

Evaluation of AgriSETA's artisan programmes against NSDS III goals

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ABSTRACT

This study explores to what extent AgriSETA has achieved the goals of the National Skills Development Strategy, specifically concerning artisans. AgriSETA plays an important enabling role in the provision of grants for apprentices to be appointed and trained and ensuring that once qualified, artisans are employable and their skills transferable to other sectors.

This study focussed on the funding of apprenticeships, the establishment of partnerships, the competence of artisans, the employability of newly qualified artisans and transferability of artisanal skills to other sectors. The availability of suitably skilled artisans is crucial for sustaining economic growth and reducing poverty in South Africa. The throughput rate of apprentices both nationally and internationally, however, is low, resulting in significant financial losses. This study explores from an employer's perspective the reasons for apprentices dropping out of the programme and the necessary interventions by employers to ensure that newly qualified artisans are fully work-ready.

AgriSETA functions in all provinces of South Africa and includes 46 standard industry classifications in its mandate. The population in this research consists of agricultural entities across nine of the 11 sub-sectors of agriculture in South Africa.

This study holds value to the strengthening of existing curricula, the implementation of artisan programmes and the relevant literature. This study's findings demonstrate a significant correlation between projects funded by AgriSETA and the competence levels of artisans. The results confirm that artisans trained through the AgriSETA-funded projects were employable, competent and their skills transferable to other sectors.

Keywords: partnerships, employability, transferability, competence and project funding

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Abbreviations

Abbreviations	Meaning
AgriSETA	Agricultural Sector Education and Training Authority
APP	Annual Performance Plan
Artisan programmes	All programmes including learnerships that lead to the qualification as an artisan
AX system	Financial system used by AgriSETA
DHET	Department of Higher Education and Training
DMR	Department of Mineral Resources
ESKOM	Electricity Supply Commission
GDP	Gross Domestic Product
GTAC	Government Technical Advisory Centre
HSRC	Human Sciences Research Council
Indicium system	Learner information system used by AgriSETA
LMIP	Labour Market Intelligence Partnership
NAMB	National Artisan Moderation Body
NDP	National Development Plan
NSA	National Skills Authority
NSDS III	National Skills Development Strategy III
NSF	National Skills Fund
NQF	National Qualification Framework
PIVOTAL programmes	Professional, vocational, technical and academic learning programmes that result in occupational qualifications or part qualifications on the National Qualifications Framework
QCTO	Quality Council for Trades and Occupations
QMR	Quarterly Monitoring Report
SARS	South African Revenue Service
SENAC	Serviço Nacional de Aprendizagem Comercial
SENAI	Serviço Nacional de Aprendizagem Industrial
SIC	Standard Industry Classification
SIPs	Strategic Infrastructure Programmes
SLA	Service Level Agreement

CHAPTER 1: SCOPE AND NATURE OF THE STUDY

1.1. INTRODUCTION

A depiction of the importance of artisan training and development is the prominent place that medium-level skills have in various policy documents of government. These include the National Development Plan (NDP) and the South African National Infrastructure plan that drive infrastructure development through 18 strategic infrastructure projects.

The NSDS is seen as a vehicle to drive skills development in South Africa. This plan, however, should be seen in the broader context of other policy documents that will be discussed for their importance and relevance to the training and development of artisans later in this document. The NSDS III, as with most other policy documents, does not specifically indicate the exact number of artisans needed to grow the South African economy. The exception might be the Medium-Term Strategic Framework of Government for the 2014–2019 election period, forecasting that 24 000 artisans will be needed by 2019. This, of course, should be seen against a projected growth in the South African economy.

Applying the *ceateris paribus* principle, SETAs must provide the required medium-level skills to the South African economy to ensure sustained growth. The apprentice system is a well-known, internationally implemented training and development stream, with hybrid systems implemented in various European, Asian and North American countries. Jordaan and Barry (2009) found that in the 1980s to 1990s, several South African artisans left the trade or were recruited by other countries, leaving a void in the South African economy.

The rapid advancement in technology certainly requires a new breed of artisans that can manage the massive amount of data that is available and optimise the Internet of things that characterises the dawn of the fourth industrial revolution. It seems that the ability to adapt to technology is the key to ensuring that employers remain on the forefront of innovation. Agriculture is not unique or shielded against this technological revolution and the role that medium-level skills, especially artisans, play in this sector is pivotal to survival.

1.2. BACKGROUND

The growth and development of an economy relies on the ability of a government to ensure that the required human capital exists to sustain economic growth in all sectors. The NDP was adopted by government in 2011 to create jobs and reduce inequality and poverty by 2030, NDP (2011). The NDP set a target of 30 000 artisans per annum from 2020, to ensure that enough qualified artisans are available to support the SIP's programmes nationally. The Department of Higher Education and Training's role in ensuring that the strategic infrastructure (SIPS) programmes are supplied with the requisite skills to be implemented is very important. The whole value chain of institutions, including Higher Education, the Technical Vocational Education and Training (TVET) sector, National Skills Fund (NSF) and the 21 SETAs have a role to play.

The strategic infrastructure programmes (SIPs) were drafted as part of the National Infrastructure Plan to ensure that significant infrastructure is created in South Africa with significant projected investment in the country. In the 2014 financial year, SETAs committed almost 1 billion rand to support these projects with training programmes DHET (2014).

Several apprentices do not complete their apprenticeships or are not absorbed into the economy. The current rate of SETA funding towards an apprenticeship is R155 000 over a three-year period, making this one of the most expensive learning programmes in South Africa. The South African economy produced skilled artisans in the 1980s, highly sought-after by the rest of the world because of their work ethic, quality of work and they were multi-skilled.

Jordaan & Barry (2009) makes the point that industries in the 1980s were more focused on profitability, resulting in major cost cutting and artisans losing their jobs. More critically, they point out that, because of the surplus of artisans, the salaries of these skilled workers did not keep up with inflation. The lower salaries might have contributed to the negative regard that young people have of becoming an artisan. The bulk of artisans trained in the 1980s was by government institutions like the South African Railways, ESKOM (EVKOM at the time) and industries like the mining and metal industries.

The net result of decisions made in the 1980s became prevalent when industries in the 2000s started complaining that they were struggling to attract talented artisans. In 2019, almost 20 years later and many billions of rand spent on artisan training, the problem seems to persist. The minister of public enterprises, Pravin Gordhan, released a press statement saying the recent failure of ESKOM to keep the lights on was a direct result of the exodus of skilled employees. The minister pointed out that the poor quality of maintenance was due to poor workmanship and that 40 per cent of plant breakdowns was due to human error (Watson 2019).

The mining industry, in contrast, managed to train and retrain individuals as artisans and critically maintained the quality standards of the technically-skilled employees. The salaries of skilled mining employees are also higher than in other industries. The reasons why this industry somehow managed this skills drain might be anchored in the strict safety and maintenance legislation of the DMR and labour unions.

The anomaly that exists is that South Africa is currently training and qualifying more artisans than ever before, but it seems that the South African economy is not getting value for the money spent.

1.3. PROBLEM STATEMENT

The National Skills Development Strategy is the guiding document that determines the work of SETAs and provides direction on the type of programmes and training initiatives implemented. The purpose of this strategy is to improve the effectiveness and efficiency of skills development and promote sustainable employment and in-work progression NSDS III (2011). The NSDS is a five-year planning document that is implemented to coincide with the national elections. SETAs are currently implementing NSDS III, which was implemented from 2011 to 2016. The Minister of Higher Education and Training extended the current NSDS to 2020, to allow for the restructuring of SETAs to increase efficiency and reduce their administrative costs.

The NSDS III is targeting eight broad goals to ensure that the South African economy has the skilled workforce to allow for growth and expansion. This study will focus on Goal 2 of the strategy that aims to increase access to occupationally-oriented programmes. Occupationally-oriented programmes refer to programmes that are focused on the competencies needed to be functional in an occupation. This

goal inherently focuses on the development of middle-level skills that are identified in all sectors.

SETAs were tasked to achieve the following outputs related to this goal (NSDS III 2011):

- That SETAs will research and identify middle-level skills needs in their sectors and put in place strategies to address them
- Projects are implemented to address middle-level skills in each sector
- SETAs establish projects and partnerships to enable the relevant number of artisans for their sector to be trained, to qualify and become work ready.

The impact of technology in agriculture over the last five to ten years cannot be underestimated. This is illustrated by the inclusion of technology /mechanisation as a key skills driver in the last five sector skills plans of AgriSETA. The demand for artisans (mechanics, for example,) has increased in the sector with mechanisation set to continue and the demand increasing for artisans and technically-qualified workers (AgriSETA SSP, 2015).

AgriSETA's mandate spans 46 industries, if the standard industry classification (SIC) is used. These sectors will require a variety of technical skills to ensure that production is as efficient as possible. These industries include milling; pet food and animal feed; seed; sugar; pest control; tobacco; aquaculture; grains and cereals; fibre; poultry; red meat and horticulture (AgriSETA SSP, 2018:19). In response to the NSDS III, various trades were implemented by AgriSETA. These predominantly include electricians, millwrights, mechanical fitters, fitters and turners, tractor mechanics, diesel mechanics and air-conditioning mechanisation (AgriSETA QMR report 2017).

The development of employees to become artisans has become a critical component within agriculture. AgriSETA was mandated by the NSDS III to ensure that the required partnerships are set up, projects developed, employees are trained and qualified and become employable for the sector. The study will look into AgriSETA's performance in achieving these outcomes and to what extent this critical skills gap was closed within agriculture.

The National Skills Development Strategy (NSDS III) set an annual target of 10 000 newly-qualified artisans, specifically to increase access to occupationally-directed programmes. SETAs were tasked to establish projects and partnerships to enable

the relevant number of artisans for the agricultural sector to be trained, qualify and be work ready.

1.4. SPECIFIC RESEARCH QUESTIONS

1.4.1. Research Questions

The primary research question that this research aims to answer is: to what extent did the AgriSETA artisan projects enable artisans to be qualified and employed in the agricultural sector?

In addition to the primary question, this research also explored if the AgriSETA programmes met the various industry requirements. This, given the various demands and competencies required in these sectors. This data was extrapolated from information from the various industries involved in the study. The data obtained from the various subsectors includes information relating to the work readiness of employees and the additional training that the specific industry had to provide to ensure that the new employees were fully functional and efficient.

The information obtained from the employers also answers the question if employee skills, once they are qualified, are transferable to other subsectors within agriculture or other industries. Practically, these conclusions were made with data from the employment status, the employer and industry that the newly-qualified artisan is employed in, as an indication of how transferable the skills are.

1.5. RESEARCH OBJECTIVES

1.5.1. Primary objective

The primary objective of this research is to determine to what extent the AgriSETA artisan projects enabled artisans to be qualified and employed in the agricultural sector for the 5-year implementation period of the NSDS III.

1.5.2. Secondary objectives

The secondary objectives of this research are:

- To determine if the AgriSETA projects addressed the middle-level skills in the sector
- To determine if AgriSETA established the projects and partnerships to enable the required number of artisans to be trained and work ready.

1.6. SCOPE OF THE STUDY

This study focuses on artisan development projects implemented by the AgriSETA for the period 2012–2017. The study includes partnerships and projects implemented and the employability and transferability of artisans to other industries. Employers who implemented artisan programmes in the 2012 – 2017 period, nationally, were included.

1.7. RESEARCH METHODOLOGY

Artisan development is one of the most written about topics in the education and training sphere in South Africa. The broad methodology implemented ensured that expert views were obtained in published documents, both nationally and internationally. This provided the researcher with a broad national and international perspective of artisan training. There is a wealth of information in published journals, articles, books and deposits of information available from public entities that assisted in completing the South African picture.

1.7.1. Literature study

A comprehensive literature study was undertaken and various methods used to obtain insight into the most relevant sources of information. Although the implementation of artisan programmes dates back several decades, care was taken to focus on information that is current and relevant to the scope of the study. The use of a scientific approach to information ensured that the wealth of information obtained from various sources could be included in the study through a blended approach.

1.7.1.1. Sources of information

Artisan development is a national programme, although the focus of this study was on AgriSETA's performance. The following additional sources were used to obtain information:

- Internet–The following keywords were used during the internet search–artisan development, workplace learning, SETA performance, trade test and national artisan development. This provided the researcher with a broad insight of national trends and challenges experienced in the agricultural sector. Broader drivers of skills and competence within artisan development will also become clear.

- Journals – The use of journals focused on the research that was done on SETA's performance, especially in terms of NSDS III. There are various implementation reports that provide the reader with a broad perspective of SETA's achievement of the outcomes contained in the NSDS III document
- Statistics SA – Data that was published in terms of job creation and growth in the agricultural sector. The breakdown into the seven main occupational groups provided greater insight into the employment trends, especially looking at skilled workers within the agricultural sector
- National Artisan Moderation Body (NAMB) – The data collected on learners seeking workplace exposure and the employment of learners was found in data sets developed by NAMB. Although no statistical analysis was available for agriculture, it assisted in determining the challenges experienced by learners and employers when employing newly-qualified artisans. It also provided rich information on the type of employment and the employer type, giving insight into the transferability of skills
- National Skills Authority (NSA) – annually provides documentation on SETA performance in the achievement of SLA targets, in collaboration with SETAs and DHET. A broad comparison was drawn between AgriSETA's performance in delivering the outcomes of the NSDS III and other SETAs and the particular challenges they experience
- Labour Market Intelligence Partnership (LMIP) – The Department of Higher Education and Training, in collaboration with various other stakeholders, including the HSRC, launched a labour market intelligence partnership that provided a platform of information that is accessible to all researchers, especially within the skills development sphere. This repository contained research that provided information, among others, of tracer studies of learners completing programmes. This provided the researcher with detailed insight into the delivery modalities of various programmes.

1.7.2. Empirical investigation

1.7.2.1. Research Philosophy

This study adopted a pragmatic approach, utilising and mixing various methodologies to collect and analyse information. Given the vast and stark differences in the agricultural sector, it was important to use an approach that could be more adaptable to the type of information available.

1.7.2.2. Research approach

This exploratory study utilised a mixed method approach of qualitative and quantitative nature. The qualitative data was used to support the quantitative research. Therefore, a QUAN/QUAL approach was followed.

- Quantitative: The quantitative research focused on the collection and evaluation of data that is available within AgriSETA. This secondary data, related to the number of projects and partnerships and the number of learners trained and qualified, was obtained through a review of existing source documents within AgriSETA
- Qualitative: The data was collected through open-ended questions in the questionnaire that mainly focused on the employers who hosted/employed apprentices. A further focus was on the employment status of learners who qualified. The qualitative research was further supported by the following:
 - rich information available from SETAs and public institutions that have been in existence from 2000, although the study will focus on the period 2012–2017
 - the researcher has personal insight and understanding of the SETAs and the subject area
 - clear comparisons were drawn from information available
 - the researcher had access to the collection of primary and secondary data.

The researcher implemented a pilot of the questionnaire to test if:

- the questions in the instrument were clear and unambiguous
- the time it took respondents to complete the instrument
- the instrument was accurate in producing the intended outcomes.

The implementation of the pilot focused on respondents who fitted the profile of the intended respondents, but were not included in the sample of the study.

1.7.2.3. The research nature of the study

This study will use a mixed methods approach to the collecting and interpreting of data. Creswell (2014:32) describes mixed method research as the collection of quantitative and qualitative data. Both types of data combined, provide a more in-depth understanding of the research. The study was exploratory in nature.

This study collected data from two different types of respondents: individuals and employers. The implementation of the artisan development programme was researched over the implementation period of the NSDS III–2012 to 2017. The artisan programme cycle is normally three years. Data intervals were analysed to:

- Establish the number of projects
- Number of learners entering the programme
- The strategic partnerships entered into to implement the programmes nationally.

Data for the period 2015–2017 was used to research the number of learners who completed the programme, due to the three-year programme cycle and the employability of the learners qualifying as artisans.

1.7.2.4. Measuring instrument

The implemented questionnaire is a newly-developed instrument by the researcher. All questionnaires were circulated with a cover letter, clearly indicating the purpose of the questionnaire and the rights of the respondents. Section A dealt with the biographical information of respondents. Section B dealt with the discretionary grant that AgriSETA provided for the implementation of the programme. Section C dealt with partnerships that employers entered into, to ensure that the programme was implemented successfully. Section D dealt with the apprenticeship curriculum in terms of length, content and the apprentices' ability to complete the programme in the prescribed period of three years. Section E dealt with the work readiness of newly-qualified artisans, critically exploring the competency levels of the employee and the possible skills gaps the employer identified post-qualification. Section F dealt with the transferability of artisans across sectors. This section critically evaluated the movement of artisans between industries and employers' preferences of artisans from specifically identified sectors. Section G included only two open-ended questions that explored the biggest challenges relating to the training of apprentices and the perceived value created by the programme. Open-ended questions were included to ensure that respondents could provide additional information relating to the topic. The questionnaire and cover letter are attached as annexures A and C.

1.7.2.4.1. Administration of measuring instrument

The scope of the study included a combination of employers who currently serve on the AgriSETA structures and employers who do not directly serve on the structures but are levy-paying members of AgriSETA.

- Consent
 - Consent was obtained from the individual (see Annexure C)
 - Consent was obtained from AgriSETA (see Annexure D).
- Administration

The questionnaires were administered through:

- Directly administering the instrument to the target employer during AgriSETA's sector skills committee meetings. The questionnaires were handed back immediately
- Instruments were e-mailed to target employers, who then completed and returned them to AgriSETA.

- Security and storage

All completed instruments were destroyed after data extrapolation.

1.7.2.4.2. Data collection

The questionnaire was distributed to employers through e-mail communication. Employers completed the questionnaire, scanned and e-mailed the completed instruments back to the researcher. The questionnaire was sent with a letter explaining the purpose of the research.

1.7.2.4.3. Sampling

AgriSETA classifies the various subsectors by using the standard industry classification issued by SARS. Employers use this classification when registering as an entity. The sample used included all apprenticeship projects implemented in the various subsectors. Currently, AgriSETA clusters various industry classifications into 11 subsectors. One hundred per cent of the subsectors that implemented apprenticeship programmes were included in the investigation—in total 9/11 or 82 per cent of all subsectors were included. The seed and pest control subsectors cut across other subsectors and were not included in the study. The employers who are suppliers of agricultural machinery were included because of the nature of this industry and the major cross-cutting nature of these industries and sectors within agriculture. Table 9 below provides further detail of the subsectors that implemented apprenticeship programmes during the implementation of the NSDS III strategy.

Table 1–2: AgriSETA apprentices per province for the period 2011–2016

No	Subsector	SIC code
1	Fibre	30118
2	Tobacco	11142, 62208
3	Poultry	30114, 11220, 11221
4	Aquaculture	13000
5	Milling, Pet Food & Animal Feed	30311, 30330, 30331, 30332
6	Sugar	30420, 11122
7	Horticulture	330132, 30133, 11130, 62112, 30493, 11301, 11120, 11121, 12109
8	Grains and Cereals	30313, 61502, 62111, 11110
9	Red Meat	11141, 30111, 30115, 30117, 61210, 74136, 87120, 11210, 11222, 11300, 11400, 11402
Other classifications included in the sample not listed above		
10	Agricultural Machinery Suppliers	35710

Source: AgriSETA SSP

The population consists of employers across South Africa who are involved in primary and secondary agricultural activities. A total of 50 respondents completed the questionnaire. All questionnaires were considered and no questionnaire was discarded.

1.7.2.4.4. Suitability of unit of analysis

The sampled unit of analysis is suitable because:

- It is representative of the majority (9/11) of subsectors in the agricultural sector
- It is representative of the majority of SIC codes (38/40) within agriculture. The standard industrial classification of all economic activities (SIC) is a consistent classification of all economic activities. It provides a framework within which economic data can be collected (Statistics SA 2012)
- It is representative of the majority of employers/projects implemented by AgriSETA.

1.7.2.4.5. Pilot

The questionnaire was piloted prior to implementation to assess the relevance, ensure that the questions were clear and the language understandable and assess

the length of the questionnaire. The pilot group comprised three subject matter experts from AgriSETA who were unrelated to the research conducted. The feedback confirmed that the questionnaire was suitable for implementation.

1.8. ETHICAL CONSIDERATIONS

Information was shared with the respondents prior to their participation.

- Respondents were made aware of what was expected of them and what participating in the study would involve
- That there were no known risks or disadvantages in participating in the study. The advantages of this study, in terms of the type of information, were explained
- That participating in the study was entirely voluntary and that participants could withdraw at any point, without any prejudice, now or in the future
- That data would be handled and protected confidentially, responses would be anonymous and that special action would be taken to physically protect the collected data
- That the dissemination of data would be done in a controlled way to ensure full integrity of results
- That data would be stored securely, archived and possibly re-used.

Full details of the contact person were provided to respondents for any further information or uncertainties.

AgriSETA is a public institution that reports to parliament annually. All information was in the public domain and was easily obtained from annual audited financial statements, QMR reports, annual reports, strategic plans and sector skills plans. Consideration was given to learner detail that had to be protected and was not disclosed in the study. All data was system-driven and could be extrapolated into excel to make it easy to draw comparisons between data sets.

The AgriSETA Governance and Strategy sub-committee and the AgriSETA board approved the study. The researcher is employed and funded by AgriSETA. Special consideration was given to the ethical questions that may be asked of the credibility of the research.

The National Artisan Moderation Body (NAMB) approved access of learners who entered and completed artisan development programmes, the employment status and full details of age, gender, race, province and trade obtained.

The identity of learners was not disclosed and was protected and the data was used exclusively for the study. The researcher had direct access to all data within AgriSETA and was in direct contact with the employers who were targeted in the study.

The Human Sciences Research Council code of ethics (HSRC, 2018) requires all their researchers to uphold four principles:

- respect and protection—research should never be undertaken at the expense of the participants
- transparency—the researcher should at all times be transparent in the objectives of the study and the methodology that will be used
- scientific and academic professionalism—the conduct of researchers must meet the code of scientific and professional conduct at all times
- accountability—all parties must be held accountable for the various outcomes of the research.

- **Access to unit of analysis**

- Access to information within AgriSETA—written approval was obtained from the governance and strategy sub-committee of the board and the AgriSETA board
- Employers', projects', institutions' access was available through AgriSETA, but consent was obtained prior to circulating the questionnaire. AgriSETA does have existing platforms that improve access to these units of analysis
- Industries – annually, AgriSETA hosts conferences and workshops, focused on the industries that function within the sector. These events ensure that the organisations are accessible.

- **Accessibility**

- AgriSETA employees, systems and financial statements are available. All this information is in the public domain
- Employers, projects and institutions: AgriSETA has existing platforms that improve access to these units of analysis
- Industries—information is in the private domain.

- All information was obtained lawfully
- All information was reported accurately.

1.9. DELIMITATIONS AND ASSUMPTIONS

1.9.1. Delimitations

Simon and Goes (2013) highlight the differences between limitations and delimitations in that delimitations result from clear choices made by the researcher. These can include the problem statement, etc. The following delimitations can be noted:

- The research focused on data for the period 2012 to 2017. This was done to coincide with the NSDS III strategy
- The middle-level skills that were selected were artisan development. This programme was selected because of its critical and scarce nature in South Africa and its contribution to national imperatives like the NDP. The availability of data and the longer duration of the programme made it more suitable than other middle-level skills programmes
- The completion of the artisan programme focused on data obtained for the period 2015–2017, given the three-year training cycle of the programme.

1.9.2. Assumptions

Simon and Goes (2013) refer to assumptions as an important element on which all the research relies. Assumptions are made when conducting research. However, stating the assumption alone, without justifying it, would bring the value of the research into question. The following assumptions can be made:

- Respondents completing the questionnaire understand the technical nature of the learning programme. The industries and employers that were selected do have the technical expertise available, however. The researcher will ensure that these individuals are included in the process
- Respondents will respond honestly and provide enough rich detail of the learner support in their industry. The researcher will guarantee the protection of their identities. However, the intellectual property must also be protected to ensure that full detail is given
- A further assumption is that the respondents are available, given the rural nature of the sector and the national footprint of the industries. Various technologies will be used to ensure accessibility to these individuals

- The population is representative of employers who delivered training to unemployed individuals. The industry and employers that were selected represent the majority of learning opportunities that became available in the sector
- The sample selected is representative of the employers that implemented artisan programmes
- The quantitative data that currently exists within AgriSETA, relating to artisan development programmes, can be further enriched with data that exists within the workplace. This is in terms of the employment status of artisans and the employability and transferability of the skills the apprentices gathered during training.

1.9.3. Current limitations

Simon and Goes (2013) describe limitations in studies as constraints that are out of your control. They might be self-inflicted with the choice of research methodology, research design and availability of respondents and information. The following limitations were identified:

- The availability of data within the employer's database can be limiting, given that the study period includes learners from the 2011/12 financial year
- The availability of institutional memory, given the period of the study and the possible staff turnover during this period
- The availability of information relating to the tracking of learners. Learners who qualify are in high demand and tend to move rapidly from one employer to another.

1.10. SIGNIFICANCE OF THE STUDY

1.10.1. Contribution to the individual

Individuals who are employed as apprentices in the AgriSETA artisan programme will benefit from improved learning programmes to increase their employability.

1.10.2. Contribution to the organisation

The study will make a significant contribution to the AgriSETA to measure the effectiveness of the artisan development interventions. No studies have previously been done to trace learners who have completed artisan programmes. Neither have there been studies to test the effectiveness of programmes in

preparing learners for the demands of the specific sector and improve their employability.

AgriSETA will also gain a better understanding of the needs of the sector from the study, not only in terms of the number of artisans required but the specific skills required. It will understand what the industry is considering and gaps in current curricula that must be added to the training and development of individuals.

This study can be used as a yardstick for AgriSETA to determine their effectiveness in implementing the NSDS III goals, relating to the development of middle-level skills. It also shows what should be done to improve future projects and partnerships to increase the efficiency of these programmes.

1.10.3. Contribution to literature

This study will contribute to current literature on artisan development, providing a South African employer perspective of the shortfalls in current programme implementation. This is crucial in understanding the South African perspective within agriculture, given the rural nature of the sector and the specific demands on employees within the South African labour context.

1.10.4. Contribution to South Africa

The contribution of a study like this to South Africa is put in context when the current shortages of qualified artisans and the state of our public entities like ESKOM and Transnet, etc. are considered. The transferability of skills, multi-skilling and the identified gaps in current training could significantly contribute to the current training schemes.

1.11. LAYOUT OF THE STUDY

1.11.1. Chapter 1: Scope and Nature of the study

The focus of this section is on the formulated problem statement, research objectives and research questions the study will answer. The chapter further unpacks the significance of the study and the contribution of the study to the individual, the organisation and the existing body of knowledge.

1.11.2. Chapter 2: Literature review

This chapter provides an overview of an international comparative review of skills development with a specific focus on work-integrated learning programmes. Artisan development models in Latin American, Nordic, European and Australian countries

were compared with the South African model of training apprentices. The literature review includes NAMB's national data of artisan development programmes from all SETAs. Specific data from AgriSETA was obtained to provide a national perspective of the SETA's contribution to artisan development.

1.11.3. Chapter 3: Empirical investigation

This chapter focuses on the implementation of the research and results of the data collected through the measuring instrument. The collected data is reflected in this chapter and an in-depth analysis is done through statistical analysis.

1.11.4. Chapter 4: Conclusion and recommendation

Conclusions are drawn from the previous section to respond to the research questions and set objectives of the study. Recommendations are formulated to provide insight to AgriSETA and the broader training community. The research also provides further detail of future studies in this area.

1.12. CHAPTER SUMMARY

The National Skills Development Strategy III is an important vehicle in providing the required skills for the South African economy to reach its development targets. The NSDS III has eight broad goals that SETAs will target to ensure that South Africa produces the human capital to sustain growth and reduce unemployment.

Various legislative documents, including the NDP's strategic infrastructure programme, highlight artisan development as crucial to South Africa. AgriSETA is one of the 21 SETAs that implement various artisan trades in various agricultural subsectors.

Employers and levy payers can rightfully ask if AgriSETA has successfully created the partnerships, projects and funding to produce artisans who are employable in the agricultural and other sectors of the South African economy.

The study is longitudinal in nature and includes employers classified under various SIC codes and subsectors nationally. Ten different industries were included in the study.

This study implemented a pragmatic, philosophical approach to ensure that the stark differences in the sector could be included in the study. Information was obtained from various sources, including accessible repositories and experts in the field. In the next chapter, a comprehensive literature review will be done to get a national and international perspective on artisan training.

CHAPTER 2: LITERATURE REVIEW

2.1. INTRODUCTION

This chapter will provide an overview of national and international perspectives of skills development frameworks and systems. Comparative studies from various systems used by countries in Latin America and the European Union, Nordic countries and Australia were included in the review. The key elements of work-integrated learning programmes were reviewed, especially in terms of artisan development programmes.

The chapter also reflects on the key aspects of the South African skills development scenario and drills down to actual expenditure, uptake of apprentices and throughput rate. A review of literature provides insight into international trends, innovation and challenges. This will provide a platform to work from during the empirical assessment in the next chapter. It will further provide the reader with insight into apprenticeship systems globally, especially in terms of policy shifts, to adjust the training frameworks to align with global technological changes.

2.2. CONCEPTUAL FRAMEWORK

This exploratory study will look into various enabling mechanisms that AgriSETA has employed in implementing the NSDS III strategy. This study will focus predominantly on the training of artisans within the agricultural sector. The conceptual framework is illustrated in Figure 2-1.

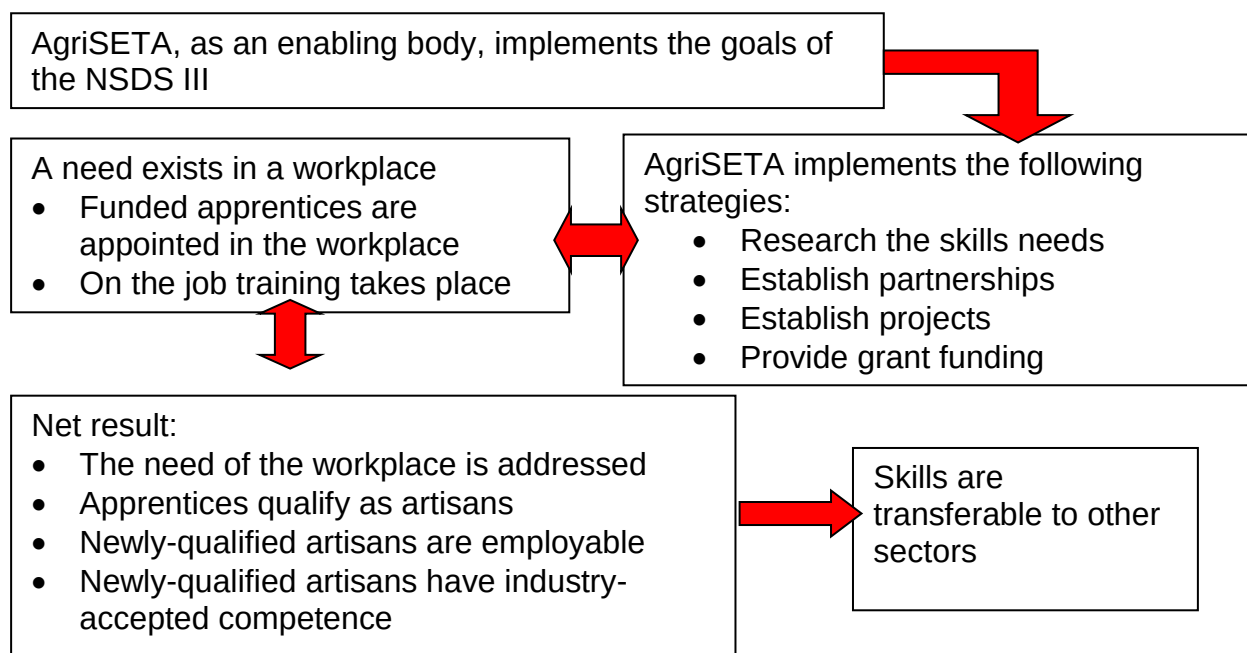


Figure 2-1: Conceptual framework (source: own compilation)

The key concepts can be summarised as:

- AgriSETA implements the goals of the NSDS III
- AgriSETA creates projects and partnerships and provides grant funding to employers
- Employers implement apprentices in the workplace and on-the-job training takes place
- Apprentices are trained and qualify as artisans
- Newly-qualified artisans are employable
- Newly qualified-artisans have industry-accepted competence
- The skills that artisans obtain are transferable to other sectors.

This study will explore the various skills needs that artisans might have after they have gone through a qualifying trade test, for the purpose of this study a skill would be considered as an ability obtained through practice (Oxford advanced Learner's Dictionary, 1995:1392)

Cimatti (2016) defines soft skills as skills containing a set of personal skills. These include knowledge and thinking skills. Soft skills also include a set of social skills like relationships with other employees. The individual soft skills give the employee the ability to develop and adapt their hard skills to keep up with any dynamics in the workplace, be they technological or other changes.

Table 2–1 Matrix of skills

Number	Type of skill	Description
1.	Soft skills	Communication skills, leaderships skills, social skills
2.	Core skills	Skills related to the core part of the job; we could also refer to these as hard skills
3.	Product-specific skills	Product-specific skills relate to skills that are unique to a specific product or model
4.	Industry-specific skills	Industry-specific skills relate to in-depth knowledge of a specific industry; for instance, the sugar or grain industry

2.3. ROLE AND IMPORTANCE OF SKILLS IN THE ECONOMY

The role of skills development in the sustained economic growth of countries is receiving unprecedented attention. Countries in the European Union, Brazil, Canada, Australia and the Nordic countries are looking at creating an enabling environment

that would foster skills and grow their economies. The development of relevant skills that keep up with the technological, environmental, geo-political and economic changes remains a challenge globally.

Souza *et al.* (2015:7) refers to the importance of Vocational Education and Training (VET) programmes in the Brazilian, Latin American and other growing economies. These programmes have been growing strongly, following extensive investment from the Brazilian government, especially to link the schooling system with the requirements of the workplace.

Roskild University (2016:7) further highlights this linkage role in Nordic countries with the labour market and further describes VET as a pathway towards employment for young people. They found that a modernised VET system has a key role to play in the development of a knowledge society. In the Nordic countries, VET is seen as a vehicle towards employment, mobility, competitiveness, economic growth and access to tertiary education and lifelong learning. The outsourcing of low-skilled labour and the current wave of immigration from low-wage countries exposes youth without any formal qualification or skills.

2.4. SKILLS DEVELOPMENT: AN INTERNATIONAL PERSPECTIVE

European countries have a rich history in apprenticeship systems and realise the continued importance of the apprenticeship schemes in the development of youth. Apprenticeships were further boosted through the launch of the European Alliance for Apprentices (EAfA), a platform that brings together governments and stakeholders from European countries. This forced government to adopt a broader, more flexible approach to apprenticeships as a key vehicle to combat youth unemployment (Cefop 2018:18).

Cedefop (2018:33) identified three main purposes of apprenticeships within the European context: (i) a system that provides individuals with the required competence in a specific occupation (ii) a type of delivery model for VET programmes and (iii) to allow young people to achieve a qualification by bringing them into the labour market.

2.4.1. International skills development structures

Smith and Kemmis (2013:15) found, in a comparative study, that governments spend significant amounts of money and resources on apprentices. The size of the formal apprenticeship system in Australia, Germany, Canada, England and France is more than 1.5 per cent of the total labour force. The apprentice systems in India, South Africa, Turkey, Indonesia, United States countries are all considered to be small.

In Australia, the National Centre for Vocational Education Research (NCVER) of apprentice and trainee data pointed to a drop of 3.7 per cent in the number of apprentices. As at 31 March 2017, 275 200 apprentices were in training, representing 2.3 per cent of the total Australian workforce (Loveder, 2017:8). Brazil and Latin American countries have seen a sharp increase in the number of technical secondary students. A 45 per cent increase was recorded between the 2007 and 2013 financial years. During the same period, general education students dropped by 9.4 per cent (Souza *et al.*, 2015:10).

Internationally, governments are making significant policy changes to allow for their work-based programmes to remain relevant and efficient. Smith and Kemmis, (2013:16) found that most of the recent policy changes in governments were aimed at dealing with youth unemployment, increased access to learning, transferability of skills through alignment with other qualification frameworks and targeting specific groups of learners from minorities, women and disabled learners.

In a comparative study, The ILO (2017:26) found that, internationally, governments are making significant policy changes to enhance their apprenticeship programmes. These vary in countries like Belgium, Bulgaria, France, Italy, Romania and Spain, that made recent amendments to their TVET programmes. Significant reforms of the apprenticeship model were implemented in Australia, Ireland, India and the United Kingdom. Latin American countries are also reviewing and adapting their models of apprenticeships. This wave of reforms points to the importance that governments see in apprenticeships and other work-based learning programmes.

Despite all these initiatives, VET programmes, especially apprenticeships, have a very low status, if compared with higher education in most countries. Germany might be the exception to this, where apprenticeship programmes are held in high regard.

2.4.2. Funding mechanisms

VET programmes, by their very nature, are expensive, given the components needed to roll out these programmes successfully. In Latin American countries, but especially in Brazil, enrolment in VET programmes has increased sharply. Federal spending on this system has also increased from 720.3 million to 7.614 billion Reals. This is equivalent to 0.04 per cent of the GDP in 2003 up to 0.2 per cent of GDP in 2013 (Souza *et al*, 2015:8).

Stenström and Virolainen (2015:14) found that in Nordic countries, expenditure on vocational education rose sharply from 1.1 billion Euros in 1995 to 1.7 billion Euros in 2012. Expenditure on apprenticeship training more than quadrupled from 32 million Euro in 1995 to 171 million Euro in 2012. The so-called Polytechnic education expenditure increased from 145 million to 928 million Euros over the same period. The levels of expenditure point to the importance of these work-based programmes to economies and the expected return on the investment.

2.4.3. Company support: Benefits and incentives

The important role of employers in the VET system and, especially, apprentice training worldwide cannot be argued. In many countries, governments are working hand in hand with employers and industries to increase access to workplace learning opportunities. The ILO, (2017:30) found that employers globally hold apprenticeships in high regard. Figure 2-2 shows the responses from employers globally when asked about their view of apprenticeships:

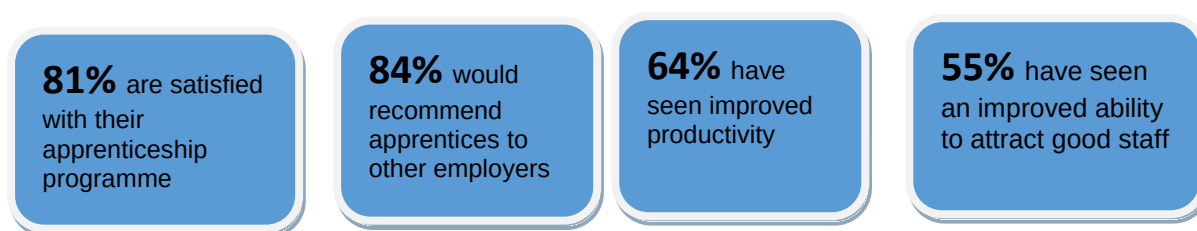


Figure 2-2: Employer perception of apprentice programmes (Source: Fazio *et al.*, 2016)

Loveder (2017:13) found that the Australian Government realised the importance of employer buy-in with their smart skilled and hired programme, focusing on

employers to provide opportunities for young Australians looking for an apprenticeship opportunity.

Smith and Kemmis (2013:24) found that governments realised that they should incentivise employers for taking on apprentices. In Australia, England, France and South Africa, for instance, employers receive financial incentives for employing an apprentice. The incentives can also take the form of exemption from taxes, social contributions or other concessions or exemptions. These innovative ways of incentivising employers exclude government's normal support of these programmes, especially the off-the-job (institutional) training.

The Brazilian government concluded an agreement with the SENAI and SENAC institutions. As part of the agreement, these institutions must utilise at least two-thirds of annual revenues from compulsory taxation to the provision of free professional and technical education programmes (Souza *et al.* 2015:18).

Loveder (2017:13) highlights various initiatives of Australian territories, including that 10 per cent of labour hours spent on all government contracts must be assigned to apprentices. The most significant policy shift in Australia might be the "Skilling Australia" fund that makes provision for ongoing funding of up to 300 000 apprentices and trainees in occupations in high demand, specifically in rural areas.

2.4.4. Individual learner support

Smith and Kemmis (2013:32) found several discrepancies between countries in their approach to recruiting learners. In Germany, Australia and Canada, the onus remains with the learner to find a job placement opportunity. Employers mainly recruit only their direct labour needs. This may have resulted in the stark differences in the perceived status and attractiveness of apprentices between sectors, especially in England. Smith and Kemmis (2013:18) found that, in trades where a strong craft tradition exists, apprenticeships are more attractive for new entrants. Loveder (2017:14) found this to be in stark contrast to the Australian Government, which specifically targets funding towards apprenticeships that address areas of priority industry growth, for example, in construction. In addition, the government aims to boost the number of female apprentices and upskill mature workers to encourage them back into the workforce

2.4.5. Learner grants

Souza *et al.* (2015:10) found that funding models in Brazil like the *Bolsa Formação*, a basic voucher type student financing scheme that comprises a vehicle to support learners at secondary schooling and the *Bolsa Formação Trabalhador*, intended primarily for the low-income public, have a significant impact on improving access to learning. Other funding schemes focus on VET students and grants to companies that are willing to offer learning opportunities to their learners through low-interest loans.

Stenström and Virolainen (2015:14) indicated that funding in Finland is uniform, irrespective of whether the providers are state owned or privately owned. Organisations' funding is based on throughput of learners and the value of funding is based on a unit cost per learner, set by the Ministry of Education and Culture. The focus of funding in Finland is based on the efficiency of a provider, irrespective of ownership.

2.4.6. Skills drivers

An important factor to consider when looking at various systems is the sort of drivers of skills in that country and the ultimate aim of the training programmes. The VET programme in Brazil aims to improve market access for a broader population. This means that financial assistance is made available to the bigger, more vulnerable sector of the population (Souza *et al.* 2015). Australia, on the other hand, being a more developed country in terms of its workforce and schooling system, focuses their learning regime on keeping up with rapid technological changes. It does this by ensuring that its workforce is flexible enough for the Australian economy to remain competitive (Loveder, 2017:14). The main thrust among most countries is to improve access to the labour market and ensure that youth are transitioned smoothly from the schooling system to industry.

Rothschild University (2016:12) found that the key importance of work-based learning is the articulation between the education system, the labour market and the

employment system Another key factor of VET programmes is that they provide attractive pathways for youth who may not have other alternatives.

Couldrey and Loveder (2016:12) make the point that medium to smaller enterprises would suffer the most, should programmes like apprenticeships be discontinued. Not only would it affect the portability of skills, but the clear link between industry and the schooling system would be lost, with a major impact on absorption of the youth into formal employment.

2.4.7. Industry involvement

Training schemes, including the VET systems and apprenticeship systems in various countries are basically built on two pillars – an off-the-job programme, concluded mostly within a training institution, and an on-the-job programme, concluded within an agreement or relationship between a learner and employer in the workplace. The on-the-job exposure is done in work conditions, under the direct supervision of a mentor, which, in most countries, is a qualified artisan. Hybrid systems like the dual system exist, but the basic fundamentals remain the same. In dual systems used in Australia, Canada, Germany and Turkey, the workplace mentor is allowed to assess the learner's competence in the workplace against predetermined outcomes (Smith and Kemmis, 2013:33). The ILO (2017:26) highlights the importance of a strong work-based learning system that can produce skills that are transversal and transferable to allow learners to adapt, especially to technological changes after finishing the apprenticeship.

Couldrey and Loveder (2016:12) go one step further by making the point that the true quality of an apprenticeship is primarily determined by the on-the-job performance of the learner and not merely the achievement of an academic qualification. Apprenticeship or work-based learning programmes are characterised by a strong, three-way relationship between the training provider, the employer and the learner.

2.4.8. Innovation in skills development

Aligning learning with the workplace is complex, given that a curriculum must be matched with institutional work and exposure. Logistically, some employers just cannot fit this modality into their daily operations. Industries, however, have become innovative in turning out artisans and employees that are properly trained and schooled to be work-ready. The Brazilian government tackled the expansion of workplace learning with online platforms. This allowed a bigger portion of the population to gain access to learning and the opportunity to provide free public distance-learning courses (Souza, 2015:31).

Smith and Kemmis (2013:33) found that in England, Germany, and Australia, companies share apprentices to overcome the requirements set for work-based programmes, thus opening up medium to small scale businesses to apprentices.

2.4.9. Artisan Development internationally

Internationally, apprenticeship programmes have a rich history and have played a major role in all the industrial revolutions the world has seen. ILO (2017: 28) found that the apprenticeship programmes, especially in the European Union, lead to improved employment possibilities. On average, 60 to 70 per cent of apprentices are employed directly after completing the programme. This figure goes up to 90 per cent in some countries. Figure 2-3 below shows some of the costs and benefits associated with apprentice programmes:

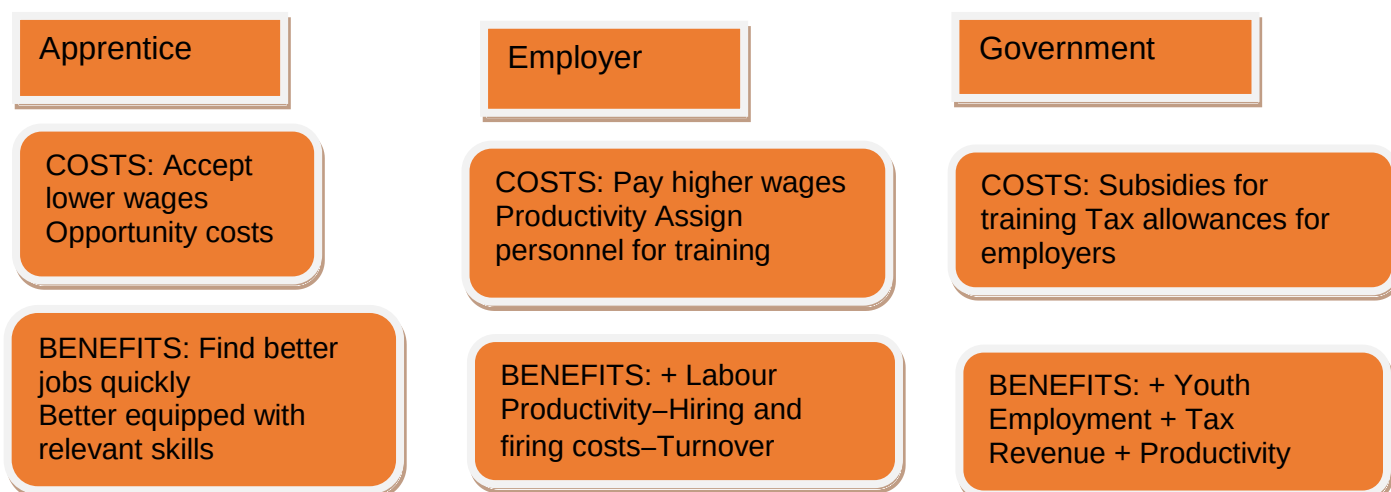


Figure 2-3: Cost/benefit breakdown of apprenticeship programmes: (Source: Fazio et al., 2016)

2.4.10. Apprenticeship model

The basic concept of apprenticeships remained fairly constant in many countries over the centuries. Several governments undertook various structural changes and reforms to ensure that the programmes remain relevant and flexible. In the Australian context, for instance, the focus of the apprentice reform advisory group report was on three broad areas of reforms. These include incentives, a pre-apprenticeship programme and looking at alternative models of delivery, specifically in response to the fourth industrial revolution and the creation of higher apprenticeships (Loveder, 2017:12)

Stenström and Virolainen (2015:24) found that the apprenticeship model in Finland is focused on combining the on-the-job and theoretical classes. The majority of the instruction (70 to 80 per cent) takes place in the workplace. The remainder of the time is dedicated to theoretical instruction. Apprentices receive a salary as an employee of the company during this time, at a rate equal to 80 per cent of a skilled worker in that particular job. Cedefop (2018:11) concluded a mapping exercise between apprenticeship schemes in 24 countries and found that all apprenticeships share the following features: compulsory learning and/or working in a company, in combination with learning at an education and training provider, and a regulated contractual relationship between the learner and the company.

2.4.11. Challenges with apprenticeship programmes internationally

The complexity of apprenticeship programmes poses a number of challenges for countries around the world. The challenges are not unique, ranging from problems to increase access, the willingness of employers to take on learners, the employer's ability to facilitate an apprentice and the net effect of macro- and micro- factors influencing the economic climate in a sector and, ultimately, the apprentice intake. In addition, the following were identified as challenges internationally:

- **Perceptions:** In most countries, apprenticeships are still perceived as an occupation taken on by individuals who are not fit for higher education –the so-called “blue collar stigma”. Germany and some of the countries that have a rich culture of apprenticeships may be the exception to the rule. Couldrey and Loveder (2016:15) found that the Australian public consider apprenticeships old-fashioned. The key challenges for the whole VET sector in Australia is to work together to raise the profile and reputation of VET careers, especially

apprenticeships. The absence of a single approach to career guidance was singled out as a major weakness, leading to these misinformed perceptions.

- **High dropout rate:** The dropout rate of learners in various countries was reportedly very high, against the background of the significant cost and resources going into the training of apprentices. The dropout rate in the PRONATEC Programme in Brazil was around 12.86 per cent from 2011 to 2014. This number is believed to be very conservative (Souza *et al.* 2015:26).
- **Skills planning:** The availability of data to plan and govern resource allocation forms the backbone of understanding the supply and possible future demand for skills. In various countries, including Brazil and Australia, data availability was highlighted as a challenge to properly addressing problems within the apprenticeship programmes. This is especially true of data that can explain why learners are drawn to the programmes and why they drop out. The skills planning in sectors relies heavily on research by educational institutions. Without this tool, serious mismatches between the demand and supply of skills cannot be addressed or projected. The fourth industrial revolution may cause a major disjuncture between the demand and supply of skills if systems are not dynamic.
- **Employers:** The literature of the comparative studies used in this research points to one decisive factor determining the quality of apprenticeships, the workplace or on the job learning. The ability of workplaces to take learners on and deliver on the outcomes of curricula remains challenging. Internationally, governments struggle to attract employers to participate in apprenticeships. This leads to the creation of so-called safety nets for learners who cannot find job placement. Employers are not always keen to take apprentices on in the current economic climate, this despite financial and tax incentives in some countries.
- **Regulatory framework:** The industry environment is characterised by disruptive technologies that are displacing current industry models. These rapid changes call for a system that is responsive to change and plays the role of an enabler rather than adding to the red tape of the interventions. The

products of modern training systems should provide broader choice to the learners and a skill to the market that meets current technological trends.

2.5. SKILLS DEVELOPMENT: A SOUTH AFRICAN PERSPECTIVE

2.5.1. Introduction

The development of skills is a critical element for economic growth. Skills development in the South African context was accelerated with the implementation of the Skills Development Act (97 of 1998). Section 9(1), in particular, made the establishment of Sector Education and Training Authorities (SETAs) a reality.

2.5.2. Background

The Department of Labour initially established 25 SETAs in 2000 to prioritise the development of skills in the various sectors. In 2005, the SETA landscape was restructured with only 21 SETAs remaining. SETAs in the agriculture and safety and security subsectors were most affected by the restructuring. In 2009, a further change was made, with SETAs moving over to the Department of Higher Education and Training. SETAs function within a broader network of national departments that fulfil various roles in the value chain of training. Figure 2-4 below shows the relationship between these sector departments and SETAs.

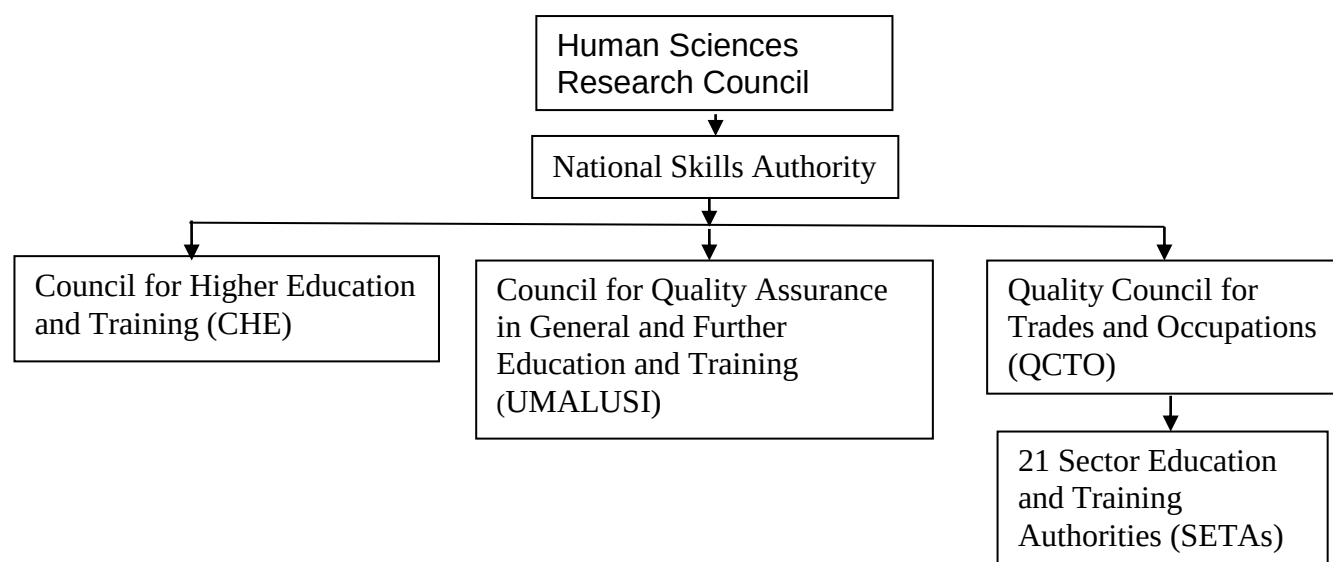


Figure 2-4: Relationship between sector departments and SETAs (Source: own compilation)

SETAs have experienced a bumpy ride since their establishment in 2000, due to allegations of maladministration, corruption, targets not being achieved and taxpayers' money not being allocated to the development of critical and scarce skills. Archer (2010:6) highlights that business, trade unions and government are very critical of the current training arrangements in South Africa and that the measurement of SETA performance is problematic. James (2012:2) identified seven pillars that differentiate top-performing SETAs. These include strategic planning, leadership, the ability to continuously innovate and good corporate governance. Unfortunately, the minister placed various SETAs, including Services SETA, SETASA EWSETA, PSETA, LGSETA, under administration in the period 2011 to 2016.

2.5.3. Funding mechanisms

Turner *et al.* (2013:5) concluded that the five-billion rand that was allocated to SETAs in the 2013 financial year alone was not used effectively. At the time of the study, only one SETA had achieved all its objectives. Similarly, SETAs are not supposed to increase their cash reserves, but funding should be channelled towards developing skills and capacity in the various sectors.

Agriculture, including forestry and fisheries, directly contribute around five per cent to the GDP of South Africa. It remains a key sector to alleviate poverty and ensure food security in South Africa. AgriSETA generates its revenue from skills development levies and, according to the WSP/ATR data collected from AgriSETA, 19 834 employers are registered with the SETA. There are reportedly over 40 000 commercial farmers registered for Value Added Tax (VAT) in the sector.

The Skills Development Levies Act (9 of 1999) requires employers that are registered with SARS to pay a one per cent skills levy, a standard industry classification code (SIC) is used to determine the specific sector. Twenty per cent of this funding is then distributed to the national skills fund and 80 per cent is distributed to SETAs. The annual approved budgets of SETAs must adhere to a strict cap on operational costs—only 10,5 per cent of the funding that a SETA receives may be used for administration. The 49.5 per cent of the funding allocated to a SETA is used as discretionary funds. This allocation is utilised to support skills development in the

sector. The fact that employers pay for the administration of SETAs makes their functioning or malfunctioning a very emotive case.

2.5.4. Sector skills planning

SETAs draft and submit sector skills plans (SSP) to the Department of Higher Education and Training annually. The main purpose of the SSP is for SETAs to conduct sector research and determine the critical and scarce skills required in the sector. These skills are determined through a thorough analysis of the sector, including the economic setting, labour profiles and performance of the sector. The demand and supply of skills in the sector are deduced from the findings of the sector analysis and a list of professional, vocational, technical and academic learning (PIVOTAL) programmes is determined as a spending priority in the coming financial year.

The Department of Higher Education and Training annually compiles a critical and scarce skills list by combining all the SETA's PIVOTAL programme lists. This provides the country with a list of skills that must be targeted to ensure that the economy is growing and underlines the critical importance of the SETA research process.

SETAs annually set performance targets that support the outcomes of the sector research. These targets are set within the parameters of two documents –a service level agreement with the department of Higher Education and Training, and in the annual performance plan of SETAs. The targets that SETAs conclude within the SLA with DHET directly support the objectives of the NSDS III.

2.5.5. Strategic impetus

The NSDS III is a strategic guide that provides the direction of skills development initiatives in all sectors of the economy. Clear links are drawn between the different partners in skills development and the use of the skills levy. The skills development strategy is also aligned with the Human Resource Development strategy (HRDSSA II) for South Africa and is considered to be a sub-component of this strategy NSD III (2011:9)

The implementation of the NSDS III remains the collective responsibility of all stakeholders, but the DHET, the SETAs and the NSF are the key implementing agents of the NSDS III objectives and targets. The main objective of the NSF is to drive key skills strategies of government and meet the training needs of the unemployed. DHET provides leadership to ensure that the goals and objectives of the NSDS III are achieved. SETAs, on the other hand, must address employer skills demand, in particular, by developing and facilitating various interventions to achieve the goals of the NSDS III (DHET 2017).

The NSDS III strategy drives eight goals that will support the South African economy with employees that are suitably skilled. This study will focus on goal 4.2, which targets the development of middle-level skills. The pool of artisanal skills is too low and the workforce is not globally competitive. It is against this backdrop that this document will particularly focus on artisan development (NSD III, 2011:13). The goal highlights the following important elements of developing artisanal skills:

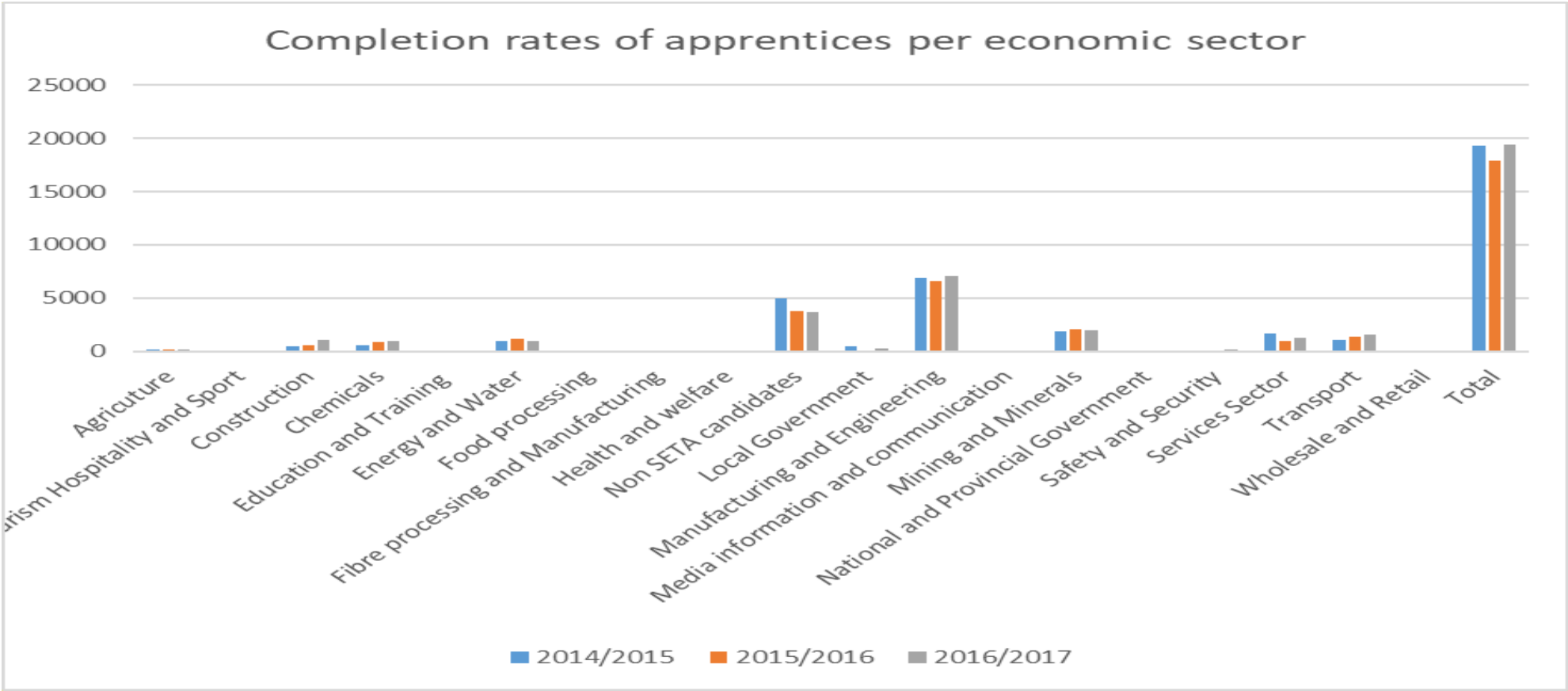
- The importance of SETA's role as an enabling body
- The importance of research to determine the middle skills/artisanal skills requirements of the agricultural sector
- The establishment of projects and partnerships to facilitate learning, especially between learning institutions and workplaces, to enable artisans to be trained and work ready
- The importance of workplace learning opportunities.

This research document will look at the elements highlighted above to determine the success of AgriSETA's implementation strategies.

2.5.6. Artisan development streams

The impact of artisans on the economy can be traced back in history with events like the First and Second World Wars and then, closer to home, the mining and manufacturing sector's rapid expansion in the 1960s and 1970s. The training of South Africans as artisans was historically divided along racial lines. Strong political efforts have been made since 1994 to radically change the labour market and the training system (Wildschut and Mbatha, 2016:5). Table 2-1 below shows the completion rate of apprentices, if compared over three financial years:

Table 2–1: Completion rates of apprentices nationally.



(Source: DHET 2018)

The performance of the main economic sectors of the South African economy can be seen when analysing the completion of apprentices for the 3-year period, 2014 to 2016. Statistics SA, 2017, reported manufacturing's GDP contribution as 12.49 per cent in the fourth quarter of 2016. This data correlates with the relatively high number of apprentices completing in that sector. The other key sectors that can be highlighted from the data are the mining, services, transport and energy sectors. The agricultural sector, in contrast, contributed 2.14 per cent to the GDP in the 2016 financial year. The number of apprentices who received certificates for the 2011 – 2016 period was 1 100 in this sector DHET (2018:89). For many years, the mining sector was the beacon of artisan training in South Africa. Over the period 2011 – 2016, the number of apprentices who completed their training dropped by 21.6 per cent. This could be attributed to the international pressure on commodities and the tough South African mining environment, given the policy uncertainties within the sector DHET, (2018:89). The number of apprentices that come through non-SETA registered candidates can mainly be contributed to Indlela in Olifantsfontein. This institution is an assessment centre only, and does not provide any practical learning. These learners are private- and industry-funded learners and provide further insight into the need for apprenticeships and SETA's inability to award grants and link learners to workplaces.

The future focus should be on the sectors that must grow and any policy changes should support artisans of the future to be employed in those high-growth sectors (Wildschut and Mbatha, 2016:7).

The levels of all qualifications are regulated by the National Qualifications Framework. The framework accommodated three sub-frameworks that regulate all programmes and qualifications and endorse the certifications within these frameworks. Although there are overlaps between the sub-frameworks, three distinct levels of skills can be deduced within the framework—low, medium and high levels of skills.

The National Skills Development Strategy III explicitly calls on the expansion of middle-level skills that can be pitched at NQF 3 and NQF level 4. The bulk of artisan development programmes are pitched at NQF 4, although the new occupational

framework also makes provision for these artisan-related qualifications to be pitched at NQF 5. Table 2 below provides an overview of the NQF levels within the South African context.

Table 2–2: NQF level descriptors within a South African context

NQF levels within the South African context					
CHE Higher Education and Training sub-framework	Doctoral Degree Doctor Degree professional	10	Higher level skills		QCTO Occupational Qualifications sub-framework
	Master's Degree Master's Degree professional	9			
	Bachelors Honours Degree Post-graduate Diploma Bachelor's degree	8		Occupational certificate	
	Bachelor's Degree Advanced Diploma	7		Occupational certificate	
	Diploma Advanced Certificate	6		Occupational certificate	
	Higher Certificate	5		Occupational certificate	
Umalusi General and Further Education and Training Qualifications sub-framework	National Certificate Grade 12 / Standard 10/ Matric	4	Medium-level skills	Occupational certificate	
	Intermediate certificate Grade 11 Standard 9	3		Occupational certificate	
	Elementary certificate Grade 10 Standard 8	2	Lower-level skills	Occupational certificate	
	General Certificate Grade 4–9 Standard 2–7	1		Occupational certificate	

(Source: South African Qualifications Authority, 2012)

SETAs drive middle-level skills needs in all sectors. With a renewed focus on artisan development programmes during the last decade, resources were reallocated to the planning and implementation of artisan training programmes in South Africa. The South African government identified the lack of artisans as an urgent priority and launched the “Decade of the Artisan” initiative in 2014. GTAC (2014:1) describes an artisan as a skilled worker who passed a summative assessment (trade test) after completing an apprenticeship under the mentorship of a qualified artisan. These trades would include electricians, plumbers, fitters and turners, mechanical fitters, millwrights etc. In South Africa, the Organising Framework for Occupations (OFO) recognises 125 occupations as trades.

2.5.7. Artisan development framework

There is an acknowledgement that the previous artisan-development system was not producing artisans with the required competency set needed by industry to ensure longer-term growth of the economy (NSA 2017:29).

The question can then justifiably be asked if we are turning out the type of artisans the economy needs. Gamble *et al.* (2016) concluded that modern artisans require a combination of workplace or situational knowledge and formal or theoretical knowledge. The implication is that we need a system that can combine on-site (in the workplace) and off-site (training environment) exposure. Gamble *et al.* (2016) makes the point that South Africa may need a system that has multiple apprentice systems to allow for the natural progression from fundamental to advanced skills and a system of part-qualifications that can support the full apprentice system.

The current apprentice system may not be serving the industry in its current format. Schoeman, (2017), in her presentation to the DHET research colloquium, referred to three streams of training artisans –a vocational stream that is driven through TVET Colleges, an occupational stream that is driven through SETAs and a technical stream that is driven through the general schooling system.

Wildschut and Ngazimbi (2012:3) identified a forth route –the recognition of prior learning (RPL). All these streams/routes have specific challenges but perhaps the most glaring is the lack of rationalising the artisanal training programmes. The availability of a workplace remains a common problem that is prevalent in all three streams. The supply of artisans through learnership programmes was seen as one of the most important new delivery modes post 1994. However, it has become apparent that the learnership system alone did not satisfy the need for artisans Wildschut and Ngazimbi (2012:3).

The 21 Sector Education and Training Authorities in South Africa provide learners with various routes to becoming an artisan. These range from national certificate programmes that are unit-standard based (learnerships) to competency-based modular training (CBMT) systems, where an acute focus on competencies in the workplace allows a learner to progress through various levels. Learners must

achieve competence in a level before they are allowed to progress to the next level. Various SETAs have their own trade tests that were developed to train employees specifically for the sector they function in. In the past few years, the NAMB started implementing strategies to improve the mobility of learners by implementing (NAMB 2018):

- A singular funding mechanism that SETAs will implement
- A singular system of moderating trade assessments through tighter monitoring of the trade tests conducted by accredited trade test centres
- A re-accreditation of trade test centres that will comply with a singular set of requirements
- A single, standardised trade assessment, specifically developed for the new occupational qualifications
- A single trade certificate for candidates who pass a trade test. This increases the mobility of learners between sectors.

The South African apprentice system shows distinct similarities with apprentice systems internationally. The similarities include the existence of a formal relationship between the employer and an apprentice, structured workplace learning and a summative assessment of learning or trade test at the end of learning programme.

DHET (2018:20) proposes a reviewed seven-step framework for an apprentice to become a fully-fledged artisan. The seven steps are shown in Figure 2-5 below:

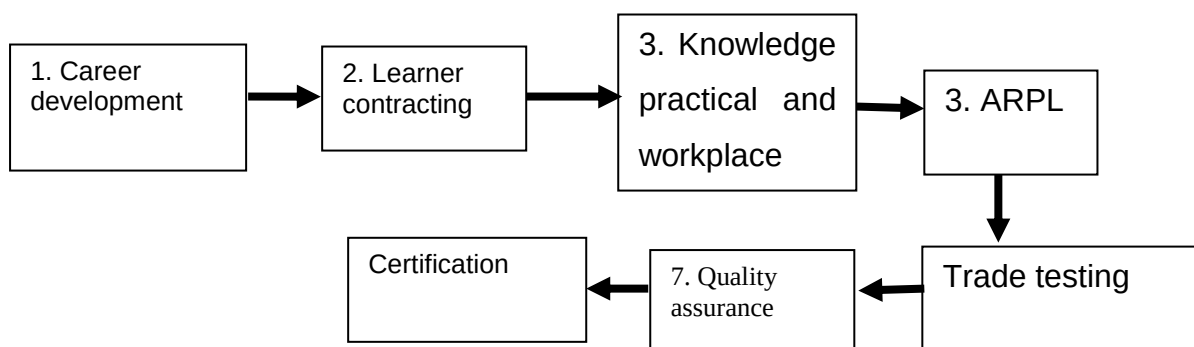
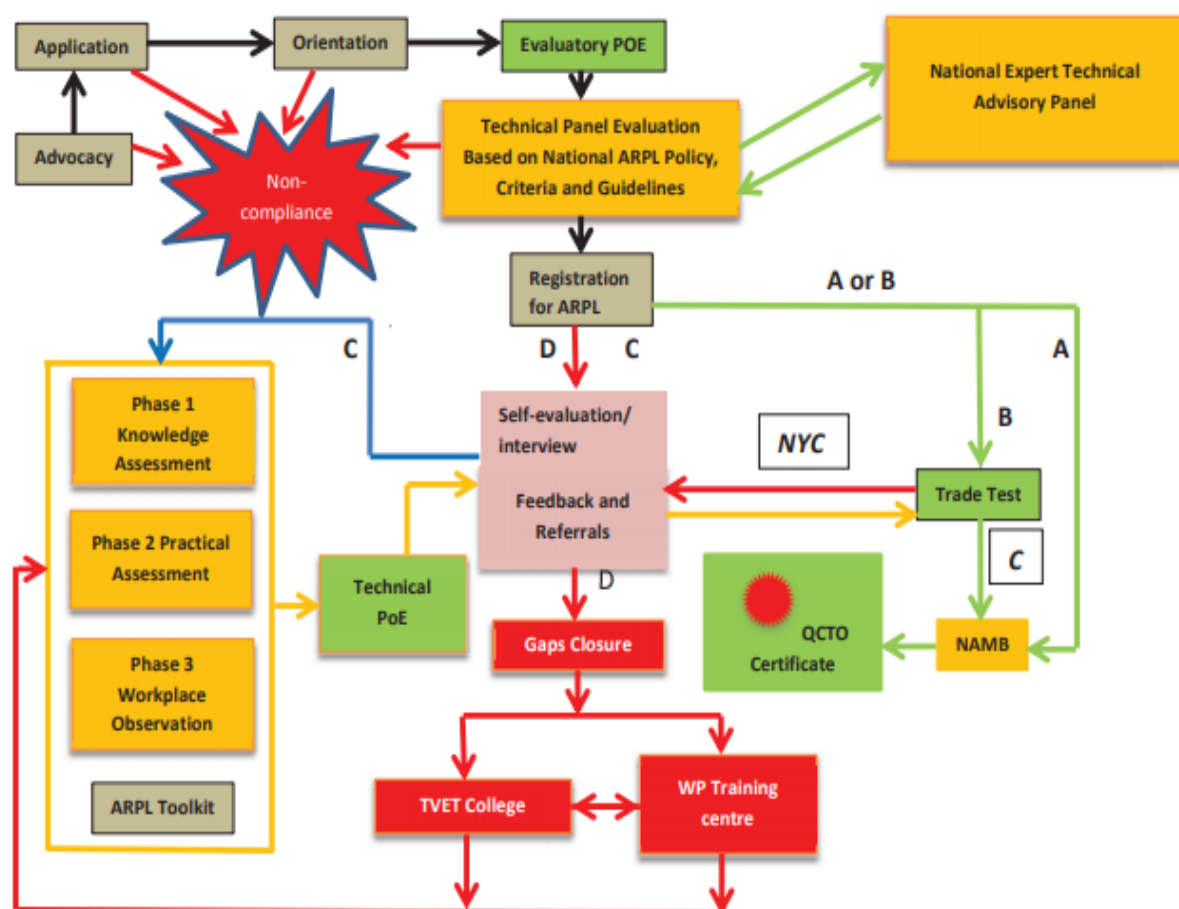


Figure 2-5: 7 steps to becoming an artisan

(Source: NAMB, 2018)

The proposed framework strengthens the new apprentices for the 21st century (A21) model that aims to strengthen the links between knowledge, practical and workplace learning. In an attempt to reduce costs and improve efficiencies, the new model will reduce the time spent between the knowledge, practical and workplace components by integrating these elements in all learning. This model has clear similarities to the German model and is also called the dual system, where learners alternate between

the workplace and the training institution. DHET (2018:31) acknowledges the importance of balancing the availability of work placement opportunities with the number of apprentices. It suggests a transitional approach between the old and new system, where learners will be allowed to continue with their practical and knowledge training at a skills-development provider if no workplace can be secured.



(Source: DHET, 2015)

There are important differences between this model and the previous section 28 model that was contained in the repealed Manpower Training Act. One is that a holistic view is taken in the entry and assessment of candidates. Any gaps in the learners' prior learning, in terms of knowledge, practical and workplace exposure, are closed. A further improvement is that the candidate's competence is assessed by a technical evaluation panel, adding a lot of credibility to the system.

2.5.8. Current challenges in Artisan Development programmes

The apprenticeship system, irrespective of stream, combines theory, practical and work-based learning for a predetermined period before a trade test. These three components of apprenticeship programmes result in intense financial strain on employers where the apprentices are based. DHET, 2015 reported that, on average, the cost for training apprentices stood at R400 000. The key drivers of the cost were the workplace component at 35 per cent of the cost, the practical off-site training, on average, accounted for a further 35 per cent and the theoretical training, another 22 per cent.

The administrative costs that include the contracting, trade testing certification, etc. account for eight per cent of the full cost. The implication of this cost is that the employer will contribute at least 47 per cent of the cost if the SETA grant is subtracted. This is an illustration of the significant financial implications for taking on apprentices and why smaller entities that do, struggle financially. The return on the invested capital from employers is delayed, as shown in Figure 2-7 below. The benefits of apprenticeships are clear over time, however.

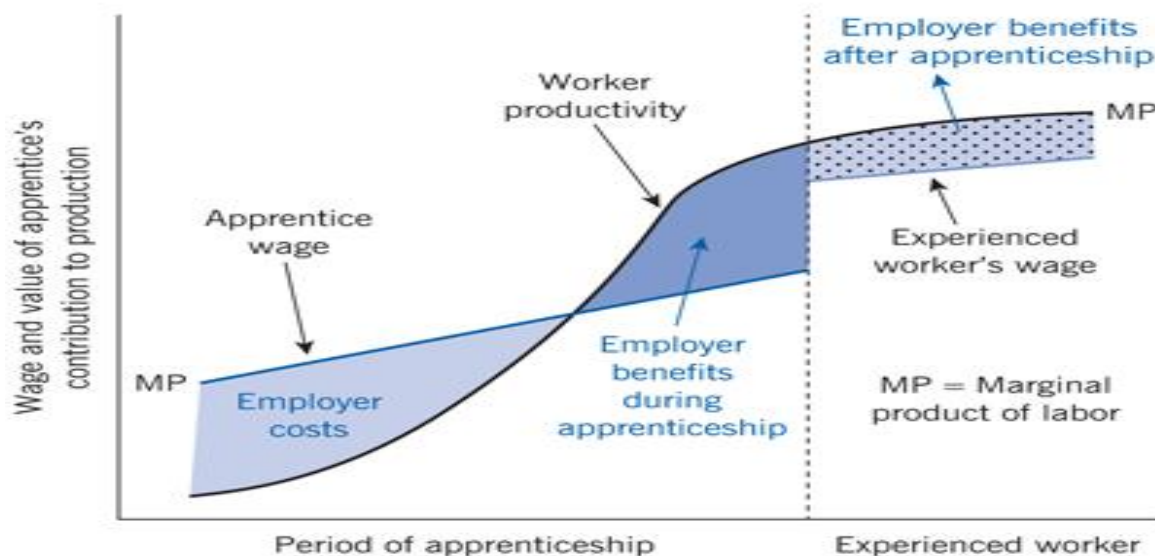
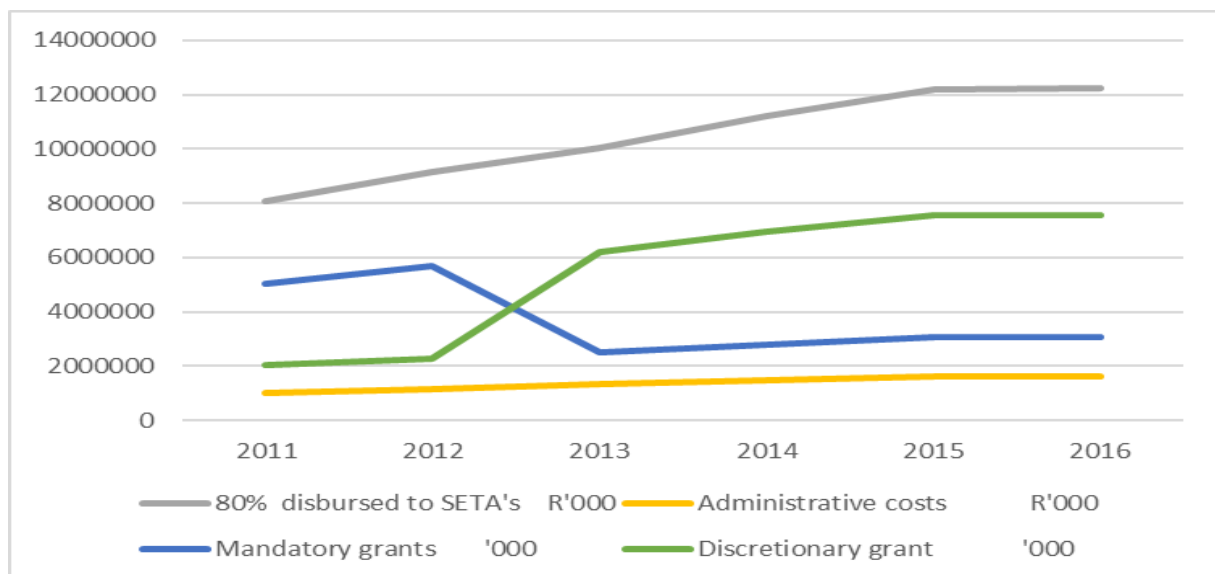


Figure 2-7: Cost benefit of apprentices: (Source: Lerman, 2014)

GTAC, 2015, reported that government and business spent around R6.5 billion on artisan development alone in 2014/15. The full extent of SETA's expenditure is shown in table 2–3 below.

Table 2–3: Distribution of skills levy 2011–2016



(Source: DHET, 2018)

SETAs received R62.2 billion for the 2011–2016 financial year. Of this income, they used R8.15 billion to fund their operations. SETAs were given a mandate to spend R32.58 billion for the 2011–2016 period through discretionary funding. The sharp reduction in mandatory grants, 44 per cent in 2012, could be attributed to the change in legislation that reduced the mandatory grant paid out to employers from 50 per cent to 20 per cent of the levies paid by employers. A corresponding increase in discretionary grants can be seen for the same period, where these funds were allocated.

Quantitative research of artisan programmes alone cannot determine the impact and work-readiness of newly-qualified artisans. Peo, (2015) identified that employers in rural areas struggle to find qualified artisans or, alternatively, fewer artisans are employed in these rural settings. The research found that 63.2 per cent of artisans are employed in urban areas. This poses a major risk to the agricultural sector, which is predominantly rural.

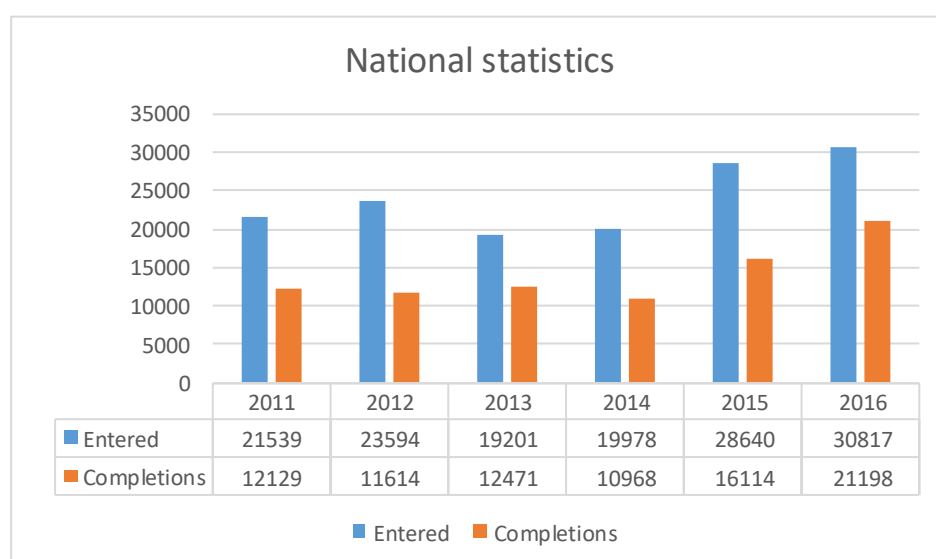
Rapid technological advances make planning for skills very difficult. Artisans are required to fulfil new roles within the workplace. The use and access of data and advanced problem-solving skills make continuous learning and development a

necessity, begging the question of whether artisan occupations should not be professionalised.

2.5.9. Throughput rate of artisan programmes

Locally and internationally, the collection of accurate data to fully understand the uptake of apprentices in the workplace remains a challenge. The National Artisan Moderation Body collected apprentice data from all SETAs, taking into account all routes towards apprenticeships for the period of 2011–2016. Table 2–4 provides statistics of registered apprentices who completed all the available trades over the period from 2011 to 2016.

Table 2–4: Apprentices entered and completed



(Source: NAMB, 2018)

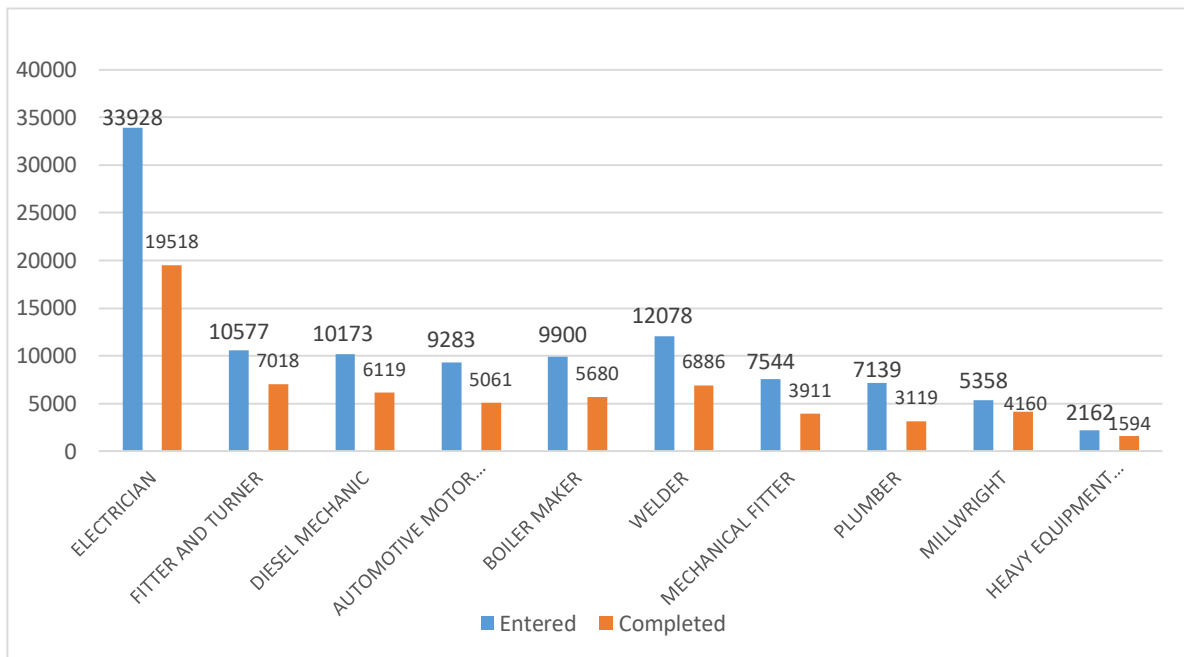
The priority placed on apprenticeship programmes can be seen if one considers that, over the 5-year period illustrated above, 143 768 apprentices were entered into an apprentice programme and 84 494 learners completed the programme. As a percentage, 58.77 per cent of the total learners completed the programme they started. This percentage can be misleading, however, if one takes into account that apprenticeship programmes are completed over a two- to three-year period and some prior year learners are included in the completion percentage. Given that 41.3 per cent of the learners did not complete the learning programme within the given time, this equates to a significant waste of funding.

The number of learners entered increased by 9.18 per cent, on average, for the period. The completions increased by 13.90 per cent, on average, for the 5-year period. It should be noted that the National Artisan Moderation Body started with the standardisation and verification of the various processes involved in artisan development. These include establishing NADQAC, a sub-body created to ensure that the quality standards and accreditation of service providers are considered, and collecting data on apprenticeships. The collection of data, accompanied by standardised reporting standards between SETAs, gained momentum in 2013, explaining the drop in the number of learners reported.

Achieving the annual NDP target of 30 000 artisans at a throughput rate of 56 per cent, means that 53 600 learners must be placed in artisan programmes annually, costing the South African economy R31.9 billion in the 2030/31 financial year. Peo (2015) found that the unemployment rate of artisans is higher in some trade areas like welders, electricians and boilermakers. There is, therefore, a need to motivate employers to take on trades that are in higher demand like riggers, fitters and millwrights. This, then, highlights the importance of sectors doing thorough research to determine possible future skills needs, considering reallocating resources towards skills in high demand and SETAs disseminating information to employers to take on trades that are in high demand.

The top 10 trades that were implemented for the 2011 – 2016 period shows that traditional trades are still in high demand. The bulk of these learners are contracted, employed as a result of an identified need and the grants that SETAs provided for them to study. Table 2–5 below shows the trades that industry demanded:

Table 2–5: Top 10 trades entered and completed



(Source: NAMB, 2018)

In total, 108 357 apprentices were enrolled in the top 10 trades. This is 75.36 per cent of the total enrolments and 63 066 completions for the same period. The highest registrations were electricians at 23.59 per cent, followed by welders at 8.4 per cent of the total number of registrations.

It is clear that these top 10 trades received the bulk of the grants, considering that only 35 411 apprentices were entered into the remaining trades registered with QCTO. Of the top 10 trades, three motor mechanic-related trades, diesel mechanic, automotive motor mechanic and heavy equipment mechanic are included. This is significant for the agricultural sector, given the levels of mechanisation within the industry.

A significant trade that has not been included, from an agricultural perspective, is the tractor mechanic. Learner registration took place in only 77 of the 125 trades, meaning that in 38.4 per cent of the registered trades, there was no learner uptake.

DHET (2017:10) reported that various initiatives were implemented to ensure that the development of artisans in all sectors was accelerated. These include a single national artisan learner funding and administration system, a provincial artisan development monitoring and evaluation system and an artisan learner database and reporting system. These systems have not only standardised artisan development

but enabled SETAs to target artisan development with a singular, measurable approach.

Despite the sizeable effort from DHET to standardise the policy framework, shortages persist, especially within the artisanal occupations. Reddy *et al.* (2018:12) reported that a survey of 750 employers across all sectors of the South African economy indicated that 34 per cent of employers experienced challenges in filling positions. Skilled-trade vacancies were reportedly the hardest to fill, a tendency that is not unique to South Africa. Internationally, 40 per cent of employers struggle to fill these positions.

2.5.10. AgriSETA skills development and planning

The National Skills Development Strategy requires SETAs to establish mechanisms that will allow for skills planning, based on reliable research. NSDS III (2011:11). Annually, AgriSETA relies on three strategic documents to guide the organisation on the type of interventions required to build capacity in the sector and, ultimately, capacitate the sector to increase their contribution to the GDP of South Africa.

2.5.10.1. Sector skills plan

Annually, AgriSETA drafts a research-based, sector skills plan that identifies the critical and scarce skills needed in the sector. The research is based on primary and secondary data obtained from various stakeholders and data sources. The programmes that will be prioritised for grant funding are identified in the document as a clear guide to the sector needs.

2.5.10.2. Strategic plan

A strategic plan is drafted for a five-year period, taking into account the goals of the National Skills Development Strategy and the outcomes from the sector skills plan. The strategies to achieve the priorities of the sector are reviewed annually, under the guidance of the AgriSETA board.

2.5.10.3. Annual performance plan (APP)

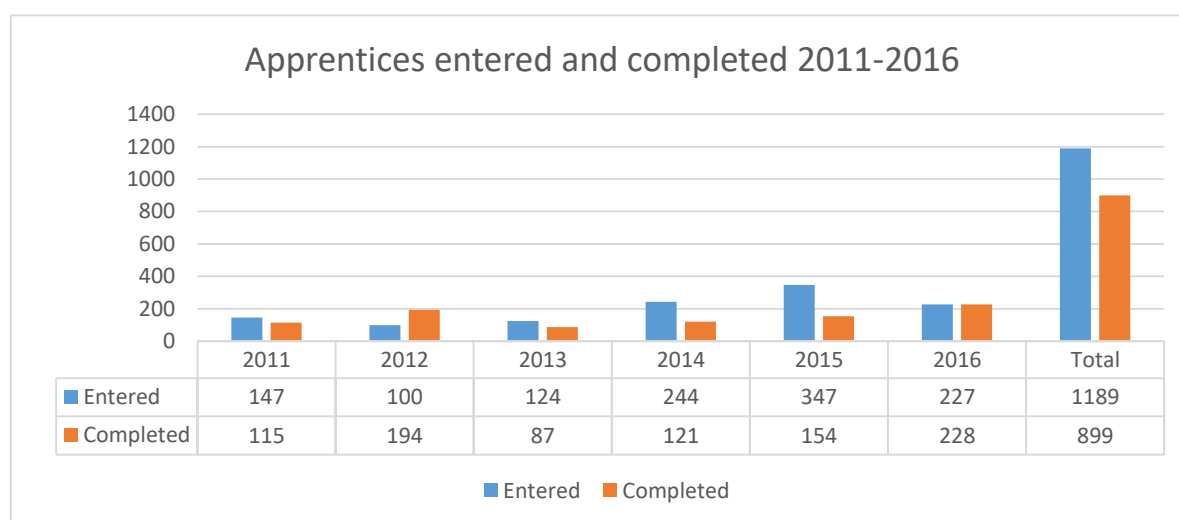
AgriSETA annually sets and reviews organisational targets for the medium-expenditure framework. These targets are formulated to ensure that AgriSETA responds to the needs of the sector, as identified in the sector skills plan. SETAs'

performance is measured by the achievement of the key performance areas and, more critically, the ability of SETAs to distribute grant funding.

2.5.11. Artisan development in AgriSETA

AgriSETA supports various industries in the primary and secondary agricultural sectors. The need for qualified artisans has increased with technological advancement in the sector. During the 2011–2016 period, AgriSETA allowed for 1 189 apprentices to enter the system. During the same period, 899 apprentices completed the apprenticeship programmes (NAMB 2018). Table 2–6 below indicates the number of candidates who entered and completed AgriSETA-supported artisan programmes.

Table 2–6: AgriSETA apprentices entered and completed per annum



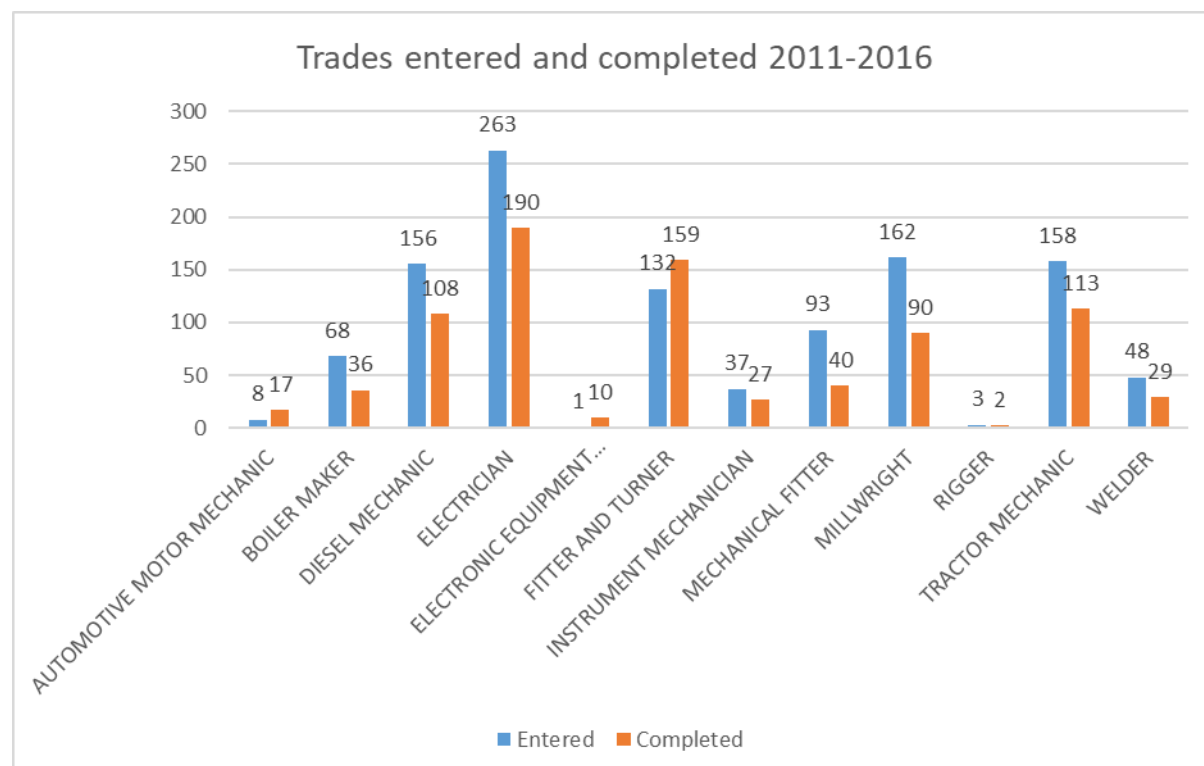
(Source: DHET, 2018)

Agriculture cuts across various sectors in the value chain, resulting in a variety of trades that receive support from AgriSETA. Table 2–7 below indicates the various trades that AgriSETA implemented:

The leading trades in the agricultural sector were electricians at 22.11 per cent, followed by millwrights at 13.62 per cent and tractor mechanics at 13.28 per cent. Electricians and millwrights are in high demand, especially within processing plants like sugar and citrus. Tractor mechanics are predominantly required by the suppliers of mechanical equipment and large producers of grain, maize and soya. Diesel mechanics are preferred by some employers that manage large fleets of vehicles, especially in processes where the cold chain is crucial. Fitter and turner apprentices were mostly taken up by the tobacco industry. However, these apprentices are also

sought after by large employers in the fruit, vegetable and processing operations, where maintenance is insourced.

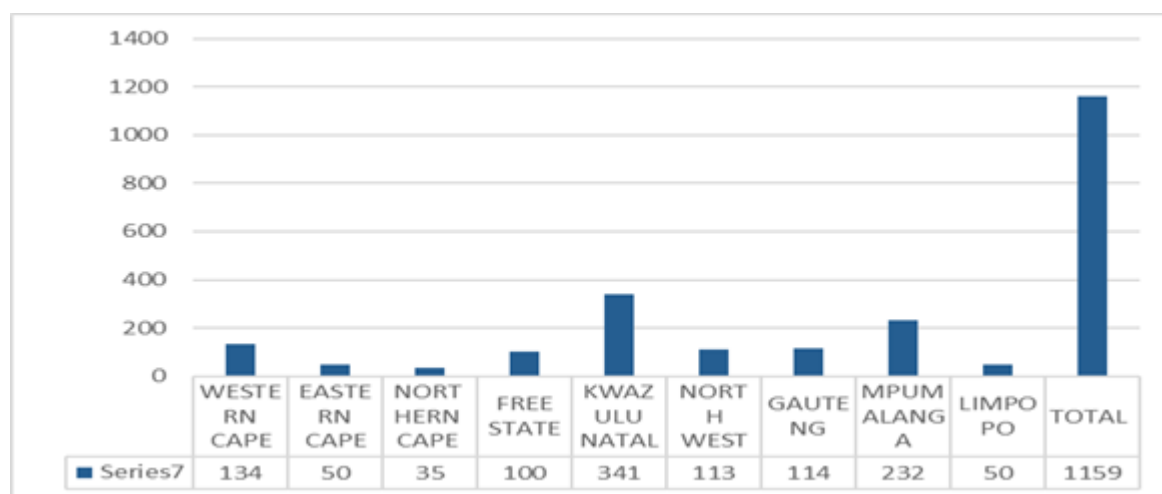
Table 2–7: AgriSETA Trades entered and completed 2011–2016



(Source: INDLELA, 2019)

In KwaZulu-Natal, 29.42 per cent of apprentices were trained, when considering the provincial breakdown of artisan programmes implemented through AgriSETA programmes. Most sugar processing facilities are in KZN, explaining the high demand for qualified artisans in this province. In Mpumalanga, 20 per cent of apprentices were trained. This province is dominated by major producers of maize, sugar and citrus and large suppliers of agricultural equipment. The Western Cape accounts for 11.56 per cent of apprentices. This province predominantly produces grain and fruit and has major suppliers of agricultural equipment. Table 2–8 below provides further information on the apprentices that were entered per province for the period 2011–2016.

Table 2–8: AgriSETA apprentices per province for the period 2011–2016



(Source: INDLELA, 2019)

The distribution of apprentices taken in per province is significant and could relate to the demand for apprentices in various industries and the willingness of specific industries to train apprentices in the workplace.

2.6. KEY TRENDS IN SKILLS DEVELOPMENT

The International Labour Organisation (2018) found that rapid technological change has not resulted in massive job losses internationally. Technology has affected some occupations but new occupations have been created, effectively offsetting the loss. The latest trends indicate that the fastest growth in employment was in jobs that required high-level skills. The challenge will be how to adapt current training methodologies and strategies to deal with displaced employees.

To understand and predict future trends in skills development, it remains important to understand the main skills drivers globally. The mega trends that have an impact on skills development are digitalisation, globalisation, climate change mitigation and demographic change. These trends are predicted to affect all the G20 countries (ILO, 2018).

The ability of a worker to adapt to these trends will call for the correct mix of skills. For the first time, the world skills competition in Kazan, Russia has hosted a skills competition for future skills. The competition included skills like agricultural biotechnology, robotic welding, digital farming and virtual and augmented reality. The skills needed to compete in this contest can be found in a range of disciplines.

The future skills report (2019) identified three dimensions that future skills will be divided into. The first dimension relates to an individual's ability to learn, adapt and develop to create or be part of future opportunities in the job market. The second dimension relates to an ability to be organised within available knowledge and how knowledge is handled and used. The third dimension relates to an individual's ability to organise himself within his organizational or community environment, whether it be organisational or community. It is clear that future skills will require a new approach to skills development.

2.7. CHAPTER SUMMARY

In summary, the literature reviewed clearly highlights the importance of artisan development programmes for the growth of the economy and job creation, nationally and internationally. An unfortunate fact is the historical context of artisan training programmes that gives it a somewhat lower status in the South African labour market. This is not unique to the South African context, with various countries globally struggling to increase the perceptions of apprenticeship programmes. It is clear that various government imperatives like the SIP programmes depend heavily on the availability of a skilled workforce, especially suitably qualified artisans.

The availability of data, internationally, was highlighted as a challenge. The annual revision of SETA's sector skills plans, however, provides a tool for sectors to gather data and correctly determine the supply and demand of occupations. The importance of sector research was further highlighted by national entities that utilise the data for national skills projections. The literature brings to the fore the challenges that exist with the implementation of artisan programmes, nationally and internationally. It examines throughput rates and the employability of the newly-qualified artisans, in particular. The fact remains that, nationally and internationally, artisans are still in high demand and the importance of focusing resources on the skills in demand remains pivotal.

The performance of SETAs in achieving targets set in annual performance plans, SLAs and the goals set out in the NSDS III remains contentious. The debate about the structure of artisan programmes rages on, with various scholars calling for a policy shift to allow for various types of artisan programmes in sectors. This may be in response to international review of apprenticeship programmes. The availability and employability of skilled artisans in the agricultural sector is important for food security, especially given the rural context of the sector. In the next chapter, an

empirical investigation will be done to explore the AgriSETA's performance in creating an environment through funding, projects and partnerships, to enable artisans to be trained and employed within the agricultural sector.

CHAPTER 3: EMPIRICAL INVESTIGATION

3.1. INTRODUCTION

The aim of this chapter is to present the results of the empirical investigation. It reflects on AgriSETA projects, partnerships, training programmes, work readiness and employment of the beneficiaries of AgriSETA-funded apprenticeships during the implementation of the National Skills Development Strategy III from the 2011/12 to 2017/18 financial years.

This chapter will further focus on:

- The research methodology used
- The approach to the statistical analysis and
- The results and discussion of the findings emanating from the data collected.

A newly-designed questionnaire was used to collect data. The development of the questionnaire will be discussed and a summarised overview of the biographical information of the participants will be discussed too. The data was captured and prepared by the North-West University statistical department.

3.2. RESEARCH METHODOLOGY

This exploratory study utilised a mixed method approach of qualitative and quantitative nature. The qualitative data was used to support the quantitative research. Therefore, a QUAN-qual approach was followed.

- Quantitative: The quantitative research focused on the collection and evaluation of data available within AgriSETA. This secondary data related to the number of projects and partnerships and the number of learners trained and qualified was obtained through a review of existing source documents within AgriSETA.
- Qualitative: The data was collected through open-ended questions in the questionnaire that mainly focused on the employers that hosted/employed apprentices. A further focus was on the employment status of learners who qualified.

3.2.1. The research nature of the study

This study used a mixed method approach to collecting and interpreting data.

Creswell (2014:32) describes a mixed method research as the collection of quantitative and qualitative data. Combined, these data types provide a more in-depth understanding of the research. The study was exploratory in nature.

The implementation of the artisan development programme was researched over the implementation period of the NSDS III–2012 to 2017. The artisan programme cycle is normally three years. Data intervals were analysed to: establish:

- The number and value of projects
- The number of learners entering the programme
- The strategic partnerships entered into, to implement the programmes nationally.

Data for the period 2015–2017 was used to research the number of learners who completed the programme, due to the three-year programme cycle and the employability of the learners qualifying as artisans.

3.2.2. Research setting

Berg (2001) makes the point that the research site is crucial in ensuring access to the population. The sample selected in this study was not selected purely on accessibility, because that would have compromised the appropriate population, given that AgriSETA provides grants to employers in all the provinces of South Africa.

3.2.3. Sampling: target population and sample type

AgriSETA classifies the various subsectors by using the standard industry classification issued by SARS. Employers use this classification when registering as an entity. The sample used included all apprenticeship projects implemented in the various subsectors. Currently, AgriSETA clustered various industry classifications into 11 subsectors. All the subsectors that implemented apprenticeship programmes were included in the investigation—a total of 9/11 or 82 per cent of all subsectors were included. The seed and pest control subsectors cut across other subsectors and were not included in the study. The employers that are suppliers of agricultural machinery were included because of the nature of this industry and the major cross-cutting nature of these industries and sectors within agriculture. Table 9 below provides further detail of the subsectors that implemented apprenticeship programmes during the implementation of the NSDS III strategy.

Table 3-1: AgriSETA apprentices per province for the period 2011–2016

No	Subsector	SIC code
1	Fibre	30118
2	Tobacco	11142, 62208
3	Poultry	30114, 11220, 11221
4	Aquaculture	13000
5	Milling, pet food & animal feed	30311, 30330, 30331, 30332
6	Sugar	30420, 11122
7	Horticulture	330132, 30133, 11130, 62112, 30493, 11301, 11120, 11121, 12109
8	Grains and cereals	30313, 61502, 62111, 11110
9	Red meat	11141, 30111, 30115, 30117, 61210, 74136, 87120, 11210, 11222, 11300, 11400, 11402
Other classifications included in the sample not listed above		
10	Agricultural machinery suppliers	35710

(Source: Own compilation)

The population consists of employers across South Africa involved in primary and secondary agricultural activities. A total of 50 respondents completed the questionnaire. All questionnaires were considered and no questionnaire was discarded.

3.2.4. Suitability of unit of analysis

The sampled unit of analysis is suitable because:

- It is representative of the majority (9/11) of subsectors in the agricultural sector
- It is representative of the majority of SIC codes (38/40) within agriculture. The Standard Industrial Classification of all economic activities (SIC) is a consistent classification of all economic activities. It provides a framework within which economic data can be collected (Statistics SA 2012).
- It is representative of the majority of employers/projects implemented by AgriSETA.

3.2.5. Data collection

The questionnaire was distributed to employers through e-mail communication. Employers completed the questionnaire and scanned and e-mailed the completed instruments back to the researcher. The questionnaire was sent with a letter explaining the purpose of the research.

3.2.6. The measuring instrument

The measuring instrument used was developed by the researcher, in collaboration with the research supervisor and the statistical services of the North-West University Potchefstroom campus.

The questionnaire consisted of six individual sections, measured using a multi-item four-point Likert scale. All options were placed in ascending order, 1 being low and 4 being high:

- Section A: dealt with the biographical information of respondents. It also included information of the subsector, the specific role played by the respondents in the implementation of the programme, the type of apprentice programme, the year(s) that apprenticeship programmes were implemented and the size of the employer, classified either as large, medium or small.
- Section B: dealt with the discretionary grant that AgriSETA provided for the implementation of the programme, critically evaluating the effectiveness of the funding mechanism. This section included six questions, two of which were open-ended questions to gain additional insight. The questions were:
 - Briefly explain your biggest challenge regarding discretionary grant funding and
 - What recommendations can you put forward to improve the discretionary grant funding for artisan development?
- Section C: dealt with partnerships that employers entered into to ensure that the programme was implemented successfully. This section critically looked at the role of these partnerships and the extent to which partnerships are needed to ensure effective implementation. Six questions, measured on a four-point Likert scale, were used in this section
- Section D: dealt with the apprenticeship curriculum in terms of length, content and the apprentice's ability to complete the programme in the prescribed period of three years. This section included seven questions, measured on the Likert scale, one of which was open ended:

- What recommendations can you put forward to improve the AgriSETA artisans development programme?
- Section E: dealt with the work readiness of newly-qualified artisans, critically exploring the competency levels of the employee and the existing skills gaps that the employer possibly identified post qualification. Six questions were included in this section, measured on the Likert scale
- Section F: dealt with the transferability of artisans across sectors. This section critically evaluated the movement of artisans between industries and employers' preferences for artisans from specifically-identified sectors. This section also looked into the transferability of skills from the agricultural sector to other sectors. It included 13 questions, measured on the Likert scale, with two open-ended questions:
 - Briefly motivate your answer in 5.5 that related to the risks involved in recruiting artisans from other sectors;
 - What, in your opinion, is the biggest challenge when employing newly-qualified apprentices?
- Section G: included only two open-ended questions that explored the biggest challenges relating to the training of apprentices and the perceived value created by the programme. The two questions were included to obtain additional insight. The questions were:
 - What, in your opinion, is the biggest challenge (overall) for AgriSETA?
 - What, in your opinion, is the biggest benefit (overall) that AgriSETA offers?

3.3. STATISTICAL ANALYSIS

The results of the study will be presented in two parts. The first section contains the demographic distributions of the respondents, followed by a detailed quantitative analysis of the data gathered in each of the sections.

3.3.1. Demographic profile

3.3.1.1. Gender: Figure 3-1 below provides a breakdown of the gender profile of the respondents

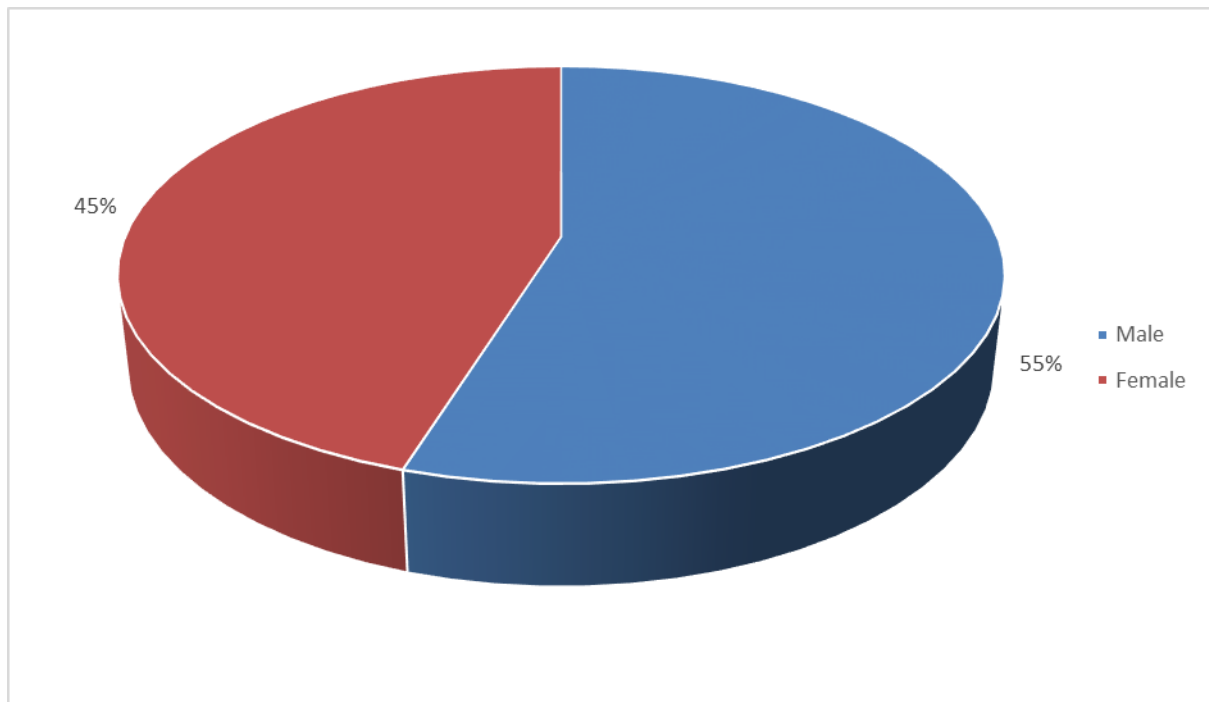


Figure 3-1: Gender breakdown

The majority of the respondents were male with 55 per cent and 45 per cent of the respondents were female. This breakdown is indicative of the functions of the respondents within the companies that host apprentices. In smaller companies, human resources will ensure that learners are trained and move through the programme. In larger organisations, this function will be the responsibility of the workshop manager or branch manager.

3.3.1.2. Qualification level

The majority of the respondents' (64.7 per cent) highest qualification was at master's degree level. Just under ten per cent (9.8 per cent) of the respondents had a qualification at post-graduate level while 19.6 per cent had bachelor's degree qualifications. Only 5.9 per cent indicated a highest qualification at secondary school level.

3.3.1.3. Occupational groups

The occupational group classification used in this study is consistent with the organisational framework of occupations. Figure 3-2 provides a breakdown of the occupational group classification of the respondents.

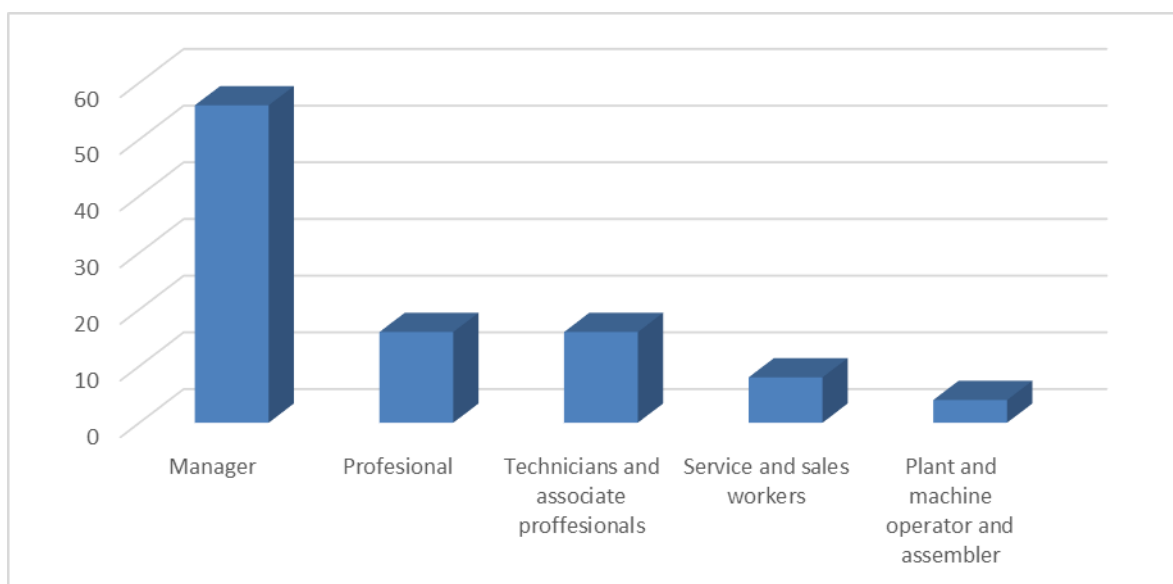


Figure 3-2: Respondents' occupational group

The highest percentage of respondents (56 per cent) can be classified as managers and 16 per cent indicated that they were professionals. A further 16 per cent were technicians and associate professionals (artisans are classified as technicians and associate professionals).

3.3.1.4. Subsectors' representation

AgriSETA implements apprenticeship programmes in various subsectors in all provinces of South Africa. Figure 3-3 represents the subsectors that implemented apprentice programmes and responded to the questionnaires. The subsectors reflected below indicate the level of automation or technology involved in these industries.

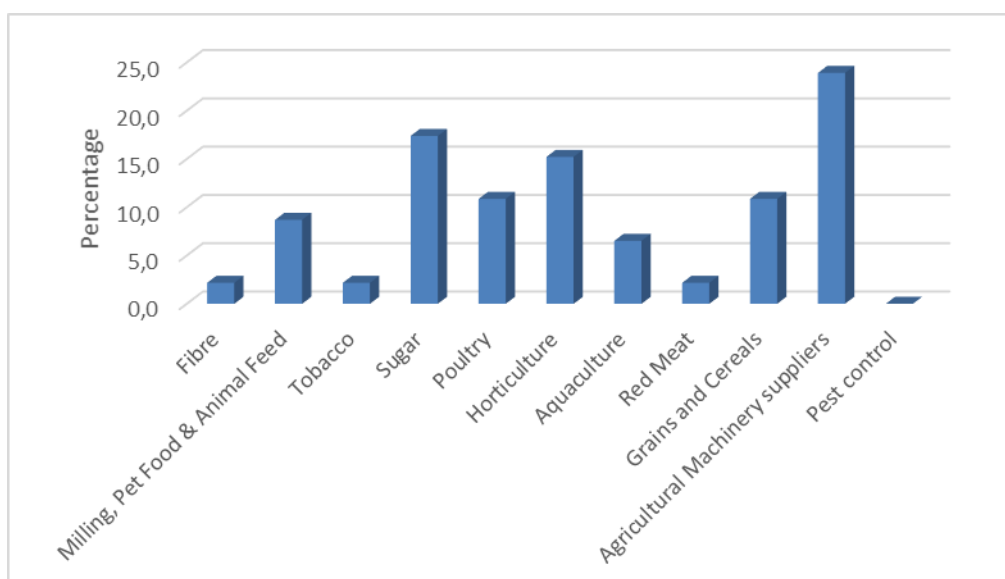


Figure 3-3: Subsectors represented

The highest number of respondents (23.9 per cent) was from the agricultural machinery suppliers. The sugar industry accounted for a further 17.4 per cent of respondents. These industries are highly mechanised, with sugar mills in Mpumalanga and KZN. The horticulture subsector accounted for a further 15.2 per cent of respondents. The questionnaires obtained a good spread across the various subsectors. AgriSETA also classifies employers according to the size of the workforce. An employer is classified as small if it has between 1–48 employees. Medium employers have from 50 to 149 and employers are classified as large if they have more than 150 employees in full employment. A total of 82.4 per cent of the respondents were from large companies; 7.8 per cent from medium and 9.8 per cent from small companies. This breakdown is a testament to the:

- Stringent accreditation requirements (specifically in terms of infrastructure and human capital) of the artisan programmes and
- The cost of the programme does not allow for smaller companies to easily take on apprentices without partnering with other employers.

3.3.2. Reliability or Cronbach

The study focused on the full population of employers that implemented artisan programmes during the NSDS III period. The approach of this study was to focus on all the subsectors (11) that exist within the AgriSETA environment. All the subsectors that implemented apprenticeship programmes (9) were included in the study.

The development of the questionnaire was done under the supervision of the supervisor and a statistical expert from North-West University's statistical services. The questionnaire was also piloted with the AgriSETA, with three experts to further refine the instrument.

A Cronbach alpha could not be done with the data obtained from the questionnaire due to the number of respondents.

3.3.3. Quantitative analysis

3.3.3.1. AgriSETA grants

The results of the empirical survey on AgriSETA grants are presented in Table 3–2 below. Firstly, item B1N1 measured AgriSETA's ability to fund the industry need. B1N2 measured the efficiency of the funding process and B1N3, the effectiveness/sufficiency of the funding. B1N4 measured the grant disbursement and B1N5 measured the additional costs incurred by the employer.

The ability of AgriSETA to fund the industry need was measured on a four-point Likert scale, where 1 indicated a strongly-disagree response and 4 indicated a strongly-agree response. The grant efficiency process scored above 3 on average, meaning that respondents agree that the AgriSETA funding was sufficient for the need and the application process was efficient. The funding mechanism (2.89) and the grant disbursement (2.84) scored the lowest but still lean towards agreement.

B1N5 was measured at 2.98, implying that employers spent, on average, between R50 000 and R75 000, in addition to the AgriSETA grant on the learners. This might be the reason why smaller employers cannot afford taking on apprentices. It must be noted that the production value of the apprentice was not taken into account.

Table 3–2: AgriSETA grants

Item	Question	N	Mean	Std. Deviation	Strongly disagree(1)	Disagree(2)	Agree(3)	Strongly agree(4)
					Percentages			
B1N1	AgriSETA managed to fund the identified need for artisans within your work environment	49	3,22	0,743	4,1	6,1	53,1	36,7
B1N2	The grant application process was efficient	48	3,10	0,515	0	8,3	72,9	18,8
B1N3	AgriSETA's funding mechanism was effective to enable the artisans programme to be implemented	47	2,89	0,634	2,1	19,1	66,0	12,8
B1N4	AgriSETA disbursed the grant efficiently to allow for an effective implementation of the programme	44	2,84	0,608	2,3	20,5	68,2	9,1

3.3.3.2. Partnerships

Item C2N1 measured the need for additional partnerships and C2N2 measured the dependency/importance of partnerships. C2N3 measured the importance of the AgriSETA grant to include an allocation for partnerships while C2N4 measured AgriSETA's role in partnership development.

All the responses leant towards a positive agreement. AgriSETA's role in the creation of partnerships scored, on average, the lowest at 2.49. Respondents mostly agreed (2.98) that the AgriSETA grant must include an allocation for partnership development. This is indicative of employers struggling to establish partnerships

without any financial implications. Alternatively, partnerships might have a financial expense attached to them.

Although respondents agreed, on average, (2.74) that partnerships were needed to implement the programme, it should be noted that most respondents (82.4 per cent) were large employers that had the capacity to implement apprentice programmes on their own.

Table 3–3: Partnerships

Item	Question	N	Mean	Std. Deviation	Strongly disagree(1)	Disagree(2)	Agree(3)	Strongly agree(4)
					Percentages			
C2N1	Additional partnerships (on employer side) were concluded to assist with the implementation of the AgriSETA artisan programme	50	2,74	0,777	8,0	22,0	58,0	12,0
C2N2	The success of the artisan programme's implementation depended on the partnerships established	48	2,90	0,660	2,1	20,8	62,5	14,6
C2N3	AgriSETA grants must include an allocation for partnerships to be established	43	2,98	0,707	4,7	11,6	65,1	18,6
C2N4	AgriSETA played a role(s), in establishing and maintaining partnerships (employer side)	47	2,49	0,804	10,6	38,3	42,6	8,5

3.3.3.3 Curriculum

Item D3N1 measured the ability of the learning programme to train individuals to an acceptable level of competency. Item D3N2 measured the length of the programme and item D3N3 measured the AgriSETA's monitoring of programme implementation. Item D3N4 measured the feedback that AgriSETA provided to ensure that programmes are implemented successfully.

Respondents were positive (3.10) that the learning programme successfully trained individuals to competency levels that were acceptable to the industry. Respondents were also in agreement (3.02) that the curriculum was of a suitable length.

Table 3–4: Curriculum

Item	Question	N	Mean	Std. Deviation	Strongly disagree(1)	Disagree(2)	Agree(3)	Strongly agree(4)
					Percentages			
D3N1	The AgriSETA programme managed to train the individual to an acceptable level of competence	48	3,10	0,592	0,0	12,5	64,6	22,9
D3N2	Learners completed the learning programme within the prescribed period (3 years)	49	3,02	0,750	2,0	20,4	51,0	26,5
D3N3	AgriSETA's monitoring and evaluation of the programme implementation was successful	48	2,75	0,729	4,2	29,2	54,2	12,5
D3N4	AgriSETA provided regular feedback relating to the programme	46	2,26	0,648	10,9	52,2	37,0	0,0

The two elements that were scored lower were the monitoring and evaluation of AgriSETA. At 2.75, it is still a positive response, but respondents felt that AgriSETA did not (2.26) provide sufficient and regular feedback.

Item D3N5 measured the skills gaps that employers identified from newly-qualified artisans. In some cases, the respondents marked more than one skills gap they experienced in the workplace. These responses shown in Figure 3-4 below are significant and a very good indication of areas that need to be strengthened in the curriculum.

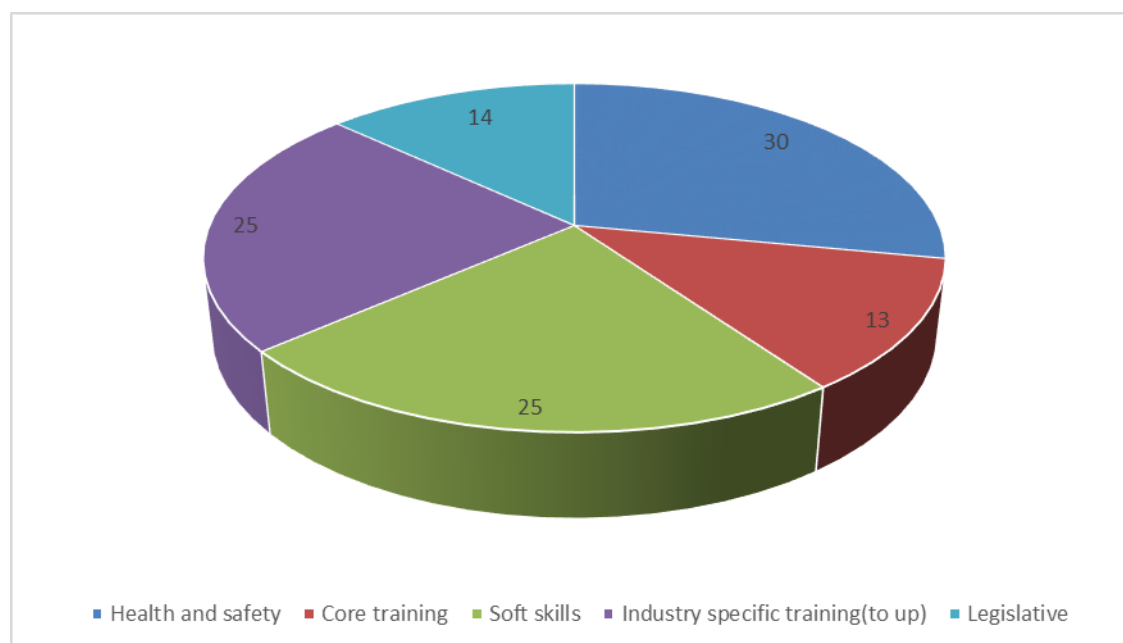


Figure 3-2: Competency gaps in curriculum

A significant number of responses (50 from 107) indicated that soft skills and industry-specific skills are lacking from the curriculum. In total, 25 or 23 per cent of the responses indicated that apprentices needed additional training on soft skills e.g. communication skills, computer skills, etc. A further 23 per cent felt that industry-specific skills must be included in the curriculum. Respondents also indicated that health and safety requires more prominence in the curriculum. In total, 28 per cent of responses identified this as the single highest element in the curriculum that needed attention.

Item D3N6 explored the reasons for apprentices not completing the programme within the prescribed three years. A significant 54 per cent of respondents identified personal reasons as the main reason for apprentices not completing the programme within the prescribed three years. However, the exact nature of these reasons was not further explored. Figure 3-5 indicates the various responses in relation to the apprentices completing the programme within the prescribed time. The throughput rate of apprentices is a significant issue, given the high cost of the programme and significant employer investment into the learning programme. The fact that only four respondents identified industry-related matters and a further eight per cent indicated workload as a barrier for not completing the learning programme, is indicative of the high selection criteria and employers' ability to create a workspace that is conducive to learning.

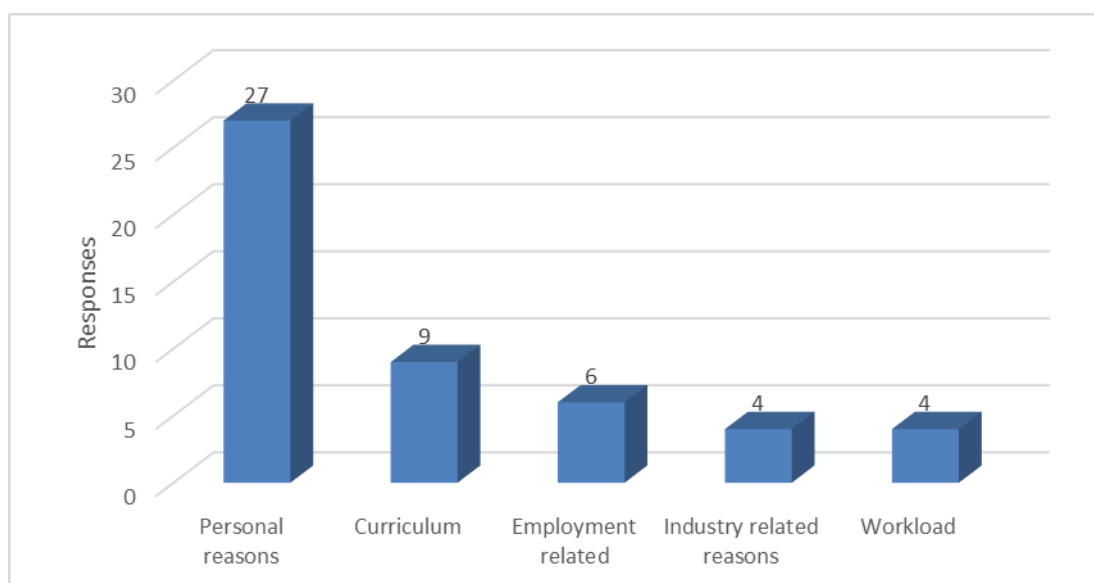


Figure 3-5: Reasons why apprentices do not complete the programme

Item D3N7 explored the specific programme challenges that were identified by the respondents. The on-the-job training component of the learning programme was

identified as the major challenge of this programme, with 30.9 per cent of the respondents highlighting it as a challenge. This is consistent with the literature review, nationally and internationally, as discussed in sections 2.4.7 and 2.5.8. Significant resources are spent in the workplace to mentor these apprentices and expose them to all the curriculum components. A further 10 respondents, or 23 per cent, identified the theoretical or institutional learning that normally takes place at TVET Colleges as a major challenge. The major programme challenges is highlighted in Figure 3-6 below:

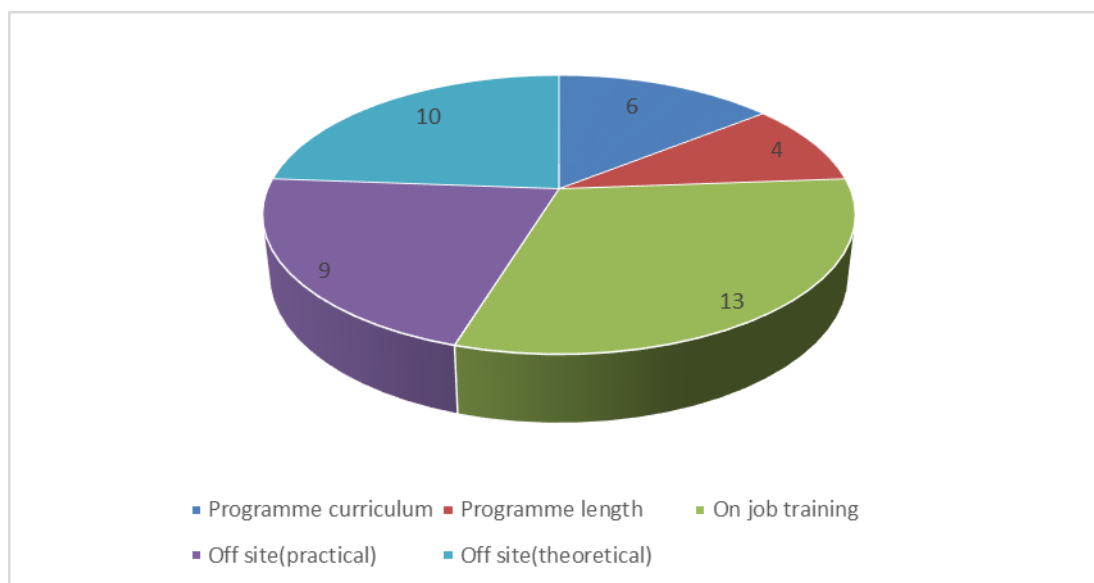


Figure 3-6: Programme challenges

3.3.3.4. Work readiness of newly-qualified artisans

Item E4N1 measured the capacity of newly-qualified artisans to function in the workplace. In total, 55 per cent of respondents agreed that newly-qualified artisans are fully capacitated to function in the workplace. A further 32.7 per cent strongly agreed that the newly-qualified artisans could function in the workplace. On average, respondents scored the functionality of apprentices at (3.18), meaning they agree that newly-qualified artisans are fully functional in the workplace.

Item E4N2 measured whether the newly-qualified artisans were able to function at the level of other artisans in the company. In total, 51 per cent of respondents agreed and 23.5 per cent strongly agreed that newly-qualified artisans could function on the same level as the other artisans in the organisation. However, 17.6 per cent disagreed with this statement. Item E4N3 measured whether the newly-qualified artisan needed additional mentoring after qualifying. Significantly, 52.9 per cent of respondents indicated that newly-qualified artisans still needed a level of mentoring.

A further 25.5 per cent strongly agreed that these artisans needed further mentoring. Respondents, on average, (3.04) fully agreed with this statement. This outcome underlines the importance of workplace learning and strong mentoring capacity in the workplace.

Item E4N4 explored the role of AgriSETA in ensuring that apprentices become work ready.

In total, 43.1 per cent of respondents agreed that AgriSETA played a role in ensuring that apprentices become work ready. However, 37.3 per cent of respondents disagreed that AgriSETA played a role in ensuring apprentices become work ready. Respondents scored this question at 2.47, meaning that respondents do not agree that AgriSETA played a leading role in ensuring that apprentices are work ready. AgriSETA's role in this regard might be limited to the implementation of the curriculum; a major portion of this responsibility would rest with the employers. The work readiness of apprentices is not only important for immediate employment opportunities but also has a significant effect on the transferability of skills to other employers or industries.

Table 3–5: Work readiness

Item	Question	N	Mean	Std. Deviation	Strongly disagree(1)	Disagree(2)	Agree(3)	Strongly agree(4)
					Percentages			
E4N1	The newly-qualified artisans are fully capacitated to work in the workplace	49	3,18	0,697	2,0	10,2	55,1	32,7
E4N2	The newly-qualified artisans could function at the level of other artisans in the company	49	2,98	0,777	4,1	18,4	53,1	24,5
E4N3	The newly-qualified artisans still needed mentoring to complete certain tasks	51	3,04	0,692	0,0	21,6	52,9	25,5
E4N4	AgriSETA played a leading role in ensuring that the apprentice is work ready	49	2,47	0,767	10,2	38,8	44,9	6,1

Item E4N5 measured the major shortcomings of newly-qualified artisans in becoming work ready and, importantly, item E4N6 measured the types of interventions that were needed from the employer to make the newly-qualified artisan work ready. In total, 62.7 per cent of respondents identified experience as a major shortcoming of newly-qualified artisans, with a further 23.5 per cent highlighting work ethics and 19.6 per cent, accuracy.

Figure 3-7 shows the type of interventions that employers needed to ensure that newly-qualified artisans become fully work ready. Industry-specific (product) training was identified as a major intervention from employers. In total, 29 responses indicated that new artisans had to be sent on product-specific training.

This is significant, given that the AgriSETA grant only funds training during the learning programme. Any training that is conducted after the apprentice qualifies is a cost to the employer. A further 24 responses indicated that they had to increase the supervision of the new incumbent and there was further loss in production for the employer.

Soft skills training was indicated as a further intervention. Fifteen respondents indicated that new artisans had to be put through soft skills training. This is consistent with the responses from question D4N5, which identified soft skills training as a shortcoming in the curriculum.

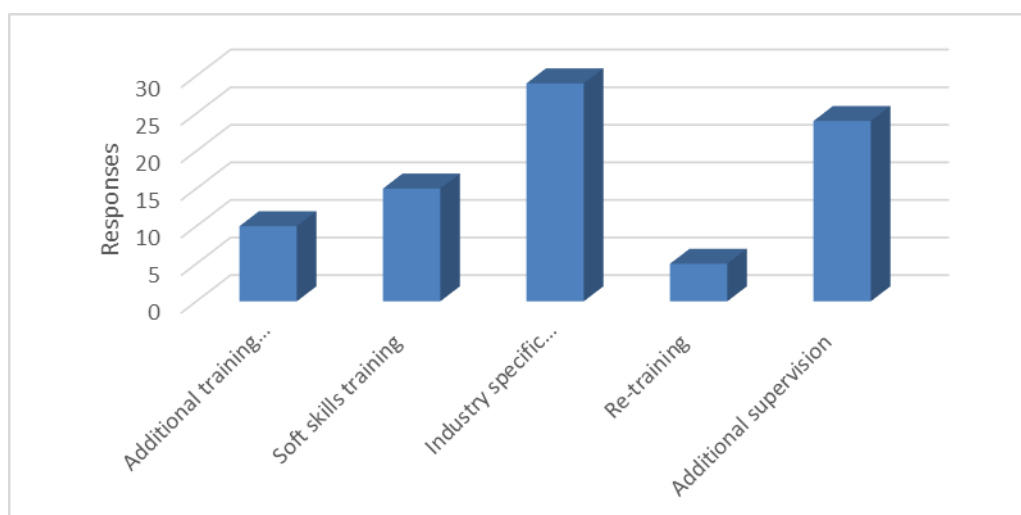


Figure 3-7: Employer interventions needed

3.3.3.5. Transferability

Item F5N1 measured to what extent artisans trained through the AgriSETA system are preferred within the industry when artisans are recruited. Respondents agreed (52.9 per cent) that their organisations preferred artisans who were trained through the AgriSETA system. Only 19.6 per cent disagreed with the statement, implying that they prefer artisans trained through other sectors.

Item F5N2 measured whether artisans are trained to the same standard in South Africa, inherently measuring perceptions of employers that training in some sectors

may be superior to others. More than half, (52.1 per cent) of respondents agreed that artisans in South Africa are trained to the same standard. However, 33.3 per cent of respondents disagreed, implying that artisans in some sectors are better trained than others.

Item F5N3 measures the employer's willingness to train and employ apprentices. Among the respondents, 47.1 per cent agreed that they train apprentices with a view to employing them and 39.2 per cent strongly agreed that apprentices are trained to be employed. This underlines the power of apprenticeships in creating employment and is confirmed by the literature review, sections 2.3.and 2.4.1.

Item F5N4 measures employers' willingness to trace artisans who left their employment, with a view to future vacancies. Only 38.3 per cent of employers indicated that they trace artisans once they leave their employment. Altogether, 46.8 per cent disagreed and indicated that they do not trace artisans with a view to future employment. On average, respondents scored this question at 2.49, meaning they do not agree with the statement. Item F5N5 measured whether employers consider employing artisans from other sectors as a risk. While 47.1 per cent of respondents disagreed that it is a risk to recruit apprentices from other sectors, 33.3 per cent did indicate that there is a risk if apprentices are recruited from other sectors. On average, respondents disagreed with the statement (2.39), meaning that they would look at artisans from other sectors when recruiting new employees.

Table 3–6: Transferability of artisans

Item	Question	N	Mean	Std. Deviation	Strongly disagree(1)	Disagree(2)	Agree(3)	Strongly agree(4)
					Percentages			
F5N1	My organisation prefers artisans trained through AgriSETA programmes when recruiting employees	46	2,98	0,649	0,0	21,7	58,7	19,6
F5N2	Artisans are trained to the same standard in South Africa	48	2,50	0,744	10,4	33,3	52,1	4,2
F5N3	My organisation trains apprentices with a view to future employment	48	3,31	0,689	2,1	6,3	50,0	41,7
F5N4	My organisation keeps track of artisans who have left our employment with a view to possible future vacancies	47	2,49	0,748	6,4	46,8	38,3	8,5
F5N5	It is a risk to recruit artisans from other sectors in South Africa	46	2,39	0,682	6,5	52,2	37,0	4,3

Item F5N7 measures the percentage of apprentices who were trained and employed by employers. Figure 3-8 indicates the percentage of apprentices who were trained by employers and offered employment. In total, 50 per cent of respondents indicated that they offered employment to 80 to 100 per cent of the apprentices they train.

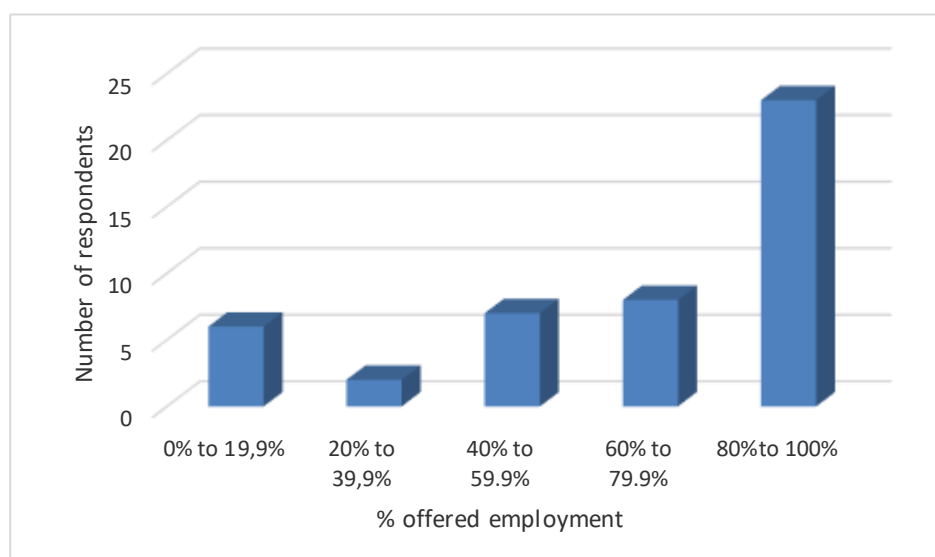


Figure 3-8: Percentage of apprentices trained who were offered employment

This confirms the ability of the artisan programmes to reduce unemployment in South Africa. A further 17.4 per cent indicated that they offered employment to 60 to 90 per cent of apprentices they had trained.

Item F5N8 explores the reasons why employment was offered to apprentices. While 47.1 per cent of the respondents indicated that a vacancy was the primary reason for offering employment to newly-qualified artisans, 33.3 per cent of respondents indicated that it was part of their talent management processes. The remaining 29.4 per cent of respondents highlighted that the attributes of the apprentice led them to extend an offer of employment.

In contrast, F5N10 measured the reasons for not extending an offer of employment to an apprentice who had qualified. 15.7 per cent of respondents indicated disciplinary problems and a further 15.7 per cent cited the lack of skills as a major reason for not extending an offer of employment. The absence of a vacancy came in at 64.7 per cent.

Item F5N11 explores employers' preferences when recruiting artisans from other sectors. Figure 3-9 indicates the preferences of respondents. Of the respondents,

72.5 per cent indicated that if they recruit artisans, they prefer the manufacturing and engineering sector.

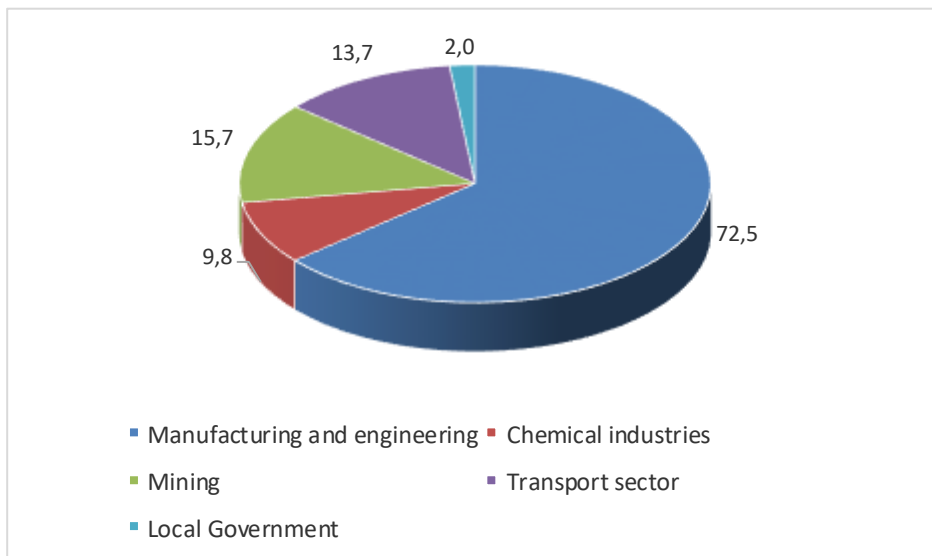


Figure 3-9: Preferences in recruiting artisans

The mining sector was the distant second preference at 15.7 per cent. Only two per cent indicated that they prefer the local government sector to recruit artisans.

Item F5N12 explored where artisans were employed after leaving their employment. It is important to understand the extent of skills transferability. The competition among agricultural entities makes it a challenge to retain talent in the sector. This is confirmed by 39.2 per cent of respondents indicating that artisans leave them to join other agricultural entities. A further 39.2 per cent indicated that artisans leave their employment for other equipment and mechanisation employers. 15.7 per cent of respondents indicated that employees leave their employment to start their own business. Only 5.9 per cent indicated that artisans find employment at SMMEs.

Item F5N13 explored the challenges of recruiting newly-qualified artisans from other sectors. Here, 47.1 per cent of respondents flagged experience as a key challenge. 19.6 per cent of the respondents felt that accuracy is a challenge when recruiting new artisans. Interestingly, a further 15.7 per cent said the artisans they recruit are not reliable. Item F5N14 explored trades for which employers would not consider recruiting artisans. In this, 23.5 per cent of the respondents indicated that they would not recruit diesel mechanics from other sectors. A further 17.6 per cent indicated that they would not recruit electricians from any other sector.

3.3.3. Correlation analyses

Cohen (1992) identified three effect sizes on the population –small effect size is 0.1, a medium effect size is 0.3 and a large effect size is 0.5 or higher. Table 3–7 below indicates the various effect sizes on the population.

Table 3–7 below indicates the various effect sizes on the population

Correlation	Effect sizes on the population
0	No correlation
0.1	Small correlation
0.3	Medium correlation
0.5	High correlation

(Source : Leyman 2011)

Levman (2011) describes statistical significance as a process to indicate that the results of an experiment or research are not random. A $p < 0.05$, practically means that there is less than a five-per cent chance that the outcome of a study occurred randomly. A $p < 0.05$ value indicates a high statistical significance between to variables and, in contrast, a $p > 0.05$ indicates a small or no statistical significance between two variables.

Cross-tabulations

Cross tabulation 1: Funded projects and acceptable levels of competence

A statistically significant correlation ($r = 0.44$, $p = 0.002$) exists between the need that was funded in the workplace and the individual who was trained to an industry-accepted level of competence as shown in table 3-8 below.

Table 3–8: Funded projects and acceptable levels of competence

Spearman's Rho	B1N1: need funded in the workplace		B1N1	D3N1
		Correlation Coefficient	1.000	0.439**
		Sig. (2-tailed)		0.002
		N	49	47
	D3N1: industry-accepted level of competence in the workplace	Correlation Coefficient	0.439**	1.000
		Sig. (2-tailed)	0.002	
		N	47	48

A further correlation was made with employer sizes as shown in table 3-9 below. The AgriSETA classifies employers as large if the number of employees exceeds 150, medium if the number of employees is between 50 and 149 and small if the number

of employees is below 50. The small and medium size employers were added, given the relatively low percentage of the overall sample.

Table 3–9: Funded projects and acceptable levels of competence correlated with employer size

Correlation with industry size				B1N1	D3N1
Spearman's Rho	Small and medium size employers	B1N1	Correlation Coefficient	1.000	0.497
			Sig. (2-tailed)		0.211
			N	9	8
		D3N1	Correlation Coefficient	0.497	1.000
			Sig. (2-tailed)	0.211	
			N	8	8
	Large employers	B1N1	Correlation Coefficient	1.000	0.455**
			Sig. (2-tailed)		0.004
			N	40	39
		D3N1	Correlation Coefficient	0.455**	1.000
			Sig. (2-tailed)	0.004	
			N	39	40

Small and medium size employers showed no significant correlation ($r = 0.5$, 0.211) between the need that was funded in the workplace and the level of competence of the employee who was trained. The lower significant correlation is indicative of the capacity of smaller employers to take on apprentices in the workplace. Large employers, on the other hand, showed a significant correlation ($r = 0.5$, $p = 0.004$). This is an indication of the capacity and size of these organisations to take on apprentices.

Cross-tabulation 2: Funded projects and the work readiness of newly-qualified artisans

A strong and significant correlation ($r = 0.4$, $p = 0.002$) was found between the need that was funded by AgriSETA in the workplace and the work readiness of the newly qualified artisans as shown in table 3-10 below.

Table 3–10: Funded projects and the work readiness of newly-qualified artisans

		B1N1	E4N1
B1N1: need funded in the workplace	Pearson Correlation	1	0.427**
	Sig. (2-tailed)		0.002
	N	49	48
E4N1: work readiness of newly-qualified artisans	Pearson Correlation	0.427**	1
	Sig. (2-tailed)	0.002	
	N	48	49

A strong and significant correlation ($r = 0.5$, $p = 0.009$) was found between the need that was funded by AgriSETA in the workplace and the work readiness of the newly-qualified artisans in large organisations as shown in table 3-11 below.

Table 3 – 11: Funded projects and the work readiness of newly-qualified artisans correlated to employer size

Correlation with industry size				B1N1	E4N1
Spearman's rho	Small and medium size employers	B1N1	Correlation coefficient	1.000	0.507
			Sig. (2-tailed)		0.200
			N	9	8
		E4N1	Correlation Coefficient	0.507	1.000
			Sig. (2-tailed)	0.200	
			N	8	8
	Large employers	B1N1	Correlation Coefficient	1.000	0.406**
			Sig. (2-tailed)		0.009
			N	40	40
		E4N1	Correlation Coefficient	0.406**	1.000
			Sig. (2-tailed)	0.009	
			N	40	41

No significant correlation ($r = 0.5$, $p = 0.2$) was found in small and medium size organisations. Larger organisations were more confident that artisans trained within their organisation are work ready.

Cross-tabulation 3: Levels of competence of apprentices trained, the capacity of newly-qualified artisans in the workplace and the functionality of newly-qualified artisans compared with other artisans.

A strong and significant correlation ($r = 0.5$, $p = 0.001$) exists between the competence of learners trained on the AgriSETA programmes and the competence of newly-qualified artisans as shown in table 3-12 below.

Table 3–12: Correlation between competence, capacity and functionality of artisans

		D3N1	E4N1	E4N2
D3N1: industry-accepted level of competence in the workplace	Pearson correlation	1	0.469**	0.388**
	Sig. (2-tailed)		0.001	0.008
	N	48	46	46
E4N1: work readiness of newly-qualified artisans	Pearson Correlation	0.469**	1	0.807**
	Sig. (2-tailed)	0.001		0.000
	N	46	49	48
E4N2: Level of functionality compared with other artisans	Pearson Correlation	0.388**	0.807**	1
	Sig. (2-tailed)	0.008	0.000	
	N	46	48	49

A very strong and significant correlation ($r = 0.8$, $p = 0.00$) was found between the work readiness of newly-qualified artisans and the functionality of newly-qualified artisans, compared to other artisans in the organisation. This is indicative of the quality of the training programme and the high levels of competence once learners enter the workplace as qualified artisans.

3.3.4. Open-ended questions

In sections B, C, D, E and G of the questionnaire, open-ended questions were asked to obtain a deeper understanding of the responses.

- ***Briefly explain your biggest challenge regarding discretionary grant funding?***

In total 42 employers responded to this question. The responses are summarised in table 3–13 can be summarised as follows:

Table 3–13: Responses–Challenges discretionary grant funding

Issue raised	% of respondents
Discretionary grant value	23.8%
Grant payment process	16.6%
Communication	21.4%
Administration	19%

The key words identified: application process, grant value, communication, paper-driven system, delay in payments, administrative burden.

The application process could be improved. Respondents felt that it took too long to apply and receive confirmation of a grant award. The application for a grant is still paper driven and respondents felt that AgriSETA, like other SETAs, should look into a paperless system-driven approach. In general, respondents recommended that the communication process between employers and AgriSETA should improve significantly to ensure that feedback is continuous.

- ***What recommendations can you put forward to improve the discretionary grant funding for artisans' development?***

In total 37 employers responded to this question. The responses can be summarised in table 3–14 as follows:

Table 3–14: Recommendations to improve grant funding

Issue raised	% of respondents
Discretionary grant value should increase	28%
Visibility/more interaction	10.8%
Communication should improve	16%
Administration should be simplified	13.5%

Key words identified: communication, site visits, payment procedure, more funding, more flexibility, reintroduce bi-annual meetings, cut down on admin, more guidance.

- ***What recommendations can you put forward to improve the AgriSETA artisans' development programme?***

In total 42 employers responded to this question. The responses can be summarised in Table 3–15 as follows:

Table 3–15: Recommendations to improve AgriSETA artisan programme

Issue raised	% of respondents
Curriculum updates required	14.2%
Programme implementation to be re-aligned	19%
Improved monitoring and evaluation	19%

Key words: monitoring and evaluation, AgriSETA's visibility, work on logbooks, regular review of training programme, workplace learning improved, improve training providers, communication, more guidance from AgriSETA.

Respondents indicated a dire need for AgriSETA's monitoring and evaluation of learning programmes. This would allow for continuous guidance and overall improvement of AgriSETA's visibility. The artisan programme logbooks should be reviewed to include latest technological content and clear guidance of the workplace component. Respondents highlighted the need for the workplace component to be strengthened and training providers further capacitated to improve their service offering.

- **It is a risk to recruit artisans from other sectors in South Africa. Motivate your answer**

In total 35 employers responded to this question. The responses can be summarised in table 3–16 as follows:

Table 3–16: Risks with recruiting artisans from other sectors

Issue raised	% of respondents
Industry-specific exposure lacking	40%
Standards of training	25.7%
Equipment-specific experience lacking	17.14%

Key words: experience, relevance of experience, some trades not up to standard. Standard should be the same nationally, specific industries' experience preferred, fundamentals stays the same, good screening and references important, qualification and workplace experience crucial, prefer training own 'appies' exposed to industry, depending on complexities of job, own employees know best.

Respondents felt that relevant experience, specific equipment, complexity of processes and the work environment are a challenge when employing artisans from other sectors. In some cases, respondents indicated that the training processes of artisans is somewhat standardised in South Africa and, therefore, the standard should be the same. However, differences in the quality of training providers would make a difference. Respondents from high volume processing industries indicated that experience in the high-volume production environment is non-negotiable if they choose to recruit from other sectors

The screening of individuals from other sectors is crucial, specifically looking at the qualification and relevant experience. In some industries, the preference remains to train their own apprentices and ensure that they are exposed to the whole industry.

- ***What is the biggest challenge when employing newly-qualified apprentices?***

The total number of 24 employers responded to this question. The responses can be summarised in table 3–17 as follows:

Table 3–17: Challenges when employing newly-qualified apprentices

Issue raised	% of respondents
Sufficient relevant experience	37.5%
Soft skills	29.1%
Salary expectations	8.3%
Transition from apprentice to artisan	20.8%

Key words: work readiness, depth of experience, transition from apprentice to artisan, accountable responsible, retention of talent, soft skills missing, attitude, needs supervision, qualifies vs experience, salary expectation, commitment to continued performance, not enough workplace exposure.

Respondents highlighted the depth of experience as a challenge and the fact that learners do not always spend enough time on the job prior to qualification. Therefore, they still require supervision when employed. In some cases, the transition from apprentice to artisan was elevated as a major challenge. Newly-qualified artisans are not ready to take responsibility or accountability for their work output. Respondents also flagged the difficulty in retaining young talent, especially in distinguishing a newly-qualified individual from an experienced one in terms of salary. Industries offer newly-qualified artisans higher salaries in some cases. Respondents indicated the need for soft skills for artisans, especially people and management skills, as a challenge when employing a newly-qualified artisan.

- ***What, in your opinion, is the biggest challenge (overall) for AgriSETA?***

The total number of 39 employers responded to this question. The responses can be summarised in table 3–18 as follows:

Table 3–18 Biggest challenge (overall) for AgriSETA

Issue raised	% of respondents
Communication	17.9%
Monitoring and Evaluation	10.25%
Administrative systems	17.94%
Funding mechanism	30.76%

Key words: communication, administration, value of grants, delayed payments, monitoring and evaluation, AgriSETA capacity, manual processes.

Respondents flagged the inefficiency of communication flow to employers as a major challenge. This, together with an outdated paper-based administration system, is a source of serious frustration for employers. The value of the grants remains a challenge, given the high cost of the learning programme and delayed payments from AgriSETA, as a result of an inefficient administrative system. Respondents also highlighted the need for monitoring and evaluation of projects. This would allow for any discrepancies to be resolved and would lift the output and quality of the artisan programmes.

- ***What, in your opinion, is the biggest benefit (overall) that AgriSETA creates?***

A total number of 39 employers responded to this question. The responses can be summarised in table 3–19 as follows:

Table 3–19 Biggest benefit (overall) for AgriSETA

Issue raised	% of respondents
Create opportunities	20.5%
Skilled artisans	12.8%
Improving skills	17.94%
Providing funding	28.20%

Key words: funding, opportunities, creating skills especially rural context, training of disadvantaged individuals, creation of employment, training for scarce and critical skills.

Respondents highlighted the fact that AgriSETA provides funding through its discretionary grant as a major benefit. The creation of opportunities, especially for young people in a rural context, is a major contribution of the SETA. The AgriSETA programmes create employment, especially through the training of critical and scarce skills.

3.4. CHAPTER SUMMARY

In this chapter, the discussion on the research findings started by explaining the sample type, size, response rate and methodology used to collect the data. An in-depth discussion of the questionnaire development and what is contained in the questionnaire followed. The greatest part of the chapter was taken up with a descriptive statistical discussion of the data that was collected. The chapter was concluded with a discussion of the feedback from respondents on some open-ended questions included in the questionnaire. The next chapter will conclude the research project

CHAPTER 4: CONCLUSION AND RECOMMENDATIONS

4.1 INTRODUCTION

In the final chapter, the conclusions are summarised and recommendations made, based on the findings of the study. Recommendations relating to the literature review and future studies will be made. The primary objective of this research was to determine to what extent the AgriSETA Artisan projects enabled artisans to be qualified and employed in the Agricultural sector for the five-year implementation period of the NSDS III. The secondary objectives were to determine if the AgriSETA projects addressed the middle-level skills in the sector and, secondly, to determine if AgriSETA established the projects and partnerships to enable the required number of artisans to be trained and be work ready.

4.2. MAIN FINDINGS

The conclusions made from the literature review and the empirical investigation will be reported separately:

4.2.1. Literature review

The importance of apprenticeship programmes and the significant effect on world economies can be seen by the international attention that apprenticeship programmes enjoy. The literature review of international apprenticeship programmes indicated that, internationally, there are similar challenges in keeping the apprenticeship models relevant and effective.

Internationally, apprenticeship programmes get massive financial backing from governments in Australia, Germany, Canada, England and France. Apprenticeship programmes make up 1.5 per cent of the total workforce. The South African programme is very small in comparison (Smith and Kemmis, 2013:15). Internationally, apprenticeship numbers are on the decline but, in the South African context, the number of learners entered increased by 9.18 per cent, on average, for the period and completions increased by 13.90 per cent, on average, for the 5-year period (NAMB, 2018). Despite this upswing, 41.3 per cent of the learners did not complete the learning programme within the given time. This equates to a significant waste of funding. During the 2011–2016 period (NAMB, 2018), AgriSETA allowed for 1 189 apprentices to enter the system. During the same period, 899 apprentices completed the apprenticeship programmes. The leading trades in the agricultural

sector were electricians at 22.11 per cent, followed by millwrights at 13.62 per cent and tractor mechanics at 13.28 per cent (NAMB, 2018). It is clear from the literature that AgriSETA funded the need in the sectoral and national spheres, taking into account that electricians and millwrights are in high demand, especially within processing plants like sugar and citrus. Tractor mechanics are predominantly required by the suppliers of mechanical equipment and large producers of grain, maize and soya.

The funding mechanisms, nationally and internationally, are under pressure to produce the artisans that the economy needs to grow. Learner grants with low interest loans, voucher systems and countries like South Africa that pay one uniform amount, are examples of the various initiatives to ensure that apprenticeships become a preferred option of learners exiting the schooling system. The funding mechanism is very structured in the South African context – a singular funding mechanism is driven by the National Artisan Moderation Body.

Internationally, the drivers for artisans compare favourably with the South African context. In Brazil, the main driver is market access and, in Australia, rapid technological advances. However, the main thrust is access to the labour market and the articulation between education and the labour market.

The challenges with the international apprenticeship programme show significant alignment with the South African model. The following were identified as challenges:

- Access to workplaces remains a challenge, given the tough global economic climate
- Perceptions—the public perception nationally and internationally—of apprentice programmes is very negative
- Skills planning, nationally and internationally, remains a challenge, given the fast pace of technological advancements and the mobility of skills
- Employers – the role of employers is central to developing the quality of artisans needed to grow an economy. Internationally, governments realise this important link. Various incentives are used to attract employers to this programme. These include exemption from taxes, social contributions or other concessions or exemptions. The South African model currently does not have

these incentives, over and above the normal grant support of these programmes, especially the off-the-job (institutional) training

- Regulatory framework – The disruptive technologies that characterise the industry environment call for rapid changes to respond proactively to the work environment. The South African system tends to be slow to switch to technology to produce artisans with skills the market needs.

Internationally and locally, apprenticeship programmes are seen as a vehicle to:

- addressing youth unemployment
- the transferability of skills through alignment with other qualification frameworks and
- targeting specific groups of learners from minorities, women and disabled learners. This is why increased access to learning is crucial.

Various innovative ways to align learning with the operational complexities of a workplace were identified. In Brazil, innovations like online platforms to increase learners access and England, Germany and Australia, where learners are being shared by companies to reduce costs. These are all attempts to get more youth into apprenticeships and open up medium- to small-scale businesses to apprentices.

The employability of newly-qualified artisans remains pivotal in ensuring that new entrants in the labour market are functional. Couldrey and Loveder (2016:12) made the point that the true quality of an apprenticeship is primarily determined by the on-the-job performance of the learner and not merely the achievement of an academic qualification. Apprenticeship programmes, especially in the European Union, lead to improved employment possibilities. On average, 60–70 per cent of apprentices are employed directly after completing the programme. This figure goes up to 90 per cent in some countries.

The cost of apprenticeship programmes remains high and small and medium size employers will struggle to take on apprentices. In South Africa, the employer will contribute at least 46 per cent of the cost, if the SETA grant is subtracted. The research found that 63.2 per cent of artisans are employed in urban areas. This obviously poses a major risk to the agricultural sector, which is predominantly rural.

4.2.2. Empirical investigation

- **Demographic information**

The majority of the respondents (55 per cent) were male and 45 per cent were female. The majority of the respondents' (64.7 per cent) highest qualification was at master's degree level. The highest percentage of respondents (56 per cent) can be classified as managers, with 32 per cent indicating that they were professionals or technicians and associate professionals. The highest number of respondents (23.9 per cent) was from the agricultural machinery suppliers with the sugar industry accounting for a further 17.4 per cent of respondents. The horticulture subsector accounted for 15.2 per cent of respondents.

- **AgriSETA grants**

Respondents agreed that the AgriSETA funding was sufficient for the needs of their institution and that the application process was efficient. The funding mechanism (2.89) and the grant disbursement (2.84) scored the lowest, but still lean towards agreement. Respondents indicated that they spent between R50 000 and R75 000 in addition to the AgriSETA grant. This confirms the findings of section 2.3.8 of the literature review, that employers will spend up to 46 per cent of the total cost of the AgriSETA grant is subtracted.

- **Partnerships**

Respondents agreed that partnerships are needed for the programme to be implemented successfully. The AgriSETA's role in establishing partnerships leant towards a negative response. The employer size of the respondents must be taken into account; 82.4 per cent of the respondents were from large companies that could implement the programme without direct partnerships.

- **Curriculum**

Respondents fully agreed that the learning programme produced individuals with competency levels that were acceptable to industry. This response is important, given that individuals with acceptable competency levels are also more employable and functional in the workplace. This will provide opportunities for employers to earn some return on their investment.

Respondents indicated that although the technical skills were at an acceptable level, soft skills, in general, were lacking in the curriculum and additional training was needed. Industry specific and health and safety skills were also indicated as a gap in the curriculum. Most respondents agreed that the curriculum was the correct length

and the main reasons for apprentices not completing the programmes were related to personal matters.

Respondents indicated that the on-the-job component of the learning was the biggest challenge in implementing the learning programme. This response is confirmed by the literature review section 2.2.11, confirming this challenge internationally. A major secondary challenge was the theoretical component at a TVET college.

- **Work readiness of newly-qualified artisans**

Respondents fully agreed that the AgriSETA-funded artisan programme capacitated newly-qualified artisans to be fully functional in the workplace. They also agreed that newly-qualified artisans can function at the level of other artisans in the organisation. The need for additional mentoring of newly-qualified artisans was confirmed, given that they do not have the experience of older artisans. Respondents agreed that work experience was the major shortcoming of newly-qualified artisans.

This response is to be expected, given that experience in the workplace can only be gained by physically working as an artisan. The importance of the workplace as a learning environment is underlined here. This again confirms the findings of section 2.2.11 that the workplace is a decisive factor in determining the quality of the future artisans.

- **Transferability of skills**

A key component of any programme is the transferability of skills, allowing individuals to move to other entities and sectors. Employers indicated that they preferred artisans trained by AgriSETA. The programme is held in high regard by employers, meaning that artisans trained through the AgriSETA programme would be readily employed by employers in the sector. A large percentage of employers indicated that they feel artisans are trained to the same level in South Africa. Although this study did not look at the apprentice programme in all sectors of South Africa, it would increase the mobility of artisans nationally. In this context, employers are recruiting artisans from various sectors, the manufacturing sector being the most prevalent sector from which employees are recruited. Employers also indicated that they train apprentices with a view to employ them. This is consistent with employers indicating that between 80 and 100 per cent of apprentices will be employed after training. This is confirmed by literature in section 2.2.9 as an international trend. It underlines the power of apprenticeships as a vehicle to create employment and get youth into the labour market. The retention of talent in organisations is important to

ensure that services can continue. Most apprentices leave employers to join opposition entities and the suppliers of agricultural equipment. Diesel mechanics and electricians from other sectors were singled out by employers as trades they would be hesitant to recruit.

4.2.2.1. Cross-tabulations

The cross-tabulations were done to measure if there is a statistically significant relationship between:

- The relationship between AgriSETA's grant-funded projects and if the artisans were produced at an industry-accepted level of competence. The cross-tabulation will measure if the product that AgriSETA's artisan programmes produce meet the industry standards:

A statistical significant correlation exists ($r = 0.44$, $p = 0.002$) between the need that was funded in the workplace and the individual that was trained to an industry-accepted level of competence. The AgriSETA programmes produce artisans for the industry that are of an acceptable level of competence. These artisans have the knowledge and skills to function in the workplace.

- The relationship between AgriSETA's grant-funded projects, if the artisans are at an industry-accepted level of competence and the employer size. This cross-tabulation will measure the ability of the organisations—taking their size into account—to take on apprentices and train them to a level of industry-accepted competence.

The lack of capacity of small and medium size employers to take on apprentices and train them to an acceptable level of confidence was confirmed. There was a level of correlation (0.497) but it was not significant ($r = 0.211$).

This confirms section 2.2.8 of the literature review that small and medium companies struggle to take on apprentices. New and innovative ways are needed to open these companies to apprentices. The low number of respondents that are classified as small and medium might influence this outcome and more extensive studies could come to a different conclusion. When correlated with large employers, there is a significant correlation ($r = 0.455$, $p = 0.004$), underlining the capacity that is needed to take in apprentices.

- The relationship between the artisan programmes funded by AgriSETA and the work readiness of newly-qualified artisans. The cross-tabulation will

measure if AgriSETA-funded programmes produced artisans who are work ready and effectively employable within the industry.

A significant correlation ($r = 0.427$, $p = 0.002$), exists between the programmes funded and the work readiness of artisans who were trained. This confirms that artisans trained through AgriSETA-funded programmes are work ready and can function in the organisation. If the industry confirms that they are work ready, it also increases the employability of a newly-qualified artisan.

A significant correlation ($r = 0.406$, $p = 0.009$) exists between the work readiness of the artisans trained and the large organisation. The organisations that take responsibility for the training of their own apprentices are clearly confident that their product is ready to enter the work environment. A correlation (0.507) could be found with smaller organisations, but with a low significance (0.2). Again, the sample size of the smaller organisations might influence the outcome.

- The relationships between the levels of competence of apprentices trained, the capacity of newly-qualified artisans in the workplace and the functionality of newly-qualified artisans compared with other artisans. This cross-tabulation measured if the apprentices who were trained on the AgriSETA programmes to an industry-accepted competence could function in the workplace as artisans and perform at the level of other artisans.

A significant correlation ($r = 0.469$; $p = 0.001$) was found between the competence of apprentices trained and the capacity of newly-qualified artisans in the workplace. This is a strong indication that the competencies gained during training are carried into the workplace and that newly-qualified artisans have the capacity and competencies to function in the workplace. A further significant correlation ($r = 0.388$; $p = 0.008$) exists when the newly-qualified artisans were compared with other artisans in the work environment. Employers confirmed that they compared very well and could function at the same level. Employers did confirm that newly-qualified artisans still needed a level of mentoring, however, given that they lack the work experience as a qualified artisan. A significant statistical correlation ($r = 0.807$; $p = 0.00$) exists between the work readiness of newly-qualified artisans and the level of functionality, compared to other artisans. The newly-qualified artisans are work ready and compare very well in terms of functionality.

4.2.2.3. Open-ended questions

Various open-ended questions were included in the questionnaire to obtain further insight into the various subsections. Two main challenges were highlighted with the discretionary grant funding process. The first was that the application process was still a paper-driven exercise, making it very challenging. The second challenge was that employers require a constant, reliable flow of information.

These two challenges were also echoed when asked what needed to be done to improve the process. In addition, employers called for more flexibility in the system and a total reduction of administration.

In terms of the learning programme, employers called for increased monitoring and evaluation of the programme to strengthen the support on the ground. The workplace component was again highlighted as an important element of the programme and the administrative capacity of the employers to manage this programme should be strengthened.

Employers expressed their willingness to recruit artisans from other sectors, especially when specific experience and qualifications are needed. An example is the skills set required for a high-volume production unit. The relevant experience, exposure to specific equipment, the work environment and the complexities of the processes played a role when recruiting artisans from other sectors.

The main challenge employers experienced when employing newly-qualified artisans is in-depth experience. This is to be expected if artisans were not trained within the specific workplace or the on-the-job component was not sufficient to capacitate the apprentice. The transition from apprentice to artisan, with the added responsibilities, is a challenge for some artisans. By law, artisans who qualify must take full responsibility for work done under their supervision. With the added responsibility of managing the employees working with them, this could pose serious challenges.

The biggest challenges with the AgriSETA learning programme centre around the paper-based administrative system that causes serious frustration on the employer side. Employers also felt that improved monitoring and evaluation of programme

implementation could significantly improve the communication channels between AgriSETA and the employer.

The biggest benefit the AgriSETA programme offers is opportunities to the youth, especially rural, to gain access to a learning programme that would, under normal circumstances, be beyond their reach because of finances. The ability of the programme to create job opportunities makes the AgriSETA artisan programme the ideal vehicle to alleviate poverty and unemployment in South Africa.

4.3. STUDY EVALUATION

4.3.1. Primary objective

The primary objective of this exploratory study was to answer if the AgriSETA artisan projects enabled artisans to be qualified and employed in the agricultural sector. These projects did enable artisans to be qualified and employed within the agricultural sector (See sections 3.3.3.4 and 3.3.3). The percentage of employees who were employed in some industries in the sector is as high as 90 per cent (See section 3.3.3.5). This is further underscored by the high and significant correlation with the funded projects, artisan's levels of competency and functionality in the workplace (See section 3.3.3). A very high percentage of employers indicated that they take on apprentices with a view to employing them (AgriSETA trained 1 189 and qualified 899 artisans specifically for the agricultural sector, See section 2.5.11).

4.3.2. Secondary objectives

The first secondary objective of the study was to determine if the middle-level skills in the sector were addressed by AgriSETA. An artisan programme is classified as a middle-level skill and AgriSETA did establish projects with partners to address middle-level skills (See section 3.3.3.2). It must be noted that the artisan training programme is only one of various learning programmes to address middle-level skills.

The last objective of the study also explored AgriSETA's partnerships and projects that enabled the required number of artisans to be trained and be work ready. Employers confirmed that the need for artisans was addressed in their workplaces through the AgriSETA-funded projects and that newly-qualified artisans were competent and had the capacity to function fully in the workplace (See sections 3.3.3.1., 3.3.3.3. and 3.3.3.4) The high percentage of newly-qualified artisans who

were employed is an indication that the programme prepared the learners to be work ready.

4.4. RECOMMENDATIONS AND MANAGERIAL IMPLICATIONS

4.4.1. Future research

The sample size in this exploratory study was too small to run a Cronbach's alpha test to measure the reliability of the data. This study only focused on artisan development programmes. Future studies should include all middle-level skills funded by the AgriSETA. This would provide a data set that could be tested for reliability.

The programme specifically focused on understanding if AgriSETA provided the mechanisms in terms of projects and partnerships to address the artisanal skills needs within the industry. However, future research should include elements to fully understand the extent of the skills need in the industry and if AgriSETA addressed the full need.

The measuring instrument focused on employers within the 11 subsectors of AgriSETA. This effectively excluded the opinions of beneficiaries. Future studies should include instruments where learner's experiences and opinions could be taken into account.

4.4.2. Industry

The following recommendations flow from the research for the following stakeholders:

- **AgriSETA**
 - The administrative burden associated with the programme must be addressed to assist employers in administering the programme
 - Monitoring and evaluation of the programme must be strengthened to provide support within the workplace
 - AgriSETA must investigate various channels to improve the communication to its clients, specifically in terms of programme requirements and grant payments
 - More flexibility must be built into the programme implementation to allow for partnership-funding to increase access of the programme, specifically in smaller and medium size workplaces
 - Consider including new elements into the curriculum. This includes soft skills and new technology to make the programmes more relevant.

- **Industry**

- The workplace component is crucial to the quality of the artisan produced
- Newly-qualified artisans will have the set of competencies in the workplace to make them functional. However, ongoing mentoring will be required to make the transition from apprentice to artisan easier
- The alignment between the workplace and the curriculum is challenging, given the complexities of the work environment. The workplace remains the best training space, however.

4.5. CONCLUSION

Artisan development programmes remain one of the most important vehicles available to government to increase the youth's access to employment, alleviate poverty and connect the educational system to the labour market. Governments must continuously review and adapt policy and curricula to ensure that programmes remain relevant and keep up with technology.

The partnership between government and the public sector to open workplaces to apprentices is at the core of ensuring that quality artisans are produced. The contribution of apprenticeship models to the economies of countries cannot be disputed but, despite this, perception of these programmes remain negative. It is upon all relevant stakeholders to ensure that career guidance is strengthened to change perceptions and make a trade the career of choice.

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Annexure A: Cover letter

Cover letter

Evaluation AgriSETA artisan programme for the period 2012–2017

Dear Participant

I invite you to participate in a research study entitled: To what extent did the AgriSETA artisan projects enable artisans to be qualified and employed in the Agricultural sector?

I am enrolled in an MBA programme at the North-West University in Potchefstroom. This study is in partial compliance with the requirements of the programme. The purpose of the research is to evaluate to what extent the AgriSETA Artisan projects enable artisans to be qualified and employed in the agricultural sector

The enclosed questionnaire has been designed to collect information on: AgriSETA projects, partnerships, employability and employment status of the qualified individuals.

Your participation in this research project is completely voluntary. You may decline altogether, or leave blank any questions you are not comfortable with or withdraw at any time. There are no known risks to participation beyond those encountered in everyday life. Your responses will remain completely confidential and anonymous. Please do not attach your name to the survey. Data from this research will be kept strictly confidential and reported only as a collective combined total.

If you agree to participate in this project, please answer the questions on the questionnaire as best you can. It should take approximately 15 minutes to complete. **Please return the completed survey to Frikkie Fouche by e-mail. Once the project is completed, all surveys will be destroyed.**

If you have any questions or complaints about this study, feel free to contact *Frikkie Fouche*, at Frikkie@agriseta.co.za

Thank you for your assistance in this important endeavour.

Sincerely yours

Frikkie Fouche

Annexure B: Consent form

Consent form

	Description	Yes	No
1.	I understand what my participation will involve		
2.	I have been given the opportunity to ask questions and have them answered to my satisfaction		
3.	I agree to take part in this project		
4.	I understand that my participation is completely voluntary and that I can withdraw at any time without prejudice, now or in the future		
5.	I consent to how the data will be handled, stored and archived		
6.	I consent to how results will be disseminated		
Investigator Name:		Respondent name	
Investigator signature		Respondent signature	
Date:		Date:	

Annexure C: Questionnaire

Section A: Cross mark (x) in the relevant boxes to indicate your response.																
1. Gender	Male	1	Female	2												
2. What is your home language	Afrikaans	1	English	2	Nguni (isiZulu/isiXhosa/isiSwati)	3	Sotho (Sepedi/Sesotho)	4	Venda (TshiVenda)	5	Tsonga-Shangana	6	Khoi-San	7	Other	8
3. What is your highest qualification	Masters	1	Post Graduate Certificate/Diploma	2	Bachelors Degree	3	Diploma Certificate	4	Secondary School (Grade 12 or less)	5	Primary School	6				
4. In what category does your current occupational groups fall	Manager	1	Professional	2	Technicians and Associate Professional	3	Clerical Support Worker	4	Service and Sales Worker	5	Skilled Agricultural, Forestry, Fishery, Craft And Related	6	Plant and Machine Operator and Assembler	7	Elementary Occupation (Performance)	8
5. In what sub-sector is your employer classified	Fibre	1	Mining, Pet Food & Animal	2	Tobacco	3	Sugar	4	Poultry	5	Horticulture	6	Aquaculture	7	Red Meat	8
	Grains and Cereals	9	Agricultural Machinery	10	Pest control	11										
6. Indicate the years that artisan programmes were implemented within your current workplace	2011	1	2012	2	2013	3	2014	4	2015	5	2016	6	2017	7	I don't know	8
7. What was your specific role in the artisan programme	Supervisor	1	SDF	2	Mentor	3	Human Resources	4	Manager	5	Training and	6	Not directly	7		
8. What specific learning programme was implemented in your workplace	Electrician	1	Millwright	2	Diesel Mechanic	3	Tractor Mechanic	4	Mechanical Fitter	5	Fitter and Turner	6	Welder	7	Other. Briefly specify below	8
9. How would you classify your employer size	Small (1-49 employees)	1	Medium (50-149 Employees)	2	Large (150+ employees)	3										

Section B									
This section will require information about AgriSETA projects, partnerships, training programme, work readiness and employment of the beneficiaries. Please provide the most appropriate answer in the space provided below the									
1.1. AgriSETA managed to fund the identified need for artisans within your work environment.	Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4	
1.2. The grant application process was efficient	Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4	
1.3. AgriSETA's funding mechanism was effective to enable the artisans programme to be implemented	Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4	
1.4. AgriSETA disbursed the grant efficiently to allow for an effective implementation of the programme	Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4	
1.5. The additional expenditure(Rand) per learner required from employer/s to ensure that the programme is implemented successfully	From 0 to 24 333	1	About 25 000 to 43 333	2	About 50 000 to 74 333	3	About 75 000 to 99 333	4	More than 100 000
1.6. I experienced the following specific challenges with AgriSETA's Discretionary Grant funding	Grant value	1	Learner registration	2	Communication	3	Administration	4	Tranche payments
1.7. Briefly explain your biggest challenge regarding discretionary grant funding?									
1.8. What recommendations can you put forward to improve the discretionary grant funding for artisans Development?									
SECTION C									
2.1. Additional partnerships(on employer side) was concluded to assist with the implementation of the AgriSETA Artisans programme.	Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4	
2.2. The success of the artisan programme implementation depended on the partnerships established	Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4	
2.3. AgriSETA grants must include an allocation for partnerships to be established	Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4	
2.4. AgriSETA's played a role(s), in establishing and maintaining partnerships(Employer side)	Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4	
2.5. Partners(employer side) played the following role(s) in the implementation of the Artisan programme	Administration (POE)	1	Additional (Top-up) training	2	Mentoring	3	SETA Administration	4	Co-funding
2.6. The monetary value of the partnership was:	From 0 to 24 333	1	About 25 000 to 43 333	2	About 50 000 to 74 333	3	About 75 000 to 99 333	4	More than 100 000
SECTION D									
3.1. The AgriSETA programme managed to train the individual to an acceptable level of competence.	Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4	

3.2. Learners completed the learning programme within the prescribed period (3 years)			Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4
3.3. AgriSETA's monitoring and evaluation of the programme implementation was successful			Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4
3.4. AgriSETA provided regular feedback relating to the programme			Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4
3.5. The additional elements/skills/competencies required added by the employer to add to the curriculum?	Health Safety and	1	Core training	2	Soft skills	3	Industry specific training(top up)	4	legislative	5
3.6. Apprentices did not complete the programme in 3 years for the following reason(s)	Personal reasons	1	Curriculum	2	Employment related	3	Industry related reasons	4	Workload	5
3.7. The following challenges were identified with the AgriSETA Artisans Training programme?	Programme curriculum	a	Programme length	b	On training job	c	Off site training(Practical)	d	Off site training(Theoretical)	e
3.8. What recommendations can you put forward to improve the AgriSETA Artisans Development programme?										
SECTION E										
4.1. The newly Qualified Artisans' are fully capacitated to work in the workplace.			Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4
4.2. The newly Qualified Artisans' could function at the level of other artisans in the company			Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4
4.3. The newly Qualified Artisans' still needed mentoring to complete certain tasks			Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4
4.4. AgriSETA played a leading role to ensure that the apprentice is work ready			Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4
4.5. The main shortcomings of newly Qualified Artisans when it comes to being work ready is:	Experience	1	Work skills	2	Reliability	3	Hand skills	4	Accuracy	5
4.6. The employer had to implement the following measures to make the artisan work ready.	Additional training(curriculum related)	1	Soft skills training	2	Industry specific training(product related)	3	Re-training	4	Additional supervision	5
4.7. What recommendations can you put forward to improve the AgriSETA Artisans Development programme?										
SECTION F										
5.1. My organisation prefer artisans trained through AgriSETA programmes when recruiting employees			Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4
5.2. Artisan 's are trained to the same standard in South Africa			Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4
5.3. My organisation train apprentices with a view of future employment			Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4

5.4. My organization keep track of artisans that left our employment with a view of possible future vacancies	Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4				
5.5. It is a risk to recruit artisans from other sectors in South Africa	Strongly Disagree	1	Disagree	2	Agree	3	Strongly agree	4				
5.6 Briefly motivate your answer in 5.5												
5.7. The percentage of apprentices that were trained in the period 2011-2016 that were offered permanent employment:	From 0% to 19,9%	1	About 20% to 39,9%	2	About 40% to 59,9%	3	About 60% to 79,9%	4	About 80% to 100%	5		
5.8. The decision to offer employment to the apprentices that qualified was based on:	Vacancy	1	Planned expansion	2	Talent management processes	3	Legal clauses in the training agreement	4	Attributes of the apprentice	5		
5.9. What in your opinion is the biggest challenge when employing newly qualified apprentices?												
5.10. The decision <u>not to</u> offer employment to apprentices that qualified was based on	No vacancies	1	Economic forecast	2	Lack of skills	3	Legislative (EE)	4	Disciplinary	5		
5.11. We consider artisans for employment from the following sectors:	Manufacturing and Engineering	1	Chemical industries	2	Mining	3	Transport sector	4	Local Government	5		
5.12. Artisans that left our employment were mostly employed in:	Other Agriculture entities	1	SMME's	2	Transport sector	3	Equipment and Mechanization	4	Own business	5		
5.13. The following challenges were experienced in appointing a newly qualified artisan's from other sectors	Experience	1	Work ethics	2	Reliability	3	Hand skills	4	Accuracy	5	Quality of output	6
5.14. We <u>will not</u> consider employing Artisans from other sectors in the following trade(s):	Mechanical Fitters	1	Electricians	2	Tractor Mechanics	3	Millwrights	4	Fitter and Turners	5	Diesel Mechanics	6
SECTION G												
6.1. What in your opinion is the biggest challenge (overall) for AgriSETA?												
6.2. What in your opinion is the biggest benefit (overall) that AgriSETA create?												
Thank you for the time that you took to complete this questionnaire, kindly e-mail the completed questionnaires to frikkiefouche6@gmail .com												

Annexure D: Consent from AgriSETA



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AgriSETA House
529 Belvedere Street, Arcadia, 0083
Tel: (012) 301 5600
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Email: info@agriseta.co.za

2019/02/09

TO: Prof. R Lotriet- Promoter
NWU Ethical Committee

RE: MASTERS OF BUSINESS ADMINISTRATION STUDIES-FJ FOUCHE STUDENT NUMBER 23682469

AgriSETA as an enabler of capacity building continuously look at ways to improve the delivery mechanisms of its programmes and projects. One method of ensuring that the delivery model of the organization continuously improve is research.

AgriSETA approved in the 2018 financial year to fund a Masters of Business administration study for Mr. F.J. Fouche student number 23682469. AgriSETA fully supports the studies of Mr. Fouche; this letter further serves to confirm that:

- Mr. Fouche obtained approval from the Governance and Strategy subcommittee of the AgriSETA board to continue with his studies and research;
- The AgriSETA's board fully supports Mr. Fouche's study and dissertation that will focus on the research of the AgriSETA's Artisan Development programme;
- Mr. Fouche is given approval to access and use all relevant information that AgriSETA have, that will assist him in completing his research;
- Mr. Fouche is given approval to conduct his research with the clients of AgriSETA;
- The AgriSETA's board view research of this nature as crucial to the organisation and that it would add value to all levels of the organisation;
- The AgriSETA board received assurance that the use of information would be in an ethical manner, and for the sole purpose of the research.

Warm regards

Mr. C van der Rheede- Chairperson AgriSETA board

• Mr C van der Rheede - Chairperson • Mr G Benjamin - Member • Ms L Botsheleng - Member • Mr R Gerritzen - Member
• Ms L Gqokoma - Member • Mr N Hamman - Member • Ms P Luwaca - Member • Mr M Mngomezulu - Member • Mr A Nazo - Member
• Dr G Neethling - Member • Dr M Ngoepe-Ntsoane - Member • Ms T Pholoana - Member • Mr A Rabe - Member • Mr D Schutte - Member
• Mr Z Myeza - Chief Executive Officer • Mr M Dlanga - Company Secretary

Annexure E: List of trades in South Africa

OFO Code	Description
2017-242215	Fraud Examiner
2017-343401	Chef
2017-514101	Hairdresser
2017-641201	Bricklayer
2017-641301	Stonemason
2017-641303	Refractory Mason
2017-641501	Carpenter and Joiner
2017-641502	Carpenter
2017-641503	Joiner
2017-642201	Wall and Floor Tiler
2017-642302	Plasterer
2017-642501	Glazier
2017-642601	Plumber
2017-642603	Gas Practitioner
2017-642607	Pipe Fitter
2017-642701	Air-conditioning and Refrigeration Mechanic
2017-642702	Refrigeration Mechanic
2017-643101	Painter
2017-643202	Vehicle Painter
2017-651101	Moulder
2017-651202	Welder
2017-651203	Fitter-welder
2017-651301	Sheet Metal Worker
2017-651302	Boiler Maker
2017-651401	Metal Fabricator
2017-651404	Structural Plater
2017-651501	Rigger
2017-652101	Blacksmith
2017-652201	Toolmaker
2017-652202	Gunsmith
2017-652203	Locksmith
2017-652204	Patternmaker
2017-652206	Die Sinker
2017-652301	Metal Machinist
2017-652302	Fitter and Turner
2017-652403	Saw Maker and Repairer
2017-653101	Automotive Motor Mechanic
2017-653103	Motorcycle Mechanic
2017-653109	Automotive Engine Mechanic
2017-653201	Aircraft Maintenance Mechanic
2017-653202	Aircraft Structures Worker

2017-653301	Industrial Machinery Mechanic
2017-653303	Mechanical Fitter
2017-653304	Diesel Fitter
2017-653305	Small Engine Mechanic
2017-653306	Diesel Mechanic
2017-653307	Heavy Equipment Mechanic
2017-653308	Tractor Mechanic
2017-653309	Forklift Mechanic
2017-661101	Precision Instrument Maker and Repairer
2017-661102	Watch and Clock Maker and Repairer
2017-661103	Scale Fitter
2017-661201	Musical Instrument Maker or Repairer
2017-661301	Goldsmith
2017-661302	Diamond and Gemstone Setter
2017-661501	Glass Maker
2017-661502	Optical Mechanic
2017-661601	Signwriter
2017-661602	Engraver
2017-662101	Electronic Pre-press
2017-662104	Electronic Originator
2017-662105	Gravure Cylinder Preparation Technician
2017-662106	Process Engraver
2017-662201	Printing Machinist
2017-662203	Screen Printer
2017-662204	Paper Sheetfed Offset Lithography Technician
2017-662205	Metal Sheetfed Offset Lithography Technician
2017-662207	Monoblock Offset Machine Technician
2017-662208	Roll Label Machine Technician
2017-662210	Heatset Rotary Offset Lithography Technician
2017-662211	Coldset Rotary Offset Lithographic Printing Technician (Coldset)
2017-662212	Rotary Printing and Re-reeling Flexographic Machine Technician
2017-662213	Rotary Printing and Re-reeling Gravure Machine Technician
2017-662215	Stationery Machine Technician
2017-662301	Mechanised soft-cover bookbinding technician
2017-662304	Craft Bookbinding Technician
2017-662305	Mechanised Hard-cover Bookbinding Technician
2017-671101	Electrician
2017-671202	Millwright
2017-671203	Mechatronics Technician
2017-671204	Lift Mechanic
2017-671205	Weapon Systems Mechanic
2017-671206	Electrical Equipment Mechanic

2017-671207	Armature Winder
2017-671208	Transportation Electrician
2017-671301	Electrical Line Mechanic
2017-671302	Cable Jointer
2017-672101	Avionics Mechanician
2017-672102	Radar Mechanic
2017-672103	Business Machine Mechanic
2017-672104	Electronic Equipment Mechanician
2017-672105	Instrument Mechanician
2017-672107	Special Class Electrician
2017-672108	Radiotrician
2017-672201	Data and Telecommunications Cabler
2017-672203	Computer Engineering Mechanic / Service Person
2017-672204	Telecommunications Line Mechanic
2017-672205	Telecommunications Technician
2017-681103	Butcher
2017-681201	Confectionery Baker
2017-681202	Pastry Cook
2017-681203	Confectionery Maker
2017-682201	Cabinet Maker
2017-682303	Wood Machinist
2017-682304	Wood Turner
2017-682305	Cooper
2017-683101	Tailor
2017-683401	Upholsterer
2017-684901	Textile, Clothing, Footwear and Leather Processing Machine Mechanic
2017-684902	Farrier
2017-684904	Panelbeater
2017-684905	Vehicle Body Builder
2017-684906	Vehicle Trimmer
2017-684907	Boatbuilder and Repairer
2017-684908	Shipwright
2017-684909	Survival Equipment Fitter
2017-684910	Ammunition Fitter
2017-684913	Melter
2017-711203	Diamond Cutter and Polisher
2017-712201	Electroplater
2017-714208	Plastics Manufacturing Machine Minder
2017-714209	Reinforced Plastics and Composite Trades Worker
2017-718304	Packaging Manufacturing Machine Minder
2017-718904	Integrated Manufacturing Line Machine Setter
2017-734212	Railway Track Master

Annexure F: Language Editor's Declaration



Language Editor's Declaration

- Language Matters Pty Ltd
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Language editing – Translation – Transcription – Simultaneous interpreting

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2531

To whom it may concern,

This document certifies that the manuscript/title listed below has been edited, within reasonable, ethical and professional limits, for syntax, grammar, spelling, punctuation and specific stylistic requirements of the English language by one or more qualified language practitioner(s) at Language Matters. The editor's revisions and comments serve as recommendations; the overall quality of the final manuscript's contents remains the responsibility of the client/author.

Manuscript title: The evaluation of AgriSETA's artisan programmes against National Skills Development Strategy III goals

Author(s): F.J. Fouché

Date Issued: 2 December 2019

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Annexure G: Turnitin digital receipt



Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author: FRIKKIE FOUCHE
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