merSETA
MANUFACTURING, ENGINEERING AND RELATED SERVICES SETA

# SECTOR SKILLS PLAN

# UPDATE

# 2015/16-2019/20

## PROMOTING ARTISAN DEVELOPMENT FOR EMPLOYABILITY

**3 August 2015**

## OFFICIAL SIGN OFF

### FINAL SUBMISSION OF REQUIRED SSP DOCUMENTS AS PER DHET GUIDELINES FOR SSP UPDATE 2015/2016

It is hereby certified that this updated version of the Sector Skills Plan takes into account all the relevant policies, legislation and other mandates for which merSETA is responsible and accurately reflects the stipulated submission requirements as communicated by the Department of Higher Education and Training (DHET). This submission comprises merSETA Cover Letter, Continuous Improvement Plan and Final Draft of the SSP which was developed in accordance with the SSP Framework produced by DHET.

Dr R. Patel

**Chief Executive Officer** Signature: 

Ms P Baleni

**Chairperson merSETA Accounting Authority** Signature: 

**3 August 2015**

# COVERING LETTER

**3 August 2015**

**To: Department of Higher Education and Training, Directorate: SETA Support**

**SSP Cover Letter: merSETA SSP 2015/16 Update**

**To whom it may concern,**

The Manufacturing, Engineering and Related Services Sector Education Training Authority (merSETA) has prepared this final submission for the Sector Skills Plan (SSP) comprising this cover letter and the merSETA Continuous Improvement Plan (CIP) in response to the requirements as set out by the Department of Higher Education and Training (DHET) in the SSP Guidelines: Requirements for SSP Submission 2015/2016.

This letter serves to outline the status of the intended process for the final submission of the merSETA SSP Update 2015/16 against the revised CIP.

1. **Updates and New Information**:

   The analysis undertaken for the SSP report draws on a range of information sources.

   These sources include:

   - The merSETA's Workplace Skills Plans. This was the primary source of data. The WSP data includes scarce skills information, vacancy information, anecdotal training information and employment information

   - WSP data have more stringent data quality controls in place and utilises codes from OFO 2013.

   - Data from secondary sources such as BER, Statistics South Africa, the Higher Education Management Information System (HEMIS) and industry associations including the National Association of Automobile Manufacturers of South Africa (NAAMSA) have been included.

   - Data sources from the merSETA's own commissioned research through the Chambers has been utilised.

   - Research reports from national research institutions, industry publications and the media has been utilised.

   - The merSETA Accounting Authority and representatives from each of the merSETA chambers and the Strategy &Research Committee have been consulted for input and approval of the final SSP document.

**2. merSETA Goals as set out in the 2015/16 CIP Update.**

| CIP Goals for 2015/16 | Comment |
|---|---|
| a) SSP Planning & Process | The merSETA has followed the plan as per internal documented processes, approved by the Accounting Authority and supporting committees |
| b) Re- establish IRD Committee as advisory for each step of the process in turn reporting to the Governance and Strategy Committee of the Board | These Committees have continued to play an oversight role to ensure adherence to processes and that all data and information are correctly utilised. |
| c) Partnership with DPRU | The data and information contained in the SSP has been reviewed by the DPRU and furthermore the merSETA has utilised data and results of the LMIP firm survey conducted by the DPRU in the merSETA sectors. |
| d) Engagement with HEIs | Research projects commissioned in support of Sector Skills Planning. DPRU, Wits and others is ongoing. |
| e) Engagement With SETA cluster | Share knowledge and experiences as per DHET suggestion and in accordance with the SSP Guidelines. |
| f) Engagement with Government Departments | merSETA have engagement on SIPs, DTI SEZs and Regional Skills Development Forums though our regional committees and departmental workshops and meetings. |
| g) Update and review of WSP Template | The WSP Template was successfully refined to ensure better quality data and information for 2015. This will be further enhanced for 2016 |
| h) Incorporating merSETA research (including impact aspect) | Research reports and data to be incorporated from internal merSETA units and divisions. |
| i) Continuing capacity building in research | The research and strategy division continuously embarks on capacity building to ensure rigorous interrogation of data and information to guide research, statistical analyses and credible research outputs |
| j) Further enhancements and improvements tracked for final submission | This is in aid of continuous development |

Developmental feedback will be tracked against new strategies and partnerships that have been put in place for this years' SSP update. All technical processes related to the SSP have been brought in-house with the view of further capacity building and continued liaison with technical experts to guide the merSETA team and ensure quality and rigorous data interrogation.

The following outlines the tasks that needed to be undertaken for this final submission:

| Task to be completed | Comment | Status |
|---|---|---|
| a) Data Cleaning and Analysis (WSP/ATR/PIVOTAL) | Ensure correct interpretation of analyses with technical support and guidance from DPRU | Complete |
| b) Verify Skills Lists (Scarce/ PIVOTAL) | Expand list to include specialisations for each OFO identified.<br><br>Workshop list with stakeholders. | Complete |
| c) Further enhance and update CIP after stakeholder consultation and DHET feedback | Improvements to be taken into consideration after stakeholders engagement and SETA Cluster Review | Complete |
| d) Update as per DHET feedback session held on 17 July 2015 | Slide presentation outlining feedback for each chapter to be incorporated for final submission | Complete |

Kind regards

Laura Crosby

**Manager: Labour Market and Sector Skills Planning**

## SYNOPSIS

The Manufacturing, Engineering and Related Services Sector Education and Training Authority (merSETA) presents the fifth annual update of the five year Sector Skills Plan (SSP) 2011/12 – 2015/16 as required by the National Skills Development Strategy III (NSDSIII), developed by the Department of Higher Education and Training. This annual SSP update spans over the period 2015/16 to 2020/21.

The merSETA SSP seeks to align its activities in support of various national policies and strategy documents that relate directly to skills development, economic growth and social development. Such policies or strategies include: National Development Plan (NDP); New Growth Path; Strategic Integrated Projects (SIPs); New Jobs Fund; the Ocean Economy; White Paper on Post-School Education and Training; the National Skills Accord; the Medium Term Strategic Framework (MTSF); and the Industrial Policy Action Plan (IPAP). Finally, monitoring and evaluation policies such as the Policy Framework for Government-Wide Monitoring and Evaluation (GWM&E) among others are also important.

An analysis of the economic performance of merSETA sectors over the past year highlights a subdued outlook nationally as well as continued global economic uncertainty. The underlying structural problems in the SA economy continue to undermine growth in the merSETA sectors. In this light, it is unsurprising that the range of government strategies and policies aimed at addressing these problems in order to support economic and employment growth have not yet yielded substantial outcomes. Rather than increases in employment, the merSETA sector has seen a year on year decline in employment since 2011/12, the outlook for the upcoming year is similarly quite negative as the sector anticipates more job losses. The notion of de-industrialisation has come to the fore and has a real impact on the merSETA sector. The sector has seen plants closing down and a moratorium on headcount by industry.
Linked to merSETA's medium term plans, the key skills development priorities outlined in this SSP are firstly to develop a sector Labour Market Intelligence (LMI) system where merSETA intends to implement a comprehensive strategy to align internal functions that help produce credible research and sector skills planning. Secondly, to systemically provide continued and increased focus on artisan development is a primary focus for the merSETA in ensuring a constant supply of artisans to the manufacturing sector and other sectors of the economy.

Thirdly, establishing and facilitating partnerships is one of the critical areas that allow merSETA to oversee that there is coordination between a higher range of government and non-governmental stakeholders and intermediary agencies. This will ensure that local and international partnerships be fostered. Fourthly, with the intention to systematically eradicate the shortage of skills, merSETA intends to increase the flow of newly skilled workers into the sector. Fifth and lastly, the merSETA intends to continue developing the skills of the existing workforce as a measure to foster the notion of lifelong learning and keeping the workforce relevant to industry skills needs.

The 2015/16 Mandatory grant submissions was used to collect data on hard to fill vacancies from employers and the findings from the analysis of these submissions were presented to stakeholders who were able to provide inputs. This enabled merSETA to draw a list of 16 hard to fill vacancies across the 5 sub-sectors. These skills have been noted to range across the all occupation groups on the OFO (Table 6).

Overall, the merSETA has invested in various resources to insure that while reporting to the Department of Higher Education and Training (DHET) on skills issues, they are also able to respond to sector needs and requirements by fostering relationships and building partnerships with various stakeholders. This helps steer the strategic direction of skills planning which is intended to respond to sector needs. Such close knit partnerships with industry allows for credibility to the merSETA funded skills development initiatives as they seek to respond to industry needs which are also balanced out with key national strategies and policies.

# EXECUTIVE SUMMARY

The Sector Skills Plan update for the 2015/2016 period was developed at an exciting time in the skills development arena. Not only does the plan comply with a new framework which was developed by the DHET to ensure standardised reporting and enhanced credibility of information but it also comes at a time when the post school education sector is seeing real development in terms of implementation of the White Paper as well as positive enhancements in our understanding of the needs of a rigorous Labour Market Intelligence System to aid skills development.

Within this current context merSETA have produced the SSP in collaboration with various research partners and we have also capitalised on our involvement with the LMIP, the SETA Cluster, DHET workshops on research and labour market intelligence as well as internal capacity building to ensure rigorous interrogation of our findings.

This SSP summarises our sectors profile in terms of its employer and employee composition, economic trends and drivers of change, it highlights our skills issues and skills mismatches which all culminates in priority actions to be undertaken to meet the needs of the sector.

With regards to the current context of the sector in terms of its profile and the economic climate, the SSP demonstrates the significant impact that global economic conditions and the domestic energy supply challenges have had on our sector. The number of employees in the sector has decreased, vacancies in the sector have decreased and our stakeholders have warned of further retrenchments and head-count freezes to be implemented in the next financial year. These trends do not bode well for our sector and will further contribute to national levels of joblessness and economic uncertainty. Furthermore our stakeholders need to remain globally competitive and the sector has seen a decline in traditional manufacturing production in favour of automation. These trends also provide an indication that the small and medium business as well as informal sectors will become a key component for employment opportunities and skills development opportunities going forward. The implication of this is a higher demand for multi-skilled individuals who can work across sectors and occupations, therefore the notion of trans-skilling and re-skilling needs to be taken into account.

In terms of skills development these findings indicate a higher demand for mid to highly skilled workers with low skilled workers bearing the brunt of the negative employment trend. Furthermore there continues to be challenges in terms of demographic profile of workers at the various occupational levels with black workers occupying the greatest proportion of low level occupations and relatively lower representation at professional and managerial levels. In terms of the age profile of workers, the majority of new entrants into the sector are semi skilled youth, however there is an indication that younger workers are also tending to be more represented in the technical and professional skills levels in accordance with the trend to automation and innovation in the sector. Overall, we do see some positive movement in terms of opportunities for the previously disadvantaged and women but the sector's demographic profile remains relatively stable.

Key skills issues have revealed that the merSETA has a significant role to play in terms of its alignment with national development priorities, there is however a trend emerging in the general economy as well as national development that calls for a focus on skilled workers, specifically for IPAP, SIPs and Operation Phakisa. Skills for the green economy are also in ever increasing demand both for productivity and renewable energies.

When considering the skills mismatches within our sectors, the merSETA have surmised that a shortage of highly skilled people is one of the factors that have contributed to the slow adoption of technology, low productivity, low competitiveness and high cost of production over time. The labour force was unable to keep up with the demands of industry at a global level. Skills requirements of the evolving sector are dependent on highly analytical and problem solving ability. Poor throughput of learners with maths, science and engineering hampers effort to compete globally. This is exacerbated by the negative perception of those in the sector of TVET college graduates. There is a prevailing trend in our sector which demonstrates a reluctance of employers to employ TVET graduates due to a lack of practical exposure, up-to-date theoretical knowledge and low work-readiness. Furthermore industry has identified the lack of support for smaller and emerging sector skills needs for occupations at the cutting edge of technology and global competition.

merSETA have capitalised on its partnerships within the TVET sector to best assist and understand the skills needs and dynamics from industry. merSETA have local and international partnerships with Universities and TVET Colleges to develop greater synergies in terms of skills supply and demand. These partnerships not only speak to skills development needs in terms of producing a relevant supply of skills, but it also fosters a dynamic pool of professional engagements and projects to critically assess skills within our sectors and meet current and future expectations of the sector.

Ultimately the SSP has focused our attention on the following strategic issues:

- Addressing strategic skills development challenges to drive employment and economic growth.
- Supporting opportunities for innovation in products, services, operations and business approaches.
- Balancing competing short and longer-term skills development needs for the sector as well as stakeholder and shareholder needs and interests.
- Enhancing merSETA's capacity to respond to the skills development needs of the not only at sectoral, but also at sub-sectoral levels, and regional as well as national levels.

# ACRONYMS

| | |
|---|---|
| **AATP** | Accelerated Artisan Training Programmes |
| **AIDS** | Acquired Immune Deficiency Syndrome |
| **AIS** | Automotive Investment Scheme |
| **AMT** | Automatic |
| **ARPL** | Artisan Recognition Prior Learning |
| **ATD-TTT** | Artisan and Technologist Development Technical Task Team |
| **ATR** | Annual Training Report |
| **APDP** | Automotive Production and Development Programme |
| **BER** | Bureau for Economic Research |
| **CAD/CAM** | Computer-Aided Design/Modelling |
| **CBQ** | Cost Benefit Quality |
| **CEPPWAWU** | Chemical Energy Paper Printing Wood and Allied Workers Union |
| **CETEMF** | Capital equipment, transport equipment, metal fabrication |
| **CHE** | Council for Higher Education |
| **COMET** | Competence Measurement in Education and Training |
| **CPI** | Consumer Price Index |
| **CNC** | Computer Numerical Control |
| **CPD** | Continuous Professional Development |
| **CSIR** | Council for Scientific and Industrial Research |
| **DHET** | Department of Higher Education and Training |
| **DoL** | Department of Labour |
| **DPRU** | Development Policy Research Unit |
| **DSAP** | Dual System Apprenticeship Programme |
| **Dti** | Department of Trade and Industry |
| **ECSA** | Engineering Council of South Africa |
| **ESSA** | Employment Services South Africa |
| **FET** | Further Education and Training |
| **GET** | General Education and Training |
| **GDP** | Gross Domestic Product |
| **GWM&E** | Government-Wide Monitoring and Evaluation |
| **HEI** | Higher Education Institutions |
| **HEMIS** | Higher Education Management Information System |
| **HET** | Higher Education and Training |
| **HIV** | Human Immunodeficiency Virus |
| **HSRC** | Human Sciences Research council |
| **ICT** | Information and Communication Technology |
| **IDC** | Industrial Development Corporation |
| **IDZ** | Industrial Development Zone |
| **IPAP** | Industrial Policy Action Plan |
| **JSE** | Johannesburg Stock Exchange |
| **LMI** | Labour Market Intelligence |
| **LMIP** | Labour Market Intelligence Partnerships |
| **MBA** | Master of Business Administration |
| **merSETA** | Manufacturing, Engineering and Related Services Sector Education and Training Authority |
| **MHCV** | Medium and Heavy Commercial Vehicles |
| **NAACAM** | National Association of Automotive Component Manufacturers |
| **NAMB** | National Artisan Moderation Body |
| **NATED** | National Technical Education |

| | |
|---|---|
| **NCPC-SA** | National Cleaner Production Centre of South Africa |
| **NCV** | National Certificate (Vocational) |
| **NDP** | National Development Plan |
| **NEET** | Not in Employment, Education or Training |
| **NGO** | Non-governmental Organisation |
| **NGP** | New Growth Plan |
| **NMMU** | Nelson Mandela Metropolitan University |
| **NQF** | National Qualifications Framework |
| **NSDS** | National Skills Development Strategy |
| **NSF** | National Skills Fund |
| **NUMSA** | National Union of Metalworkers of South Africa |
| **NYDA** | National Youth Development Agency |
| **OEM** | Original Equipment Manufacturers |
| **OFO** | Organising Framework for Occupations |
| **PDI** | Previously Disadvantaged Individual |
| **PhD** | Doctor of Philosophy |
| **PICC** | Presidential Infrastructure Coordination Committee |
| **PIVOTAL** | Professional, Vocational, Technical and Academic Learning |
| **PlasticsSA** | Plastics Federation of South Africa |
| **PPP** | Public-Private Partnership |
| **PWD** | People with Disabilities |
| **QCTO** | Quality Council for Trades and Occupations |
| **QLFS** | Quarterly Labour Force Survey |
| **QMR** | Quarterly Management Report |
| **R&D** | Research and Development |
| **RAP** | Retrenchment Assistance Programme |
| **Redisa** | Recycling and Economic Development Initiative of South Africa |
| **REAL** | Centre for Researching and Learning |
| **Rm** | Rand (million) |
| **RMI** | Retail Motor Industry |
| **RPL** | Recognition of Prior Learning |

| | |
|---|---|
| **SA** | South Africa/South African |
| **SAA** | South African Airways |
| **SADC** | Southern African Development Community |
| **SAQA** | South African Qualifications Authority |
| **SDL** | Skills Development Levy |
| **SEIFSA** | Steel and Engineering Industries Federation of South Africa |
| **SET** | Science, Engineering and |
| | Technology |
| **SETA** | Sector Education and Training Authority |
| **SEZ** | Special Economic Zone |
| **SIC** | Standard Industrial Classification |
| **SIP** | Special Infrastructure Project |
| **SME** | Small- and medium enterprises |
| **SMME** | Small, medium and micro-enterprises |
| **SOE** | State Owned Enterprise |
| **SSP** | Sector Skills Plan |
| **Stats SA** | Statistics South Africa |
| **STEM** | Science, Technology, Engineering and Mathematics |
| **TLS** | Training and Lay off Scheme |
| **TVET** | Technical & Vocational Education and Training College |
| **UCT** | University of Cape Town |
| **WELA** | Women in Engineering Programme |
| **WIL** | Work Integrated Learning |
| **WSP** | Workplace Skills Plan |
| **WTO** | World Trade Organisation |

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# 1 SECTOR PROFILE

## 1.1 INTRODUCTION

The purpose of this chapter is to provide an overview of the merSETA labour market profile and economic performance of the sector. A description of the organisations within the sector and the sector's employment profile are also highlighted. The chapter also describes the major sector characteristics that directly influence sector skills needs and requirements and, therefore, the work of the merSETA.

## 1.2 SCOPE OF COVERAGE

The merSETA, established in 1999 in terms of the skills development legislation, includes a range of manufacturing activities in addition to a few related service and retail activities. On the basis of the three-digit Standard Industrial Classification (SIC) codes that are used in capturing the data for the National Accounts, the table below outlines the industrial activities aligned to the merSETA scope of coverage and classifies them by chamber.

| Chamber | SIC | Description | sector |
|---|---|---|---|
| Auto | 381 | manufacture of motor vehicles | manufacturing |
| Metal | 351 | manufacture of basic iron and steel | manufacturing |
| | 352 | manufacture of basic precious and non-ferrous metals | |
| | 353 | casting of metals | |
| | 354 | manufacture of structural metal products, tanks, reservoirs and steam generators | |
| | 355 | manufacture of other fabricated metal products; metalwork service activities | |
| | 356 | manufacture of general purpose machinery | |
| | 357 | manufacture of special purpose machinery | |
| | 358 | manufacture of household appliances n.e.c. | |
| | 361 | manufacture of electric motors, generators and transformers | |
| | 362 | manufacture of electricity distribution and control apparatus | |
| | 363 | manufacture of insulated wire and cable | |
| | 365 | manufacture of electric lamps and lighting equipment | |
| | 366 | manufacture of other electrical equipment n.e.c. | |
| | 371 | manufacture of electronic valves and tubes and other electronic components | |
| | 372 | manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy | |
| | 373 | manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods | |
| | 374 | manufacture of medical appliances and instruments and appliances for measuring, checking, testing, navigating and for other purposes, except optical instruments | |
| | 375 | manufacture of optical instruments and photographic equipment | |
| | 384 | building and repairing of ships and boats | |
| | 385 | manufacture of railway and tramway locomotives and rolling stock | |
| | 386 | manufacture of aircraft and spacecraft | |
| | 387 | manufacture of transport equipment n.e.c. | |
| | 503 | building installation | construction |
| | 504 | building completion | |
| Motor | 382 | manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers | manufacturing |
| | 383 | manufacture of parts and accessories for motor vehicles and their engines | |
| | 387 | manufacture of transport equipment n.e.c. | |
| | 631 | sale of motor vehicles | retail |
| | 632 | maintenance and repair of motor vehicles | |
| | 633 | sale of motor vehicle parts and accessories | |
| | 634 | sale, maintenance and repair of motor cycles and related parts and accessories | |

| Chamber | SIC | Description | sector |
|---|---|---|---|
| New Tyre | 337 | manufacture of rubber products | **manufacturing** |
| Plastics | 334 | manufacture of basic chemicals | **manufacturing** |
| | 338 | manufacture of plastic products | |
| | 395 | recycling n.e.c. | |

**Table 1: merSETA scope of coverage**

Functionally, merSETA member companies belong to one of five chambers. This five-chamber structure does not however totally align with the National Accounts data or with the references in the literature to the firms contained in this group, which generally refer to the metals industry, the automotive industry, or the plastics manufacturing industry. Furthermore, while the majority of merSETA firms fall within the overall manufacturing sector in the National Accounts data, and make up a sizeable proportion of total SA manufacturing, the merSETA also includes firms that fall into the retail and construction sectors.

## 1.3 INDUSTRIAL OVERVIEW

This section provides a brief overview of each of merSETA's sectors.

### 1.3.1 Metal Sector

The metal sector, including the capital equipment, transport equipment, metal fabrication (CETEMF) and related subsectors, forms a substantial part of SA's manufacturing. The production of this sector is based on the country's rich natural endowment in a wide range of metals. This sector contributed 19.2% to total manufacturing according to the 2014 Stats SA GDP figures (Stats SA, 2015).

### 1.3.2 The Automotive Sector

The automotive sector, incorporating local OEMs, New Tyre Chamber and Motor Chambers, includes companies linked to each other through the automotive production and distribution value chain. The metals, plastics and rubber products sectors provide key inputs into the automotive components manufacturing and vehicle assembly sections of the value chain. The automotive industry accounts for about 30% of manufacturing output (Automotive Industry Export Council, 2015).

### 1.3.3 The Plastics Manufacturing Sector

The merSETA's plastics manufacturing sector represents the downstream section of the plastics value chain. The sector is largely composed of small firms, as barriers to entry are relatively low (DTI, 2013). The vast majority of firms are not listed in the Johannesburg Stock Exchange (JSE) (merSETA, 2013). Local and imported polymers are converted into a range of intermediate and final products. These products form a critical input into a range of other sectors. More than half (52%) of SA's plastics manufacturing serves the local food and general packaging market. Other market sectors include building and construction, automotive, agriculture, medical, household goods, clothing and footwear, and toys and

leisure equipment. The sector contributes about 14.2% to the manufacturing sector (Plastics SA, 2014).

## 1.4 KEY ROLE PLAYERS

### 1.4.1 Key Role Players

The industry is shaped primarily by big businesses, but it is also influenced by national priorities and watchdog organisations which monitor and regulate industry. The key industry players within merSETA's sectors includes some of the worlds largest OEMs, large steel and engineering companies, large plastics manufacturers, large motor retail and service companies and some of the largest global tyre manufacturers. Table 2 below highlights some of these key players.

| Auto | Metal | Motor | New Tyre | Plastics |
|---|---|---|---|---|
| Toyota | Cape Gate | McCarthy Limited | Bridgestone | Zibo Containers Oty Ltd |
| Mercedes Benz | ARCELORMITTAL SA | Associate Motor Holdings | Continental Tyre SA | Atlantic Foundries Pty Ltd |
| Volkswagen | Rotek Engineering | Unitrans Automotive Pty Ltd | Sumitomo Rubber | Polyoak Packaging Cape |
| BMW SA | Barloworld Equipment | Barloworld | Apollo Tyres Africa Pty Ltd | Telplast |
| Ford Motor Company of Southern Africa | Columbus Stainless Steel | Sandown Motor Holdings | Max T Solutions | Multiknit; sakpro; knittex & Multiknit International |
| Nissan SA Pty Ltd | Highveld Steel | Hesto Harnesses Pty Ltd | TrenTyre Pty Ltd | Mondi Versapak (Pty) Ltd |
| Volvo | Vanadium and Cisco | CMH Holding Pty Ltd | Goodyear SA (Pty)Ltd | Marley Pipe Systems (SA) Pty Ltd |
| Scania South Africa Pty Ltd | Scaw Metals | Alan Hudson Motors Cc | Max T Solutions | |
| General Motors of South Africa (Pty) Ltd | Aveng Grinaker-Lta M&E | Feltex Automotive Trim East London | | |
| | Atlantis Foundries Pty Ltd | | | |

**Table 2: Key role players in the merSETA sectors**

### 1.4.2 Labour organisations

The National Union of Metalworkers of South Africa (NUMSA) is one of the biggest unions in the sector. NUMSA represents workers from the engineering (steel production), vehicle assembly, automotive components manufacturing, new tyre and electronics manufacturing subsectors. Other unions that play a significant role in the sector include Chemical Energy Paper Printing Wood and Allied workers Union CEPPWAWU (Plastics sector), Metal and Electrical Workers Union of South Africa (NEWUSA) (Plastics and Metal sector) and Solidarity that cut across all the sectors. Unions play a significant role in advocating and fighting for workers rights, skills development and improving conditions of employment and advocating for transformation among other things.

### 1.4.3 Employer organisations

Like labour, employers in the merSETA sectors are well organised. Firms in the Metals Chamber are represented by SEIFSA. NAAMSA represents franchise holders marketing vehicles in South Africa (NAAMSA, 2012). NAACAM is the National Association of Automotive Components and Allied Manufacturers of South Africa, while the Retail Motor Industry (RMI) Organization represents the retail segment of the automotive sector. The New Tyre Chamber companies are represented by the New Tyre Manufacturers Employers Association and the South African Tyre Manufacturer's Conference (SATMC). Firms in the Plastics Chamber are represented by the Plastics Federation of South Africa (PlasticsSA). These organisations play an important role in the sector in terms of activities such as collective bargaining, data- and information gathering and dissemination, and skills development.

### 1.4.4 Professional Organisations

The various professional groups employed by the merSETA sectors are affiliated to a range of statutory and voluntary professional associations and bodies. Professional bodies (for example, the Engineering Council of South Africa (ECSA) play an important role in skills development, in promoting the relevance and the quality of professional qualifications, in maintaining professional work standards, and in continuous professional development (CDP), (ECSA, 2012).

Since the election of the new ECSA Council in 2009, this professional body has furthermore taken on additional responsibilities outside of its statutory requirements that focus on increasing the relevance of the engineering profession to national development objectives. In line with this, ECSA has provided leadership co-ordination to the 'Ingenious' programme that aims to increase the exposure of particularly rural, African and female children to science and engineering; undertaken research to find solutions to increasing the success rates of engineering students at higher education; and entered into a partnership to develop the engineering skills capacity at all levels of government in order to deliver on the SIPs at national and local level and through this to positively impact on national service delivery.

### 1.4.5 Bargaining Councils

Wage determination in the automotive assembly subsector takes place through a non-statutory centralised bargaining arrangement. The two parties of the National Bargaining Forum (NBF), which was established in 1990, are NUMSA and the Automobile Manufacturers Employers Organisation (AMEO) to which all seven local OEMs belong. For the other merSETA sectors in which NUMSA represents workers, the industrial councils include the Metal and Engineering Industries Bargaining Council (MEIBC), the Tyre Industrial Council, and the Motor Industries Bargaining Council (MIBCO).

## 1.5 MANUFACTURING, ENGINEERING AND RELATED SERVICES ECONOMIC PERFORMANCE

The Manufacturing, engineering and related services sector is currently taking a lot of strain compounded by the fact that the sector has not fully recovered from the 2009 recession. Production levels have slowed which has contributed to the subdued outlook and labour instability within the sector. Overall, the outlook remains uncertain due to renewed threats of labour strikes in the metal, engineering and manufacturing sectors and the uncertainty with regard to electricity supply and electricity tariff increases, weighs heavily on the sectors performance as reported by the Bureau for Economic Research (BER, 2015). The relative

contribution of the manufacturing sector to the gross domestic product (GDP) in the SA economy from 1995 to 2014 is shown in figure 1 below. In comparison, the manufacturing sector as a whole (of which the merSETA sector forms a significant proportion) has experienced contraction from about 19.5 % in 1995 to about 11.9% in 2014. Sub-sectors such as the new tyre are facing numerous challenges due to continued increase of cheap tyre imports from the east. High electricity costs and increasing transport costs are also taking their toll on the sector. One-sided labour laws and customs, the pending carbon tax, the high cost of tooling imports due to the weak currency and reduced productivity have all contributed to the underperformance of sector (Transport World Africa, 2014). The metals industry has also taken strain due to electricity shortages and labour unrest among other factors (Engineering News, 2015). The Automotive sector however performed well in the past year with export earnings for 2014 increasing by 12.7%, to a record R115.7-billion, compared to the R102.7-billion reported in 2013 due to the weakened currency (Automotive Industry Export Council, 2015).

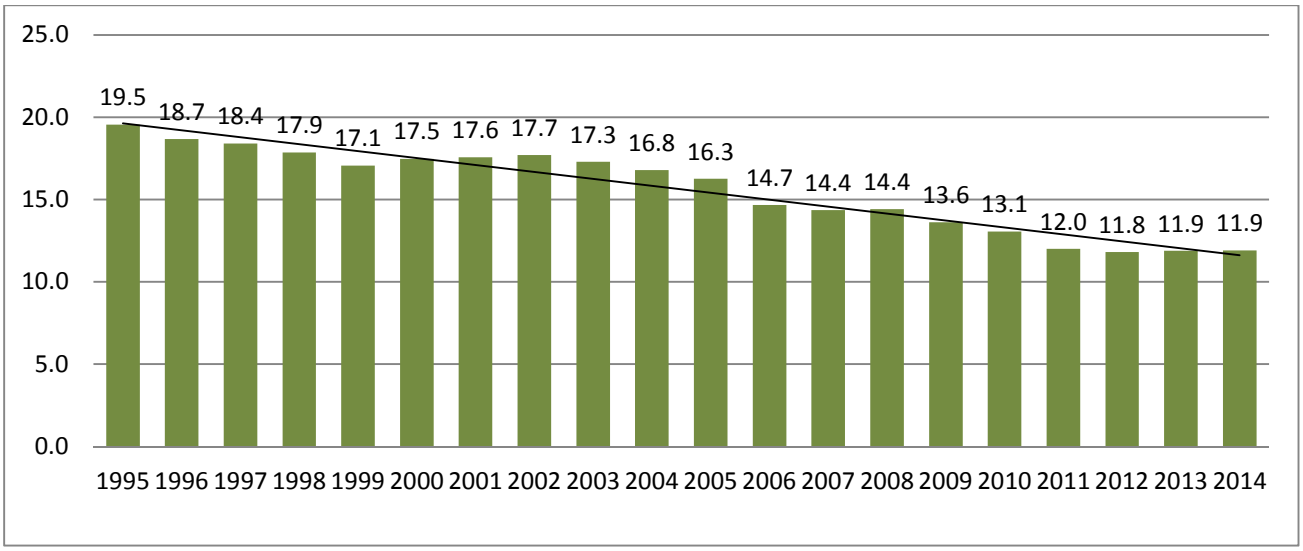



**Figure 1: Contribution of the manufacturing sector to the GDP**
Source: Stats SA, 2015

### 1.5.1 Economic Factors that influence the performance of the sector

The impact that the merSETA sector has on the economy as a whole is driven by a multitude of factors that are important to consider when contemplating skills in South Africa and indeed skills planning. The sector does not operate in isolation and it is important to reflect on such issues.

#### *1.5.1.1 Global economics*

South Africa's economy continues to be negatively affected by global trading conditions, with adverse home-grown factors aggravating its performance in recent times**.** Harsh recessionary conditions in the Eurozone are having a particularly detrimental effect on the local manufacturing sector, specifically its export-oriented segments. Combined with subdued growth elsewhere in the world and competitive challenges on the local front, such developments are stifling prospects for a meaningful industrial recovery (Industrial Development Corporation (IDC) (2013).

#### *1.5.1.2 The exchange rate and currency volatility*

Volatility of the SA Rand against major global currencies makes planning for profitable local manufacturing very difficult. Studies on the impact of currency volatility concluded that "real exchange rate volatility has a significant contractionary effect on manufacturing employment growth in both the short-and long-run while the depreciation of real exchange rate leads to an improvement in manufacturing employment growth using long run effects" (Mpofu, 2013). The South African structural weaknesses, growth of the United States of America economy, labour relations, infrastructure constraints, and electricity supply disruptions continue to weigh on the Rand.

#### *1.5.1.3 Raw material input costs and availability*

An ongoing problem for SA manufacturing and engineering and related services firms is the local pricing of raw material from monopolistic upstream suppliers. A DTI survey found that 21,8% of manufacturers would raise employment by 10% for a sustained 10% fall in the steel price, while 45% indicated that they would lift employment by 10% should the steel prices be 20% lower (Creamer, 2011). In line with this, the SA government is demanding a more competitive 'developmental' steel price for the local industry. To add to the woes, shortage of electricity, a major energy resource has impacted negatively on the merSETA sectors such as new tyre manufacturing and energy intensive metal and engineering sectors. According to Henk Langenhoven, chief economist of SEIFSA representing the energy-intensive steel and engineering industries, electricity disruptions could slash production by an estimated 23 percent (Engineering News, 2015).

#### *1.5.1.4 Labour productivity and skills availability*

The continued rise of labour costs without an accompanying rise in labour productivity is the main cause of the manufacturing sector's deteriorating global competitiveness (Kagiso Asset Management, 2013). Key findings from the 2013 Kagiso Asset Management report show that Labour costs typically account for more than 50% of manufacturers' costs. South Africa has in the past had far higher unit labour cost growth relative to emerging market peer group countries. Much of the blame for this lies with South Africa's very inflexible labour regulations and the power of trade unions. Union wage agreements have tended to be at above-inflation levels (Mthethwa & Elsley, 2014). Other factors include the limited supply of artisans and experienced management, particularly those from previously disadvantaged backgrounds, drives up wages for this group (Nzukuma & Bussin, 2011). Challenges within the public basic education and TVET systems also impact the availability of skills for industry, directly through their impact on the generic skills levels within the workforce and through the generation of quality artisans as well as indirectly through the negative effect on the quality of higher education qualifications (Africa Economy Outlook, 2014).

#### *1.5.1.5 The local political and social context*

A number of political and social factors in South Africa serve to undermine certainty in production and, therefore, the competitiveness of local firms. The local political and social context has been particularly relevant over the 3 years. The Marikana mining strike in August 2012 not only resulted in a devastating loss of life, but also undermined established collective-bargaining structures; led to the downgrading by various rating agencies of some of South Africa's state owned enterprises and its ongoing effect (in the form of 'wildcat' strikes in the mining sector that reduced mining output) resulted in an overall trade deficit for South Africa of R190 billion over the 2012/13 financial year (Mail& Guardian, 2013).

Together the factors outlined above contribute to the sector being subjected to high levels of both fair and unfair competition from imported products.

#### *1.5.1.6 Government priorities and infrastructure development*

Government's infrastructure development programmes have a direct influence on the economic performance of the merSETA's sectors. On one hand the entire sector is dependent on the infrastructure (specifically the transport infrastructure) for the distribution of its products and, therefore, stands to benefit substantially from the upgrading of the national roads and rail network (CSIR, 2010). On the other hand both the metals and the plastics industries are suppliers to the building and construction sector and firms that supply government infrastructure-development initiatives are to a large extent shielded from the full impact of the challenges facing the global economy. In February 2012 President Jacob Zuma announced government's intention to undertake a huge campaign of building national infrastructure with a total of 18 large-scale Strategic Integrated Projects. This expenditure is part of government's drive to stimulate economic development (national industrialisation, skills development and job creation) through a network of policies and strategies (The Presidency, 2012).

Manufacturing has also been identified as one of the four priority sectors that have been selected as new growth areas in the ocean economy. These include marine transport and manufacturing activities, such as coastal shipping, transhipment, boat building, repair and refurbishment (Engineering News, 2014). This is set to boost the manufacturing and engineering sectors such as the plastics and metal sector and consequently the demand for skills and employment in these sectors.

The Department of Trade and Industry Automotive Investment Scheme (AIS) and Medium and Heavy Commercial Vehicles-Automotive Investment Scheme (MHCV-AIS), has also contributed to the growth and competitiveness of the automotive sector (Automotive Industry Export Council, 2015). The envisaged growth and development of the automotive sector through the Automotive Investment Scheme coupled with other industry driving forces such as technology innovation, the prevailing economic and global environment will arguably have an impact on skills planning for this sector going forward.

#### *1.5.1.7 Environmental considerations and the green agenda*

Finally, impacting on all three merSETA sectors is the cost associated with meeting increasing environmental pressures. The nature of metals manufacturing, especially at the milling stage where purification of the raw material demands a number of high-temperature processes, subjects this subsector to stricter legislation; for example, the Waste Management Act, 2008 (Government of South Africa, 2009) and the National Waste Management Strategy. Overall, the merSETA sectors all want to be seen to be part of the solution and not part of the problem:

merSETA's Plastics Chamber identified 'Sustainability, including managing the environmental impact' as the top of its list of key drivers for the future of the sector (merSETA , 2013).
merSETA's Motor Chamber identified the 'Green Agenda' as of critical importance to the motor industry, since it is a major creator of waste (merSETA, 2013).
The merSETA has prioritised skills for sustainable development as part of its Strategic Plan.

The merSETA has also facilitated the development of ''green qualifications" such as the Wind Turbine Service Technician and Solar PV Technician as a contribution to "greening the economy".

## 1.6 THE IMPACT OF ECONOMIC PERFORMANCE ON SKILLS DEVELOPMENT

The weak performance of the manufacturing, engineering and related service sector is affecting employment. The contraction of the sector has resulted in the sector shedding jobs especially unskilled workers. According to key findings from the 2014 Metal Chamber research, to grow and survive, in the face of harsh economic conditions and competition, industry needs to continue to invest in automation to cut down labour and other costs of production (merSETA, 2014). This has however created an opportunity for highly skilled people to drive the automated processes. Findings from the 2015 Motor Chamber research also highlighted the need to increase the number of highly skilled people in the sector so as to increase productivity which is essential for the competitiveness, growth and survival of the sector (merSETA, 2015). This places emphasis on the need for the merSETA to facilitate the development of unskilled and semi-skilled workers who risk losing their jobs due to mechanisation. This is important in a sector like merSETA which is semi-skilled intensive. Chapter two will highlight some of the initiatives the merSETA has put in place as a response to the decline of the sector, retrenchments and layoffs.

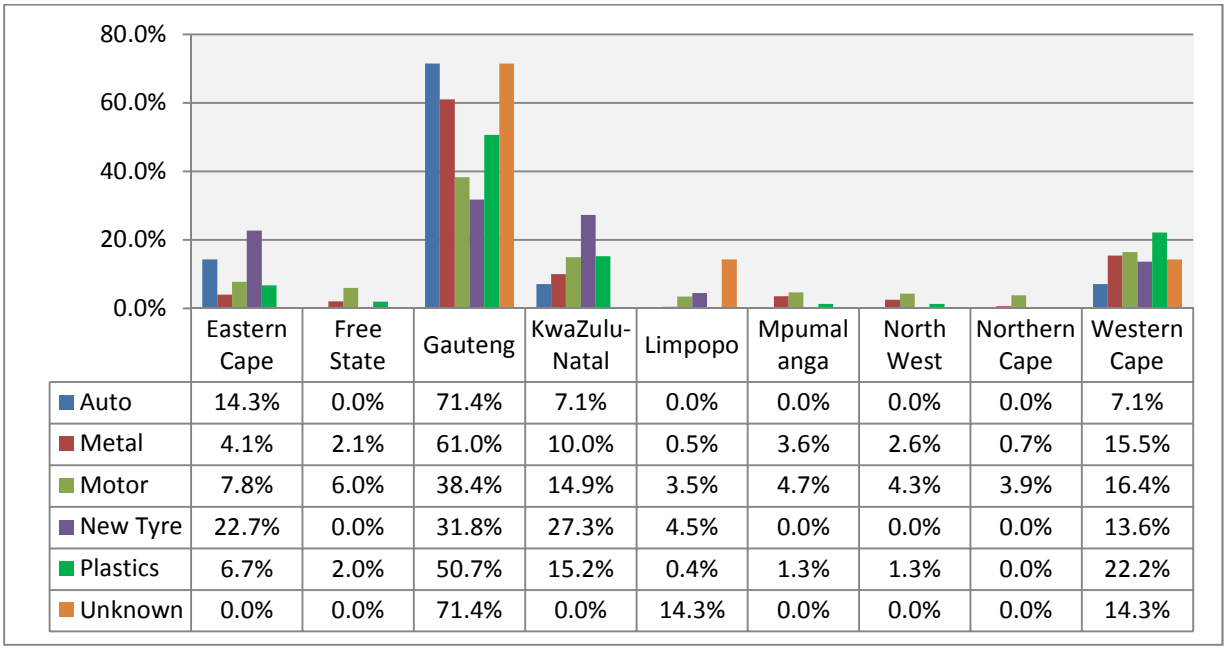
## 1.7 ORGANISATIONS IN THE SECTOR

In the 2015/2016 financial year, 13582 companies paid skills development levies (SDLs) to the SETA, which is an increase of 5.7% from the previous year, however less than 4000 companies submitted WSP/ATR information as a requirement for the Mandatory Grant. The growth in the number of companies paying levies to the merSETA is attributed an increase in the number of small and medium firms submitting data. The merSETA recognises the challenges that it faces with respect to the understanding and servicing of the small non-levy-paying companies in its sector. This is an area that will receive continued attention in future.

In terms of the size of levy paying companies in the merSETA sector, 86% are Small and Medium enterprises (SMEs) employing less than 150 people and 14% employ are large enterprises employing more than 150 people. The SME sector plays a very critical role in the economic and social development of the country. The Government has prioritised entrepreneurship and the advancement of Small, Medium and Micro-sized Enterprises (SMMEs) as the catalyst to achieving economic growth and development (DTI, 2015). The merSETA also recognises the role played by SMEs in national development (See chapter 2).

### 1.7.1 Provincial distribution of merSETA companies

In terms of the provincial distribution of the companies within merSETA's five chambers. All m. Outside of Gauteng, companies in the Metal Chamber are concentrated in the Western Cape and KwaZulu-Natal; companies in the Auto Chamber are concentrated in the Eastern and Western Cape and KwaZulu-Natal; companies in the Motor Chamber are concentrated in the Western Cape and KwaZulu-Natal; companies in the New Tyre Chamber are concentrated in KwaZulu-Natal and the Eastern Cape; and companies in the Plastics Chamber are concentrated in the Western Cape and KwaZulu-Natal. The merSETA sector is thus relatively unevenly distributed across the provinces as can be seen in figure 2 below.




| | Eastern Cape | Free State | Gauteng | KwaZulu-Natal | Limpopo | Mpumalanga | North West | Northern Cape | Western Cape |
|---|---|---|---|---|---|---|---|---|---|
| Auto | 14.3% | 0.0% | 71.4% | 7.1% | 0.0% | 0.0% | 0.0% | 0.0% | 7.1% |
| Metal | 4.1% | 2.1% | 61.0% | 10.0% | 0.5% | 3.6% | 2.6% | 0.7% | 15.5% |
| Motor | 7.8% | 6.0% | 38.4% | 14.9% | 3.5% | 4.7% | 4.3% | 3.9% | 16.4% |
| New Tyre | 22.7% | 0.0% | 31.8% | 27.3% | 4.5% | 0.0% | 0.0% | 0.0% | 13.6% |
| Plastics | 6.7% | 2.0% | 50.7% | 15.2% | 0.4% | 1.3% | 1.3% | 0.0% | 22.2% |
| Unknown | 0.0% | 0.0% | 71.4% | 0.0% | 14.3% | 0.0% | 0.0% | 0.0% | 14.3% |

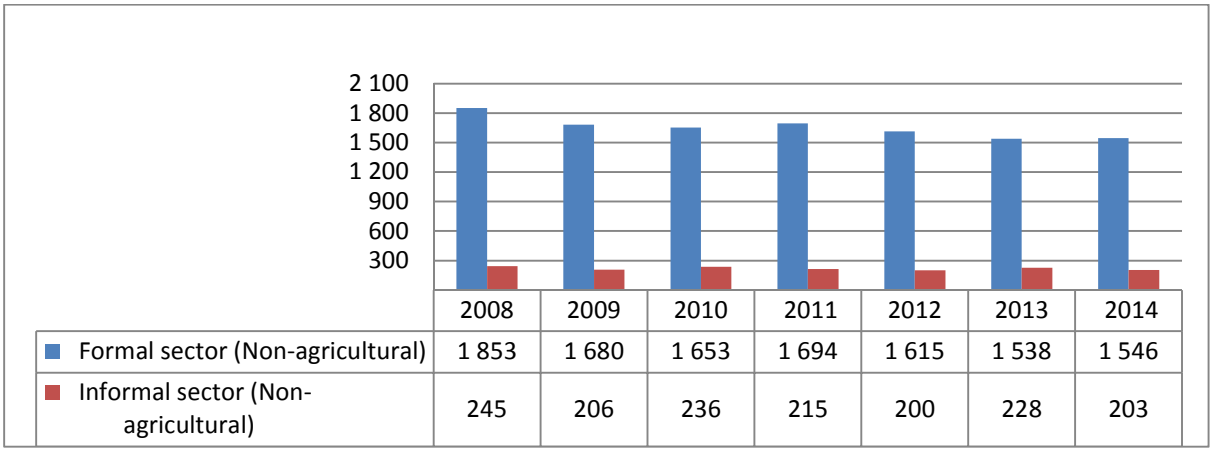
**Figure 2: Provincial distribution of companies in the sector**
Source: merSETA WSP data 2015

## 1.8 LABOUR MARKET PROFILE

The merSETA's workplace skills plans (WSPs) provide data on sector employment by chamber, the demographic profile of employees, and by occupation. Although the WSPs submitted in June 2015 represent only 26.0% of the levy-paying organisations in the sector, they represent over seventy percent of the total levies paid. As there is a direct relationship between levies paid and employment, it therefore stands to reason that the WSPs represent the majority of employees in the sector. For this reason the data from this source was the primary source of information used in the compilation of the sector profile. In order to extrapolate the data to the total sector and to compensate for the levy-paying organisations that didn't submit WSPs, the data were weighted.

The analysis of Workplace Skills Plans (WSPs) submitted to the merSETA in June 2015 sets total employment in the sector at an estimated 609 823. This figure excludes employment in the non-levy-paying companies allocated to the sector1. According to the 2014 Quarterly Labour Force Survey (QLFS), the national economy employed about 13.359 million people in the first quarter of 2015. The manufacturing sector provided employment for about 1.749 million or 13.1% of the total employed population (Stats SA, 2015). Figure 3 below provides context to these figures by showing total manufacturing employment figures in SA by both formal and informal employment in the sector. Since 2008 total manufacturing employment has declined, with the largest decline between 2009 and 2010.

[1] At this stage the merSETA doesn't have enough information on the small non-levy-paying companies to estimate employment numbers. A clean-up of the data that are transferred from the DHET to the SETA and focused research are needed before any reliable estimates can be made.

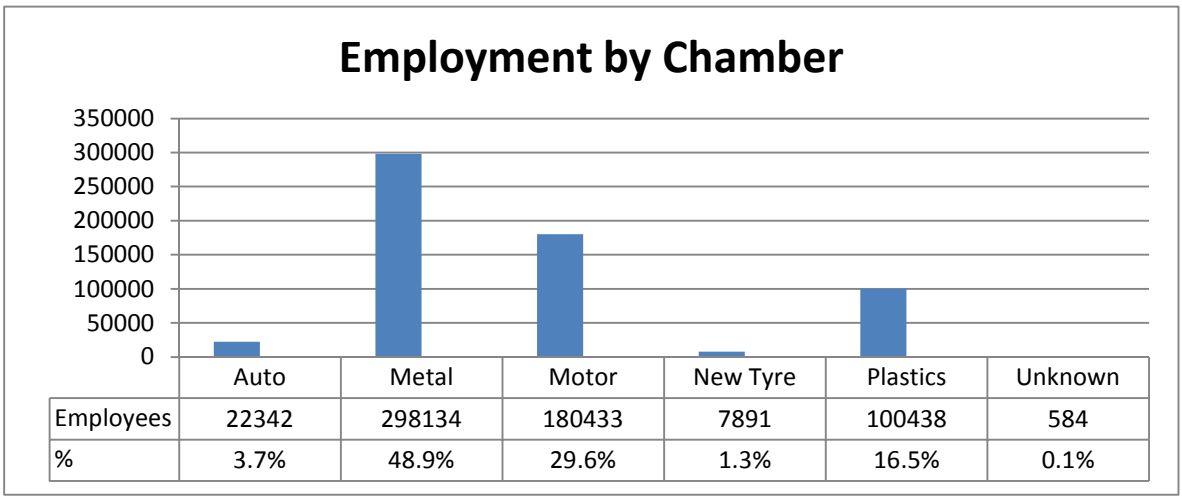



| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|
| Formal sector (Non-agricultural) | 1 853 | 1 680 | 1 653 | 1 694 | 1 615 | 1 538 | 1 546 |
| Informal sector (Non-agricultural) | 245 | 206 | 236 | 215 | 200 | 228 | 203 |

**Figure 3: Manufacturing sector employment: 2008 -2014**
Source: Stats SA, 2015

### 1.8.1 Distribution of employees by chamber

The distribution of total employment by chamber indicates that the largest group of merSETA employees fall within the Metal Chamber (48,9%) followed by those in the Motor Chamber(29.6%), Plastics chamber (16.5%) and the Auto chamber (3.7%). The new tyre is the smallest chamber contributing 1.3% to total employment. Employment distribution is indicated in figure 4 below.




| | Auto | Metal | Motor | New Tyre | Plastics | Unknown |
|---|---|---|---|---|---|---|
| Employees | 22342 | 298134 | 180433 | 7891 | 100438 | 584 |
| % | 3.7% | 48.9% | 29.6% | 1.3% | 16.5% | 0.1% |

**Figure 4: merSETA employment by chamber**
Source: merSETA WSP data 2015

### 1.8.2 Provincial distribution of employees

The geographical distribution of employees is likely to follow the geographical distribution of the sector as a whole, with employment concentrated in Gauteng, but with nodes of higher-level employment in Cape Town, East London, Port Elizabeth and Durban. The rural provinces and rural areas of provinces in which there are concentrations of merSETA employment are likely to have a greater proportion of employment in the motor retail, motor service and repairs, and metal fabrication subsectors than in the other merSETA subsectors as shown in table 3.

| PROVINCE | Total Employed | Total employed % |
|---|---|---|
| Eastern Cape | 45972 | 7.54% |
| Free State | 9433 | 1.55% |

| | | |
|---|---|---|
| Gauteng | 345028 | 56.58% |
| KwaZulu-Natal | 90400 | 14.82% |
| Limpopo | 5796 | 0.95% |
| Mpumalanga | 22710 | 3.72% |
| North West | 12131 | 1.99% |
| Northern Cape | 4173 | 0.68% |
| Western Cape | 74180 | 12.16% |
| **Grand Total** | **609823** | **100%** |

**Table 3: merSETA provincial distribution of employees**
Source: merSETA WSP data 2015

### 1.8.3 Educational profile

There is no detailed information available on the skills levels of employees from merSETA data; however, the occupational distribution provides a rough proxy of the sector's educational profile. The 2014 QLFS data from STATS SA were also utilised to establish a proxy measure for educational levels of merSETA sector employees. According to 2014 QLFS data (see table 4) the majority of employees have an NQF level 4 (44%) but overall 90% of employees have TVET band qualifications with less than 10% having qualifications higher than TVET level. The data also shows that women tend to be less represented above NQF 4 although this gap is slowly closing.

| | Gender | | | | | |
|---|---|---|---|---|---|---|
| **NQF Level** | **Female** | | **Male** | | Total | |
| Less than level 1 | 454 | 0% | 12072 | 1% | 12526 | 1% |
| NQF level 1 | 26078 | 9% | 277257 | 19% | 303335 | 17% |
| NQF level 2 | 31957 | 11% | 214380 | 14% | 246337 | 14% |
| NQF level 3 | 35130 | 13% | 207836 | 14% | 242966 | 14% |
| NQF level 4 | 165870 | 59% | 618093 | 41% | 783963 | 44% |
| NQF level 5 | 5137 | 2% | 22907 | 2% | 28044 | 2% |
| NQF level 6 | 1458 | 1% | 12144 | 1% | 13602 | 1% |
| NQF level 7 | 9791 | 3% | 42540 | 3% | 52331 | 3% |
| NQF level 8 | 0 | 0% | 22641 | 2% | 22641 | 1% |
| NQF level 9 | 2153 | 1% | 18806 | 1% | 20959 | 1% |
| Other | 0 | 0% | 10570 | 1% | 10570 | 1% |
| No Schooling | 2252 | 1% | 35520 | 2% | 37772 | 2% |
| | **280280** | **100%** | **1494766** | **100%** | **1775046** | **100%** |

**Table 4: Educational levels of employees in the sector**
Source: STATSSA 2014 QLFS, data based exclusively in merSETA SIC codes

These trends seem to be in keeping with the occupational profile of the sector. Deriving from merSETA data 2015, Managers (8% of the total) and professionals (6%) are likely to have high levels of formal education. The bulk of technicians and associate professionals (10%) and skilled agricultural, forestry, fishery, craft and related trades workers (which include artisans) (19%) will have trade-related qualifications. The categories of clerical support workers (11%) and service and sales workers (5%) are likely to have a range of qualifications, from the low intermediate level through to professional qualifications. Plant and machinery operators and assemblers (21%) are likely to have a relatively even split between low intermediate level qualifications, and higher entry-level qualifications. Elementary workers (19%) generally have only entry-level qualifications.

### 1.8.4 Race and gender distribution of employees

merSETA's sectors are male dominated with 78.24% males and 21.76% females representing the gender profile of the sector. As can be seen in figure 5 below, the group of clerical support workers is the only occupational category in which there is more or less an equal split between men and women. For the other major occupational categories the proportion of women ranges from a low of 7.29% for skilled agricultural, forestry, fishing, craft and related trades workers to a high of 29.47% for professionals.

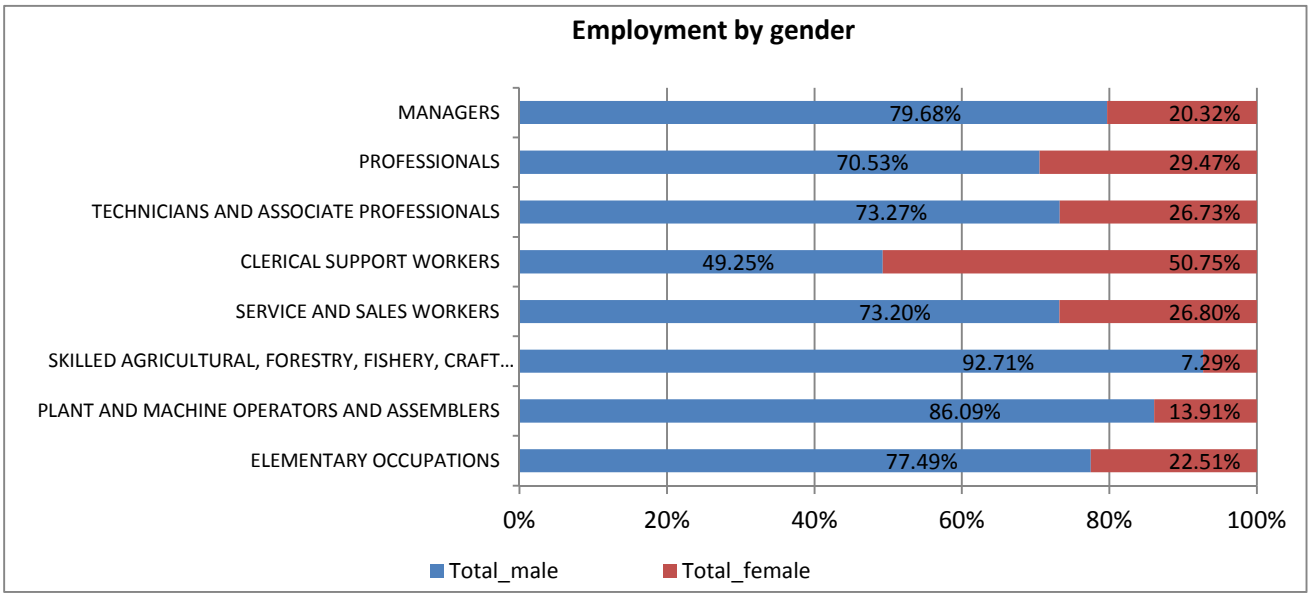



**Figure 5: Gender distribution of employees in the sector according to occupational group**
Source: merSETA WSP data 2015

### 1.8.5 Racial distribution

Racial distribution is an important indicator of transformation in the sector. In terms of racial, more than half (58.0%) of merSETA employees are African and almost a quarter (24.2%) are white. Indians constitute 5.3% while coloureds constitute 12.5%.

The data as reflected in figure 6 below also reveals that transformation in the sector has not been progressive with previously disadvantaged racial groups still occupying lower occupational categories. The occupational categories of plant and machine and assemblers and elementary occupations have the greatest proportion of African employees (79.2 % and 78.9% respectively). For skilled agricultural, forestry, fishery, craft and related trades workers, Africans make up well over half the total employment (61.0%), while whites make up just less than one quarter (22.0%). White employees form the largest racial group in the occupational categories of managers (67.2%) and professionals (54.4%). Africans make up the majority of workers for Technician and associate professionals (45.9%), service and sales workers (40.6%) and clerical support workers (44.5%). It is important that these indicators be tracked for changes over time. As merSETA's data collection systems become more embedded, more detailed monitoring of transformation will become possible.

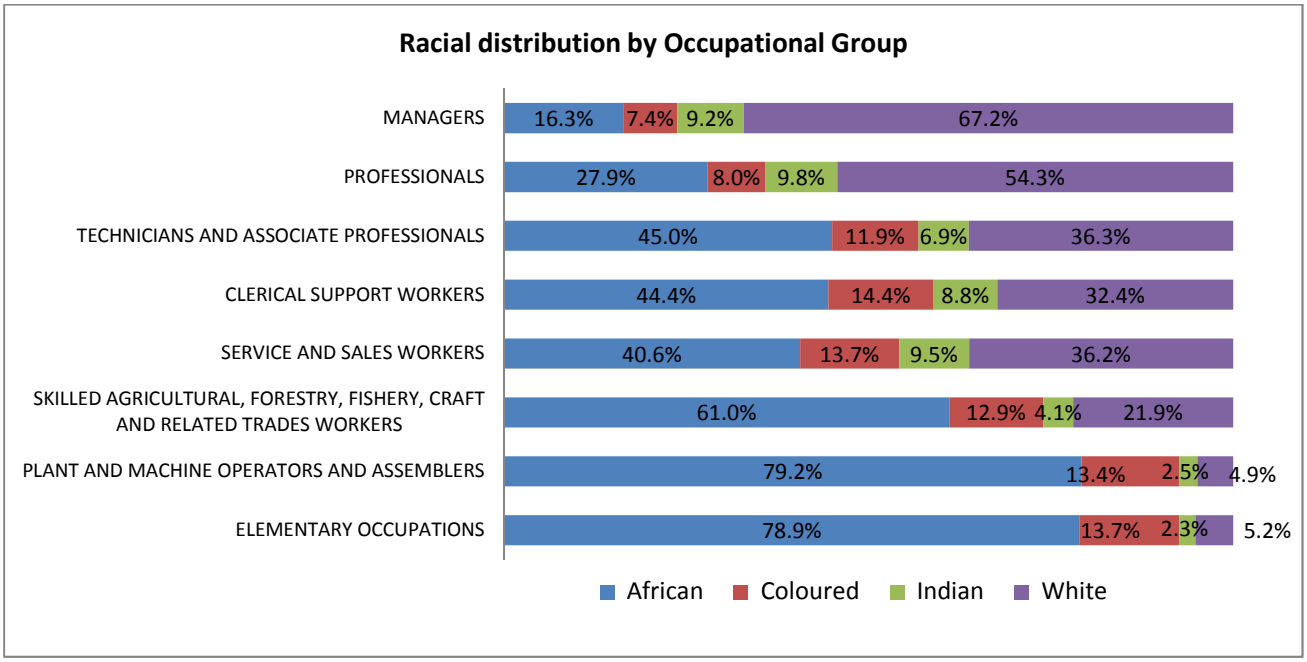
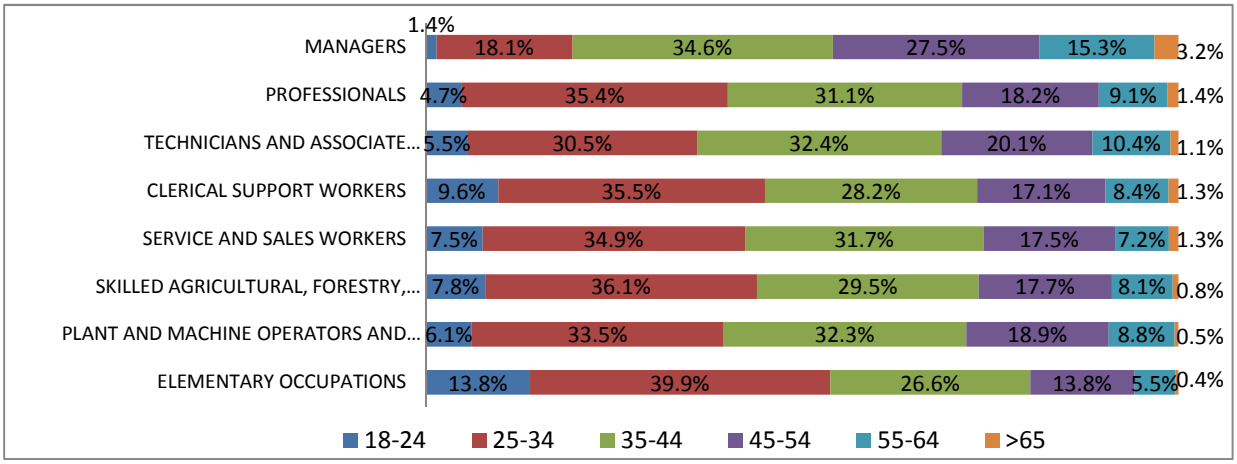



**Figure 6: Racial distribution of employees in the sector according to occupational group**
Source: merSETA WSP data 2015

### 1.8.6 Age distribution of employees

merSETA is a youthful sector, in 2015 slightly below half of all employees (44%) were younger than 35 years and only 9.6% were between 55 and 64 years old (Figure 7). The group elementary occupations have a relatively large proportion of workers younger than 35 years (53.7%). This group is to a larger extent composed of semi-skilled people with basic entry level qualifications (grade 12). Workers younger than 35 years constitute 43.9% of the skilled occupational category (including artisans)[2]. The Managers category is the only category with a significantly high number of employees (46%) older than 45 years. This is attributed to the fact that the majority of individuals in that age group are highly experienced and therefore take up the majority of management positions.




[2] Chamber representatives (in a meeting on 3 July 2013) report that in the metals and plastics sectors the average age of artisans has reduced considerably due to the recent drive to train artisans. In the tyre industry the average age of artisans remains high. Thus this overall profile hides the details within the chambers. While industry reports maintain that the average age of artisans is high (in contrast to this data) it may be that industry is making a distinction between what they perceive to be the older age of 'competent' artisans, rather than the overall age of 'qualified' artisans.

**Figure 7: Age distribution of merSETA employees by major occupational category**
Source: merSETA WSP data 2015

### 1.8.7 Disability

According to merSETA WSP data, merSETA organisations employ approximately 4389 people with disabilities, this is a decrease from the figure of 4 875 reported in the previous SSP cycle (Table 5). The decrease can be attributed to decrease in the number of companies that submitted WSPs. This constitutes 0.7 % of total employment. The chamber with the highest percentage of people with disabilities (1.8% of total employment) is the Auto Chamber (Table 5), with this figure having increased significantly from the past year (1.1%). A significant decrease of 50% is reported in the New Tyre Chamber which despite an increase in the total number of employees experienced a decrease from 0.8% reported in the previous year to about 0.4%. Other chambers such as the Plastics, Metal and Motor Chamber, reported no significant gains or decreases from figures reported in the past year Chapter 3 will highlight skills development initiatives aimed at up skilling people with disabilities.

| Chamber | Employment | Employees with disabilities | Employees with disabilities as % of employment |
|---|---|---|---|
| Auto | 22342 | 409 | 1.8% |
| Metal | 298134 | 2123 | 0.7% |
| Motor | 180433 | 1565 | 0.9% |
| New Tyre | 7891 | 28 | 0.4% |
| Plastics | 100438 | 262 | 0.3% |
| Unknown | 584 | 1 | 0.2% |
| **Total** | **609823** | **4389** | **0.7%** |

**Table 5: Number of employees with disabilities by chamber**
Source: merSETA WSP data 2015

## 1.9 CHAPTER SUMMARY

This chapter has provided an overview of the merSETA labour market profile and economic performance of the sector. The chapter described organisations within the sector and the sector's employment profile. Factors affecting the performance of the sector such as the domestic and global economic environment, technology changes and labour market unrest were also highlighted.

Overall the sector is experiencing a decline in the number of employees as well as representing an ever decreasing contribution to the overall economy, despite the fact that the sector is still lauded as a sector that can create jobs. According to National Planning Commission commissioner Dr Miriam Altman, while it was important for South Africa to grow its manufacturing output, the sector was unlikely to be a major source of employment in future, she said it was unlikely that more than 0% to 3% of employment created in South Africa over the next 20 years would come from the manufacturing sector.

According to the Department of Science and Technology, Director General Dr Phil Mjwara, South Africa has no alternative but to develop its advanced manufacturing capabilities. Poor labour productivity relative to other export-orientated countries hampers South Africa's global competitiveness. Advanced manufacturing, including the production of advanced materials and the use of advanced manufacturing techniques, can create alternative employment opportunities through the creation and growth of new industries and markets.

While advanced manufacturing techniques and machinery require higher levels of skills, such jobs justify the generally high wages demanded in South Africa and also provide companies with sustainable commercial opportunities. This arguably will have an impact in the future oriented approach to manufacturing and engineering skills development as this will demand the need to focus on up skilling of the workforce and redesigning curricula to meet the changing trends an issue which emerged as recommendations from the merSETA Motor Chamber research (2013). Furthermore, the manufacturing sector has been identified as one of the four priority sectors that have been selected as new growth areas in the ocean economy, with the objective of growing them and deriving value for the country. These include marine transport and manufacturing activities, such as coastal shipping, transhipment, boat building, repair and refurbishment which should boost demand for skills particularly in the plastics and metal sectors.

# 2 KEY SKILLS ISSUES

This chapter identifies factors that are driving change in the sector and influencing skills demand and supply of skills either positively or negatively. There are many factors that impact on skills demand and supply in the merSETA sector such as technological innovation, and the global and domestic economic environment. This chapter will identify the "key skills issues" and analyse their implications for skills development in the sector. The chapter will also look at how government policies and strategies influence considerations of skills supply and demand in the merSETA sectors.

## 2.1 CHANGE DRIVERS

### 2.1.1 Factors affecting Skills Demand and Supply in the merSETA

#### *2.1.1.1 Domestic economic environment*

The manufacturing, engineering and related services sectors have faced consistently low growth rates as a result of a number of complex factors. Low productivity in mining and manufacturing due to labour unrest and eratic labour supply are amongst key elements contributing to lower levels of economic growth. The energy crisis in the country has also caused serious production challenges in the manufacturing sector. According to the University of Stellenbosch Bureau of Economic Research (BER) (2015), "electricity supply disruptions not only cap actual production abilities, but also depress overall domestic demand. Given that electricity supply will remain constrained for the next two to four years, this is a key challenge for the manufacturing sector (and the broader economy) going forward. The weak performance of the manufacturing sector affects the demand of unskilled and semi-skilled people as industry turns to automation to increase productivity and cut costs. This has however created opportunities for more highly skilled employees. The merSETA is responsible for identifying such high level skills required in the sector through the scarce skills list (see chapter 3) so as to prioritise funding and other interventions for the development of such scarce skills for the sector.

#### *2.1.1.2 Global economic environment*

The recent global and local economic recession continues to have a profound effect on the local manufacturing sector as a whole, including all three of the major industries (metals, automotive and plastics industry) included in the merSETA sector. The result of economic contraction was severe job losses across the sector. Economic recovery has been slow, with continued challenges facing the European financial systems and the slow growth of China (one of South Africa's biggest trading partner) (BizNews, 2015). In the Eurozone, policy makers are grappling with ways for countries to meet deficit targets, but at the same time escape a second consecutive year of recession and the social unrest associated with record high levels of unemployment (Reuters, 2013). These markets represent SA's current major export markets, and the negative effect of limited or no growth in these markets within the merSETA's sectors, is currently only being counterbalanced in part by the growth of, and increased exports to, other African economies (Mail & Guardian, 2013). Inexpensive imports from China pose further challenges to the local industry. These factors will influence the sector's requirements for new skills (as opposed to skills for replacement demand and to fill vacancies that result from skills scarcity). Furthermore, against the context of a declining sector, retrenchments and layoffs are becoming more noticeable. The merSETA's

Retrenchment Assistance Programme and participation in the National Training Layoff Scheme, seeks to counteract this.

#### *2.1.1.3 Impact of technology and the shift towards greater proportion of skilled workers*

Global advances in manufacturing technology have resulted in skills demand shifts in the sector. The proportion of unskilled and semi-skilled workers in the sector has declined, while the proportion of skilled and highly skilled workers has increased. These shifts are driven by the increase in cost of labour has resulted in the automation of manufacturing processes so as to reduce labour costs. As employees will have to engage with new and increasingly complex technologies on an ongoing basis within the workplace, the baseline qualifications required across the board are increasing. The majority of OEMs, for example, now only accept individuals who have passed Grade 12 Maths as operators on the shop floor.

Computer Aided Design (CAD), Computer Aided Manufacturing (CAM) and Computer Numerical Control (CNC) are some of the technologies that are driving improved quality and efficiency in the manufacturing sector. CNC in particular is having a major impact on sheet metal fabricators by dramatically improving quality and productivity. Engineering qualifications now generally include training in these technologies, so that new graduates entering the system are equipped with these skills. However, for the existing workforce, skills gaps in respect of these areas must be filled by additional training (merSETA, 2010). Technological innovation as reported by the 2015 merSETA motor chamber research has resulted in job loses as fewer people are needed to do the job (merSETA, 2015).

In addition, according to the Department of Science and Technology, Director General Dr Phil Mjwara, South Africa has no alternative but to develop its advanced manufacturing capabilities. Poor labour productivity relative to other export-orientated countries hampers South Africa's global competitiveness. Advanced manufacturing, including the production of advanced materials and the use of advanced manufacturing techniques, can create alternative employment opportunities through the creation and growth of new industries and markets. Advanced manufacturing needs a highly skilled labour force and the merSETA has given support through various interventions such as policy dialogue and partnering with Universities of Technology to establish research Chairs for Manufacturing Skills Development (See chapter 4).

## 2.2 ALIGNMENT WITH NATIONAL STRATEGIES

### 2.2.1 Transformation imperatives

Legislation aimed at the transformation of the national economy demands increasing proportions of Black Africans in the more highly skilled occupational groups – managers, professionals, and technicians and artisans in particular. As a starting point, for employment at these levels relevant qualifications are a prerequisite. This means that the rate of transformation is dependent on a sufficient numbers of black graduates emerging with technical degrees, learnerships and apprenticeships and therefore on the supply of these skills. Furthermore, many positions (including management) demand not only a relevant qualification, but also many years of work experience in the sector in order to 'qualify' the individual. At present the demand for qualified and experienced black South Africans in the sector considerably outstrips the supply available and places a premium on the cost of their employment (merSETA, 2010).

The merSETA recognises the continued and growing importance of transformation imperatives and supports initiatives that promote change in this regard. As part of its drive for improved accuracy and greater detail of sectoral labour market data collection processes, it is hoped that the nuances of labour demand in respect of transformation will be better understood into the future, and that this will inform more targeted interventions. An example of such an intervention is the merSETA Black Women in Leadership management development program and planned project to support the movement of technical females,

### 2.2.2 Support for government's rural and People with Disabilities (PWD) development agendas

There are a number of government policies and strategies that affect the way in which merSETA sector firms recruit and train people for employment within the sector. These all form part of the basket of policies aimed at furthering the national development agenda. Examples include:

> ***Integrated Rural Development Strategy (2000).***The Integrated Rural Development Strategy (2000) provides the overarching policy for rural development with more recent policies and strategies all requiring organisations to direct a specific focus on improving the opportunities and well-being of people living in rural areas, and particularly the rural poor (Government of South Africa, 2000). The merSETA has determined that its motor servicing and sales sub-sector has the highest potential in terms of rural reach. In this light, it is important that all provinces are supported in developing local training and trade test centres for motor servicing and sales skills (merSETA, 2013). Furthermore, linking training for this subsector with entrepreneurship training so that individuals with relevant skills can create their own employment in rural areas should thus be a merSETA focus in the future (merSETA, 2012). merSETA through new partnerships with TVET colleges in rural areas and other initiatives will support the rural development agenda (See chapter 4).
>
> ***Employment of People with Disabilities (PwD).*** The Employment Equity Act (No.55 of 1998) sets a target of 2% of employment within qualifying companies (i.e. companies with 50 or more employees) for people living with disabilities. Efforts to achieve this target will impact on firms' recruitment for training and employment of people with disabilities, and on their strategies to retain employees who become disabled while they are employed within the sector (merSETA, 2013).

### 2.2.3 Government policies aimed at Economic development and sector support

Government's policies and strategies are aimed at supporting economic development and job creation within the national economy. While the SIPs are aimed at supporting the national economy generally and in the process increasing local employment, many of the other policies and strategies are directed in part or in full at supporting the manufacturing sector, including all the merSETA's subsectors.

The National Planning Commission released SA's first **National Development Plan (NDP)** in November 2011. The major focus of the plan is the eradication of poverty and the reduction of inequality by 2030, thus offering a long-term perspective and defining the desired destination and the role that each sector of society must play in achieving it. The plan aims

to create jobs in the economy through by shifting the economy away from its traditional reliance on resource-intensive industries towards more labour-intensive beneficiation activities. Among other interventions, improving education and training, forms a key pillar for achieving this.[3]The NDP now stands as the overarching vision guiding resource allocation, and the implementation of most other government social and economic policies.

Government's **New Growth Path** includes support of the manufacturing sector and links this support directly to Industrial Action Plan (IPAP) 3, which covers focused support of a range of manufacturing sectors, including the merSETA's metals, automotive and plastics manufacturing subsectors. IPAP (which is in turn supported by other policies such as the APDP, the Metals Beneficiation Strategy, the IDC's Jobs Scheme and the SEZ policy) aims to grow employment in these sectors, which will in turn require an adequate supply of skills to the sector. By focusing on skills development and, in particular, the development of scarce artisan- and engineering skills, the merSETA will be supporting these key national policies and strategies.

**The Strategic Integrated Projects (SIPs)** cover social and economic infrastructure across all nine provinces (with an emphasis on lagging regions).The SIPs include catalytic projects that can fast-track development and growth. The SIPS requires a more focused approach to artisan, technologist and engineering skills development is the latest government policy supporting the New Growth Plan. In this regard merSETA believes that a cluster approach with other relevant SETAs is necessary for a more appropriate and synergistic response to the SIPs. The merSETA has committed assistance and resources to support SIPS implementation across a wide spectrum of areas, including among other things:

- Dedicated funding
- Focusing existing programmes on SIPs requirements
- Sharing partnerships, existing networks and co-ordination services
- Sharing of experience and identification of best practices
- Providing information – such as information on current and future skills needs

### 2.2.4 Industrial Policy Action Plan (IPAP) 3

The Industrial Policy Action Plan (IPAP) 3 aims to address the underlying structural problems in the SA economy, by encouraging the development, growth and increased competitiveness of the South African manufacturing (Value Added) sector and in the process to create 5 million new jobs over the ten-year period from 2010 to 2020. While the exact number anticipated for the iron, steel and non-ferrous metals subsector and the capital equipment, transport equipment, metal fabrication (CETEFM) subsector are not indicated, the policy indicates the total number of new jobs in the automotive sector as 160 000 and in the plastics sector as 22 754 over the period. The merSETA through its various programs highlighted in chapter 3 has been working with government, industry and higher education in expanding the skills base for an industrialized economy.

### 2.2.5 New Jobs Fund

The New Jobs Fund intends to create 150 000 jobs overall, some of which will be linked to infrastructure development, and the IDC's intention to create 40 000 to 50 000 job opportunities linked to support of manufacturing and infrastructure development. If these

initiatives succeed in turning around current negative employment trends and in growing employment across the merSETA's sectors and subsectors, the implication for skills demand will be enormous as merSETA will have a role to play in facilitating the development of relevant skills in its sector to fill the new jobs. The South African economy is however facing some serious challenges which have resulted in stagnant growth in the creation of new jobs.

### 2.2.6 The Ocean Economy

President Jacob Zuma officially launched Operation Phakisa on the 15th of October 2014 – an initiative adapted from Malaysia's Big Fast Results Methodology that aims to exploit the country's vast, yet untapped, ocean resources. Outlining the focus of the initiative, President Zuma said that Operation Phakisa would concentrate on four "critical" areas: marine transport and manufacturing, offshore oil and gas exploration, aquaculture as well as marine protection services and ocean governance.

The oceans economy focus of Operation Phakisa is based on the premise that the country had not adequately exploited its strategic location, infrastructure and skills base to accelerate the growth of the sector. The 18 initiatives have been identified across three categories, including infrastructure and operations, skills and capacity building as well as market growth to accelerate sector growth. The success of the ocean economy relies on the availability of relevant skills as one of the major drivers. The merSETA being a skills development facilitator has a critical role to play in facilitating the development of relevant skilled individuals such as artisans and technicians in areas such as boatbuilding, welding and underwater welding etc. to help drive the ocean economy. The merSETA is prioritising this national initiative and is in the process of drafting a strategy that is responding to skills development issues in the ocean economy. The merSETA has also entered into a partnership agreement with the Nelson Mandela Metropolitan University in support of the maritime strategy.

### 2.2.7 White paper on Post-School education and Training

The White Paper on Post-School Education and Training has renewed emphasis on the role played by SETAs specifically with regard to improving data supply and supporting education and training in the workplace based on empirical evidence from credible skills planning processes and procedures. The merSETA has committed itself to fully supporting the DHET and the QCTO in the implementation of a more coherent post-school education and training system that is focused on employability and is informed by citizenship and lifelong learning. Specifically, we recognize the overarching theme of "social justice" as being important for how we do things.

The White Paper stresses the need to improve the efficiency and effectiveness of the SETAs to ensure that training provision is directed towards identified sector, cross-sector and occupational needs. Their role in skills planning must be expanded to focus more on labour market analysis in order to improve the match between the supply of E&T and labour market needs. The merSETA and other SETAs have to play a stronger role in improving the articulation between educational institutions and the labour market by facilitating and funding private sector employers to provide workplace-based learning, especially through apprenticeships, learnerships and internships. The merSETA is also putting a monitoring and evaluation framework in place to monitor and evaluate the impact of skills interventions in the merSETA sector.

### 2.2.8 Support for the informal sector and Small to Medium Enterprises (SMME)

The informal and SMME sector play a critical role in the economic and social development of the country. The Government has prioritised entrepreneurship and the advancement of Small, Medium and Micro-sized Enterprises (SMMEs) as the catalyst to achieving economic growth and development (DTI, 2015). Research by Global Entrepreneurship Monitor (2014) shows that small businesses in South Africa are significant contributors to job creation, creating more than 50 percent of all employment opportunities and contributing more than 45 percent of the country's gross domestic product. It is against this background that SMMEs *and the informal sector,* in the rural areas and as part of urban renewal, is viewed as an opportunity for growth through skills development by the merSETA. This is particularly true of the Motor sector, but also of the metal and plastics sectors. The role of SMMEs in the merSETA sub-sectors cannot be downplayed considering they constitute the majority (81%) in the sector. The merSETA's approach to SME support and development is inclusive of recognizing co-operatives as a form of ownership that could contribute in bridging the formal and informal economies through the value chain. The potential in supporting informal apprenticeships has also been recognised.

### 2.2.9 Environmental sustainability and the green economy

Environmental sustainability is receiving attention now more than ever due to the global depletion of natural resources as a result of human activities including manufacturing. South Africa, through the establishment of the National Cleaner Production Centre of South Africa (NCPC-SA) and supporting policies and legislation such as the National Waste Management Strategy and Environmental Management Act No. 7 of 2007, has embraced the concept of cleaner production as a way of reducing the negative effects of manufacturing production activities on the environment. Overall, the automotive, metals and plastics sectors all want to be seen to be part of the solution and not part of the problem:

- merSETA's Plastics Chamber identified 'Sustainability, including managing the environmental impact' as the top of its list of key drivers for the future of the sector (merSETA, 2013).
- merSETA's Motor Chamber identified the 'Green Agenda' as of critical importance to the motor industry, since it is a major creator of waste (merSETA, 2013).
- The merSETA has prioritised skills for sustainable development as part of its Strategic Plan.
- The merSETA has facilitated the development of ''green qualifications" such as the Wind Turbine Service Technician and Solar PV Technician through its curriculum development and learning unit.

## 2.3 CHAPTER SUMMARY

It is clear from the discussion in this chapter that the manufacturing, engineering and related services sector is experiencing significant changes due to domestic and global economic developments. Technology is also a significant change driver in the sector, but has a far reaching impact on skills development and labour demand. It is also evident from the discussion above that the merSETA needs to play a more active role in supporting government national priorities such as the NDP, SIPS and ocean economy.

# 3 EXTENT OF SKILLS MISMATCHES

## 3.1 INTRODUCTION

This chapter focuses on highlighting the occupationally based skills mismatches in the sector by identifying the extent and nature of skills demand and supply. The overarching objective of this chapter is to identify the scarce skills and skills gaps in the sector. The data was sourced from multiple sources such as the merSETA WSP data, merSETA chamber led research, desktop research and national accounts data.

## 3.2 DEMAND ASSESSMENT: VACANCIES IN THE SECTOR

### 3.2.1 Analysis of Vacancies in the Sector

The WSP/ATR template for 2015 requested that companies provide information on vacancies. The companies indicated the total number of vacancies that they had in the previous financial year, the number of vacancies that were filled in the previous financial year and vacancies they anticipate for the upcoming financial year.

The data yielded the following information:

- there were a total of 15475 vacancies;
- 13423 vacancies were filled;
- 2034 vacancies were not filled;
- 5102 vacancies are anticipated for the next financial year.

Unfilled vacancies in the sector were attributed to difficult to fill positions by respondent companies if more than half of vacancies for that position remained unfilled. The motor and metal sectors had the highest number of vacancies, with these sectors accounting for 45% and 42% of the total demand respectively.

Figure 8 below demonstrates that the greatest demand is for managerial positions, representing almost 80% of the demand followed by skilled trade workers and machine operators.

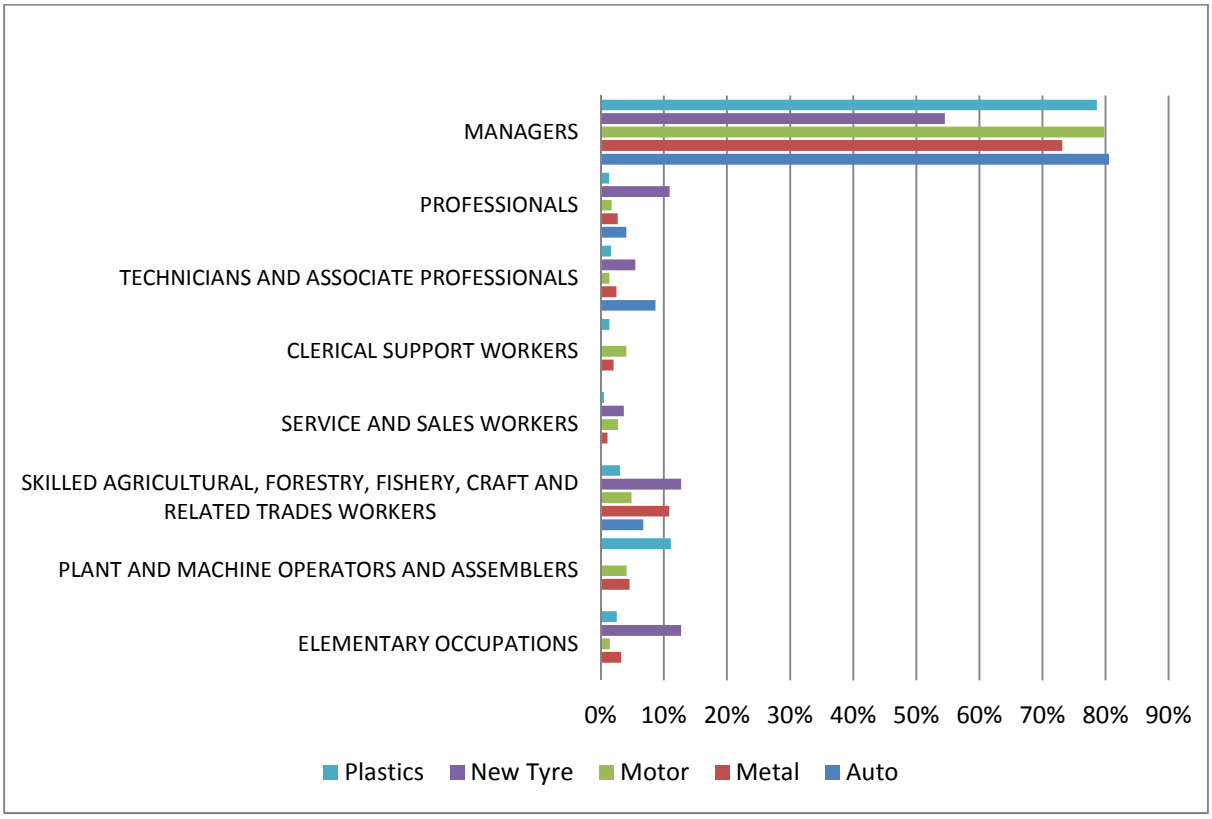



**Figure 8: merSETA vacancies by Occupational Group and Chamber**
Source: merSETA WSP data 2015

### 3.2.2 Occupations that are difficult to fill

As demonstrated by figure 9 sectors reporting highest frequencies are the metal and motor sectors with greatest demand for skilled trades workers, managers and service, professionals and sales workers respectively.

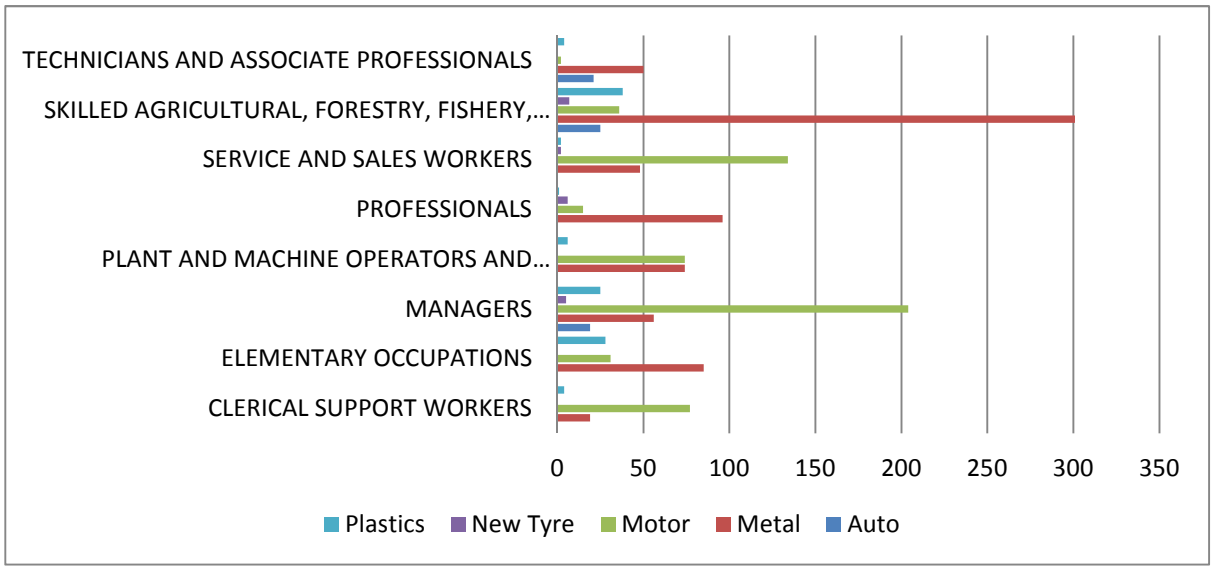



**Figure 9: merSETA difficult to fill vacancies by Occupational Group and Chamber**
Source: merSETA WSP data 2015

Specific difficult to fill skills for each of the merSETA sectors is presented in the table below (table 6), only skills that had 20 or more unfilled vacancies are classified as difficult to fill:

| OFO Code | Difficult to fill vacancies | Auto | Metal | Motor | New Tyre | Plastics |
|---|---|---|---|---|---|---|
| 121901 | Corporate General Manager | | | X | | |
| 132104 | Engineering Manager | | | | | X |
| 242101 | Management Consultant | | | | X | |
| 312201 | Production / Operations Supervisor (Manufacturing) | X | | | | |
| 431102 | Cost Clerk | | | X | | |
| 522301 | Sales Assistant (General) | | X | X | | |
| 642701 | Air-conditioning and Refrigeration Mechanic | | X | | | |
| 651202 | Welder | | X | | | |
| 651301 | Sheet Metal Worker | | | | | X |
| 651302 | Boiler Maker | | X | | | |
| 652302 | Fitter and Turner | X | X | | | |
| 671208 | Transportation Electrician | | X | | | |
| 718905 | Engineering Production Systems Worker | | | X | | |
| 734101 | Agricultural Mobile Plant (Equipment) Operator | | X | | | |
| 831301 | Builder`s Worker | | X | | | |
| 832902 | Plastics, Composites and Rubber Factory Worker | | | X | | X |

**Table 6: merSETA difficult to fill vacancies by OFO Specialization and Chamber**
Source: merSETA WSP data 2015

The Metal Chamber reported the most difficult to fill positions followed by the Motor and Plastics Chambers respectively; the Auto and New Tyre Chambers reported fewer difficult to fill positions; and the majority of difficult to fill positions are related to trades.

## 3.3 EXTENT AND NATURE OF DEMAND

The occupational composition of the merSETA sector shows that Technicians and Associated Professionals account for 10% of total sector employment while professionals (including engineers) make up 6% of employment in the sector. Professionals and technicians are employed across a range of the following technical-skill areas: mechanical engineering, industrial engineering, electrical engineering, electronics engineering, metallurgical engineering and chemical engineering. Professionals also fill non-line function positions such as accounting, financial management, human resources management, information technology and communications, and marketing. Training of professionals generally takes place at universities and universities of technology (qualifications at NQF Level 8 and above), while technician training is done at universities of technology (qualifications at NQF levels 6 and 7). Training for both these groups lies within the HET system.

An analysis of the merSETA 2015 WSP data and key findings from the 2013 and 2014 chamber led research reports led to the following conclusions about occupational demand in the sector:

Professionals, Technicians and associated Professionals and Crafts and related trades workers, including artisans, emerged as the occupational categories where there is an increasing demand for highly skilled people. This occupational category increased from about 12% reported in the previous SSP to about 19%. The demand has been pushed up as a result of digitization, mechanization, and automation of manufacturing processes.

There has been a decrease in demand for people at the lower occupational levels despite the fact that the lower skills categories such as elementary workers still constitute a significant number (101 996) in the sector. In the past year this category shrunk from 23% reported in the previous SSP to about 19%. This is due to the technological shifts described above.

The demand for Plant and machine operators has also increased as the sector moves towards being skills intensive. This category now constitutes the majority of employees in the sector (21%) and slightly gained from the 20.5% reported in the previous SSP.

Demand of skilled people in the Professionals, Technicians and associated professionals and Crafts and related trades workers categories has pushed up wages in those categories ( See figure 12: Mean monthly salary per chamber by occupation).

Managers make up 8% of the sector occupational profile and are generally recruited from within the professional ranks of the industry. The artisan occupations that occur most frequently in the merSETA sector include: fitters, fitters and turners, electricians, metal machinists, toolmakers, millwrights, precision instrument makers and repairers, and air conditioning and refrigeration technicians. Training of artisans happens through the TVET system and by means of apprenticeships and learnerships.

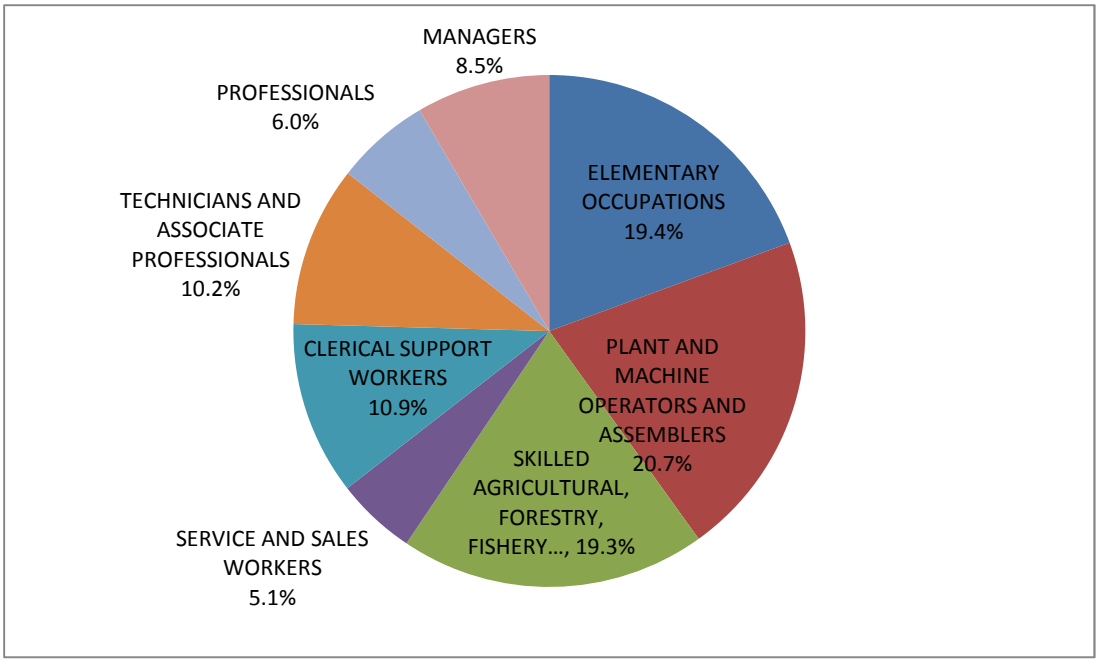



**Figure 10: merSETA total employment by major OFO occupational groups**
Source: merSETA WSP data 2015

### 3.3.1 Labour Intensity based on Skills level in the sector

The merSETA sector is characterised by a higher demand for high skilled workers relative to unskilled workers as seen in the graph below. The proportion of unskilled and semi-skilled workers has seen a decline in the merSETA sector in the recent past. Within the merSETA sectors, the rubber products sector employs the largest proportion of unskilled and semi-skilled workers within this skills level category accounting for 65% of total employment in that sector. The merSETA sector that employs the least amount of semi-skilled and unskilled workers is the plastics sector at 11%. Preliminary findings from the University of Cape Town (UCT) Department of Policy Research Unit (DPRU) LMIP survey also show that the merSETA labour market is semi-skilled intensive and draws a large number of Grade 12 completers. Workplace training is therefore a key component of skills development. The metal sector has the highest skills intensity (23% of workers have an FET qualification, diploma or degree), followed by auto and plastics (14% of workers have an FET qualification, diploma or degree). The new tyre sub sector has the lowest skills intensity (7.6% of workers have an FET qualification, diploma or degree) (DPRU, 2014).

While the demand for skilled workers in the sector is not increasing as rapidly as for the rest of the national economy, demand among the sectors for highly skilled workers is following roughly the same trend for all the merSETA sectors. merSETA industry representatives[4] support findings from the 2013 Motor Chamber research which highlights the difference between 'qualified' workers and 'competent' workers. This distinction appears to be growing in SA, with qualifications not guaranteeing competence. Thus industry calls of skills scarcity areas increasingly related to the scarcity of competent rather than merely qualified workers. Figure 11 below highlights the skills intensity of the sector.

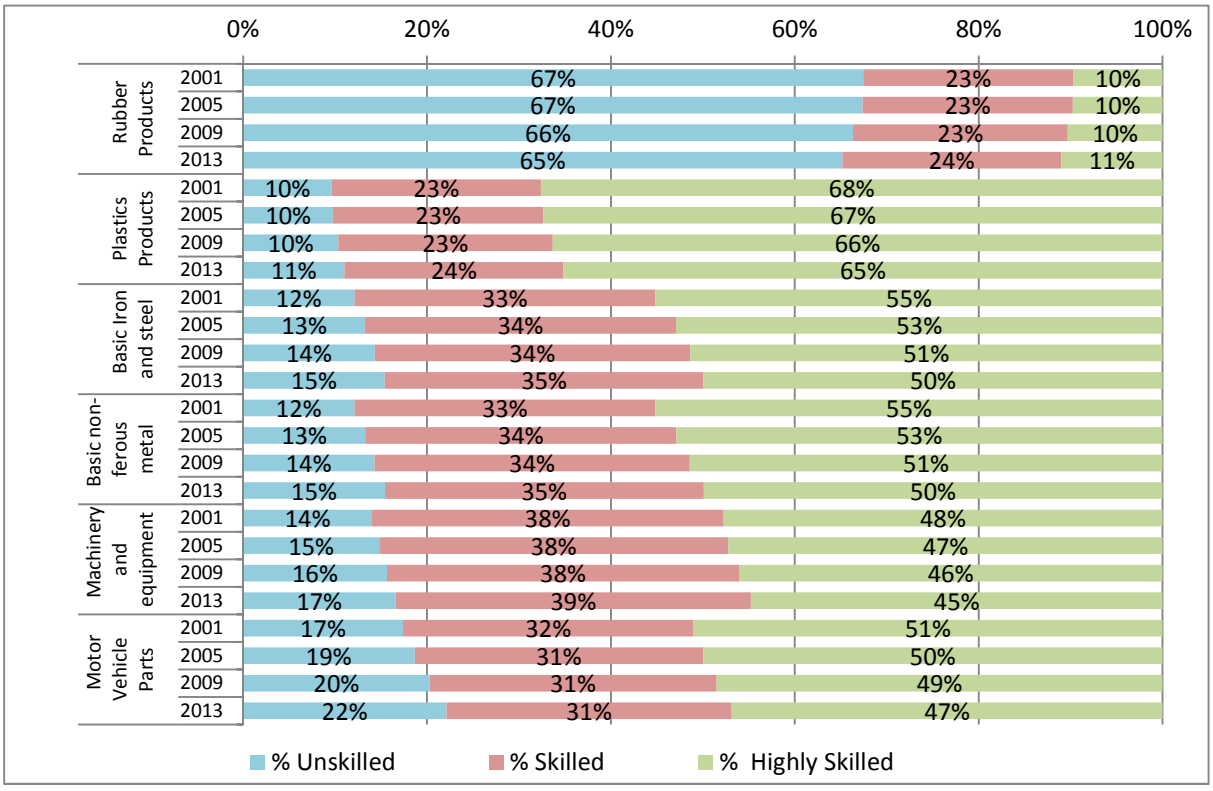
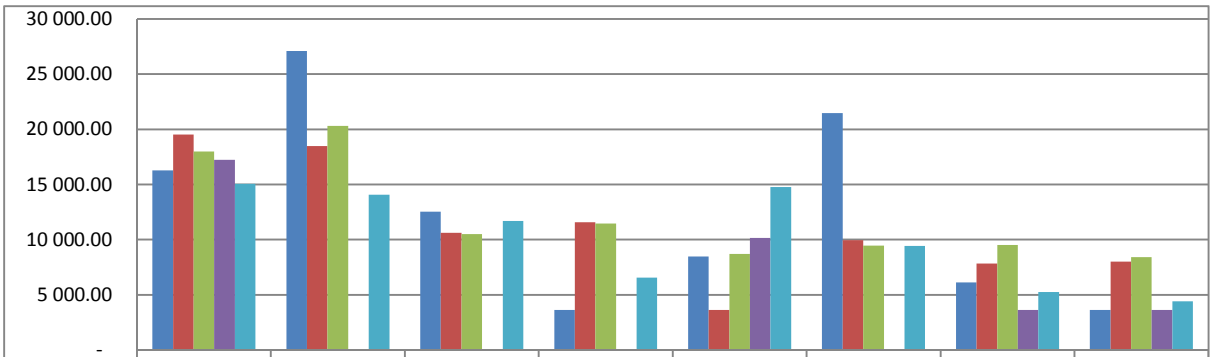



**Figure 11: Skilled labour intensity for the merSETA sector's cluster 2001-2013**
Source: Statistics South Africa, 2014

[4] Opinions expressed by merSETA chamber representatives at meeting on 3 July 2013.

## 3.4 OCCUPATIONAL WAGE TRENDS

Occupation specific remuneration data was obtained from the 2014 DPRU LMIP survey of merSETA firms (figure 12). The data obtained shows that the Auto (R12 641) and Motor (R11 676) subsectors have the highest mean monthly salary, followed by Metal (R10 889) then Plastics (R 7488). The new tyre sub sector (R6514) has the lowest mean monthly average salary. The data show that highly skilled intensive sectors such as motor, metal and metal have higher mean monthly salaries compared to sectors such as the new tyre that have the largest proportion of semi-skilled and unskilled workers. Occupational wage trends also show that professionals such as engineers and technologists in the Auto and Motor subsectors are the highest earning category. This is linked to the scarcity of skills in those occupational categories such as engineers. In other sectors managers tend to earn more that the other professional categories. Skilled and trade workers including artisans also tend to earn higher than managers and technicians in the Auto sector, This can also be attributed to the scarcity of the skills in that occupational categories (See section on merSETA scarce skills list).




| | MANAGERS | PROFESSIONALS | TECHNICIANS & ASSOC PROFESSIONALS | CLERICAL SUPPORT WORKERS | SERVICE & SALES | SKILLED AGRICULTURAL, FOSTERY, FISHERY, CRAFT & RELATED TRADES WORKERS | PLANT & MACHINE OPERATORS & ASSEMBLERS | ELEMENTARY OCCUPATIONS |
|---|---|---|---|---|---|---|---|---|
| Auto | 16 272.29 | 27 089.67 | 12 545.27 | 3 636.50 | 8 485.11 | 21 453.56 | 6 136.33 | 3 636.50 |
| Metal | 19 516.33 | 18 477.48 | 10 616.83 | 11 563.43 | 3 636.50 | 9 959.18 | 7 840.07 | 7 997.49 |
| Motor | 17 987.23 | 20 292.51 | 10 489.90 | 11 446.91 | 8 714.87 | 9 451.53 | 9 527.09 | 8 407.18 |
| New Tyre | 17 235.90 | - | - | - | 10 151.67 | - | 3 636.50 | 3 636.50 |
| Plastics | 15 060.08 | 14 082.26 | 11 699.17 | 6 573.19 | 14 772.46 | 9 416.45 | 5 250.12 | 4 412.31 |

**Figure 12: Mean monthly salary per chamber by occupation**
Source, DPRU LMIP survey 2014

### 3.4.1 Income inequality within sector

According to preliminary findings from the DPRU LMIP survey, the averages of the top 20 percent of wages in the sector are seven times that average for the bottom 20 percent of incomes. The averages hide some of the distributional differences – the motor sector has a wider income distribution than the metal sector (DPRU, 2014). The chart below highlights income equality within each sector. The motor sector has the highest income inequality (7.7%) while the new tyre sub-sector has the lowest income inequality gap (3.98%), see figure 13.

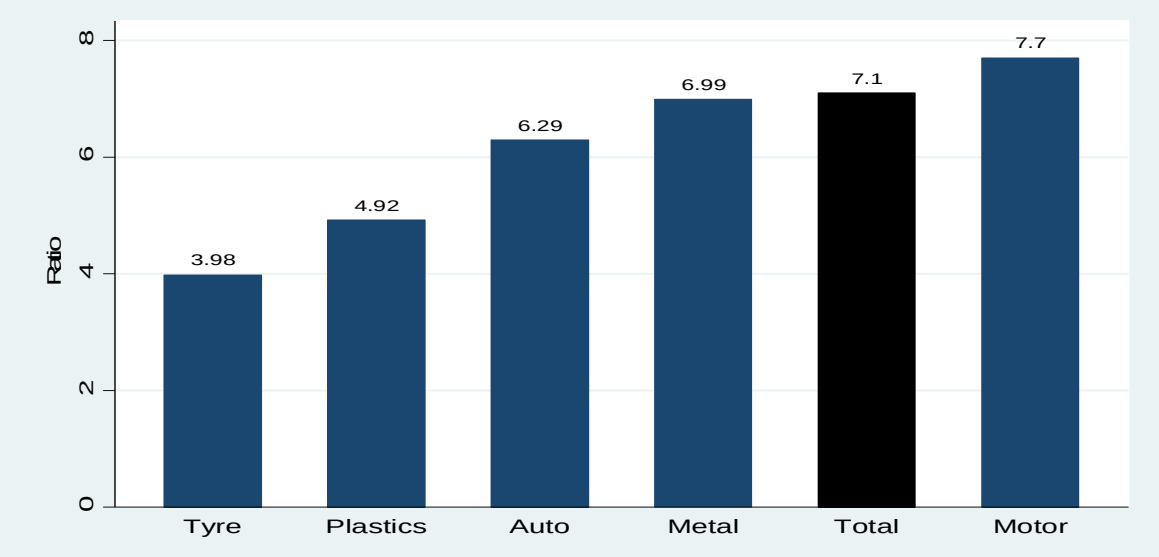



**Figure 13: Ration of top 20% of incomes to the bottom 20% of incomes in merSETA sub-sectors**

Source: DPRU LMIP survey (2014)

## 3.5 CONDITIONS OF EMPLOYMENT

### 3.5.1 Labour unions

The workforce of the merSETA sectors is highly unionised. The National Union of Metalworkers of South Africa (NUMSA) is one of the biggest unions in the sector. NUMSA represents workers from the engineering (steel production), vehicle assembly, automotive components manufacturing, new tyre and electronics manufacturing subsectors. Other unions that play a significant role in the sector include Chemical Energy Paper Printing Wood and Allied workers Union CEPPWAWU (Plastics sector), Metal and Electrical Workers Union of South Africa (MEWUSA) (Plastics and Metal sector) and Solidarity that cut across all the sectors. Unions play a significant role in advocating and fighting for workers rights, skills development and improving conditions of employment and advocating for transformation among other things.

### 3.5.2 Strikes and industrial action

Nationally, there was a reported increase in strike incidents from 99 strikes in 2012 to 114 strikes in 2013. The resultant effect was that a total of R6.7 billion in wages was lost due to the participation of workers in strikes as compared to the R6.6 billion in 2012. As has been the trend in the past, wages were still the main reason for workers to embark on strikes action at 76.6% working days lost in 2013. It is shown that the cost of living keeps going up because multiple factors from domestic and international market. Indeed, workers will probably continue to strive for decent wages as it is framed in the Decent Work Country programme (Department of Labour, 2014). According to the 2014 Department of Labour (DoL) report, out of 114 strikes in 2013, 42% of strike incidents as against 58% were protected strikes. Unprotected strikes have in the majority of cases resulted in job loses.

### 3.5.3 Casualisation of labour

Temporary staffing is an increasing phenomenon in international labour markets, and SA is demonstrating similar trends. As at June 2014, temporary work accounted for 31.1% of formal sector employment (Adcorp, 2014). Because the demand for the merSETA's sector's products is closely linked to the performance of both the national and international

economy, production is cyclical and temporary workers have been a long-standing labour phenomenon within the sector. Agreements with unions have, however, set limits to this type of employment: A key challenge for skills development for the sector related to casualisation of labour is that these workers are not generally accommodated in skills planning and they make up a large proportion of the sector's workforce. Furthermore, these workers are considered more vulnerable than other workers and thus need to be considered from the perspective of the sector's support for the principles of a 'developmental state' and social inclusion.

## 3.6 MIGRATION

Stats SA stopped recording **emigration** figures in 2003 and at this stage there is no single local data source that provides information on the movement of workers out of SA. In the absence of any empirical data, it is estimated that approximately 0.5% of managers and professionals of the sector are lost to the SA labour market as a result of emigration. It was assumed that emigration of the other occupational groups is negligible because of the lack of international demand for lower-level skills and the cost of emigration. The SA labour market is affected by migration of highly skilled people to overseas destinations such as Dubai and Quatar, places where qualified SA engineers and artisans are in high demand and are able to easily move to in order to work on high-paying and exciting projects. Similarly, the SA labour market is affected by demand emanating from other African – and especially other Southern African Development Community (SADC) – countries. Specific skills needed for development projects are attracted from our labour market and as SA companies deploy their staff in neighboring countries, the demand in SA is effectively increased. Economic growth in countries in close proximity to SA, such as Mozambique, is starting to have an effect on the local demand for skilled labour. This may very well continue into the future. Through these trends, skills are lost to the local, regional or national economy on either a temporary or a permanent basis.

With regards to **immigration**, of professional, technical, and artisanal qualified people, tracking is also difficult. The intention of the national Scarce Skills List is to assist the Department of Home Affairs to make decisions in issuing work permits to foreigners.

In terms of internal migration patterns, our two newly qualified artisan tracer studies (2012 and 2015) indicate generally higher levels of migration along the eastern parts of the country, and towards Gauteng, than in the western and southern parts of the country. It may be anticipated that as the SIP projects are commissioned, internal migration trends will also shift, to meet demand.

## 3.7 EXTENT AND NATURE OF SUPPLY

### 3.7.1 Current supply

The stock of skills available to the metals, automotive and plastics manufacturing sectors includes the group of people that are currently employed in addition to those that are currently unemployed but that are available for work. Unemployed people who are currently unemployed but were previously employed in the sector must also be considered as part of the current supply of skills. The sector has shed many jobs since 2008 as a result of the economic recession, as well as some other recent factors that have served to constrain

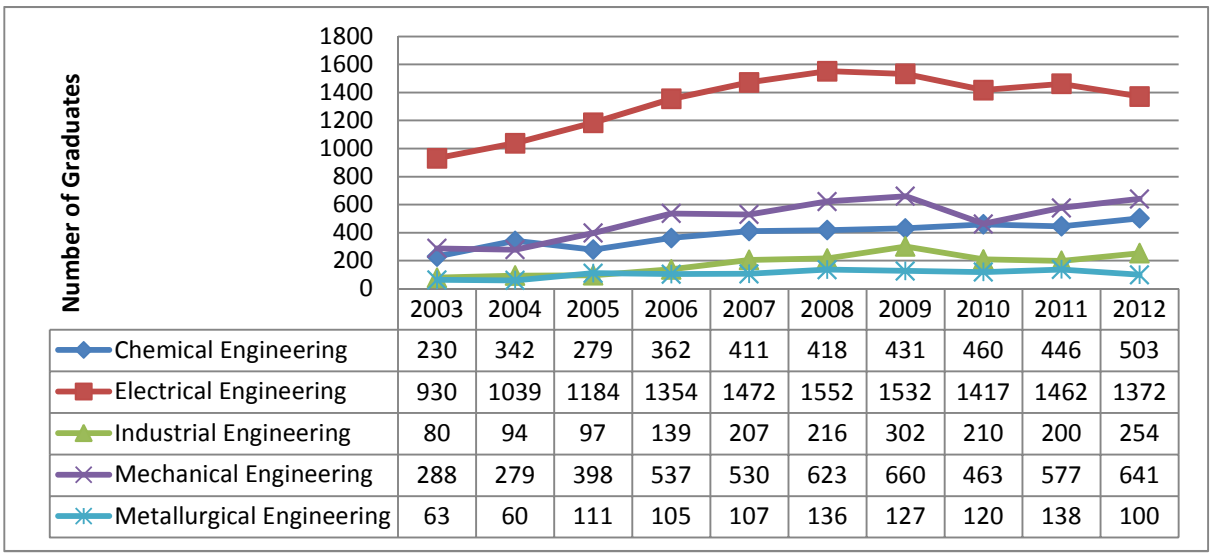
growth and profitability. In addition, labour unions have provided evidence that retrenchments in the sector are ongoing.[5] This group of recently retrenched workers forms the pool of immediately available skills that can be drawn from to meet both new- and replacement demand.

No information is currently available on the current employment status of these workers specifically. It is however possible to analyse the Quarterly Labour Force Surveys (QLFS) data. Upon comparison of the Q1 year on year QLFS data from March 2009 through March 2014, the manufacturing sector has recorded shedding jobs at an average of 5.45%. Further analyses on this data showed that since the 2008 economic recession, the manufacturing sector has been showing a steady increase in its recovery and shows a positive average employment absorption rate of 2.25% (Statistics South Africa, 2014).

### 3.7.2 Higher education and training

While a range of general qualifications from the Higher Education and Training (HET) sector in the areas of finance, accounting, human resources and Information and Computer Technology (ICT) are utilised in the merSETA sector, the output of engineers is most relevant; in particular, in the fields of electrical engineering, mechanical engineering, chemical engineering, industrial engineering, and metallurgical engineering.

Figure 14 below, shows the total number of graduates with national diplomas in selected engineering fields from 2003 to 2012. These graduates become available to the national economy as engineering technicians in the relevant engineering disciplines. Electrical engineering has the highest output (1 372 in 2012), followed by mechanical engineering (641 in 2012) and chemical engineering (503 in 2012). Output from all fields has increased substantially over the ten-year period, although a slight decrease in output was reported in all fields except chemical engineering in 2010. The average annual increase was greatest in industrial engineering (16.6%), followed by mechanical engineering (11.4%), chemical engineering (10.5%), metallurgical engineering (8.7%), and electrical engineering (4.7%).



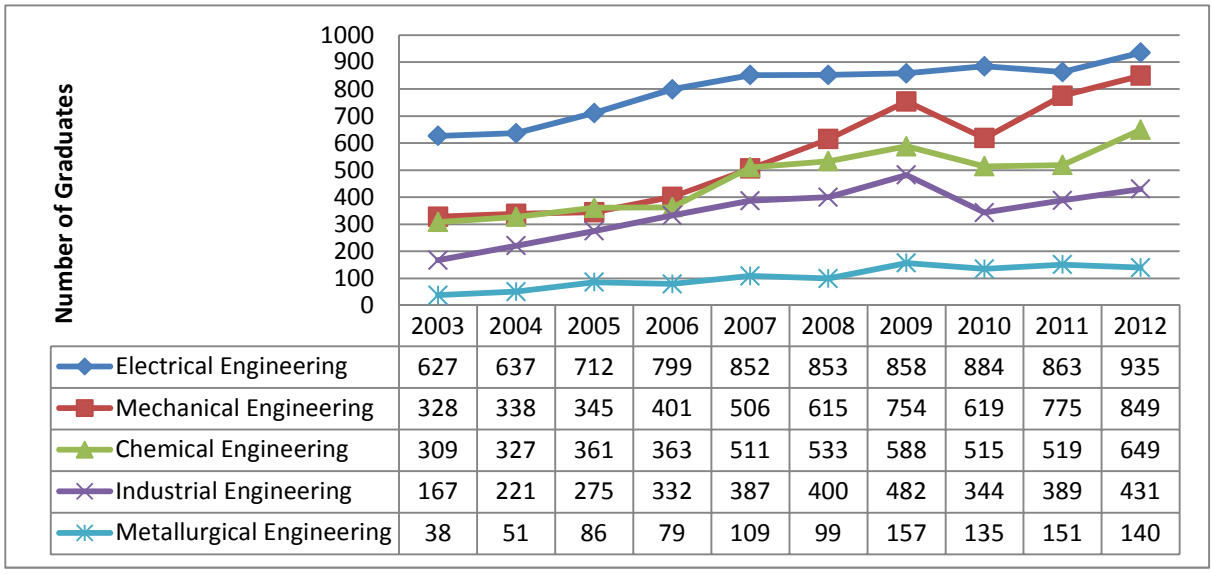

| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| Chemical Engineering | 230 | 342 | 279 | 362 | 411 | 418 | 431 | 460 | 446 | 503 |
| Electrical Engineering | 930 | 1039 | 1184 | 1354 | 1472 | 1552 | 1532 | 1417 | 1462 | 1372 |
| Industrial Engineering | 80 | 94 | 97 | 139 | 207 | 216 | 302 | 210 | 200 | 254 |
| Mechanical Engineering | 288 | 279 | 398 | 537 | 530 | 623 | 660 | 463 | 577 | 641 |
| Metallurgical Engineering | 63 | 60 | 111 | 105 | 107 | 136 | 127 | 120 | 138 | 100 |

**Figure 14: Number of national diplomas awarded in selected engineering fields: 2003-2012**

[5] NUMSA has provided the merSETA with some information on workers that have been retrenched from the sector between the 3rd Quarter of 2008 and the 2014. The data contains over one thousand names of people retrenched from about 140 companies. While majority of retrenched workers were last employed as machine operators, many indicated that their previous positions were that of artisan or assistant artisan.

Source: CHE, HEMIS, 2013

Figure 15 below, shows the number of first degrees awarded in the same selected engineering fields during the ten year period of 2003-2012. Upon successful completion of their qualifications and a minimum three years practical experience, these graduates become available to the national economy as engineers or engineering technologists and can register with ECSA as professional engineers or engineering technologists in their respective fields. In 2010, a decrease in total output was reported across all fields except electrical engineering which showed a 3% increase during the same year. In the following year (2011) increase in output was the greatest in electrical engineering (863), followed by mechanical engineering (775), and chemical engineering (519). The fields that have demonstrated the highest average annual growth over the past decade are metallurgical engineering with an average annual increase of 19.1% followed by industrial engineering at 12.6%, mechanical engineering at 12.1%, chemical engineering was 9.5% and electrical engineering was 4.7%.




| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| Electrical Engineering | 627 | 637 | 712 | 799 | 852 | 853 | 858 | 884 | 863 | 935 |
| Mechanical Engineering | 328 | 338 | 345 | 401 | 506 | 615 | 754 | 619 | 775 | 849 |
| Chemical Engineering | 309 | 327 | 361 | 363 | 511 | 533 | 588 | 515 | 519 | 649 |
| Industrial Engineering | 167 | 221 | 275 | 332 | 387 | 400 | 482 | 344 | 389 | 431 |
| Metallurgical Engineering | 38 | 51 | 86 | 79 | 109 | 99 | 157 | 135 | 151 | 140 |

**Figure 15: First degrees awarded in selected engineering fields: 2003-2012**
Source, CHE, HEMIS, 2013

Importantly, graduates with national diplomas and first degrees from the HET system have to meet the needs of all sectors of the national economy that require these skills, and not only the needs of the merSETA sectors. Competition between sectors is strong because, despite the positive growth in output in all fields, these increases have not been sufficient to alleviate the shortages of these skills in the country. As such, direct support for the generation of these skills through incentive schemes such as bursaries plays a critical role in channeling graduates into the merSETA sector. merSETA has awarded 1306 bursaries to date with 394 learners having successfully completed a qualifying programme in accordance with merSETA to date.

A study conducted by the Human Sciences Research Council (HSRC) found that the engineering skills development pipeline is not only long, but is also being adversely affected by a number of factors. One of these factors is the poor-quality schooling system in South Africa, with low enrolment in the critical subject areas of maths and physical science (combined with low-quality teaching and low pass rates in these subjects), which poses a fundamental challenge to growing the national pool of engineers. Engineering faculties also

compete with other faculties for enrolments from a small pool of eligible school leavers, among whom Africans are still under-represented (HSRC, 2013).

Poor school preparation is a factor of poor engineering throughput rates, together with other issues such as the increased engineering class sizes; the difficulty some students have in accessing study finance; and limited workplace-training opportunities, which are compulsory for graduation for students from the universities of technology (Du Toit & Roodt, 2009).

Another key factor is the difficulty that candidate engineers (having successfully passed their academic studies) have in obtaining mentorship support that would allow them entry into and registration with ECSA. This challenge, arising out of historical racial and gender imbalances is a serious threat to retaining these high potential candidates for the sector.

### 3.7.3 Learnerships and apprenticeships

Since its inception, the merSETA has registered 68 704 apprentices on apprenticeships and 64668 learners on learnerships. In the same period a total of 36 826 apprentices qualified as artisans in the sector and another 39 522 learners successfully completed their learnerships. The annual registration and completion figures for apprentices and learnerships since 2002 are shown in Figure16 and Figure 17 below. It is clear that apprenticeships and learnerships form a crucial part of the supply of skills to the sector. Therefore the merSETA continues to support the uptake of these learning pathways and continues to monitor trends in registrations and completions.

From outside the merSETA sector, the NGP aims to increase the number of artisans available to the SA economy as a whole through leveraging training from all SOEs. From across Eskom, Transnet, South African Airways (SAA), Denel, Safcol, Alexcor and Infraco, the aim is to have at least 20 000 people enrolled in artisan-related apprenticeships and learnerships between 2011 and 2015 (Department of Economic Development, 2011).

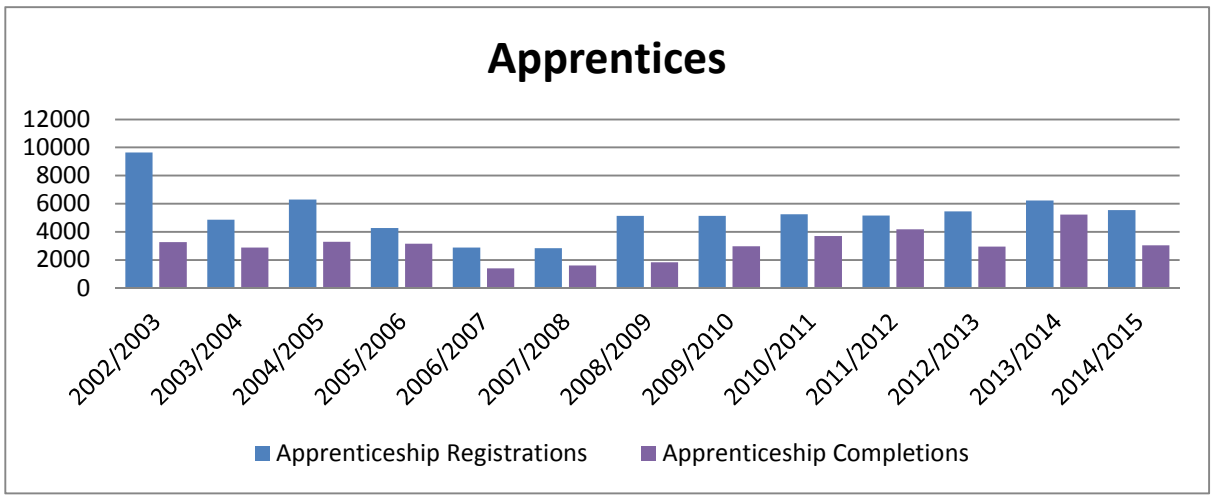



**Figure 16: Apprenticeships entered and certified**

Source: merSETA QMR data (2015)

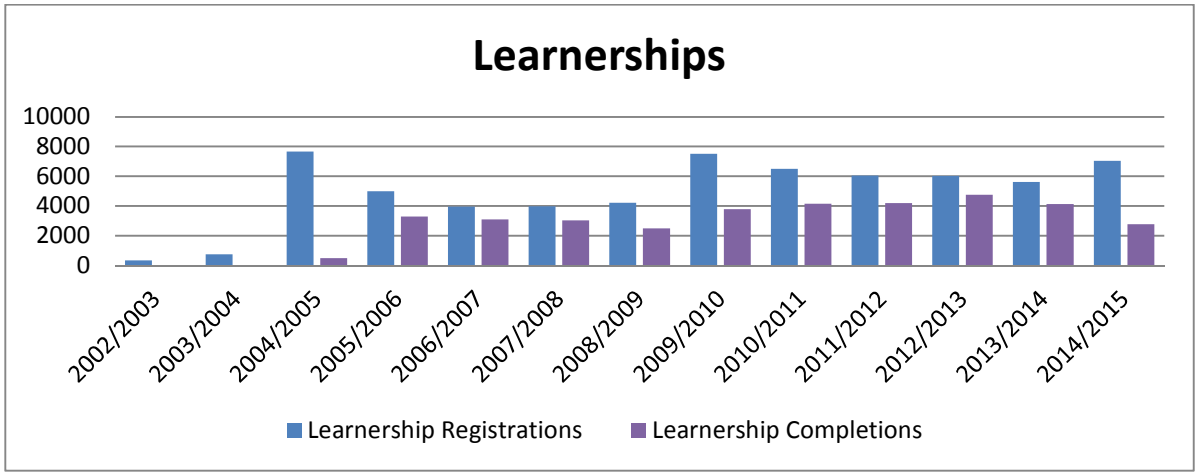



**Figure 17: Learnerships entered and certified**
Source: merSETA QMR data (2015)

### 3.7.4 TVET colleges

Traditionally TVET college programmes in engineering have been very limited and narrow in content, as they were designed to meet the demands of manual low-skill- and low-wage industries. This has resulted in challenges for universities and universities of technology in their attempts to recognise these qualifications for articulation purposes. Additionally, as the work-experience component of the training is not enforceable, employers have been reluctant to accept these students.

Despite this negative state of affairs, the tide is turning and TVET colleges form a critical component of the current training capacity of artisans. TVET colleges offer training for the NQF Level 4 National Certificate (Vocational) (NCV) and merSETA currently has relationships with 39 TVET colleges. Through partnerships with public TVET colleges, the merSETA is increasing the artisan development pipeline through the NCV artisan training programme. This programme has offered NCV learners an alternative pathway to becoming artisans besides following the traditional apprenticeship pathway.

Government has highlighted the long-term importance of TVET colleges in generating the skills that will assist the nation in reducing poverty and unemployment, and their short-term importance in generating the skills required to support the SIPs. As such, the support and growth of this form of education and training have become a major focus of government intervention. The White Paper for Post school education and Training reiterates that DHETs priority is to strengthen and expand public TVET colleges and turn them into institutions of choice for school leavers (DHET, 2013).

Therefore, while TVET colleges' contribution to meeting the skills demand for the merSETA sector has been limited in the past, the DHET is making huge efforts to change this. Through its Strategic Plan, the merSETA is supporting this objective. The Strategic Plan includes a directed focus on promoting the responsiveness of the TVET sector to meeting the immediate skills needs of the metal, automotive and plastics industries, which will be done through: participation in the revision and development of the relevant curricula and qualifications offered by TVET colleges; establishing partnerships that result in increased capacity at TVET colleges; and implementing mechanisms aimed at bridging the gap between industry and academic provision (see chapter 4).

### 3.7.5 Regional variation in skills supply

merSETA's focus on skills supply has generally considered the flow of skills into the labour market at a national level. The more localized perspective of skills demand has however been fore-fronted by an increasing focus on the SIPs, IDZs and SEZs with the result that skills supply must now also be considered at regional level. A research study commissioned by merSETA in 2013 highlights the regional variation in skills development opportunities in Gauteng province, the province that is considered to have the best skills development infrastructure in the country (Lolwana, 2013). The spatial challenges encountered by particularly the poor in accessing education and training means that the issue of regional variation in skills supply thus needs to be considered more closely into the future. To support the regional variation in supply and skills development initiatives, the merSETA regional committees are focused on supporting the Provincial Human Resource Development Councils. MerSETA will commission a second round of regional sector skills research in the 2015/16 financial year.

## 3.8 TRAINING AND DEVELOPMENT OF THE CURRENT WORKFORCE

This section describes initiatives that the merSETA has put in place to train and develop the sector's current workforce. While many of these initiatives do not address the issue of 'scarce' skills directly, they however address the need for skills which industry considers as 'critical' to its continued operation and growth prospects.

### 3.8.1 Qualifications developed by the merSETA

Companies in the merSETA sector are involved in a range of training and development initiatives that focus on developing in skills of their employees (see table 7 below). Such initiatives supplement, but also build on the training that supplies new skills to the sector. This training and development of the current workforce forms a critical source of skills supply. merSETA qualifications registered with SAQA range from NQF Level 1 to Level 5. The majority of these qualifications are attained through learnerships. The merSETA skills programmes are made up of unit standards or groups of unit standards that belong to these qualifications.

| Occupational qualification | OFO Code | Development Quality Partner | Assessment Quality Partner | Status |
|---|---|---|---|---|
| Lift Mechanic | 671204 | merSETA | NAMB | Registered |
| Armature Winder | 671207 | merSETA | NAMB | Registered |
| Fitter and Turner | 652303 | merSETA | NAMB | Registered |
| Mechanical Fitter | 653303 | merSETA | NAMB | Registered |
| Metal Machinist | 652301 | merSETA | NAMB | Registered |
| Plastics Manufacturing and Setter | 714208 | merSETA | NAMB | Registered |
| Lubrication Equipment Mechanic | 653310 | merSETA | NAMB | Registered |
| Millwright | 671002 | merSETA | NAMB | Registered |
| Mechatronics Technician | 671203 | merSETA | NAMB | Development finalized, verification stage |

| Occupational qualification | OFO Code | Development Quality Partner | Assessment Quality Partner | Status |
|---|---|---|---|---|
| Melter | 684913 | merSETA | NAMB | Registered |
| Moulder | 651101 | merSETA | NAMB | Registered |
| Patternmaker | 652204 | merSETA | NAMB | Registered |
| Electroplater | 712201 | merSETA | NAMB | Registered |
| Occupational Trainer | | merSETA | SABPP | Registered |
| Wind Turbine Service Mechanic | | merSETA | merSETA | In process at QCTO |
| Vehicle Damage Quantifier | | merSETA | merSETA | In process at QCTO |
| Vehicle Painter | 643202 | merSETA | NAMB | Registered |
| Panel beater | 684904 | merSETA | NAMB | Registered |
| Ship Builder & Repair | 684907 | merSETA | NAMB | Registered |
| Automotive Electrician | 671208 | merSETA | NAMB | Registered |
| Automotive Machinist | 652301 | merSETA | NAMB | Registered |
| Solar Photovoltaic Service Technician | | merSETA | merSETA | In process at QCTO |
| Boat Builder and Repairer | 684907 | merSETA | NAMB | Registered |
| Automotive Motor Mechanic | 653101 | merSETA | NAMB | In process at SAQA |
| Diesel Mechanic | 653306 | merSETA | NAMB | In process at SAQA |
| Small Engine Mechanic | 653305 | merSETA | NAMB | In process at SAQA |
| Motor Cycle and Scooter Mechanic | 6533103 | merSETA | NAMB | In process at SAQA |
| Heavy equipment Mechanic | 653307 | merSETA | NAMB | In process at SAQA |
| Diesel Fitter | 653304 | merSETA | NAMB | In process at SAQA |
| Pipe Fitter | 642607 | merSETA | NAMB | In process at SAQA |
| Pressure Equipment Inspector | 311502 | merSETA | merSETA | In process at QCTO |
| Non Destructive Testing Technician (NDTT) | 311702 | merSETA | merSETA | In process at QCTO |
| Armature Winder (Heavy Coil Winder) | 671207 | merSETA | NAMB | In process at QCTO |
| Metal Manufacturing Production Process Controllers | 311501 | merSETA | merSETA | Finalization stage |
| Vehicle Trimmer | 684906 | merSETA | NAMB | In process at QCTO |

| Occupational qualification | OFO Code | Development Quality Partner | Assessment Quality Partner | Status |
|---|---|---|---|---|
| Engineering Production Systems Worker (Machine Operator and assembler) | 718905 | merSETA | merSETA | In process at QCTO |

**Table 7: Qualifications developed by the merSETA**

### 3.8.2 Management and supervisory development

Managers and supervisors in the metals, automotive and plastics manufacturing sectors need a combination of industry-specific knowledge and 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 within the workforce (and therefore, already have technical and functional knowledge). Further skills development happens through combinations of formal training programmes such as Masters of Business Administration (MBA) programmes as well as short courses and in-service training. The limited supply of particularly black managers means that a focus of this form of training for potential managers from previously disadvantaged backgrounds will remain critical into the foreseeable future. The merSETA's Women in Leadership programme is one such significant example of programmes aimed at developing potential managers and business leaders from previously disadvantaged backgrounds.

### 3.8.3 Continuous professional development

Table 8 highlights the number of employees who attended continuous professional development training**.** Compared to the demographic profile of the occupational group 'Professionals' (see figure 5, Chapter 1) it is clear that African and Coloured professionals are receiving focused attention in terms of professional development: Africans represent 27.8% of the total group of professionals and received 31.3.0% of CPD opportunities, while Coloured workers represent 7.9% of the total group of professionals and received 15.5% of CPD opportunities. The proportion of White Professionals however is still quite sizable and a significant percentage (42.3%) of these workers also received CPD opportunities.

A recent trend, emerging from the Chamber-led research projects is the increased emphasis on the need for CPD for technicians (based on skills sets) or for artisans (based on specializations).

| | | | | | Total | |
|---|---|---|---|---|---|---|
| | **African** | **Coloured** | **Indian** | **White** | **Number** | **%** |
| **Male** | 3961 | 1764 | 1343 | 5404 | 12472 | 76.4% |
| **Female** | 1146 | 768 | 441 | 1499 | 3854 | 23.6% |
| **Total** | 5107 | 2532 | 1784 | 6903 | 16326 | 100% |
| **%** | 31.3% | 15.5% | 10.9% | 42.3% | 100% | |

**Table 8: Employees attending continuous professional development**
Source: merSETA QMR data 2014

### 3.8.4 Skills Programmes

A skills programme is a structured learning programme that comprises an agreed cluster of unit standards drawn from a NQF registered qualification. A skills 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 completed skills programme therefore constitutes credits towards an NQF-registered qualification skills programmes continue to form an important part of the training and development of the occupational groups 'plant and machinery operators and assemblers' and 'elementary workers'. Registration in skills programmes has increased steadily. Between the 2011/12 and 2014/15 financial year a total of 24806 learners were registered in skills programmes with 12383 qualifying during the same period (see figure 18). This is possibly linked to the new focus on post qualification specialisations.

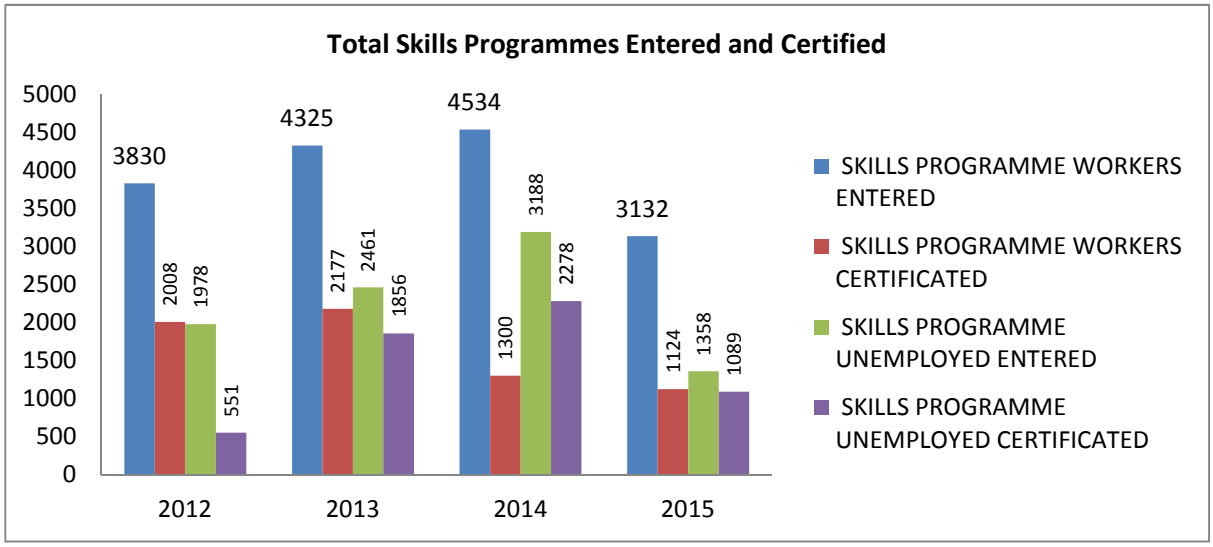



**Figure 18: Skills programme registrations and completions: 2004/2005-2013/2014**
Source: merSETA QMR data 2014

### 3.8.5 Adult Education and Training (AET)

Adult Education and Training (AET) is especially prevalent among the relatively large group of elementary workers within the sector. A substantial 19% of the sector's employees are employed as elementary workers and are likely to have formal educational levels below NQF Level 1. A proportion of those employed as plant and machine operators and assemblers (especially older employees) are also likely to have comparatively low levels of formal education. For these groups, AET is critical to the sector's ongoing need to raise general skills levels and support the acquisition of critical core skills and health and safety skills. Table 9 shows the number of employees who completed completing AET in 2014Employers that submitted Annual Training Reports (ATRs) for the year 2015/16 reported that 1135 workers completed AET programmes. Of the 1135 workers that completed AET, 89.4.0% were African, 7.7% were Coloured, 0.2% were Indian and 2.7 % were white. Overall, 86.1% of those employees that completed AET were male and 13.9% were female.

| | | | | | Total | |
|---|---|---|---|---|---|---|
| | **African** | **Coloured** | **Indian** | **White** | **Number** | **%** |
| **Male** | 880 | 71 | 1 | 25 | 977 | 86.1% |
| **Female** | 135 | 16 | 1 | 6 | 158 | 13.9% |
| **Total** | 1015 | 87 | 2 | 31 | 1135 | 100% |
| **%** | 89.4% | 7.7% | 0.2% | 2.7% | 100% | |

**Table 9: Employees who completed AET in the sector**
Source: merSETA QMR data 2014

## 3.9 MERSETA'S SUPORT FOR ARTISAN DEVELOPMENT

Artisan development has emerged as one of the government priorities in skills development. In 2014 DHET launched the decade of the artisan programme aimed to producing 30 000 artisans a year as prescribed by the National Development Plan (NDP) (Engineering News, 2014). The merSETA's core focus since its foundation has been to increase the supply of skills and alleviate skills shortages in the metal, automotive and plastics manufacturing sectors. Apart from the provision of bursaries and grants, the merSETA has also: ensured that the necessary qualifications and learnerships are registered; has accredited providers; has supported the training and registration of assessors and moderators; has verified assessments and awarded qualifications; and has undertaken research to identify areas requiring focus as well as to uncover the impact of its existing and/or completed programmes. Together with government (including the NAMB) and a range of other stakeholders, the merSETA forms an integral part of the Artisan and Technician Development Technical Task Team (ATD-TTT). The ATD-TTT has identified major bottlenecks in respect of artisan development in SA and is in the process of setting in place mechanisms to address these.

The generation of large numbers of qualified artisans in the motor-related trades is seen as one of the key ways in which merSETA can promote rural development and sustainable livelihoods. As indicated in Chapter 2, the geographical distribution of the motor retail and service sector is likely to follow the geographic distribution of the vehicles in use across the country. This is considerably more equitably distributed than the manufacturing portion of merSETA operations, with KwaZulu-Natal province (a largely rural province) having the third largest vehicle park after Gauteng and the Western Cape. As such, the development of qualified motor mechanics that are able to find employment almost anywhere in the country or are able to work as self-employed entrepreneurs promotes the rural agenda.

### 3.9.1 The Dual System of Apprenticeship (DSA) training

A new approach to r artisan development is the DSA project. The merSETA has become an active participant in the DHET-led Dual System Apprenticeship Pilot project (DSAP). The dual system of apprenticeships provides a more efficient and effective platform from which to shape the development of competence of apprentices during their three year learning process. This initiative is supported by the Minister of Higher Education and Training

through a special task team. The merSETA is part of this task team and has been supporting the DSA pilot project implementation since January 2013. The key point of delivery is through the TVET College supported by a measured College-Industry partnership. Participating Employers select their school leaving apprentice candidates and enter into a partnership with the TVET College for the provision of either the NCV curriculum or the noted curriculum with additional trade related components over the three year period. Special time tables for classes are set so that the apprentice spends two days a week at the college and the remaining three days at the workplace. This is designed to link the two distinct skills sets of the teacher and the artisan. This pilot project will run from July 2013 to June 2016. The first phase of registrations commenced in January 2014 with 42 apprentices selected by employers.

### 3.9.2 Competence Measurement in Education and Training (COMET)

The COMET Project has reached its third year of implementation in South Africa. The initial pilot in 2011/12 sought to establish whether participation in the international project would deliver some insights into the role of vocational competence measurement in teaching and learning reforms. This first pilot had three significant findings – firstly, that in the sample of 300+ apprentices tested, there was a stagnation of competence development observed through average test scores of first, second and third year apprentices in training – i.e., average results of each year group were the same, showing no progressive trend. Competence is measured through a standardised rating of how occupational specific problems are solved. The second finding was that there were a large proportion of learners that would not be able to achieve the required competence level of a skilled worker according to international standards. The third finding was that a structured approach to work-integrated learning, where apprentices are sandwiched between rotating theoretical classes, then simulated practicals, then workplace experience is most effective in building high levels of competence. Critically, the pilot indicated that the merSETA has developed a feasible model to strengthen the apprenticeship system in South Africa.

After this COMET pilot project, the merSETA made the decision to invest in a knowledge transfer to the South African TVET ecosystem in order to build the skills and systems required to run the project “in-house/domestically” as opposed through international consultants. Progress made after the initial pilot project has been through the award of two linked PhD Scholarships through the University of Bremen, the first of which is expected to submit a final dissertation in early 2016 and a second candidate due to submit in early 2017 – both these PhD candidates come from the TVET College sector. Further progress has been established through five TVET Colleges participating in the September 2014 COMET Test Series. Each College received feedback on their student test performance and as a result, technology teachers and workshop instructors have been joining the debate on the reforms required that would produce graduates with high levels of occupational specific competence. The results of the tests have also improved dialogue with participating workplaces supporting colleges in more structured work-integrated learning opportunities. The range of occupations developed for COMET testing purposes has now been expanded from millwright to the additional occupations of welder, mechatronics technician, electrician and motor mechanic. The next COMET Test Series takes place in September 2015.

### 3.9.3 Cost-Benefit-Quality (CBQ)

Apprenticeship training is seen as vital for economic development however, there are some concerns relating to the programme. The main concern regarding the apprenticeship model is the costs associated with its implementation. In an attempt to deal with this concern, the

CBQ was developed by Bremen University's TVET research group and has been modified in order to fit the South African context. The innovative practice of CBQ is focused on the quality returns of in-company training as part of apprenticeship training (merSETA, 2014). In general, apprenticeships are not only seen as more expensive than learnerships, but it also takes much longer for employers to complete. Therefore learnerships have become the more attractive option. However, it is important to consider these two programmes in their totality and it needs to be known whether learnerships produce the same quality outputs than apprenticeships as the country's vision is to produce 30 000 artisans per annum. Employers require a properly trained workforce to produce high quality products which are intended to compete in the competitive global economy. Therefore the CBQ is an effective tool that provides a scientific breakdown of the costs and benefits of apprenticeship training.

As an innovative practice the CBQ tool is an instrument that could bring the following benefits:

- For the merSETA, the instrument could be used to build partnerships that lower costs associated with teaching and learning.
- Potential partnerships around sharing provision platforms to reduce duplication.
- Benchmarking practices to act as guide for system improvements.
- Cooperation in workplace rotation to cover aspects of the curriculum more efficiently.
- QBC is anticipated to benefit the South African Skills development system in various ways. Employers will be able to explore the possibilities of improving productivity of apprentices; it will be likely to understand the training costs related to candidates entering an apprenticeship with different pre-apprenticeship qualifications and to relate general cost benefit results (Rauner et al, 2012: 87).
- Innovations in apprenticeships will be achieved with a focus on quality and improved profitability.
- Technical & Vocational Education and Training (TVET) Colleges can benefit from the information gathered by the QBC database; their curricula can be benchmarked against those of private training providers.
- With CBQ, it is quite easy to receive an overview on the strength and weaknesses of in-company training and to find ways to improve their methods (Brown and Hauschildt, 2014: 5).

In order to take the work on the CBQ tool forward the merSETA is supporting a few South African students to pursue PhD studies at the University of Bremen; this will widen the knowledge base on the apprentice training ecosystem.

## 3.10 SKILLS SUPPLY SIDE CHALLENGES

### 3.10.1 General Education and Training

The output of the General Education and Training (GET) sector to the overall supply of skills for the merSETA sector is important in two key ways. First, the number of learners graduating with maths and physical science as subjects at grades that support entry and success at higher education level in qualifications such as engineering has a direct impact on the ultimate availability of these high-level (and future management) skills for the national economy and the merSETA sector. Between 2013 and 2014, the Maths pass rate dropped

from 59.1% to 53.7% while the physical science pass rate dropped from 67.4 % to 61.5% (ENCA, 2015). These low percentages, combined with the absence of any clear improvement trends for these key subjects, is concerning and a factor that limits the higher education system from increasing access to and success in many of the high-level scarce-skill occupational qualifications.

### 3.10.2 Drop out rates

Drop out rates are high in engineering related qualifications as it is the case in other disciplines are high according to a DHET (2013) report on Statistics on Post-School Education and Training in South Africa . Recent evidence shows that on average, 70% of the families of the higher education drop-outs surveyed were in the category "low economic status". Many of those who dropped out indicated that they worked to augment their meagre financial resources, no doubt adding to their stress levels and distracting them from their studies" (Letseka & Maile, 2008:5) . A recent survey by Statistics South Africa (2015) indicated that the cost of education rose by 9, 3% in March 2015 compared with March 2014. This is 5, 3% percentage points higher than the headline CPI of 4, 0%. Rising education costs present a barrier for those seeking an education. Stats SA's latest *General Household Survey* reports that 33% of individuals aged 5–24 indicated that a lack of money was the reason they were not attending an educational institution.To improve the number of learners completing their studies, funding should reward graduate output without reducing the opportunities of learners from disadvantaged backgrounds (The Presidency, 2014).

### 3.10.3 Competition for skills with other sectors

The manufacturing and engineering sector competes with other sectors to attract engineering graduates whose skills are sought after in other sectors such as construction, finance, ICT, energy and mining etc. The movement of skilled artisans and engineers across the sectors also pose a supply side challenge for the merSETA sector. Attractive working conditions in other sectors may be a pull factor for engineers, technicians, artisans and professionals in the merSETA. The decline of the manufacturing sector which has been coupled with declining employment in this sector as indicated in previous chapters has reduced the attractiveness of this sector.

### 3.10.4 Employability of merSETA graduates in in the labour market

Evidence from research on artisan employability conducted by the merSETA (2013) suggests that there is still a strong belief that apprenticeship graduates have a clear advantage over learnership graduates when entering the market. There is a general belief that companies still prefer the traditional route of studying and that apprenticeship graduates obtained more relevant skills. According to the merSETA 2015 tracer study 84 % of the learners who had completed apprenticeship programmes were employed. Of the 84 % employed 49 % were retained in full time employment by their initial employer while 25% were employed full time by a different employer. About 10% of the learners were employed part time while 16% indicated they were still unemployed.

There is still a huge concern from industry on the quality of graduates coming through the TVET system. A recent report by the merSETA metal chamber for example, expressed concern on the quality of graduates coming through the TVET system. Concerns are around the relevance and up to datedness' of the curriculum, lack of practical work exposure of TVET college learners and lectures who lack the industry exposure. This confirms earlier findings by the merSETA employability in engineering survey in 2013 that concluded that employers felt TVET college students lacked practical exposure to industry and also lacked the practical Skills. This has affected the employability of TVET graduates. On the other

hand, research revealed that employers however have high perceptions of university graduates and felt that their qualifications were of a higher standard as revealed by a merSETA (2013) study. This in turn has a huge positive impact in the employability of University engineering graduate students who are in high demand not only in the sector, but also other competing sectors such as ICT, finance and mining.

## 3.11 SKILLS NEEDS OF THE MERSETA SECTOR

The first part of the section considers the broad categories of skills development needs, as these emerge from the discussions in the previous chapters of this SSP. These broad categories include technical skills; fundamental work-readiness skills (the basic skills necessary for safe and efficient production); health and safety skills; HIV and AIDS awareness and prevention; AET; RPL; the development of black managers; environmental skills; and the training and development of retrenched workers.

The next section presents information on specific occupations in the sector that can be regarded as scarce or critical occupations. The 2015 merSETA Scarce and Critical Skills List involved substantial industry engagement despite having its base in the quantitative analysis of the merSETA 2015 WSP vacancy data. More expansive chamber-specific priority skills lists are presented in Appendix A. The final section of the chapter considers the SIPs Scarce Skills List, and merSETA's intended contribution to the development merSETA-relevant skills on this list.

## 3.12 BROAD CATEGORIES OF SKILL DEVELOPMENT NEEDS

### 3.12.1 Technical skills

The work environment for the majority of employees in the merSETA sector demands a sound level of technical knowledge and skills. These range from the more basic technical skills required by machine operators to the advanced technical skills demanded by artisans and engineers. In addition, globally the technology in the areas of materials, manufacturing, logistics, CNC and CAD are continually advancing, and regular updating of technical skills across all levels of employees is an ongoing skills development need for the sector. The focus should thus be developing skills that will be applicable in the future.

### 3.12.2 Fundamental work-readiness skills

"Fundamental work-readiness skills" refers to the skills necessary to utilise acquired theoretical and practical knowledge, and skills in support of efficient and profitable production and/or service delivery for the employer within the work environment. In US technical colleges this group of skills is referred to as "critical core manufacturing skills" and includes both soft skills and fundamental skills. This skills group covers four key areas: fundamental productivity skills (working productively, following directions, and maintaining a safe work environment); fundamental problem-solving skills (thinking critically, applying problem-solving strategies, and applying mathematical reasoning); fundamental team skills (working cooperatively in teams, communicating clearly, and listening effectively); and fundamental adaptability skills (demonstrating integrity, demonstrating a positive attitude, and adapting to change) (Fox Valley Technical College, 2011). The need for such skills is in line with the merSETA's finding that the skills most required by industry are: "a positive attitude; solid work ethics; thinking skills related to maths and reading skills; problem-solving skills; and interpersonal and communication skills" (merSETA, 2010).

### 3.12.3 Health and safety

While also part of the group of core skills for the sector, health and safety skills require specific attention. Training in this area is legislated and includes both induction courses and regular refresher courses.

### 3.12.4 HIV/AIDS awareness and prevention

While many organisations in the sector have instituted various interventions to curb the spread of HIV infections and to treat HIV-positive workers and those workers who are living with AIDS, infection rates in the sector are higher than in many other sectors of the national economy. As such, firms – with some assistance from the merSETA's Workplace Wellness Programme – need to continue to focus on awareness and prevention programmes.

### 3.12.5 Adult Education and Training (AET)

A substantial 19% of the sector's employees are employed as elementary workers and are likely to have formal educational levels below NQF Level 1. A proportion of those employed as plant and machine operators and assemblers (especially older employees) are also likely to have comparatively low levels of formal education. For these groups, AET is critical to the sector's ongoing need to raise general skills levels and support the acquisition of critical core skills and health and safety skills.

### 3.12.6 Recognition of Prior Learning (RPL)

While there are still numerous challenges to assessing the skills of all individual workers in the sector who have extensive experience but who have not had the opportunity to earn formal qualifications, one area in which RPL has now been institutionalised is the area of artisan training. The RPL route forms one of four routes through which artisans can acquire the practical knowledge needed to qualify to undertake a formal trade test.

### 3.12.7The development of black managers

In support of transformation efforts within the sector, the development of black managers remains critical. This will necessarily entail a focus on transformation at the level of professional employees, as these generally feed into management positions. Support by the merSETA of increased access for and graduation of black students, particularly in engineering qualifications, is thus imperative.

### 3.12.8 Environmental skills

Skills that support the development and use of 'greener' technologies and the Green Agenda more broadly are likely to become increasingly important in the sector and thus need to be considered among the merSETA's skills development priorities now. The merSETA Strategic Plan has prioritised skills for sustainable development.

### 3.12.9 Training and development of retrenched employees

The merSETA's sectors have suffered considerable levels of employee retrenchment since the start of the economic crisis in late 2008. While many of the retrenched were permanent workers, the vast majority would have been more vulnerable casual workers, as cancellation of labour-broker contracts was one of the first ways that firms sought to cut operating costs at the start of the crisis. Many of the programmes that were undertaken by companies (either with or without merSETA or government support) should become institutionalised so that employees that are forced to leave the sector have the entrepreneurial and other skills

necessary for self-employment or for employment in other sectors.. The Retrenchment Assistance Plan (RAP) and Training and Layoff Scheme (TLS) are programmes aimed at the development of retrenched employees.

## 3.13 SPECIFIC SCARCE SKILLS

A priority skills list is drawn up by the merSETA using a combination of statistical analysis of vacancy data from the WSP and consultation with sector representatives. Qualitative inputs from the sector confirms that the skills indicated were either very difficult to find, difficult to train or crucial to the sector in terms of sustainability and global competitiveness. The Pivotal Skills lists presented in this SSP (table 10), was determined through the following process:

For occupations driven by high employment rates, WSP 2015 data was used, with a focus on occupational vacancies. A number of filters were applied to a group of variables. Occupations from the WSP 2015 data were included in the list of scarce skills if: 1) The total sector employment of a particular occupation was greater than 500; 2) The percentage of employing companies that reported a scarcity for a particular occupation was greater than 5; 3). The percentage of vacancies for a particular occupation was greater than 5.0% of total employment for that occupation.

WSP 2015 data was again considered for scarcity driven by low employment rates in occupations with fewer than 500 employees. Again filters were applied with occupations considered to be scarce if: 1) The total sector employment of a particular occupation was less than 500; 2) The percentage of employing companies that reported a scarcity for a particular occupation was greater than 3; 3)The percentage of vacancies for a particular occupation was greater than 5.0% of total employment for that occupation.
Analyses of difficult to fill positions were also considered relative to the number of employees, number of vacancies and number of companies reporting.

The 2015 merSETA Top 10 PIVOTAL Skills List is presented below:

| | OFO | Occupation | Specialization | Total Demand |
|---|---|---|---|---|
| 1 | 653101 | Automotive Motor Mechanic | Automotive Mechanic | 1028 |
| 2 | 121901 | Corporate General Manager | Business Operations Manager | 243 |
| 3 | 651302 | Boiler Maker | Boilermaker | 1146 |
| 4 | 651202 | Welder | Welding Tradesperson | 919 |
| 5 | 718905 | Engineering Production Systems Worker | Sheet Metal Production/Process Worker | 260 |
| 6 | 312201 | Production / Operations Supervisor (Manufacturing) | Production Plant Supervisor | 1074 |
| 7 | 132104 | Engineering Manager | Engineering Maintenance Manager | 34 |
| 8 | 652302 | Fitter and Turner | Industrial Mechanician | 302 |
| 9 | 832902 | Plastics, Composites and Rubber Factory Worker | Fibreglass Laminating Process Worker | 30 |
| 10 | 718905 | Engineering Production Systems Worker | Steel Worker | 289 |

**Table 10: merSETA scarce skills list**

Source: merSETA WSP data 2015

## 3.14 SKILLD REQUIRED TO SUPPORT THE SUCCESSFUL IMPLEMENTATION OF THE SIPS

The Presidential Infrastructure Coordination Commission (PICC) in 2013 released a SIPs Scarce Skills List, which all SETAs are asked to address in their SSPs. Specifically, government requires that SETAs indicate the way in which they are planning to address shortages in all the scarce skills relevant to their sector. In table 11 below, merSETA SIPS commitments are outlined. The development of skills relevant to these occupations will thus receive merSETA's direct attention and support.

| OFO | TRADES SUPPORTED | NUMBER TOTAL |
|---|---|---|
| 671202 | Millwright | 200 |
| 651302 | Boilermaker | 150 |
| 651202 | Welder | 100 |
| 651501 | Rigger | 50 |
| 651101 | Moulder | 15 |
| 642607 | Pipe Fitter | 20 |
| **Total** | | **535** |

**Table 11: Scarce skills list for the Strategic Integrated projects (SIPs)**

In addition to merSETA supporting the development of skills that have been identified by government as relevant to the SIPs, merSETA intends to provide channels through which unemployed graduates with relevant skills (but with relatively little experience) can be accessed by the private sector companies that win the tenders to undertake the SIPs projects.

## 3.15 IMPACT OF SKILLS SHARTAGES

Skills shortages have a far reaching negative impact in the sector. According to key findings of the merSETA (2014/15) chamber led research project the following emerged as the impact of skills shortages on firms:

- One of the major risk facing firms is the inability to upgrade to new technology which required highly skilled people to operate. Consequently firms have failed to take full advantage of newer technologies that bring with them advantages such as lower production costs. Higher production costs translate to low profit margins.
- There is decline productivity and higher production costs as firms are stuck with older technologies that are less efficient, more expensive to maintain and more labour intensive.
- The lower rate of innovation in the South African manufacturing and engineering sector can be attributed to the shortage of highly skilled people capable of coming up with innovative ideas. The failure to offer innovative products is a risk for South African firms as they face the risk of loosing business to competitors both locally and globally. This has resulted in South African firms loosing a market share to firms from other countries such as China and other developed countries.

- The shortage of skilled people has also resulted in some employees working longer hours. This has a negative impact on employee moral, motivation and turnover of skilled employees.

## 3.16 CONCLUSION

This chapter reflects on the categories of skills development needs in the merSETA sector that have been alluded to in the previous chapters of this SSP. In respect of the specific skills that need focused attention, merSETA's 2015 Draft on Scarce and Critical Skills List is included in this chapter. The SIPs Scarce Skills List that released by government includes a number of occupations that have been identified by merSETA as part of its Scarce Skills List. The development of skills to match these occupations will thus receive direct support from the merSETA. Additionally, merSETA will develop ways in which employers on SIPs projects can access information about recent graduates with relevant skills. Such platforms are necessary in order to support and facilitate the provision of skills for these important projects and for maximizing employment opportunities for young people entering the sector.

# 4 PARTNERSHIPS

## 4.1 INTRODUCTION

The purpose of this chapter is to assess the effectiveness of existing partnerships in the sector. The chapter will highlight the successes, challenges and propose best practices for strengthening partnerships. New partnerships needed in the sector will also be identified including the plan of action the merSETA is putting in place to ensure the successful establishment of these new partnerships.

## 4.2 STATE OF EXISTING PARTNERSHIPS AT THE MERSETA

Partnerships play a pivotal role in strengthening skills development interventions by creating and strengthening synergies among players in the skills development eco-system. The White Paper on Post School Education and Training sets out strategies to improve capacity for post school education and has identified the need for a stronger and more cooperative relationship between education and training institutions and the workplace as one of its major policy objectives.

The merSETA has established a national footprint for skills development by entering into a range of partnership agreements with TVET colleges, local and international universities and universities of technology, as well as national and provincial governments. One of the objectives is to support employability and to contribute to the professional development of TVET educators. The agreements further support localisation through networking the relevant businesses, industry, national and provincial departments to collaborate in providing work-integrated learning opportunities. Several of the partnership agreements also aim to strengthen the South African TVET college system through the introduction of teaching and learning methodologies to prepare the learners more effectively for the workplace.

To date, the merSETA has entered into several partnership agreements which are categorised below:

- Thirteen (13) National and provincial government department partnership agreements
- Public university and university of technology agreements
- Two (2) International university partnership agreements
- Thirty nine (39) TVET College agreements

## 4.3 LOCAL AND INTERNATIONAL PUBLIC UNIVERSITIES AND UNIVERSITIES OF TECHNOLOGY PARTNETSHIPS

The list of partnerships with universities is discussed below.

- The partnership with the Tshwane University of Technology based on a Chair for Manufacturing Skills Development, with related output of Masters, and PhD candidates based on identifying and supporting skills for technology gaps requiring skills development support that will improve the competitiveness and sustainability of the South African manufacturing value chain.

- A partnership with the Centre for Researching and Learning (REAL), at Wits University, focussed on “Sector, Skills and Economic Evolution” based on a Masters, Doctoral and Post-doctoral academic program which seeks to integrate VET, industrial policy and evolutionary economics disciplines towards the new skills required by DHET for skills planning purposes.

- A partnership with the Nelson Mandela Metropolitan University to support Mathematics and Science tutoring for Grades 10, 11 and 12 /Upgrading of two Technical High School Technical Laboratories / Technical School Support / Women in Engineering programme (WELA).

- A partnership with the University of Venda to support rural learners in Mathematics, Science and Technology as well as the development of the next generation of academics; and capacity building at TVET Colleges.

- A partnership with the University of Western Cape to support the mentorship of undergraduate students in Mathematics and Science (engineering-related). Also the training of teaching assistants in the Extended Curriculum Programme at the University.

- A partnership with the University of Johannesburg (UJ) which will see UJ experiential learners placed at the incubation hub for small business (services to industry, as well as product and process development). Part B of the partnership focuses on the placement of UJ experiential learners for work-integrated learning at merSETA companies.

- A partnership with the Cape Peninsula University of Technology around greening the economy and for piloting the new QCTO Wind Turbine Service Technician Qualification.

- A partnership with the Central University of Technology to support capacity building at six TVET Colleges.

- A partnership with the University of Cape Town to establish a new Masters qualification specialising in entrepreneurship linked to the industrialisation of Intellectual Property developed through HEIs in support of new manufacturing and employment opportunities in SA.

- A special partnership with the University of Bremen to develop four South Africans in a PhD scholarship programme dedicated to specialised research into vocational competence diagnostics (COMET) and in-company training efficiency development (QRC) in artisan training and development, currently being rolled out within industry.

- A partnership agreement with Nelson Mandela Metropolitan University (NMMU) that establishes a Chair In Engineering Development. The purpose of this Chair is to grow human resources in mechanical engineering, electrical engineering, mechatronics and industrial engineering in order to enhance the manufacturing industry in the Eastern Cape to enable competitiveness and a growing and sustainable economy. Important aspects of this partnership relate to increasing capacity at FET Colleges, promoting the

women in engineering objective, and career guidance linked to promoting articulation and collaboration between the sub-systems Basic, Further and Higher Education.

- Masters and PhD scholarship programmes through partnering with local and international universities such as the University of Cape Town, University of Bremen, Walter Sisulu University, Tshwane University of Technology, and Wits, for the production of and transfer of knowledge in Technical Vocational Education (TVET), manufacturing stimulation, as well as technology-based entrepreneurship, are therefore flagship initiatives.

## 4.4 TVET COLLEGE PARTNETSHIPS

The merSETA, in response to DHET's highest priority to strengthen and expand TVET colleges and turn them into attractive institutions of choice for school leavers as highlighted in the White Paper on Post School Education and Training, has increased and strengthened its partnerships with TVET colleges.

In 2014/15, continuing into 2015/16, merSETA entered into 39 partnership agreements with TVET colleges. The 39 agreements exclude the agreements where TVET colleges were identified as the preferred providers, for example in some of the agreements with provincial governments. The majority of these partnerships focus on learning pathways towards learners progressing to become trade-tested artisans. The agreements have a national TVET college footprint in all nine provinces, inclusive of agreements with colleges in rural areas. On completion of the National Vocational Certificate (NCV) in engineering studies, learners often have difficulty to find work due to a lack of work-integrated learning (WIL) during their studies. Through 22 of the partnership agreements, merSETA will establish a network between merSETA companies and the TVET colleges to engage the NCV learners in a further 18 months of WIL that ends in a trade test. The aim is to qualify 650 NCV learners as fully-fledged artisans in the next two years through this process, over and above the agreements where there is also an option for TVET college learners to access trade tests.

In collaboration with the DHET, the merSETA supports 40 TVET college lecturers through several of the partnership agreements, aimed at the professional development of the lecturers in engineering studies. The support process provides lecturers, who are not trade-tested artisans, to spend a period of 18 months in merSETA industries with the option of a trade test post the WIL intervention. The aim is to strengthen the TVET colleges and industry relationships and expose lecturers to technologies, productivity and quality standards in industry.

## 4.5 NATIONAL AND PROVINCIAL GOVERNMENT DEPARTMENT PARTNETSHIPS

The merSETA has entered into partnerships with government at national and provincial level to aid skills development and assist merSETA in reaching some of its development goals.

The table below (table 12), outlines the key national and provincial partnerships merSETA have with government departments. These have a national footprint and aid skills development initiatives for both employed and unemployed learners across all regions in which merSETA has a footprint.

| NATIONAL/PROVINCIAL PARTNERS | INTERVENTIONS |
|---|---|
| National Department of Public Works | 330 artisan training-related learners |
| Gauteng Education Department | 156 apprenticeships registered (school learner/unemployed target group) |
| Limpopo Provincial Government | 100 NQF level 2 learners |
| KwaZulu-Natal Provincial Government | 200 unemployed learners - apprenticeships<br>1 660 unemployed learners - skills programmes |
| Mpumalanga Department of Public Works | 100 learners - apprenticeships |
| Western Cape Department of Economic Development and Tourism | 100 learners - apprenticeships |
| Office of the Premier in the Eastern Cape | 231 Experiential learners (P1 & 2) / 92 learnerships<br>28 apprenticeships / 31 NCVs - artisan programmes |
| Department of Correctional Services: Free State/Northern Cape | Skills development of awaiting-parole offenders for reintegration in society - 40 learners in Bloemfontein and 40 in Kimberley. |
| Western Cape Department of Education | Work-integrated learning (TVET provider) - 33 disadvantaged learners with learning difficulties |
| Mpumalanga Department of Education | 143 learners for artisan training / 86 for skill sets |
| Office of the Premier of North-west | Learnerships, artisan training and skills programmes |
| Department of Military Veterans | 50 learners on ARPL training |
| State-owned Entity, Denel Aviation | 15 learners on apprenticeship training |

**Table 12: National and Provincial Government Department Partnerships**

## 4.6 PARTNETSHIP SUCCESSES

The role of partnerships in enabling the merSETA to meet and exceed some of its skills development goals, cannot be overemphasised. Some of the successes are highlighted below.

**Capacity development of TVET Colleges through the lecturer artisan training programme**. This programme has been effective in equipping TVET college lecturers with the knowledge and skills to teach and train artisans. This was in response to the outcry by industry on the quality of learners coming through the TVET college system. Research conducted by the merSETA in 2013 on the employability of engineering graduates in the sector recommended retraining lectures as a way of improving the quality of teaching of technical and engineering courses.

**Capacity development of TVET colleges through the TVET college leadership development in partnership with British council.** This programme is set to develop leadership capacity in TVET colleges. The selected TVET colleges have also benefited from an exchange programme with their counterparts in the United Kingdom.

**Increasing the artisan development pipeline through the NCV artisan training programme**. This programme has offered NCV learners an alternative pathway to becoming artisans besides following the traditional apprenticeship pathway.

**Increasing the quality of artisan training through the dual system apprenticeships approach to artisan development.** This is a national DHET project that links TVET Colleges to workplaces for structured work-integrated- learning on a rotational plan.

**Increasing collaboration**. Partnerships have improved stakeholder participation by engaging industry associations, employer associations, organised labour, and sector bargaining councils to address bottlenecks in the system and work towards the mutual goals of increased levels of co-ordination and efficiency.

**Successful placement of learners**. The successful placement of learners in workplace has increased as a result of increased collaboration due to strong partnerships. The merSETA assists TVET colleges in placing learners by linking them directly with employers that provide workplace learning spaces.

**Improved learner success rates.** Completion rates have also been increased due to a strong learner support system formed as a result of increased collaboration due to strong partnerships between the merSETA, industry and TVET colleges. More than ever, learners can easily secure workplace learning with employers, a critical component for successful completion.

## 4.7 CHALLENGES EXPERIENCED WITH PARTNERSHIPS

Partnerships have presented the merSETA with some challenges that are worth mentioning. Through various interventions that will be discussed in the following section, merSETA has come up with innovative ways and best practices for dealing with these challenges. The challenges identified include:

**There is a lack of administrative capacity in some TVET colleges.** This is a serious challenge considering that partnerships require a lot of administration, which includes but is not limited to; finance management, procurement and reporting. Challenges such as late reporting, poor records management and poor finance management are some of the few examples of challenges the SETA has been confronted with.

**The success of partnerships arguably depends to a large extent on good project management.** Poor project management practices in some TVET colleges have added to the challenges the merSETA is facing. This has resulted in some projects failing to be completed on schedule without any valid reason, poor project reporting, and poor implementation and monitoring of projects.

**The lack of technical capability or expertise within the TVET colleges has presented the merSETA with some serious challenges.** There has been a tendency by some TVET colleges to outsource projects to external providers despite the fact that the

expectations are that the TVET College will conduct the work and take ownership of the projects. The involvement of third parties has created some serious administrative and project management problems.

**A lack of available and suitably qualified Professors.** Evidence from data collected through the evaluation of some partnerships with universities has found that work programs are also sometimes delayed by the lack of the availability of suitably qualified Professors (PhD/DPhil) to lead the programs.

## 4.8 BEST PRACTICES IN STRENGTHENING PARTNERSHIPS

Good project management practices such as project finance management, project risk management and project time management are important to ensure the success of partnerships. Good project management results in the completion of projects within time and within the allocated resources. The risk of overspending or under- spending and project delays is therefore minimised.

Monitoring and evaluation (M&E) is an important element that needs to be built into all partnership agreements. The merSETA is in the process of implementing an organisation-wide M&E framework to monitor and report on skills development interventions being implemented, organisational performance in general, as well as to assess the quality, effectiveness, efficiency, and impact of its projects including partnership agreements.

The involvement and commitment of management and executive leadership is critical to ensure the success of partnerships. Management steering committees play a critical role in monitoring and ensuring the implementation of partnership agreements (project management), while the steering committees (executive leadership) offers strategic guidance in the conceptualisation and implementation of partnerships through resources allocation; clarifying the goals and expectation of the partnerships (project leadership ). The importance of working towards mutually shared objectives cannot be over emphasised.

The effective management of partnership contracts play a significant role in managing partnerships. Contract management helps to improving financial and operational performance in partnership agreements. Moreover, ensuring that deliverables are clearly articulated, as the clarity of roles for all parties involved in the partnerships are critical. Furthermore, to minimize the risk of misaligned expectations it is extremely important from a contractual perspective to clarify the terms and expectations of the agreement upfront.

The role of industry in partnerships needs to be emphasised as it is the industry that provides workplace learning opportunities. Partnerships are therefore incomplete without the support of industry. It is therefore important for TVET colleges and SETAs to get input from industry rather than including employers as an after thought.

Furthermore, there is also a need to revisit the notion of the workplace, which more often than not is narrowly defined. This is especially problematic in rural areas where in some cases there is little or no presence of industry. Innovative approaches to providing workplace experience need to be explored in partnership with other relevant SETAs such as the Agri SETA.

## 4.9 NEW PARTNETSHIPS

Forming new strategic partnerships has been identified as one of the skills development priorities for the sector. The merSETA intends to act as a key facilitator to assist the sector to engage meaningfully with a range of government and non-governmental stakeholders as well as intermediary agencies to ensure the national skills development agenda is adequately coordinated, resourced and funded (see chapter 5). The merSETA has put in place various strategies aimed at supporting the establishment of new partnerships as it is acutely aware of government's rural development agenda, development of special economic zones, ocean economy, and other national and sector priorities.

Despite the largely urban concentration of merSETA companies, the sector has identified the need to support the development of skills in rural areas to support rural development and industrialization. Establishing new partnerships and strengthening existing partnerships with rural TVET colleges is being explored as a vehicle for enabling merSETA to effectively contribute to the rural development agenda as articulated in the NDP. In this regard, the new agreement with Walter Sisulu University is key in exploring the potential of light manufacturing for community development.

Finally, SETAs, including the merSETA have a pivotal role to play in the success of the newly established community colleges which are set to play an important role in skills development. The White Paper on Post School Education and Training also articulates the role of SETAs in facilitating partnerships between community colleges and workplace integrated learning opportunities such as the Expanded Public Works Programme.

## 4.10 CONCLUSION

This chapter has highlighted the partnerships which the merSETA currently has, as well as new partnerships which will further cement the merSETA's efforts for collaboration to close the skills gap.

merSETA has seen many successes as a result of partnerships that have yielded tangible returns in the skills development arena, these include efforts to support teaching and learning at TVET Colleges; brokering relationships between the education sector and the private sector; improving quality of teaching and learning; and increasing learner success rates.

Partnerships are fraught with challenges. A major contributor to these is capacity limitations in managing, implementing, monitoring and evaluating key outputs and milestones. To this end the merSETA has endeavoured to implement measures to ensure successful outcomes of partnerships including the implementation of monitoring and evaluation; putting in place steering committees; ensuring effective contract management through clearly defined deliverables and roles including financial management and ensuring that all parties are on board and committed from the time of inception.

# 5 KEY FINDINGS AND SKILLS PRIORITY ACTIONS

## 5.1 INTRODUCTION

This chapter consolidates and presents the findings from previous chapters and reflects on priority skills development actions for the sector. The first section of this chapter discusses the key strategic issues that arise from the analysis undertaken for this SSP. The discussion of key strategic issues is followed by an explanation of the merSETA's skills development priorities.

## 5.2 KEY FINDINGS

The Sector Skills plan has highlighted pertinent issues for priority actions to be undertaken.

The sector profile in terms of the labour market and economic environment drew attention to the fact that:

The manufacturing, engineering and related services sector is experiencing significant challenges due to domestic and global economic conditions, energy supply challenges and labour volatility.

The decline in traditional manufacturing production coupled with other factors such as automation have seen a decrease in manufacturing employment, coupled with a year on year decline in the sector's contribution to GDP, relevant to other economic sectors.

The informal and SME sector is increasingly seen as key to employment growth in the sector.

Demographic challenges remain in respect of race, gender and PWD, at different occupational levels.

Productivity and industrial competitiveness remains a key issue for the sector.

In Chapter 2, key skills issues were discussed taking into consideration change drivers and alignment with national strategies against the demand and supply of skills to the sector, with residual emphasis required in the following areas:

The merSETA sector has a significant role to play in supporting national development priorities linked to the National Development Plan (NDP), and Strategic Integrated Projects (SIPS), as well as Operation Phakisa.

The centrality of the Industrial Action Plan (IPAP) to manufacturing sector growth cannot be ignored, and requires a skilled labour force.

Increasing technological changes linked to digitisation and automation especially within the advanced manufacturing sector, are critical to reversing the downward trend of an ageing industry, but require a different skills sets, and a highly skilled workforce.

Skills for the "Green Economy" are becoming increasingly important, in terms not only sustainability and productivity considerations, but because of the strong focus on renewable energies.

Chapter 3 analysed the demand and supply by examining skills mismatches and skills gaps within the sector. It highlighted that:

The shortage of highly skilled people is one of the factors that have contributed to the slow adoption of technology, low productivity, low competitiveness and high cost of production.

Low throughput rates in higher education and TVET Colleges, and low enrolment rates in engineering related qualifications are partly due to poor pass rates in maths and physical science.

The merSETA sector also competes with other sectors for newly qualified engineers, artisans, technicians and other professionals.

Perceptions within some sectors of the industry that TVET College graduates lack practical exposure and up-to date theoretical knowledge means that candidates who come through the traditional apprenticeship system are still rated more highly.

Industry has identified as a problem the lack of skills development support mechanisms for post qualification training and specialisation, and smaller skills sets.

In Chapter 4 we examined the effectiveness of merSETA partnerships with TVET Colleges, as well as other supporting partnerships linked to the TVET sector. It identified that:

Partnerships are critical for the sector to address the skills development challenges that the sector is facing.

The merSETA has several partnerships with TVET colleges, Local and international universities aimed at strengthening skills development in this sector.

There is a need to foster stronger, more focussed, and programmatic partnerships between industry and TVET college partnerships in order to develop greater synergy between skills demand and supply and counter negative perceptions by developing more relevant skills for the industry and the broader economy.

The TVET College sector is well positioned to support the unique skills requirements of SMEs and the informal sector.

## 5.3 KEY STRATEGIC ISSUES

A major concern for industry is that in the context of the existing economic climate, the employment creation capacity of the sector may be overstated. The steady year-on-year decline in manufacturing output as a percentage of GDP is partly a sign of an ageing industry. The following strategic growth areas have been identified:

***De-industrialisation:*** South Africa finds itself facing the dangers of de-industrialisation amid job losses and factory closures in the manufacturing sector along with rising imports and declining exports of some manufactured products. This results in a struggling manufacturing sector with a decreasing demand for semi-skilled workers. Increasingly, more skilled and highly skills workers are required in the manufacturing industry, this has the potential to negatively impact the labour force resulting in more job losses over time.

***Beneficiation*:** high value added manufacturing (final manufactured products) has been identified as an important mechanism to further diversify South Africa's economy, and thereby to also create jobs. However, for this to succeed concerted efforts are needed within viable sectors who aim to beneficiate locally. Currently, South Africa lacks the necessary capacity to make this a reality. Through research and development (R&D) initiatives, SETAs may gain insight into what skills are needed in various local beneficiation sectors, and thereby address these skills issues.

***Advanced manufacturing*:** the sector needs to be supported to develop advanced manufacturing capabilities, and through a futures-oriented focus to skills development. Advanced manufacturing, including the production of advanced materials and the use of advanced manufacturing techniques, can create new employment opportunities through the creation and growth of new industries and markets.

**The *Strategic Integrated Projects (SIPS):*** which are key for national growth. The strategic aim of the merSETA in responding to the Strategic Infrastructure Projects, IDZs, and SEZs, is to leverage the potential for growth and localisation that they offer merSETA industry component manufacturers and downstream suppliers, and in turn to grow employment in these sectors. This requires an adequate supply of skills to the sector.
*Operation Phakisa's* focus on growing the ocean economy brings opportunities for marine manufacturing and engineering activities, such as boatbuilding, ship and rig repair and refurbishment. Strategically this will boost local manufacturing capacity through a 10 percent increase in the usage of local components for boat and ship building.

***SMEs and the informal sector**:* in the rural areas and as part of urban renewal, is viewed as an opportunity for growth through skills development. This is particularly true of the Motor sector, but also of the metal and plastics sectors. The merSETA's approach to SME support and development is inclusive of recognizing co-operatives as a form of ownership that could contribute in bridging the formal and informal economies through the value chain.

***The Green Economy:*** has been identified as a significant growth as a result of the rapid expansion of the green manufacturing industry, e.g. photovoltaic and wind-farms and although prospects for large scale employment creation in these areas remain uncertain, there will nevertheless there will be an increasing need for maintenance technicians in the years to come. The new business opportunities (and job opportunities) associated with a low carbon economy and new forms of environmental management have led the manufacturing industry to take a more proactive role in the development of cleaner manufacturing processes and the design of recyclable products, where the waste from one process becomes the raw material for another in a large cycle.

Other areas of concern identified in previous chapters relate to the need for competiveness enhancement in the manufacturing sector. Besides support for productivity focussed initiatives, this includes industry leadership programmes, and initiatives to boost efficiencies

and effect cost savings for industry sustainability under adverse economic conditions, while retaining commitment and awareness of issues around technology and innovation.

In order to attract the right calibre of candidates to studies linked to the manufacturing and engineering sector, through career guidance and development, there is a universal need to sustain the learner pipeline through Science, Technology, Engineering and Mathematics (STEM) and other programmes.

The sector recognises that there is a need to increase the efficiency of its spend on training. Improving the efficiency and economy of skills development efforts in the sector will make it easier to raise funding from other sources, as well as improve the impact of its skills development support in the sector. Key initiatives to address these concerns will include the broader roll-out of applied apprenticeship research linked to quality, cost, productivity, as well as learner tracer studies. The development of an integrated monitoring and evaluation system at all structural levels is envisaged.

In summary, the key strategic issues facing the merSETA and its sector are about:

Addressing strategic skills development challenges to drive employment and economic growth.
Supporting opportunities for innovation in products, services, operations and business approaches.
Balancing competing short and longer-term skills development needs for the sector as well as stakeholder and shareholder needs and interests.
Enhancing merSETA's capacity to respond to the skills development needs of the not only at sectoral, but also at sub-sectoral levels, and regional as well as national levels.

## 5.4 SKILLS DEVELOPMENT PRIORITIES

### 5.4.1 Priority 1: Develop the sector Labour Market Intelligence (LMI) system

This overarching priority for the sector aims to promote and develop an institutional base for providing robust and reliable sector data. The merSETA intends implementing a comprehensive strategy to ensure alignment of internal ICT, administration functions, and M&E with the requirements for credible research and sector skills planning.

To this end, developing and implementing the merSETA Monitoring and Evaluation System is a key priority area, as is the systematic development of research partnerships with Higher Education Institutions. Closely related to this is Knowledge Management and dissemination of research information relevant to the sector.

***Key considerations***

Equality and equity within a context of globalisation; Foreign Direct Investment (FDI); Tracking of capital projects; An ageing workforce and youth unemployment; Sustainability issues within the context of the 'green economy'; Technology innovation impacting on society and business operations; Inter-sectoral value chain analysis; Internal merSETA processes; TVET research and capacity development; Knowledge management; Alignment of OFO codes; WSP and ATR data collection and analysis; Sector-wide surveys; Applied research; Monitoring and Evaluation.

### 5.4.2 Priority 2: Continued and Increased focus on artisan development

The key role of the merSETA in ensuring a constant supply of artisans to the manufacturing sector and other sectors of the economy is the most critical skills development area for achieving its strategic intent. Emerging thinking around artisan training in the sector, focuses on the need for a more nuanced understanding of the pathways to apprentice status, from a learner progression, career guidance, and sector and company perspective.

The merSETA is exploring and piloting innovative approaches both to funding as well as delivering apprenticeships in a way that will simultaneously address the needs of the sector as well as national socio-economic development objectives and initiatives.There continues to be an urgent need to develop frameworks and incentive mechanisms to promote the active involvement of relevant stakeholders in planning, governance, curriculum, qualifications development and assessment, as well as provider-employer cooperation and workplace learning for a systemic, scalable and sustainable artisan development system.

Enhancing the current skills development infrastructure is critical to this key priority area. The relationship between TVET colleges, industry training centres and industry will be strengthened through a range of projects, programmes, incentives, and other forms of support. These include supporting and promoting the national Artisan Recognition of Prior Learning (ARPL) initiative. Another matter that the merSETA will attend to is the potential and capacity of SMEs to offer artisan training and internships.

***Key considerations***

TVET College engagement; Lecturer development; Financing mechanisms for formal apprenticeship systems, including PPPs; Growing workplace absorption capacity; Expanding availability of workplaces; Quality, Supply-side capacity; Research and Development; Overcoming barriers to apprenticeship in smaller industries; Improving holistic learner competence and performance; Productivity and costs associated with artisan training. Dual System Apprenticeships.

### 5.4.3 Priority 3: Establish and facilitate strategic partnerships

The merSETA intends to act as a key facilitator to assist the sector to engage meaningfully with a range of government and non-governmental stakeholders and intermediary agencies in ensuring that the national skills development agenda is coordinated and adequately resourced and funded. Thus merSETA partnerships will also actively seek to increase the levels of funding available for training and skills development in the sector.

In particular, the merSETA intends to maintain and pursue partnerships with key higher education institutions both locally and internationally to ensure that new ideas and research outcomes are systematically created in line with the merSETA strategy and developed in projects that come within the scope of available resources and funding.

Partnerships and co-operation agreements are also seen as important for improving stakeholder participation by engaging industry associations, employer associations, organised labour, and sector bargaining councils to address bottlenecks in the system and work towards the mutual goals of increased levels of co-ordination and efficiency.

***Key considerations***

Higher Education Institutions (HEIs); Intermediary agencies; Provincial Human Resource Development Councils; Other skills development agencies; Government departments, Employers and Labour. Synergy of objectives, objectives realised; Identification of shared and respective interests and roles; Industrial Development Zones (IZs) and Special Economic Zones (SEZs); Sustainable funding, efficient spending and return on investment. Monitoring and Evaluation.

### 5.4.4 Priority 4: Increase the flow of newly skilled workers into the sector

This priority involves increasing the skills available to the sector to meet its short and medium term needs. Improving the base and entry levels of learning is required at a scale large enough to provide for the systematic eradication of the skills shortages that are currently experienced and to accommodate the planned growth of the economy, the impact of technological changes, globalisation and the replacement demand that currently exists in the sector. New qualifications development by the merSETA under the Quality Council for Trades and Occupations (QCTO) will seek to address these aspects. Besides the professional- and technical qualifications required by the sector, new entrants should reflect the racial and gender composition of the population across all occupational categories.

Together with STEM, foundation and bridging programmes, Adult Education and Training (AET) interventions are planned as for promoting access to training and workplace experience. The merSETA will also pay attention in the coming year to significantly increase the intake of young learners into workplace experience opportunities within companies in the sector, as well as the systematic provision of internships. By improving the skills supply pipeline, and the pool of candidates with acceptable maths and science passes – either to enter into engineering-related apprenticeships and learnerships or into university engineering, technician, and technologist programmes. Additionally, the merSETA's increased focus on career guidance and development in rural areas will be closely linked to this priority.

***Key considerations***

Science, Technology, Engineering and Mathematics (STEM) and related programmes; Absorption, exit and placement. Geo-spatial dimensions; Regional, district and municipal linkages; Strategic Integrated Projects (SIPS) and other national development prerogatives; Community Colleges; Quality Council for Trades and Occupations (QCTO). Incentives and opportunities for workplace placement; Tracer studies and learner tracking; Youth not in Employment, Education or Training (NEET). TVET College / HEI articulation; Informal Sector.

### 5.4.5 Priority 5: Develop the skills of the existing workforce

The development of existing employees in the sector through lifelong learning and the creation of career pathways are of equal importance for the development of the sector and for achieving outcomes that are consistent with decent work, equity, and sector-economic growth. The identification of occupational pathways for existing employees, as well as those at risk of retrenchment is important. Approaches will therefore need to include up-skilling, re-skilling, and trans-skilling (to redirect an employee from one sub-sector to another).

Attention will be given to stregthening the sector systems for RPL through the national Artisan Recognition of Prior Learning (ARPL) initiative of NAMB. Promoting equity in the workforce and company-based succession planning, linked to Workplace Skills Plans and Annual Training Reports (ATRs) is also planned, as well as a more integrated to approach to addressing stakeholder capacity-building needs, in particular that of organised labour.

The ongoing development of new occupational qualifications to promote workplace learning will continue, with the participation of industry experts and TVETC lecturers, by agreement with the QCTO, while due attention to the role and need and principles for short courses within the sector will also receive attention.

With regards to continuing education, post qualification programmes, continuous professional development, and management development (with an emphasis on black females from technical backgrounds) is seen as an ongoing priority to address the gender and race imbalances at the higher occupational levels.

***Key considerations***

Employer Associations and Organised Labour; Chamber and sector level research; Labour capacity-building; Industry Leadership Development Programmes; QCTO; Lifelong learning and supporting soft infrastructure for skills development, including learning programmes, curricula and materials to promote access and success; Recognition of Prior Learning; Productivity and efficiencies for industry sustainability; Career pathways; Gender and race imbalances.

## 5.5 CONCLUSION

This chapter forms the conclusion of the 2015 update of the merSETA SSP for the period through to 2020. The five skills development priorities identified by the merSETA represent the culmination of the sector analysis and stakeholder-consultation processes and are intended to guide the merSETA's strategic objectives. This chapter thus provides the foundation for the merSETA's priority actions in the last phase of NSDS III and beyond.

The implementation of these skills development priorities are linked to a range of inter-related strategic issues that arise from the sector analysis, including the cross-cutting imperatives of rural development, sustainable green skills development, and skills development of PWD. In this regard, the importance of appropriate local and regional level skills development support to support the informal, emerging and SME sector has been noted.

Finally, the merSETA's skills development priorities have been developed and refined after merSETA's responsibilities have been taken into consideration, not only to the manufacturing, engineering and related services sectors, but also to national social- and economic-development objectives as outlined in relevant government policies and strategies.

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