAs with required skills combinations</li> </ul>
Professionals	Indications of shortages (Long-term vacancies and low unemployment) Vacancies for <ul style="list-style-type: none"> <li>▪ Engineers: Electrical</li> <li>▪ Engineers: Mechanical</li> <li>▪ Engineers: Mining</li> <li>▪ Geologists</li> <li>▪ Metallurgists</li> <li>▪ Surveyors</li> </ul>	<ul style="list-style-type: none"> <li>▪ Effective utilisation of professionals at mining house level may contain the growth in demand</li> <li>▪ Need to change racial profile</li> <li>▪ Movement out of Sector</li> </ul>	<ul style="list-style-type: none"> <li>▪ Higher education institutions</li> <li>▪ FET institutions for Jewellery Manufacturing</li> </ul>	<ul style="list-style-type: none"> <li>▪ Total number of graduates insufficient for growing economy</li> <li>▪ Racial profile of new graduates is changing rapidly but it will take time to change the pool of professionals available to the Sector</li> <li>▪ Relatively few women available in professional categories relevant to the Sector, but more women graduating in relevant fields</li> <li>▪ Existing employees and new entrants supported by bursaries to obtain qualifications</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mathematics and science at school level</li> <li>▪ General shortages across the economy</li> <li>▪ Shortages may be reduced in short term by economic recession, but may increase again if economy starts growing</li> </ul>
Technicians and Trades Workers	Indications of shortages (Long-term vacancies and low unemployment) Vacancies for <ul style="list-style-type: none"> <li>▪ Mining Technicians</li> <li>▪ Electrical Engineering Technicians</li> <li>▪ Mine Surveyors</li> <li>▪ Draughtspersons</li> <li>▪ Diesel Mechanics</li> <li>▪ Electricians</li> <li>▪ Fitters</li> <li>▪ Fitters and Turners</li> <li>▪ Boilermakers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Need to change racial profile</li> <li>▪ Absolute scarcity experienced in labour market</li> </ul>	<ul style="list-style-type: none"> <li>▪ Higher education institutions</li> <li>▪ FET institutions for Jewellery Manufacturing</li> <li>▪ Apprenticeships</li> <li>▪ Learnerships</li> </ul>	<ul style="list-style-type: none"> <li>▪ Total number of graduates at universities of technology has grown substantially</li> <li>▪ Racial profile is changing</li> <li>▪ More women are graduating in the relevant fields</li> <li>▪ Existing employees and new entrants supported by bursaries to obtain</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mathematics and science at school level</li> <li>▪ General shortages across the economy</li> <li>▪ Economic recession may influence employers' ability to take on new learners on learnerships – may have a long-term effect on supply</li> <li>▪ Shortages may be reduced in short term by economic</li> </ul>

Occupational Group	Imbalances in the labour market	Special factors influencing demand	Main sources of education and training	Responsiveness of supply to demand	Problems that still remain
	<ul style="list-style-type: none"> <li>▪ Riggers</li> <li>▪ Millwrights</li> <li>▪ Welders</li> <li>▪ Jewellers</li> </ul>			<ul style="list-style-type: none"> <li>▪ qualifications</li> <li>▪ Long training periods inhibit responsiveness</li> </ul>	<ul style="list-style-type: none"> <li>▪ recession, but may increase again if economy starts growing</li> </ul>
Clerical and Administrative Workers	Over supply of people with matric		<ul style="list-style-type: none"> <li>▪ In-service training</li> </ul>		
Sales Workers	Over supply of people with matric		<ul style="list-style-type: none"> <li>▪ In-service training</li> </ul>		
Machinery Operators and Drivers	<ul style="list-style-type: none"> <li>▪ Drillers</li> <li>▪ Miners</li> <li>▪ Earthmoving Plant Operators</li> <li>▪ Loader Operators</li> </ul>	<ul style="list-style-type: none"> <li>▪ High replacement demand due to mortality (occupational diseases, accidents, HIV/AIDS)</li> <li>▪ Higher levels of literacy required</li> </ul>	<ul style="list-style-type: none"> <li>▪ Learnerships</li> <li>▪ Skills programmes</li> <li>▪ In-service training</li> <li>▪ ABET programmes</li> </ul>	<ul style="list-style-type: none"> <li>▪ Skills programmes very suitable – address technical skills, workplace realities (little time for training) and health and safety requirements.</li> <li>▪ Large-scale uptake of skills programmes</li> <li>▪ Large-scale involvement of Sector in ABET</li> </ul>	<ul style="list-style-type: none"> <li>▪ Need for assessment of qualification levels (RPL)</li> <li>▪ Impact of ABET is still slow</li> </ul>
Elementary Workers	<ul style="list-style-type: none"> <li>▪ Most vulnerable in terms of retrenchments – unemployment expected to increase</li> </ul>	<ul style="list-style-type: none"> <li>▪ High replacement demand due to mortality (occupational diseases, accidents, HIV/AIDS)</li> <li>▪ Higher levels of literacy required</li> </ul>	<ul style="list-style-type: none"> <li>▪ Skills programmes</li> <li>▪ In-service training</li> <li>▪ ABET programmes</li> </ul>	<ul style="list-style-type: none"> <li>▪ Skills programmes very suitable – address technical skills, workplace realities (little time for training) and health and safety requirements.</li> <li>▪ Large-scale uptake of skills programmes</li> <li>▪ Large-scale involvement of Sector in ABET</li> </ul>	<ul style="list-style-type: none"> <li>▪ Need for assessment of qualification levels (RPL)</li> <li>▪ Impact of ABET is still slow</li> <li>▪ Need training to soften the impact of retrenchments</li> </ul>

#### 4.2.1 Managers

In Chapter 1 (Section 1.5.1) the legislative provisions for the development of a more equitable distribution of the benefits of South Africa's mineral resources have been described. An important cornerstone of redistribution is a shift in ownership of companies to HDSAs. However, the success of ownership depends on the combination of technical knowledge and understanding of the industry, entrepreneurial and business skills. New participants in the Sector need to be skilled in at least two distinct areas, namely in the understanding of the MMS technical environment (e.g. mining methods) and in MMS business environment. The development of these skills that support HDSA ownership in the MMS is a priority that the MQA will continue to address in the planning period.

The Mining Charter sets the specific target of 40 % HDSAs in management. The Sector profile indicates that the current overall ratio is relatively close to the target - 39% (see Table 2.2). However, it is important to continue to support management development at all levels. In Chapter 1 it has also been emphasised that companies in the MMS operate within a very competitive global environment. For this reason it is necessary to increase the depth of managerial talent by providing managers (specifically HDSAs) with international exposure.

#### 4.2.2 Professionals

The professional skills that are specifically relevant to this Sector are: Mining Engineering, Metallurgy, Chemical Engineering, Geology, Electrical Engineering, Mechanical Engineering, Environmental Management, Analytical Chemistry, Mine surveying, Jewellery Design and Manufacturing, Accounting, Financial Management, Human Resources Management and Information Technology.

The transformation of the Sector requires greater racial and gender equity in all occupational categories. The profile of the Sector clearly shows that participation of HDSAs in the occupational categories "Professionals" and "Technicians and Associated Professionals" is still lagging behind. Although the number of Black graduates who qualified in the last five years has increased significantly, the inflow of new graduates is small relative to employment in the professional categories and therefore it will take time to change the racial profile of these occupations. Another aspect of the problem is the inability of the Sector to retain young graduates (including those who studied with bursaries from employers in the Sector) in a labour market where there is a general shortage of black engineers and other professionals. This Sector finds itself at a disadvantage because of the geographical location of most of its operations and the relatively unappealing work circumstances.<sup>67</sup>

The scarcity of high level technical skills in the MMS does not only pertain to skills that are developed at higher education institutions. In certain components of the industry, for example Jewellery Manufacturing and Diamond Processing, most of the technical skills are developed at FET level or in the workplace.<sup>68</sup> Specific shortages in this subsector are for jewellery makers and gold smiths. Due to the computerisation of processes the Jewellery Manufacturing subsector also experiences an increase in the need for people with skills in information technology.

In the CLAS Subsector a considerable amount of practical experience and industry knowledge is required before workers can become proficient managers, professionals and technicians. For this component of the Sector it is more useful to invest in the advancement of workers who are already in the Sector than to source new entrants from higher education institutions.<sup>69</sup>

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<sup>67</sup> Comment stated repeatedly in all SSP development workshops and stated again by employers in their 2009/2010 WSP submissions of scarce skills.

<sup>68</sup> Comments of participants in the SSP development workshop for Diamond Processing and Jewellery Manufacturing.

<sup>69</sup> Comments of participants in the SSP development workshop for CLAS and Other Mining.



#### **4.2.3 Technicians and Trades Workers**

The vacancies reported by employers in their 2009/2010 WSP submissions indicate that there are still shortages of technicians and artisans, despite the current economic situation. At a macro-level it is important for the Sector to take a long-term view in respect of the development of artisan and other technical skills. Even though the Sector is currently shrinking and is facing difficult economic circumstances, the long lead times involved in the development of these skills require continued investment in the learnerships through which artisans are trained in order to avoid skills shortages in future.

#### **4.2.4 Clerical and Administrative Workers and Sales Workers**

Clerical and Administrative Workers and Sales Workers are easily sourced in the current labour market. These workers mostly need a FET-level qualification and are easily trained through in-service training.

#### **4.2.5 Machinery Operators and Drivers and Elementary Workers**

These two categories of workers form the bulk of the labour force of the MMS. Expansion or contraction of the industry immediately affects thousands of workers in these categories. The closure of mining operations could leave thousands of workers in a particular area unemployed.

As indicated in Chapters 1 and 2, the volatility that exists of certain components of the MMS is a reality which needs to be faced. The life span of individual mining operations depends on the combination of factors such as the depth and quality of ore deposits, cost factors, the demand for and price of the commodity and the exchange rate. In periods when production contracts, the Sector is faced with the need to facilitate the transition from employment in the MMS to employment elsewhere in the economy and to try to avoid further large-scale unemployment. Similarly, in times of expansion of production the sector needs to have enough appropriately skilled workers available. Skills development of the workforce (especially in these two occupational categories) is a critical component creating this flexibility. The enhancement of the quality of labour in the MMS to ensure the portability of skills is an overall priority in the MMS. The aim is also to ensure that workers who are released from the MMS are employable in other sectors.

In Chapter 2 it was indicated that as much as 24 % of the workers in the Sector have no formal school qualifications and as much as 55 % have not attained NQF level 1. Increasing the overall educational levels of the workforce in the MMS is an important priority. This priority originates not only from policy documents such as the Mining Charter and the National Skills Development Strategy, but also from health and safety requirements, technological changes and changes in the way in which work is organised within mining operations. The Sector is to a very large extent involved in the provision of ABET programmes. However, the impact of these programmes on the overall educational profile is not yet visible.

Many workers in the MMS have long years of work experience and might have been exposed to various forms of training in the workplace. However, the skills acquired in this manner are not necessarily reflected in their formal qualifications. In order to purposefully implement skills development programmes for these workers their current skills levels need to be assessed. Similarly, workers of whom certain competencies are required in terms of health and safety regulations need to be assessed.

The concept of skills programmes has been defined and the importance of skills programmes in the MMS has been highlighted in Chapter 3. Skills programmes have become a very important component of the training provision for the two occupational categories under discussion.

### **4.3 SCARCE SKILLS**

Annexure E contains a list of scarce skills as required by the DoL. The information on scarce skills was obtained by analysing the scarce skills table of the workplace skills plans (WSPs) submitted for Year 2009/2010 (Year 10). These documents were submitted in June and July 2009 and reflect the situation in the Sector at the time of preparing this SSP update. Data from 472 levy paying

companies operating in the Mining and Minerals Sector (MMS) were analysed. The information was also extrapolated to the total sector by weighting the data.<sup>70</sup>

The positions that could not be filled due to the scarcity of skills amounted to 1 234 – a marked decrease from the 8 301 positions reported in the previous year. The positions in which scarcity existed amounted to approximately 0.3% of total employment in 2009 as apposed to the 1,4% of total employment in the previous year.

Of the positions that employers reported as unfilled due to scarcity 26% were ascribed to a lack of suitably skilled people in the labour market (absolute scarcity), while 60% were unfilled because of relative scarcity. Relative scarcity could result from people's unwillingness to work outside urban areas or a particular industry or it could mean that there were people in the process of acquiring the necessary skills but due to the length of their training they would not be available in the short term. A lack of candidates with the requisite skills from the designated groups (blacks, women, people with disabilities) could also result in a relative scarcity of particular skills.

Most of the skills shortages occurred in the occupational categories Technicians and Trade Workers (665 vacant positions), Professionals (267 vacant positions) and Machine Operators and Drivers (227 vacant positions).

In the occupational category Professionals the specific occupations with the highest numbers of vacancies were Geologists (59 positions), Mining Engineers (42 positions), Mechanical Engineers (34 positions), Electrical Engineers (24 positions), Metallurgists (21 positions) and Surveyors (14 positions).

In the occupational category technicians and trade workers, most of the positions that companies had difficulty filling, were for Mining Technicians (114 positions), Fitters (107 positions), Electricians (90 positions), Jewellers (87 positions), Millwrights (62 positions), Diesel Motor Mechanics (37 positions), Fitters and Turners (35 positions), Precision Instrument Makers and Repairers (34 positions) and Welders (31 positions).

In the machine operators and drivers category, most of the hard-to-fill vacancies were for Miners (75 positions), Drillers (36 positions), Engineering Production Systems Workers (25 positions) and Stone Processing Machine Operators (20 positions).

#### 4.4 CRITICAL SKILLS

The concepts "critical skills" refer to **skills within an occupation** which are in short supply. These deficiencies are normally very specific to a particular job and occur as a result of changes in the work environment such as changes in technology used by a certain employer, changes in legislation (for example health and safety legislation).

The information on critical skills needs of the MMS was obtained from the WSPs submitted for the year 2008/2009.<sup>71</sup> The table on critical skills in the WSP incorporates detail regarding the nature of the need, namely the occupations in which the needs are experienced, descriptions of the critical skills that employees need to acquire, the number of employees in need of training and the importance of the "top-up" skills to organisational functioning. Almost a third of levy payers in the sector reported critical skills. Most of the critical skills reported came from companies with 150 or more employees.

The analysis of the WSP information showed that the number of employees in the MMS who required additional training in critical skills areas amounted to 14 336 or 2.5% of total employment. Forty two per cent of the people who needed training were employed by the Coal Mining subsector, 19.8% by Gold Mining, 14.1% by Services Incidental to Mining and 13.5% by the Other Mining subsector.

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<sup>70</sup> The levy amounts paid by the respective companies in the 2008/2009 financial year was used as a proxy of their employment size in the calculation of weights.

<sup>71</sup> The positions that employers try to fill are directly linked to the economic position of the Sector. It was therefore very important for this SSP update to analyse the most recent scarce skills information. The timelines for the submission of the SSP update did not allow for the capturing and analysis of the critical skills information submitted for 2009/2010. The critical skills needs of the Sector do not change dramatically from year to year.

Nearly half (44.6%) of the employees in the MMS who lacked critical skills were employed as Technicians and Trade Workers, 20.6% as Machine Operators and Drivers and 13.3% as Elementary Workers. Furthermore, of those who lacked skills 9.0% were Managers, 10.5% were Professionals and 1.9% were Clerical and Administrative Workers.

Most of the Managers who lacked skills were Production or Operations Managers. Among the Professionals most of the employees who lacked skills were Mining-, Mechanical- and Electrical Engineers, Geologists and Surveyors. The MMS also reported relatively high numbers of vacancies in these occupations (scarce skills). In the Technicians and Trade Workers category, most of the employees who needed additional skills were Mining-, Mechanical- and Electrical Engineering Technicians, Diesel Mechanics, Electricians, Millwrights and Fitters and Turners. Most of those in the Machine Operators and Drivers category that lacked skills were employed as Drillers or Miners.

Almost 70% of the critical skills were classified as very important or essential to organisational functioning in the MMS. Of the employees who needed critical skills, 36.2% required a "top-up" of leadership, management or supervisory skills, 9.3% of technical skills and 9.0% required more experience in the workplace.

In conclusion most of the deficiencies in the skills apparatus of people in the MMS were identified in people who were employed in engineering and technical occupations. Furthermore the sector's struggle to find qualified people for certain positions (scarce skills) was confirmed by the number of employees in similar positions in the sector who needed "top-up" skills i.e. employed people who were not fully qualified and who needed to be trained on-the-job.

## **4.5 OTHER SKILLS DEVELOPMENT PRIORITIES**

### **4.5.1 Mine health and safety**

Training in support of mine health and safety regulations remains a key priority in the MMS. Health and safety training include induction and refresher training as well as training towards qualifications required for specific positions in the sector. The training of mine health and safety officers as well as mine inspectors who can ensure adherence to health and safety requirements is also important.

### **4.5.2 Development of mining communities and communities in labour sending areas**

It is a priority for the MMS to support the economic development of communities where mining takes place and communities based in the main labour sending areas of the country. In Chapter 1 the close relationship between mining companies and the surrounding communities has been explained. By stimulating other economic activities through skills development in the mining communities and in communities from which migrant workers originate, the potential for job creation and the absorption of retrenched mine workers into the local labour markets are enhanced.

### **4.5.3 Supporting beneficiation in local areas through skills development**

The relatively low levels of beneficiation and the fact that most of our mineral production is exported remains a concern to the MMS. Although the bulk of beneficiation activities would fall outside the MMS, for example in the Manufacturing Sector, the MMS needs to support skills development in terms of beneficiation in general and specifically where it ties in with local community development and job creation for retrenched workers of the MMS. The one component of beneficiation which falls within the MMS, namely jewellery manufacturing needs special attention.

### **4.5.4 Training and development of retrenched employees**

A last priority is the training of employees who have already been retrenched or who stand to be retrenched. It is important to start the training for positions outside the MMS as early as possible before retrenchment, while the workers are still in employment. The main aim would be to provide these employees with skills that are in demand in other sectors and with entrepreneurial skills.

## 4.6 INSTITUTIONAL AND OTHER CONSTRAINTS

### 4.6.1 Constraints in the assessment of prior learning

Although the assessment of the skills of all individual workers is essential for skills development, there are many practical impediments to such a process. For large organisations the mere magnitude of the task is a barrier. Some organisations in the Sector employ as many as 50 000 workers, most of whom are below NQF level 1. Smaller organisations on the other hand don't have the in-house skills to perform assessments and are situated in remote parts of the country, far from assessment facilities.

### 4.6.2 Mathematics and physical science at school level

The quality of mathematics and physical science education at school level is a major constraint that impacts on the supply of high-level skills to the Sector. For most of the fields of study relevant to the Sector these two subjects are prerequisites.

### 4.6.3 Constraints in the uptake of learnerships

At the end of 2003 the MQA commissioned an independent investigation into the capacity of the Sector to deliver on its targets for learnerships and the resource constraints faced by the Sector.<sup>72</sup> This study found that the Sector actually has limited capacity to accommodate large numbers of unemployed learners on learnerships. The constraints faced by employers include the cost of these learnerships and legislative requirements (health and safety requirements) that impede the provision of workplace/experiential training. Apart from these practical constraints, it is generally very difficult for companies to take on learners while they are retrenching their own employees or while they are faced with high levels of uncertainty regarding their own future.<sup>73</sup> The imminent downsizing of organisations and the closure of some of the operations may in this planning period have a negative impact on the intake of new learners and this may, in years to come have an adverse effect on the skills situation in the Sector.

## 4.7 CONCLUSIONS

The skills priorities that will guide the interventions of the MQA over the planning period are influenced by a variety of factors. The first priority is to address scarce skills in the Sector. The development of new entrants into occupations in which there is a shortage of skills links with the need for transformation in the Sector. Skills development strategies in this regard will be aimed specifically at continued changes in the racial profile of the managerial, professional and technical occupational categories.

The priorities set out in this chapter also address the skills needs of the current workforce that mostly have their origins in the business environment of the Sector. Employers will be supported to continue with the provision of training and wherever possible training will be structured and linked to unit standards and qualifications so that workers can receive formal recognition for skills acquired. This will facilitate career development within the Sector.

The possibility of continued downsizing and closure of certain operations and the associated retrenchments is a reality with which the Sector needs to deal in a constructive manner. These changes affect the communities surrounding mining operations as well as labour sending areas. Priorities in this regard include community development, supporting of beneficiation through skills development and the training of retrenched mine workers.

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<sup>72</sup> This study has not yet been completed and accepted by the MQA. The findings cited above are interim results only.

<sup>73</sup> Comments made by participants in the SSP development workshops.

## **5 SMALL BUSINESS AND ENTREPRENEURIAL OPPORTUNITIES AND OTHER NSDS PRIORITIES**

### **5.1 INTRODUCTION**

This chapter deals with a number of National Skills Development Strategy (NSDS) objectives to which the MQA will be attending in the period covered by this SSP. These areas include small business and entrepreneurial opportunities, support to small levy paying and non-levy paying firms, adult basic education and training, the promotion of national standards of good practice and stakeholder capacity building.

### **5.2 SMALL BUSINESS AND ENTREPRENEURIAL OPPORTUNITIES**

The stimulation and support of new enterprise development through skills development is an important priority for the MMS. This priority originates from the objectives of the NSDS as well as the BEE objectives of the Mining Charter. Moreover it is necessitated by the economic realities of the Sector itself.

Over the last few years the MQA has identified various areas in which small enterprise development is possible and the SETA has already put in place a number of programmes to support entrepreneurs. MQA's SME project supports a range of target groups through various skills development initiatives. Target groups include small scale miners, retrenched workers, women in mining, youth in mining, people with disabilities and BEE firms, BEE and community co-operatives, non-levy paying enterprises, non-governmental organisations and community-based organisations.

#### **5.2.1 New Venture Creation**

The new venture creation (NVC) training aims to provide business management skills to historically disadvantaged individuals who have just established or plan to establish their own mining or mineral related enterprise. Services SETA accredited training providers are utilised.

#### **5.2.2 Small-scale mining**

The importance and growth potential of small-scale mining have been mentioned in earlier chapters of the SSP. The MQA has already trained many potential and existing small-scale miners in mining methods and business skills. Such initiatives are undertaken in close collaboration with the Department of Mineral Resources (formerly Department of Mineral and Energy). Small-scale mining is in particular an avenue to promote women's involvement in the MMS.

#### **5.2.3 Jewellery manufacturing**

The beneficiation of raw materials in South Africa as a means of stimulating economic activity and of creating employment has already been identified by the MQA in 2002. Jewellery manufacturing, which is the main beneficiation process located in this Sector is not only seen as an area for creating employment to new entrants to the labour market, but it is also seen as a source of potential employment for workers leaving the mining industry.<sup>74</sup> The MQA has been purposefully involved in training for jewellery manufacturing over the last number of years. Qualifications and training materials have been developed. Training takes place by and in close co-operation with various Public FET colleges and private MQA accredited providers.

#### **5.2.4 Business opportunities outside the MMS**

In 2001/2002 the MQA started to investigate the possibilities of entrepreneurial development of mine workers who were retrenched. Studies were undertaken in a number of communities that were affected by mine closures. The investigations included analyses of the local economies and the local economic development plans. The skills development areas were selected to utilise the

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<sup>74</sup> MQA, Project proposal to the NSF.

existing skills of mine workers as far as possible. In 2009, research commissioned by the MQA into retrenchments in the sector again stressed the importance of needs assessment in communities surrounding mines and in labour sending areas in order to identify economic development opportunities.

### **5.3 SUPPORT TO SMALL LEVY PAYING AND NON-LEVY PAYING FIRMS**

In Chapter 1 of this report it has been established that 70 % of the organisations in the MMS are small – i.e. employ fewer than 50 people. Most of the small organisations are in the CLAS and jewellery manufacturing subsectors.

The MQA has attempted in numerous ways to support small organisations in the MMS. Since 2002 the SETA has contracted special Skills Development Facilitators who assisted small organisations with the development and submission of WSPs and ATRs. This outreach programme has brought a significant number of small organisations into the levy-grant system.

In 2003/2004 the MQA commissioned three studies into the skills development needs of the subsectors in which the small organisations occur, namely small scale mining, CLAS and jewellery manufacturing. The needs of small organisations have been incorporated in the qualification structure of the MMS, the learnerships and skills programmes and in the special programmes initiated by the MQA. The SETA's support for small organisations will continue throughout the period covered by this SSP update.

### **5.4 NATIONAL GOOD PRACTICES IN SKILLS DEVELOPMENT**

The Department of Labour has introduced a framework for promoting national good practice in skills development, culminating in annual awards to organisations from the various sectors. Several organisations from the Sector have received the award. The will continue to encourage organisations to commit to good practices in skills development.

### **5.5 STAKEHOLDER CAPACITY BUILDING**

The MQA has, since its inception, recognised the importance of the active and effective participation of all stakeholders in its structures. All structures consist of representatives of employers, employees and the state. The MQA has developed guidelines for the development of stakeholder capacity and provides for support of stakeholders in its annual budget. Capacity building of stakeholders take many forms including payment of allowances to enable stakeholders to participate in MQA activities, training of stakeholders for fulfil their functions in the various structures and the provision of funding to assist stakeholders to co-ordinate the activities of their representatives and to promote their reporting and mandating processes.

### **5.6 CONCLUSION**

In this chapter a number of specific NSDS objectives were discussed and indications have been given of how the MQA contributes to the attainment of these objectives. All the objectives cited in this chapter have received attention from the MQA prior to the development of this SSP – in fact, some of the issues have been receiving attention since the establishment of the SETA. The MQA will continue its work in all these areas during the period covered by this SSP update.

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**ANNEXURE A  
SUBSECTORS**

Sub-sector	SIC Code (Dept of Labour)	Description of activity
Coal Mining	21000	Mining of coal and lignite
Gold Mining	23000	Mining of gold and uranium ore
	23001	Thin tabular operations
	23002	Thick tabular operations
	23003	Massive mining operations
	24000	Mining of metal ores, except gold and uranium
PGM Mining	24240	Platinum group metals
Diamond Mining	25200	Mining of diamonds (including alluvial diamonds)
	25201	Marine mining operations
	25202	Coastal mining operations
Other Mining	24100	Mining of iron ore
	24200	Mining of non-ferrous metal ores, except gold and uranium
	24210	Chrome
	24220	Copper
	24230	Manganese
	24290	Other metal ore mining, except gold and uranium
	25000	Other mining and quarrying
	25102	Open cast/strip mining operations
	25103	Open pit operations
	25300	Mining and quarrying n.e.c.
	25310	Mining of chemical and fertilizer minerals
	25311	Phosphates
	25319	Other chemical and fertilizer mineral mining
	25320	Extraction and evaporation of salt
	25390	Other mining and quarrying n.e.c.
	25391	Mining of precious and semi-precious stones, except diamonds
	25392	Asbestos
25399	Other minerals and materials n.e.c.	
Cement, Lime, Aggregates and Sand (CLAS)	34240	Manufacture of cement, lime and plaster
	25100	Stone quarrying, clay and sandpits
	25110	Dimension stone (granite, marble, slate, and wonderstone)
	25101	Quarrying/dimension stone operations
	25120	Limestone and lime works
	25190	Other stone quarrying, including stone crushing and clay and sandpits
Services Incidental to	92004	Education by technical colleges and technical institutions
	87000	Research and development

Sub-sector	SIC Code (Dept of Labour)	Description of activity
Mining	29000	Service activities incidental to mining of minerals
Diamond Processing	39212	Diamond cutting and polishing
	39219	Other precious and semi-precious stone cutting and polishing
Jewellery Manufacturing	39210	Manufacture of jewellery and related articles
	39211	Jewellery and related articles composed of precious metals, precious and semi-precious stones and pearls

## ANNEXURE B METHODOLOGY USED IN THE DEVELOPMENT OF A SECTOR PROFILE

There is no single database that provides a complete and comprehensive profile of the MMS as it has been defined for the purposes of the Skills Development Act. In order to develop such a profile a variety of data sources were used. For each of the subsectors and for each of the variables needed in the profile, the sources that provided the best data were selected.

### ***Mining***

For the six mining subsectors the DME's database of mines (average employment in the first three months of 2009) was used to establish total employment in each subsector. This database is maintained and updated every quarter when all mining operations are required to submit information to the DME. The employment and earnings figures provided on this database are used by Statistics South Africa in their quarterly Survey of Employment and Earnings (SEE) and are regarded as the official statistics on employment in the Mining Industry.

Information on population group, gender, occupational distribution and educational levels was not available from the DME database. However, the MQA has a relatively high return of WSPs every year and the WSPs contain comprehensive information on the workforce of the sector. The WSPs submitted for the financial year 2007/2008 represented approximately 70% of the workers in the sector. Thus, for the purpose of establishing a sector profile these variables were determined by applying the distributions observed in the WSPs submitted for 2007/2008 to the employment totals in the DME database.

### ***Services Incidental to Mining***

The organisations in this subsector are in the MMS by choice. They expressed their choice by registering with the MQA and by submitting WSPs. For this reason the figures provided in the WSPs were used throughout.

### ***Diamond Processing and Jewellery Manufacturing***

To arrive at an estimate of total employment in the Diamond Processing and Jewellery Manufacturing subsectors SDL payments were used. It was assumed that there is a direct relationship between the amount of levies paid by an organisation and the number of people employed. It was also assumed that organisations in a particular subsector would have similar wage structures and that the employment-levy relationship of companies that submitted WSPs would be the same as for those in the same subsector that did not submit WSPs. Thus total employment of these two subsectors was calculated using the following formula:

$$E_{ss} = L_{ss}/L_w \times E_w$$

where

$E_{ss}$  – Total employment in the subsector

$L_{ss}$  – Total levies paid by organisations in the subsector

$L_w$  – Total levies paid by organisations that submitted WSPs in Year 2007/2008

$E_w$  – Total employment in organisations that submitted WSPs in Year 2007/2008

After calculating total employment for each subsector the distributions used in the WSPs were used to calculate the other variables. The total Sector profile was obtained by adding together the respective subsector profiles.

**ANNEXURE C**  
**MQA STRATEGY TO SUPPORT THE**  
**BROAD-BASED SOCIO-ECONOMIC EMPOWERMENT CHARTER FOR THE SOUTH AFRICAN MINING**  
**INDUSTRY**

**BACKGROUND TO THE MINING CHARTER**

The Broad-Based Socio-Economic Empowerment Charter for the South African Mining Industry (Mining Charter) was developed in 2002 in response to the requirement of the Mineral and Petroleum Resources Development Act for the development of such a Charter. The development of the Charter was a joint effort by all the Stakeholders in the Mining industry and after an intense consultation process it was accepted by Government, employers and labour. The Charter was accepted by Parliament in October 2002. The Charter covers a wide range of areas for transformation including human resources development, employment equity, migrant labour, mine community and rural development, housing and living conditions, procurement, ownership and joint ventures, beneficiation, licensing and financing. Together with the Charter, a scorecard was developed for the measurement of companies' progress towards the objectives set out in the Charter.

**VISION**

The actions and commitments of the Mining Charter were based on "a shared vision of a globally competitive mining industry that draws on the human and financial resources of all South Africa's people and offers real benefits to all South Africans" and the goal of the Charter is "to create an industry that will proudly reflect the promise of a non-racial South Africa."

**RECOGNITION OF THE CURRENT SITUATION IN THE MINING INDUSTRY**

The Charter starts by recognizing

- "The history of South Africa, which resulted in blacks, mining communities and women largely being excluded from participating in the mainstream of the economy, and the formal mining industry's stated intention to adopt a proactive strategy of change to foster and encourage black economic empowerment (BEE) and transformation at the tiers of ownership, management, skills development, employment equity, procurement and rural development;
- The imperative of redressing historical and social inequalities as stated by the Constitution of the Republic of South Africa, in inter alia section 9 on equality (and unfair discrimination) in the Bill of Rights;
- The policy objective stated in the Mineral and Petroleum Resources Development Act to expand opportunities for historically disadvantaged persons to enter the mining and minerals industry or benefit from the exploitation of the nation's mineral resources;
- The scarcity of relevant skills has been identified as one of the barriers to entry into the mining Sector by historically disadvantaged South Africans (HDSA's);
- The slow progress made with employment equity in the mining industry compared to other industries.

## **OBJECTIVES**

The objectives of the Charter clearly linked to human resources development. These objectives are to:

- Promote equitable access to the nation's mineral resources to all the people of South Africa;
- Substantially and meaningfully expand opportunities for HDSA's including women, to enter the mining and minerals industry and to benefit from the exploitation of the nation's mineral resources;
- Utilise the existing skills base for the empowerment of HDSA's;
- Expand the skills base of HDSA's in order to serve the community;
- Promote employment and advance the social and economic welfare of mining communities and the major labour sending areas; and
- Promote beneficiation of South Africa's mineral commodities.

MQA strategies to support the Charter are outlined in the table below:

**MQA STRATEGY TO SUPPORT THE MINING CHARTER: APRIL 2004 – MARCH 2010**

**ABRIDGED VERSION ADOPTED BY MQA ON 29 APRIL 2004**

**PROGRESS REPORT FOR THE PERIOD 2008/2009**

	<b>CHARTER OBJECTIVES</b>	<b>THE MQA PLANS TO SUPPORT THE CHARTER</b>	<b>POTENTIAL CHALLENGES</b>	<b>MQA SUCCESS INDICATORS</b>	<b>PROGRESS REPORT FOR THE PERIOD 2008-2009</b>
1.	<b>Skills Audit and Sector Skills Strategy</b> Stakeholders should formulate a comprehensive skills development strategy to include a skills audit.'	Review the Sector Skills Plan (SSP) by October 2004 and produce a new SSP for 2005 - 2009. Review the criteria for Workplace Skills Plans (WSP) and Annual Training Reports (ATRs) annually. Maintain an appropriate database to facilitate reporting by companies on the implementation of the National Skills Development Strategy.	Potential conflict between stakeholders in adopting sectoral skills priorities.	The Board and Department of Labour to approve a Sector Skills Plan for 2005 – 2010 Update. Skills audit guidelines and toolkit to be developed.	The Board approved the 2005-2010 Mining and Minerals Sector Skills Plan Update, submitted to the Department of Labour (DOL) by 31 August 2008 and approved by DOL. Scarce and critical skills in the sector were updated based on the analysis of the Workplace Skills Plan and Annual Training Reports submitted for the 2008-2009 period. A Skills Audit Colloquium was held on 4 December 2008 with the aim of providing stakeholders, including Skills Development Facilitators, Sector Specialists, HR Practitioners and Skills Development Committee members with an opportunity to share their experiences and views of skills audits and reflect on good practice in skills auditing. The OFO-aligned skills audit guidelines, the toolkit and the process of auditing of core skills will be rolled out in the 2009-2010 financial year once the occupational profiling within the sector has been completed.
2.	<b>Career paths</b> Companies should implement career paths for their HDSA employees, including skills development plans.	Popularise the use of the MQA Qualifications Framework and publish case studies as part of the Communication Strategy. Ensure that qualifications remain relevant to support the mobility of employees.	Clarity on use of the Framework by industry and the role of the MQA is needed.	Reports of activities to promote the framework are accepted by the SGB.	The MQA Qualifications Framework has been updated and is also being revised. <b>33</b> qualifications and associated unit standards have been registered on the National Qualifications Framework.
3.	<b>Literacy and Numeracy</b> Companies should offer opportunities for literacy and numeracy to every employee by 2010.	Implement a Recognition of Prior Learning (RPL) system at ABET 4/NQF1. Promote participation in ABET programmes among mineworkers.	Release of workers to attend ABET classes is a constraint. There are workplace incentives that take learners away from training.	<b>126 750</b> learners to participate in ABET programmes by March 2010. Quarterly ABET reports accepted by Board and Department of Labour. Reports on promoting Language Policy accepted by EXCO.	A total of <b>12 235</b> learners entered ABET 1-4 programmes in the 2008-2009 period, from a targeted <b>6 800</b> . And a total of <b>10 332</b> learners completed ABET programmes in the 2008-2009 period, from a targeted <b>4 000</b> . The review of the MQA language policy is underway, as well as research into language in the sector.

	CHARTER OBJECTIVES	THE MQA PLANS TO SUPPORT THE CHARTER	POTENTIAL CHALLENGES	MQA SUCCESS INDICATORS	PROGRESS REPORT FOR THE PERIOD 2008-2009
4.	<b>Generic skills for miners</b> Companies should provide training opportunities to miners to improve their income-earning capacity beyond the mine.	Adopt and implement a Communication Strategy to promote mining among new entrants to the mining industry.	Bringing more equity miners into the industry.	<b>2 000</b> Small Scale Miners to be trained in technical skills by 2010. 450 SMMEs to be trained in the Mineral Beneficiation skills programme by 2010.	Some <b>300</b> Small Scale Miners were trained during 2008-2009 in 9 provinces. The MQA Minerals Beneficiation Support Strategy was approved by the Board. <b>210</b> learners were trained in Mineral Beneficiation skills programme in 2008-2009
5.	<b>Maths and Science at schools</b> Stakeholders should promote Maths and Science at school level.	Support initiatives of the government or mines to promote Mathematics and Science at schools. MQA to conduct research into Maths and Science initiatives in the sector.	The MQA would contribute in kind, but would not manage school projects. Reluctance by companies to support Maths and Science pilot projects	Reports of MQA support accepted by Board. Research report on Maths and Science pilot projects in the sector.	No targets were set for this during the 2008-2009 financial year, but a maths and science pilot project is being implemented in 2009-2010. Research was conducted on Maths and Science pilot project in the sector.
6.	<b>Learnerships</b> Stakeholders should increase registered learnerships from 1 200 learners to a minimum of 5 000 by March 2010.	To encourage companies to enrol more learners into learnerships, and to prioritise the implementation of the RPL system. MQA to conduct impact analysis of learnership programmes	Learnership targets can only be met with the cooperation of employers. The sector target of <b>5 000</b> learners is not specified per individual mine or per license holder. Because of the economic recession, companies may be reluctant to take on learners after they have completed their learnership.	At least <b>5 000</b> employees should participate in learnerships by March 2010. Quarterly reports on learnerships are provided to the Board and Department of Labour. Impact Analysis Report	<b>1 491</b> employed learners and <b>790</b> unemployed learners entered into learnerships. <b>1 059</b> employed learners and <b>2 085</b> unemployed learners completed learnerships.
7.	<b>Employment equity (Management)</b> Companies agree to spell out their employment equity plans for junior and senior management levels and to target a 40% HDSA participation in 5 years.	Extend the period of the MQA Bursary Scheme to 2010. Give grants to mines that provide practical experience to the MQA, NUM and other needy and qualifying students studying in similar fields. In order to require MQA accredited training, providers must meet the 40% HDSA target.	The MQA relies on companies to provide bursars with practical training. There is a need to find ways to add management competencies to complement technical qualifications of HDSAs.	Over <b>1 500</b> learners should benefit from the Bursary Scheme by March 2010. Quarterly reports on the Scheme accepted by the Board and Department of Labour.	During the 2008-2009 period, <b>739</b> HET and FET bursars participated in the MQA Bursary Scheme. A total of <b>130</b> students successfully completed studies within the bursary programme in the 2008-2009 financial year. Altogether <b>377</b> students underwent practical training with various mining companies. In January 2009, a further <b>171</b> students were placed to do practical training with <b>16</b> companies. A total of <b>548</b> students were placed to gain workplace experiential training. During the 2008-2009 financial year an overall total of <b>1 287</b> students received assistance bursaries and practical training.

	CHARTER OBJECTIVES	THE MQA PLANS TO SUPPORT THE CHARTER	POTENTIAL CHALLENGES	MQA SUCCESS INDICATORS	PROGRESS REPORT FOR THE PERIOD 2008-2009
8.	<b>Employment Equity (Women)</b> Companies agree to establish plans for the target of 10% women participation in Mining within 5 years.	Give priority to women in MQA-sponsored programmes. Link women initiatives to the MQA SMME Support Strategy and related Department of Minerals and Energy (DME) activities. MQA to conduct research on women in mining.	The identification of the target population for promoting mining amongst women is a challenge. Expectations created by the Charter and awareness workshops on the Charter should be managed.	Reports on women representation in MQA programmes accepted by the Board. Research on women in mining is on the MQA Research Agenda. This has been approved by the Board. Research Partners have been appointed to conduct this research.	To increase the participation and entry of women into the sector during 2008-2009, women involved in the sector were targeted, with <b>194</b> learners receiving small-scale mining technical training in all nine provinces. Of the total of <b>14 508</b> learners that received support from the MQA, <b>7 834</b> were women.
9.	<b>Entrepreneurial Training</b> Through its associated institutions, the government shall provide training courses in mining entrepreneurs' skills.	Extend the period of the Executive Preparatory Programme (EPP) to run until 2010 catering for over <b>300</b> participants. Roll out the SMME support strategy of the MQA in order to assist new entrants. The New Venture Creation Project, develop in support of the National Skills Development Strategy (NSDSII) targets, seeks to provide management-related business training to historically disadvantaged individuals who have just established or want to establish their own mining-related enterprises.	Tracking of EPP trainees should be conducted.	A total of <b>324</b> participants should have benefited from EPP by February 2010. Biannual reports on the EPP programme are accepted by the Board. Quarterly reports on the implementation of the SMME support strategy accepted by the Board and Department of Labour. Analysis Report needed	No target was set for 2008-2009. The EPP is in the process of being revised. A total of <b>149</b> learners in three Provinces, i.e. the Free State, KwaZulu-Natal and Mpumalanga, were trained and mentored on New Venture Creation by three Services SETA accredited training providers.
10.	<b>Mentoring of empowerment groups</b> Companies should develop systems to mentor empowerment groups.	BEE mentoring activities can be linked to other initiatives.	DME to communicate this provision of the Charter to BEEs and companies.	A target of <b>26</b> was set to increase a number of small BEE firms and BEE co-operatives supported by skills development.	A total of <b>130</b> SME firms participated in the survey commissioned by the MQA in Gauteng and Limpopo to identify skills needs in their businesses. The SME firms were subsequently trained in accordance with the outcomes of the skills needs identified.



	CHARTER OBJECTIVES	THE MQA PLANS TO SUPPORT THE CHARTER	POTENTIAL CHALLENGES	MQA SUCCESS INDICATORS	PROGRESS REPORT FOR THE PERIOD 2008-2009
11.	<b>Exchange opportunities for HDSAs</b> In its bilaterals with other countries, the government will secure opportunities for training and exchange for HDSA companies' staff.	The Board to adopt a process to support HDSA exchange within the mandate of the Skills Development Act and in compliance with the PFMA.	A Board policy is required within PFMA and the MQA area of jurisdiction. DME to communicate opportunities that may be available to the HDSAs.	The MQA Board should adopt a policy position on exchange programmes.	No targets were set for this during the 2008-2009 financial year. However the Board approved a SADC cooperation strategy. An MoU was signed between the MQA and the Botswana Training Authority (BOTA) of Botswana. Cooperation has been implemented through ongoing workshops to develop expertise.
12.	<b>Beneficiation</b> Companies should get involved in beneficiation activities beyond mining and processing, to include production of final consumer goods.	The Board to consider support of initiatives by the Jewellery Council and the DME towards the promotion of beneficiation.	Most companies in the jewellery industry are SMEs and find it difficult to participate in the skills strategy. The MQA is contracting SDFs to assist them.	About <b>720</b> learners to complete training in Rural Jewellery Manufacturing by March 2010.	A total of <b>210</b> learners were trained on mineral beneficiation in the Northern Province and North West.
13.	<b>Mine Community and rural development</b> Companies should co-operate in the formulation and implementation of IDPs for communities where mining takes place and for major labour-sending areas, with special emphasis on development of infrastructure.	Allocate R10 million from NSF funds to <b>10</b> District Municipalities and manage the implementation of projects. Facilitate the partnerships with industry. Phase out the MQA role in ex-mineworker training. Transfer coordination role to development agencies, mines and DME.	MQA's capacity to manage the dynamics of this environment.	It is envisaged that <b>2 331</b> ex-miner proxies and community members will be participating in projects by March 2010. The Board and the Department of Labour accept quarterly reports on the Social and Labour Plan support. The Board accepts the strategy and reports for the MQA to phase out its role in the Social and Labour Plan.	In the Eastern Cape, <b>100</b> learners were trained in jewellery manufacturing. Ongoing engagement is in progress with DME to align the skills and levy plans with the MQA, WSP and ATR processes.
14.	<b>Procurement</b> Stakeholders undertake to give HDSAs preferred supplier status in the procurement of capital goods, services and consumables.	Appoint a Procurement Specialist and maintain a proper supplier database that clearly shows HDSA participation. Identify the current levels of MQA procurement from HDSAs and adopt procurement targets.	The move to a representative supplier profile will require commitment and active management.	A Procurement Specialist had been appointed by April 2004. Board to adopt HDSA procurement targets in 2004. Levels of HDSA procurement reported to Board by August 2004. An HDSA supplier database had been compiled by June 2004.	The Finance Unit had appointed a Procurement Specialist by April 2004. The Board adopted HDSA procurement targets in 2004. An HDSA supplier database, compiled in June 2004, is being updated annually. Annual reports are submitted to the Board.

**ANNEXURE D  
DETAILED OCCUPATIONAL PROFILE**

**Occupational distribution of workers according to population group and gender**

Subsector		African			Coloured			Indian			White			Total		
		M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot
Legislators, Senior Officials, Managers and Owner Managers	N	2 549	113	2 662	141	23	163	158	48	205	4 440	429	4 868	7 287	612	7 899
	%	32	1	34	2	0	2	2	1	3	56	5	62	92	8	100
Professionals	N	2 527	697	3 224	253	63	316	234	150	384	6 537	1 537	8 074	9 551	2 447	11 998
	%	21	6	27	2	1	3	2	1	3	54	13	67	80	20	100
Technicians and Associated Professionals	N	10 953	1 665	12 618	789	199	988	288	133	421	14 614	2 360	16 974	26 644	4 357	31 001
	%	35	5	41	3	1	3	1	0	1	47	8	55	86	14	100
Clerks	N	12 754	3 640	16 393	373	777	1 150	107	259	366	1 446	4 950	6 396	14 680	9 625	24 305
	%	52	15	67	2	3	5	0	1	2	6	20	26	60	40	100
Service Workers, Shop and Market Sales Workers	N	6 986	1 206	8 192	283	97	380	33	34	67	984	495	1 479	8 286	1 831	10 118
	%	69	12	81	3	1	4	0	0	1	10	5	15	82	18	100
Agricultural and Fishery Workers	N	1 033	12	1 045	99	5	104	28	4	32	727	8	735	1 887	29	1 916
	%	54	1	55	5	0	5	1	0	2	38	0	38	98	2	100
Craft and Related Trade Workers	N	30 556	2 222	32 778	1 721	164	1 884	350	20	369	21 575	416	21 990	54 201	2 821	57 022
	%	54	4	57	3	0	3	1	0	1	38	1	39	95	5	100
Plant and Machine Operators and Assemblers	N	195		199										202		207
	%	94	2	96	1	0	2	0	0	0	2	0	2	98	2	100
Labourers and Related Workers	N	181		192										184		196
	%	92	6	98	0	0	1	0	0	0	1	0	1	94	6	100
Apprentices and Section 18 (1) Learners	N	5 545	1 068	6 612	268	34	302	15	1	16	894	66	960	6 722	1 169	7 891
	%	70	14	84	3	0	4	0	0	0	11	1	12	85	15	100
<b>Total</b>	N	<b>449</b>		<b>475</b>										<b>516</b>		<b>555</b>
	%	<b>81</b>	<b>5</b>	<b>86</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>2</b>	<b>12</b>	<b>93</b>	<b>7</b>	<b>100</b>

**ANNEXURE E  
SCARCE AND CRITICAL SKILLS LIST**

M & L = Management and leadership courses  
 OHSE = Occupational health, safety and environmental awareness  
 T = Technical skills  
 Ed = Formal education (e.g. university degree or diploma)  
 SC = Short course  
 L = Learnership  
 SP = Skills programme

OFO CODE	OCCUPATION	S	Speciali- sation/Job	Critical Skills	Intervention	NQF Level	NQF aligned	NEED	Comments
1	<b>MANAGERS</b>								
11	<b>Chief Executives, General Managers and Legislators</b>								
111	<i>Chief Executives, General Managers, Legislators and Senior Government Officials</i>								
1111	<i>Chief Executives and Managing Directors (Enterprises / Organisations)</i>								
111101	Chief Executive Officer / Managing Director (Enterprise / Organisation)	√			Ed, M&L, SC	5-7	Yes	1	
1112	<b>General Managers</b>								
111201	Corporate General Manager	√			Ed, M&L, SC	5-7	Yes	1	
1114	<b>Senior Government and Local Government Officials</b>								
111402	General Manager Public Service	√			Ed, M&L, SC	5-7	Yes	3	
13	<b>Specialist Managers</b>								
132	<i>Business Administration Managers</i>								
1321	<i>Aquaculture / Mariculture Farm Production Managers / Foremen</i>								
132102	Resources Manager	√			Ed, M&L, SC	5-7	Yes	1	
1322	<i>Finance Managers</i>								
132201	Finance Manager	√			Ed, M&L, SC	5-7	Yes	2	
1323	<i>Human Resource Managers</i>								
132301	Personnel / Human Resource Manager	√			Ed, M&L, SC	5-7	Yes	1	
133	<i>Construction, Distribution and Production / Operations Managers</i>								
1331	<i>Construction Managers</i>								
133101	Construction Project Manager	√			Ed, M&L, SC	5-7	Yes	1	

OFO CODE	OCCUPATION	5	Specialisation/Job	Critical Skills	Intervention	NQF Level	NQF aligned	NEED	Comments
<b>1332</b>	<b><i>Engineering Managers</i></b>								
133201	Engineering Manager	√			Ed, M&L, SC	5-7	Yes	8	
133202	Engineering Maintenance Manager	√			Ed, M&L, SC	5-7	Yes	7	
<b>1335</b>	<b><i>Production / Operations Managers</i></b>								
133502	Production / Operations Manager (Manufacturing)	√			Ed, M&L, SC	5-7	Yes	1	
133503	Production / Operations Manager (Mining)	√			Ed, M&L, SC	5-7	Yes	14	
133504	Operations Manager (Non Manufacturing)	√			Ed, M&L, SC	5-7	Yes	1	
<b>2</b>	<b>PROFESSIONALS</b>								
<b>22</b>	<b>Business, Human Resource, Marketing and Communication Management Professionals</b>								
<b>221</b>	<b><i>Accountants, Auditors and Company Secretaries</i></b>								
<b>2211</b>	<b><i>Accountants</i></b>								
221101	Accountant (General)	√			Ed	6-7	Yes	1	
<b>2212</b>	<b><i>Auditors, Company Secretaries and Corporate Treasurers</i></b>								
221204	Internal Auditor	√			Ed	6-7	Yes	3	
<b>223</b>	<b><i>Human Resource and Training Professionals</i></b>								
<b>2231</b>	<b><i>Human Resource Professionals</i></b>								
223101	Human Resource Advisor	√			Ed	6-7	Yes	2	
<b>2233</b>	<b><i>Training and Development Professionals</i></b>								
223301	Training and Development Professional	√	√		Ed	6-7	Yes	1	
223302	Technical Instructor / Trainer	√	√		Ed	6-7	Yes	3	
223303	Training Assessor	√	√		Ed	6-7	Yes	1	
<b>225</b>	<b><i>Sales, Marketing and Communication Management Professionals</i></b>								
<b>2251</b>	<b><i>Advertising and Marketing Professionals</i></b>								
225103	Marketing Practitioner	√			Ed	6-7	Yes	3	
<b>23</b>	<b>Design, Engineering, Science and Transport Professionals</b>								
<b>232</b>	<b><i>Architects, Designers, Planners and Surveyors</i></b>								
<b>2322</b>	<b><i>Cartographers and Surveyors</i></b>								
232202	Surveyor	√	√		Ed	6-7	Yes	14	
<b>2323</b>	<b><i>Fashion, Industrial and Jewellery Designers</i></b>								
232303	Jewellery Designer	√	√		Ed	6-7	Yes	4	
<b>2326</b>	<b><i>Urban and Regional Planners</i></b>								

OFO CODE	OCCUPATION	5	Speciali- sation/Job	Critical Skills	Intervention	NQF Level	NQF aligned	NEED	Comments
232601	Urban and Regional Planner	√			Ed	6-7	Yes	4	
233	<i>Engineers and Engineering Technologists</i>								
2331	<i>Chemical, Materials and Metallurgical Engineers and Technologists</i>								
233101	Chemical Engineer	√	√		Ed	7	Yes	9	
233105	Metallurgical Engineer	√	√		Ed	7	Yes	3	
2332	<i>Civil Engineers and Technologists and Quantity Surveyors</i>								
233201	Civil Engineer	√	√		Ed	7	Yes	3	
2333	<i>Electrical Engineers and Technologists</i>								
233301	Electrical Engineer	√	√		Ed	7	Yes	24	
2335	<i>Industrial and Mechanical Engineers and Technologists</i>								
233501	Industrial Engineer	√			Ed	7	Yes	1	
233502	Mechanical Engineer	√	√		Ed	7	Yes	34	
2336	<i>Mining Engineers and Technologists</i>								
233601	Mining Engineer (excluding Petroleum)	√	√		Ed	7	Yes	42	
234	<i>Natural and Physical Science Professionals</i>								
2342	<i>Chemists and Food and Wine Scientists</i>								
234201	Chemist	√	√		Ed	6-7	Yes	12	
2343	<i>Environmental Scientists</i>								
234303	Environmental Research Scientist	√			Ed	6-7	Yes	3	
2344	<i>Geologists, Geophysicists and Earth Science Technologists</i>								
234401	Geologist	√	√		Ed	6-7	Yes	59	
2345	<i>Life Scientists</i>								
234508	Zoologist	√			Ed	6-7	Yes	1	
2349	<i>Miscellaneous Natural and Physical Science Professionals</i>								
234902	Metallurgist	√	√		Ed	6-7	Yes	21	
25	<i>Health Professionals</i>								
251	<i>Health Diagnostic and Promotion Professionals</i>								
2513	<i>Occupational and Environmental Health Professionals</i>								
251301	Environmental Health Officer	√	√		Ed	6-7	Yes	3	
251302	Occupational Health and Safety Advisor	√	√		Ed, SC, SP	6-7	Yes	10	
2519	<i>Miscellaneous Health Diagnostic and Promotion Professionals</i>								

OFO CODE	OCCUPATION	5	Specialisation/Job	Critical Skills	Intervention	NQF Level	NQF aligned	NEED	Comments
251901	Health Promotion Officer	√			Ed, SC, SP	6-7	Yes	4	
26	ICT Professionals								
263	<i>ICT Network and Support Professionals</i>								
2632	<i>ICT Support and Test Engineers</i>								
263202	ICT Support Engineer	√		√	Ed	5-7	Yes	1	
27	Legal, Social and Welfare Professionals								
272	<i>Social and Welfare Professionals</i>								
2724	<i>Social Professionals</i>								
272405	Archaeologist	√			Ed	6-7	Yes	1	
3	TECHNICIANS AND TRADES WORKERS								
31	Engineering, ICT and Science Technicians								
311	<i>Agricultural, Medical and Science Technicians</i>								
3119	<i>Other Miscellaneous Science Technicians</i>								
311903	Environmental Science Technician	√			Ed	5-7	Yes	2	
312	<i>Building and Engineering Draftspersons and Technicians</i>								
3122	<i>Civil Engineering Draftspersons and Technicians</i>								
312201	Civil Engineering Draftsperson	√		√	Ed	5-6	Yes	1	
3123	<i>Electrical Engineering Draftspersons and Technicians</i>								
312302	Electrical Engineering Technician	√			Ed	6	Yes	2	
3125	<i>Mechanical Engineering Draftspersons and Technicians</i>								
312501	Mechanical Engineering Draftsperson	√		√	Ed	5-6	Yes	1	
312502	Mechanical Engineering Technician	√		√	Ed	6	Yes	1	
3129	<i>Miscellaneous Building and Engineering Draftspersons and Technicians</i>								
312901	Maintenance Planner	√		√	Ed	5-6	Yes	20	
312902	Metallurgical or Materials Technician	√		√	Ed	6	Yes	1	
312903	Mining Technician	√			Ed	6	Yes	114	
313	<i>ICT and Telecommunications Technicians</i>								
3131	<i>ICT Support Technicians</i>								
313101	Hardware Technician	√			Ed	5-6	Yes	3	
32	Automotive and Engineering Technicians and Trades Workers								
321	<i>Mechanics and Automotive Electricians</i>								

OFO CODE	OCCUPATION	5	Specialisation/Job	Critical Skills	Intervention	NQF Level	NQF aligned	NEED	Comments
<i>3211</i>	<i>Automotive Electricians</i>								
321101	Automotive Electrician	√		√	LS	4-6	Yes	3	
<i>3212</i>	<i>Motor Mechanics</i>								
321202	Diesel Motor Mechanic	√		√	LS	4-6	Yes	37	
<i>322</i>	<i>Fabrication Engineering Trades Workers</i>								
<i>3223</i>	<i>Structural Steel and Welding Trades Workers</i>								
322301	Metal Fabricator	√			LS	4-5	Yes	16	
322303	Welder / Welder (First Class)	√			LS	4-5	Yes	31	
<i>323</i>	<i>Mechanical Engineering Trades Workers</i>								
<i>3232</i>	<i>Metal Fitters and Machinists</i>								
323201	Fitter (General)	√		√	LS	3-5	Yes	107	
323202	Fitter and Turner	√		√	LS	4-5	Yes	35	
<i>3233</i>	<i>Precision Metal Trades Workers</i>								
323304	Precision Instrument Maker and Repairer	√			LS	4-5	Yes	34	
<i>3235</i>	<i>Millwrights and Mechatronics Trades Workers</i>								
323501	Millwright	√		√	LS	4-7	Yes	62	
<i>33</i>	<i>Construction Trades Workers</i>								
<i>331</i>	<i>Bricklayers, Carpenters and Joiners</i>								
<i>3311</i>	<i>Bricklayers and Stonemasons</i>								
331101	Bricklayer	√			LS	4-5	Yes	1	
<i>34</i>	<i>Electrotechnology and Telecommunications Trades Workers</i>								
<i>341</i>	<i>Electricians</i>								
<i>3411</i>	<i>Electricians</i>								
341101	Electrician (General)	√			LS	4-5	Yes	90	
<i>342</i>	<i>Electronics and Telecommunications Trades Workers</i>								
<i>3421</i>	<i>Air-conditioning and Refrigeration Mechanics</i>								
342101	Air-conditioning and Refrigeration Mechanic	√			LS	4-5	Yes	1	
<i>3423</i>	<i>Electronics Trades Workers</i>								
342305	Electronic Instrument Trades Worker (Special Class)	√			LS	4-5	Yes	10	
<i>3992</i>	<i>Chemical, Gas, Petroleum and Power Generation Plant Controllers</i>								
399203	Power Generation Plant Controller	√			LS	4-5	Yes	4	

OFO CODE	OCCUPATION	5	Specialisation/Job	Critical Skills	Intervention	NQF Level	NQF aligned	NEED	Comments
3994	<i>Jewellers</i>								
399401	Jeweller	√		√	LS	4-5	Yes	87	
3999	<i>Other Miscellaneous Technicians and Trades Workers</i>								
399901	Diver	√			SC	4-5	Yes	2	
7	<b>MACHINERY OPERATORS AND DRIVERS</b>								
71	<b>Machine and Stationary Plant Operators</b>								
711	<i>Machine Operators</i>								
7111	<i>Clay, Concrete, Glass and Stone Processing Machine Operators</i>								
711102	Concrete Products Machine Operator	√		√	SC, SP	3-4	Yes	11	
711104	Stone Processing Machine Operator	√		√	SC, SP	3-4	Yes	20	
712	<i>Stationary Plant Operators</i>								
7121	<i>Crane, Hoist and Lift Operators</i>								
712101	Crane, Hoist or Lift Operator	√		√	SC, SP	3-4	Yes	8	
712102	Winding Engine Driver	√		√	SC, SP	3-4	Yes	6	
7122	<i>Drillers, Miners and Shot Firers</i>								
712201	Driller	√		√	SC, SP	3-4	Yes	36	
712202	Miner (Non-Metalliferous)	√		√	SC, SP, LS	3-4	Yes	75	
712203	Shot Firer	√		√	SC, SP, LS	3-4	Yes	7	
7123	<i>Engineering Production Systems Workers</i>								
712301	Engineering Production Systems Worker	√			SC, SP	3-4	Yes	25	
7129	<i>Miscellaneous Stationary Plant Operators</i>								
712902	Bulk Materials Handling Plant Operator	√			SC, SP	3-4	Yes	3	
72	<b>Mobile Plant Operators</b>								
721	<i>Mobile Plant Operators</i>								
7212	<i>Earthmoving Plant Operators</i>								
721204	Excavator Operator	√		√	SC, SP	3-4	Yes	1	
721206	Loader Operator	√		√	SC, SP	3-4	Yes	9	
7219	<i>Other Mobile Plant Operators</i>								
721913	Tunnelling Machine Operator	√			SC, SP	3-4	Yes	6	
73	<b>Road and Rail Drivers</b>								
731	<i>Automobile, Bus and Rail Drivers</i>								



OFO CODE	OCCUPATION	SS	Specialisation/Job	Critical Skills	Intervention	NQF Level	NQF aligned	NEED	Comments
7313	<i>Train and Tram Drivers</i>								
731301	Train Driver	√		√	SC, SP	3-4	Yes	14	
732	<i>Delivery Drivers</i>								
7321	<i>Delivery Drivers</i>								
732101	Delivery Driver (Vehicle)	√		√	SC, SP	3-4	Yes	1	
733	<i>Truck Drivers</i>								
7331	<i>Truck Drivers</i>								
733101	Truck Driver (General)	√		√	SC, SP	3-4	Yes	5	
8	ELEMENTARY WORKERS								
82	Construction and Mining Workers								
821	<i>Construction and Mining Workers</i>								
8217	<i>Structural Steel Construction Workers</i>								
821701	Construction Rigger	√		√	SC, SP	1-3	Yes	15	
8219	Miscellaneous Construction and Mining Workers								
821904	Mining Support Worker	√			SC, SP	1-3	Yes	4	
83	Factory Process Workers								
839	<i>Miscellaneous Factory Process Workers</i>								
8391	<i>Metal Engineering Process Workers</i>								
839101	Metal Engineering Process Worker	√		√	SC, SP	1-3	Yes	8	
89	Other Elementary Workers								
899	<i>Miscellaneous Workers</i>								
8992	<i>Deck and Fishing Hands</i>								
899201	Deck Hand	√			SC, SP	1-3	Yes	4	
8999	<i>Other Miscellaneous Workers</i>								
899906	<i>Mechanic's Assistant</i>	√			SC, SP	1-3	Yes	3	
								1234	



**ANNEXURE F**

**NATIONAL SKILLS DEVELOPMENT STRATEGY 2005-2010 – MQA REPORT FOR THE PERIOD 2008-2009**

No	National Skills Development Strategy 2005 – 2010 objectives	National Skills Development Strategy 2005 - 2010 Success Indicators, National Targets	MQA Plan for 2005 – 2010 Five Year Targets	MQA Plan for 2008– 2009 Annual Targets Budget in R 000's	MQA achievements for 2008-2009 Expenditure in R 000's	Department of Labour Performance Scorecard Results
1.	<p><b>PRIORITISING AND COMMUNICATING CRITICAL SKILLS FOR SUSTAINABLE GROWTH, DEVELOPMENT AND EQUITY.</b></p>	<p><b>INDICATOR 1.1</b> Skills development supports national and Sectoral growth, development and equity priorities.</p>	<p>Target is the same for each year from 2005 to 2010 as described under Annual Target.</p>	<p>The SSP or Annual Update is submitted and signed off by the:</p> <p>a) MQA and Department of Labour who agreed growth, development and equity strategy drivers.</p> <p>b) Signature of SETA Board Chairperson.</p> <p>c) Department of Labour Executive Manager responsible for quality assurance of SSP.</p> <p>The SSP or Annual update submitted on time as per Department of Labour Guidelines.</p> <p>Discretionary Budget: <b>R4 500</b></p>	<p>The 2005-2010 SSP Update was signed of by the Department of Labour Executive Manager responsible for quality assurance of SSP.</p> <p>It reflects MQA/Department of Labour agreed growth, development and equity strategy drivers.</p> <p>The Annual update was submitted on time as per Department of Labour Guidelines.</p> <p>Discretionary Expenditure: <b>R230</b></p>	<p><b>Target achieved.</b></p> <p><b>Target achieved.</b></p> <p><b>Target achieved.</b></p> <p><b>Discretionary:</b> Slow progress on research partner implementation</p>

No	National Skills Development Strategy 2005 – 2010 objectives	National Skills Development Strategy 2005 - 2010 Success Indicators, National Targets	MQA Plan for 2005 – 2010 Five Year Targets	MQA Plan for 2008– 2009 Annual Targets Budget in R 000's	MQA achievements for 2008-2009 Expenditure in R 000's	Department of Labour Performance Scorecard Results
		<p><b>INDICATOR 1.2</b> Information on critical skills widely available to learners. Impact of information dissemination researched, measured and communicated in terms of rising entry, completion and placement of learners.</p>	<p>Target is the same for each year from 2005 to 2010 as described under Annual Target.</p>	<p>Annual guide on critical skills needs for the sector developed and available to learners.</p> <p><b>200</b> SDFs or sector specialists to be trained in the sector for the year 2008-2009.</p> <p>Discretionary Budget: <b>R4 500</b></p>	<p>The MQA annual guide on critical skills needs was developed for the sector and available to learners.</p> <p><b>584</b> SDFs or sector specialist were trained.</p> <p>Discretionary Budget: <b>R1 815</b></p>	<p><b>Target achieved.</b></p> <p><b>Target exceeded</b> due to good participation and support received from the sector I attending forums and training arranged by the MQA.</p> <p><b>Discretionary:</b> Slow progress on SDF support implementation</p>
2.	<p><i>Promoting and accelerating quality training for all in the workplace</i></p>	<p><b>INDICATOR 2.1</b> By March 2010 at least 80% of large firms' and at least 60% of medium firms' employment equity targets are supported by skills development. Impact on overall</p>	<p>Target is set for each year from 2005 to 2010 as described under Annual Target.</p>	<p>The target for the large firms is <b>110</b> firms.</p> <p>The target for medium firms is <b>64</b> firms.</p>	<p><b>100</b> large firms received WSP/ATR Grants.</p> <p><b>55</b> medium firms received WSP/ATR Grants</p>	<p><b>Target not achieved.</b> Possible change in baseline levels as well as limited advocacy among large companies.</p> <p><b>Target not achieved.</b></p>

No	National Skills Development Strategy 2005 – 2010 objectives	National Skills Development Strategy 2005 - 2010 Success Indicators, National Targets	MQA Plan for 2005 – 2010 Five Year Targets	MQA Plan for 2008– 2009 Annual Targets Budget in R 000's	MQA achievements for 2008-2009 Expenditure in R 000's	Department of Labour Performance Scorecard Results
		equity profile assessed.		Discretionary Budget: <b>R1 000</b> Mandatory Budget: <b>R 243 667</b>	Discretionary Budget: <b>R 414</b> Mandatory Budget: <b>R 238 285</b>	Possible change in baseline levels as well as limited advocacy among medium companies.  <b>Discretionary:</b> Slow progress on implementation of new management information systems.
		<b>INDICATOR 2.2</b> By March 2010 skills development in at least 40% of small levy paying firms supported and the impact of the support measured.	Target is set for each year from 2005 to 2010 as described under Annual Target.	The target for the different number of small firms is <b>351</b> firms.  Discretionary Budget: 2.1 Mandatory Budget: 2.1	<b>351</b> small firms received WSP/ATR Grants.  Discretionary Budget: 2.1 Mandatory Budget: 2.1	Target achieved. Slow progress on support for small companies.  <b>Discretionary:</b> Refer to 2.1
		<b>INDICATOR 2.5</b> Annually increasing number of small BEE firms and BEE co-operatives supported by skills development. Progress measured through an annual survey of BEE firms and BEE co-operatives	Target for the sector for the period 2006 – 2010 will be established after completion of baseline survey.	The target for the period 2008-2009 is <b>20</b> small BEE firms.  The target for the period 2008-2009 is <b>0</b> BEE co-operatives.  Budgeted expenditure: <b>R 6 600</b>	<b>118</b> small BEE firms supported.  Discretionary Expenditure: <b>R 4 392</b>	<b>Target exceeded.</b> Well focused project implementation  <b>Discretionary:</b> Good

No	National Skills Development Strategy 2005 – 2010 objectives	National Skills Development Strategy 2005 - 2010 Success Indicators, National Targets	MQA Plan for 2005 – 2010 Five Year Targets	MQA Plan for 2008– 2009 Annual Targets Budget in R 000's	MQA achievements for 2008-2009 Expenditure in R 000's	Department of Labour Performance Scorecard Results
		within the Sector from the second year onwards. Impact of support measured				progress made
		<p><b>Indicator 2.7</b></p> <p>By March 2010 at least 700 000 workers have achieved at least ABET Level 1 to 4.</p>	<p>Target for the Sector for the period 2005 to 2010 is <b>43 000</b> learners to have achieved ABET 1 to 4.</p> <p>The target of learners to have entered and achieved ABET levels are:</p> <p>Level 4: 6 000  Level 3: 10 000  Level 2: 12 000  Level 1: 15 000</p>	<p>Total target for the sector for the period 2008 -2009 is <b>6 800</b> learners to enter and achieve abet levels 1 to 4.</p> <p>The target of learners to have entered and achieved ABET levels are:</p> <p>Level 4: <b>800</b>  Level 3: <b>1 000</b>  Level 2: <b>2 000</b>  Level 1: <b>3 000</b></p> <p>The target for Sector for the is <b>3 400</b></p> <p>Learners to achieve abet levels are:</p> <p>Level 4: <b>400</b>  Level 3: <b>500</b>  Level 2: <b>1 000</b>  Level 1: <b>1 500</b></p>	<p>A total of <b>12 235</b> learners have entered abet programmes.</p> <p>Breakdown per level:</p> <p>Level 4: <b>1051</b>  Level 3: <b>3461</b>  Level 2: <b>3736</b>  Level 1: <b>3987</b></p> <p>A total of <b>10 332</b> learners have completed abet programmes.</p> <p>Breakdown per level:</p> <p>Level 4: <b>355</b>  Level 3: <b>1316</b>  Level 2: <b>5336</b>  Level 1: <b>3325</b></p> <p>Discretionary Expenditure: <b>R 19 384</b></p>	<p><b>TARGETS EXCEEDED.</b> Good support from the sector with regards to the implementation of abet programmes.</p> <p><b>TARGETS EXCEEDED.</b> Good support from the sector with regards to the implementation of ABET. programmes. The level 1 and 2 achievements are still being verified by the DoL as part of the scorecard validation process</p> <p><b>Discretionary:</b> Good progress made</p>

No	National Skills Development Strategy 2005 – 2010 objectives	National Skills Development Strategy 2005 - 2010 Success Indicators, National Targets	MQA Plan for 2005 – 2010 Five Year Targets	MQA Plan for 2008– 2009 Annual Targets Budget in R 000's	MQA achievements for 2008-2009 Expenditure in R 000's	Department of Labour Performance Scorecard Results
				Discretionary Budget: R 20 440		
		<p><b>Indicator 2.8</b></p> <p>By March 2010 at least 125 000 workers assisted to enter and at least 50% successfully complete programmes, including Learnerships and apprenticeships, leading to basic entry, intermediate and high level scarce skills. Impact of assistance measured.</p>	<p>Target for the Sector for the period 2005 to 2010 is <b>30 500</b> Learners.</p>	<p>Target for the sector for the period 2008-2009 is <b>6 100</b> learners to have entered learning programmes, including:</p> <p>Learnerships 1 000</p> <p>Skills Programmes 5 000</p> <p>Workers to enter (MTA Section 13) 60</p> <p>Workers to enter (MTA Section 28) 40</p> <p>Target for the sector for the period 2008-2009 is <b>3050</b> learners to have completed learning programmes, including:</p> <p>Learnerships 500</p> <p>Skills Programmes 2 500</p>	<p>A total of <b>9 754</b> learners have entered into learning programmes.</p> <p><b>8 130</b> learners have entered into skills programmes.</p> <p><b>1 492</b> learners have entered into learnerships</p> <p><b>126</b> learners entered (MTA Section 13) apprenticeships.</p> <p><b>6</b> learner entered (MTA Section 28) apprenticeships</p> <p>A total of <b>21 314</b> learners have completed learning programmes.</p> <p><b>1 059</b> learners have completed learnerships</p> <p><b>20 191</b> learners have completed skills programmes</p> <p><b>4</b> learners have completed Section 13 and <b>60</b> apprenticeships</p>	<p><b>Targets exceed.</b></p> <p>Good support from sector.</p> <p><b>Discretionary:</b> Limited take</p>

No	National Skills Development Strategy 2005 – 2010 objectives	National Skills Development Strategy 2005 - 2010 Success Indicators, National Targets	MQA Plan for 2005 – 2010 Five Year Targets	MQA Plan for 2008– 2009 Annual Targets Budget in R 000's	MQA achievements for 2008-2009 Expenditure in R 000's	Department of Labour Performance Scorecard Results
				<p>Workers to enter (MTA Section 13) <b>30</b></p> <p>Workers to enter (MTA Section 28) <b>20</b></p> <p>Discretionary Budget: <b>R 50 997</b></p>	<p>Discretionary Expenditure: <b>R 19 415</b></p>	<p>up of grants due to economic slow down.</p>
3.	<p><i>Promoting employability and sustainable livelihoods through skills development</i></p>	<p><b>INDICATOR 3.2</b> By March 2010, at least 2000 non-levy paying enterprises, NGOs, CBOs, and community-based co-operatives supported by skills development. Impact of support on sustainability measured with a targeted 75% success rate.</p>	<p>Target for the Sector for the period 2005 to 2010 is <b>20</b> enterprises.</p>	<p>Target for the sector for the period 2008-2009 for non levy paying enterprises, NGOS and CBOS is <b>6</b> enterprises.</p> <p>Discretionary Budget: <b>R 5 500</b></p>	<p><b>12</b> enterprises were supported.</p> <p>Discretionary Expenditure: <b>R 4 859</b></p>	<p><b>Target exceeded.</b> Well focussed project implementation</p> <p><b>Discretionary:</b> Good progress made</p>
	<i>Assisting</i>	<b>INDICATOR 4.1</b>	Target for the Sector for	Target for the sector for the	Total number of people that	



No	National Skills Development Strategy 2005 – 2010 objectives	National Skills Development Strategy 2005 - 2010 Success Indicators, National Targets	MQA Plan for 2005 – 2010 Five Year Targets	MQA Plan for 2008– 2009 Annual Targets Budget in R 000's	MQA achievements for 2008-2009 Expenditure in R 000's	Department of Labour Performance Scorecard Results
4.	<i>designated groups, including new entrants to participate in accredited work, integrated learning and work based programmes to acquire critical skills to enter the labour market and self employment</i>	By March 2010 at least 125 000 unemployed people assisted to enter and at least 50% successfully complete programmes, including Learnerships and apprenticeships, leading to basic entry, intermediate and high level scarce skills. Impact of assistance measured.	the period 2005 to 2010 is <b>6 590</b> Learners to enter learning programmes and <b>3 295</b> learners to have completed learning programmes.	<p>period 2008-2009 is <b>1318</b> unemployed people to enter learning programmes.</p> <p><b>1118</b> unemployed people to enter learnerships and <b>200</b> unemployed people to receive bursaries</p> <p>Target for the Sector for the period 2008-2009 is <b>659</b> unemployed people to successfully complete learning programmes.<b>559</b> Unemployed to successfully complete learnerships</p> <p><b>100</b> Unemployed people successfully completed studies in bursaries</p> <p>Discretionary Budget: <b>R 73 079</b></p>	<p>have entered the Learning Programmes is <b>1 542</b></p> <p><b>790</b> learners have entered learnerships and</p> <p><b>6</b> learners have entered Section 13 and <b>7</b> learners have entered Section 28 apprenticeships.</p> <p><b>739</b> unemployed people have received bursaries.</p> <p>A total of <b>660</b> learners have completed learning programmes.<b>514</b> learners have completed learnerships. <b>1</b> learner has completed Section 13 and <b>15</b> learners have completed Section 28 apprenticeships and <b>130</b> learners have completed bursaries.</p> <p>Discretionary Expenditure: <b>R 44 892</b></p>	<p><b>Target exceeded.</b></p> <p><b>Target Achieved.</b></p> <p>Slow progress due to economic down turn in the sector.</p> <p><b>Discretionary:</b> Limited take up of grants due to economic slow down.</p>
		<b>INDICATOR 4.2</b> 100% of learners in critical skills	Target for the Sector for the period 2005 to 2010 is <b>640</b> practical training	Target for the sector of learners assisted to gain work experience	<b>588</b> learners have been assisted with workplace experience.	<b>Target exceeded.</b> Well focussed projects

No	National Skills Development Strategy 2005 – 2010 objectives	National Skills Development Strategy 2005 - 2010 Success Indicators, National Targets	MQA Plan for 2005 – 2010 Five Year Targets	MQA Plan for 2008– 2009 Annual Targets Budget in R 000's	MQA achievements for 2008-2009 Expenditure in R 000's	Department of Labour Performance Scorecard Results
		programmes covered by Sector agreements from FET and HET institutions assisted to gain work experience locally or abroad, of whom at least 70% find placement in employment or self-employment	learners, including GDP learners. <b>448</b> learners to become self-employed or employed.	for the period 2008-2009 is <b>160</b> .  Target (70%) of students/graduates who find placement in employment or self-employment is <b>112</b> .  Discretionary Budget: <b>R 22 400</b>	<b>112</b> learners have been assisted to find placement in employment or self-employment.  Discretionary Expenditure: <b>R 22 109</b>	implementation.  <b>Discretionary;</b> Good progress made
		<b>INDICATOR 4.3</b> By March 2010, at least <b>10,000</b> young people trained and mentored to form sustainable new ventures and at least 70% of new ventures in operation 12 months after completion of programme	Target for the Sector for the period 2005 to 2010 is <b>445</b> young persons to be trained and mentored to form new ventures.  Target is that <b>398</b> (70%) new ventures are sustainable and in operation 12 months after completion of the learning.	Target for the sector for the period 2008-2009 is <b>130</b> young person's trained and mentored in new ventures.  Target for the sector is <b>91</b> new ventures are sustainable and in operation 12 months after completion of learning.  Discretionary Budget: <b>R 6 800</b>	<b>149</b> young people have been trained.  <b>96</b> new ventures are in operation 12 months after completion of the programme.  Discretionary Expenditure: <b>R 6 792</b>	<b>Target exceeded.</b>  <b>Target achieved.</b>  <b>Discretionary;</b> Good progress made
5	Improving the quality and	<b>INDICATOR 5.1</b> By March 2010 each	Target for the Sector for the period 2005 to 2010	Target for the sector for the period 2008-2009 is <b>5</b> institutes.	<b>6</b> Institutes of Sectoral or Occupational Excellence (ISOE)	<b>Target exceeded</b>

No	National Skills Development Strategy 2005 – 2010 objectives	National Skills Development Strategy 2005 - 2010 Success Indicators, National Targets	MQA Plan for 2005 – 2010 Five Year Targets	MQA Plan for 2008– 2009 Annual Targets Budget in R 000's	MQA achievements for 2008-2009 Expenditure in R 000's	Department of Labour Performance Scorecard Results
	<b>relevance of provision</b>	MQA recognises and supports at least five Institutes of Sectoral or Occupational Excellence (ISOE) within public & private institutions and through Public Private Partnerships (PPPs) where appropriate, spread as widely as possible geographically for the development of people to attain identified critical occupational skills, whose excellence is measured in the number of learners successfully placed in the Sector and employer satisfaction ratings of their training.	is 5 institutes.	Discretionary Budget: <b>R 2 291</b>	supported and recognised.  Discretionary Expenditure: <b>R 961</b>	<b>Discretionary:</b> Slow progress on implementation of ISOE process.
		<b>INDICATOR 5.2</b> By March 2010, each province has at least two provider institutions accredited to manage the delivery of the new venture creation qualification.	Target for the Sector for the period 2005 to 2010 is 5 institutes.	Target for the sector for the period 2008-2009 is 5 institutes.  Discretionary Budget: <b>R 0</b>	5 Providers are managing the New Venture Creation.  Discretionary Expenditure: <b>R 0</b>	<b>Target achieved.</b>  The MQA only utilises New Venture Creation Providers accredited with the

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		70% of new ventures still operating after 12 months will be used as a measure of the institutions' success.				Services SETA.
		<p><b>Indicator 5.3</b></p> <p>By March 2010 there are measurable improvements in the quality of the services delivered by skills development institutions responsible for the implementation of NQF in support of the NSDS&gt;</p>	Target is set for each year from 2005 t 2010 as described under annual target	<p>The target is to improve the quality of service delivery and implementation of NQF as required by SAQA and score a green rating on SAQA audits.</p> <p>Discretionary Budget: <b>R 6 668</b></p>	<p>SAQA Audit Rating = Orange</p> <p>Discretionary Expenditure: <b>R 5 449</b></p>	<p><b>Target not achieved.</b></p> <p>Due to ongoing challenges related to change over to new management information system.</p> <p><b>Discretionary:</b> Good progress made</p>