YOUTHS' ASPIRATIONS AND PERCEPTIONS TOWARDS AGRICULTURAL PARTICIPATION: A CASE OF TWO FREE STATE REGIONS

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DECLARATION

I, **Moatlhodi Maxwell August**, hereby declare that:

This research study for the degree *Magister of Agriculturae* at the University of the Free State, under the Natural and Agricultural Sciences (NAS) faculty, in the Agricultural Economics Department, is my own independent work and has not been previously submitted to any other university before. I also cede copyright of this work to the University of the Free State.

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Moatlhodi Maxwell August Date

Bloemfontein

DEDICATION

This research study is dedicated to the young men and women of the Free State province and the rest of South Africa, whose realities and struggles inspired this body of work.

A special dedication to my late father, Goitsemodimo R. Masisi.

Rest well, sir.

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ABSTRACT

Youth unemployment, food insecurity, and poverty are some of the major problems facing countries around the world, and South Africa is no exception. The aforementioned challenges can be reduced through improved agricultural participation by the youth. The main aim of this study is to explore the influence of the youths' aspirations and perceptions towards participation in agriculture. This was achieved through two sub objectives; the first objective was to measure the youths' aspirations and perceptions towards participation in agriculture and the second sub objective was to determine the influence of livelihood assets, aspirations and perceptions towards agricultural participation. This study employed a stratified random sampling method, and 178 youth respondents between the ages of 18 and 36 were interviewed through a structured questionnaire. Out of the total sample size, 49 % of the youth participated in agriculture and 51 % did not participate in agriculture. To achieve the first sub objective, a Principal component analysis was used to generate two indexes (aspiration index and perception index) in SPSS to measure the youths' perceptions and aspirations towards agriculture and related activities. The results show low scores regarding perceptions for economic motivation, agricultural value chain and the attractiveness of agriculture and rain-fed farming as a livelihood strategy, while the perceptions on interest and inclusiveness showed higher scores, signifying better perception with regard to the inclusiveness and interest in agriculture.

To achieve the second objective, a binary logistic model was used to determine the influence of the Sustainable Livelihood Assets (SLA) and perceptions and aspirations on agricultural participation. A total of 31 variables were included in the binary logistic model, which consisted of: total number of household, age, gender, marital status, number of years of experience in farming or agriculture-related activities, access to agricultural training, land access, livestock ownership, grant use for agricultural inputs, access to savings, access to savings, co-operative membership, youth club/group membership, social media group membership, extension contact, full-time farmer, employed, self-employed, student, matric, grade 11 or less, degree/diploma and higher, market access, household income, and aspIndex and percptIndex (interest in agriculture and attractiveness of agriculture). Eleven (11) out of 31 predictor variables came out as significant, and five were positive (number of years of

experience in farming or agriculture-related activities, employed, self-employed, interest in agriculture, and attractiveness of agriculture) which indicate a positive association with the likelihood of agricultural participation. The other six variables (age, land access, grant use for agricultural inputs, access to savings, extension contact, and market access) were negative, which indicates the decrease in the likelihood of agricultural participation.

The study found that the youth do take part in smallholder farming and other agriculture-related activities. However, the youth still have generally low aspirations and poor perceptions towards agriculture and therefore, efforts needs to be made to invest in improving the youth perceptions and aspirations. Access to resources is fundamental for agricultural participation, as better access to productive resources has the potential to enhance youth participation in agriculture. It is therefore important that the government pays more attention to resource allocation and better strategies in terms of resource provision. Market access, training, extension support, and government support are lacking in QwaQwa and Thaba 'Nchu. It is important that the government improves youth access to these important resources.

Key Words: Agriculture, youth, perceptions, aspirations, participation, farming

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AGRA	: Alliance for a Green Revolution in Africa
ASGISA	: Accelerated and Shared Growth Initiative for South Africa
AYC	: African Youth Charter
CA	: Cluster Analysis
CASP	: Comprehensive Agricultural Support Programme
DAFF	: Department of Agriculture, Forestry and Fisheries
DFID	: Department for International Development
FANRPAN	: Food, Agriculture and Natural Resources Policy Analysis Network
FAO	: Food and Agriculture Organization
GDP	: Gross Domestic Product
GPYE	: Global Partnership Youth Employment
HFG	: Homestead Food Garden
IDS	: International Development Studies
ILO	: International Labour Organization
LRAD	: Land Redistribution for Agricultural Development Programme
MAFISA	: Micro Agricultural Financial Institutions of South Africa
MAP	: Maluti-A-Phofung Municipality
MYC	: Malaysian youth council
NDP	: National Development Plan
NEET	: Not in Education, Employment or Training
NPC	: National Planning Committee
NYPSA	: National Youth Policy of South Africa
OECD	: Organisation for Economic Co-operation and Development
PCA	: Principal Component Analysis
RDP	: Reconstruction and Development Programmes
RSA	: Republic of South Africa
SL	: Sustainable Livelihood
SLA	: Sustainable Livelihood Approach
SLF	: Sustainable Livelihood Framework
SRLAC	: Sustainable Rural Livelihoods Advisory Committee
UN	: United Nations
UNDESA	: United Nations Department of Economic and Social Affairs
YARD	: Youth in Agriculture and Rural Development

CHAPTER 1: INTRODUCTION

1.1 Introduction and Background

The agricultural sector is considered a leading employment creator in developing markets (White, 2012) and plays a pivotal part in the economic growth and poverty alleviation drive of most countries (Muhammad-Lawal, 2009). The sector is not only vital for the development of nations (Naamwintome and Bagson, 2013), but also offers support to 60–80 percent of livelihoods, worldwide, and provides a major boost to national revenue and economic development (Brown and Hansen, 2008). The agricultural sector contributes 35 % in employment creation, worldwide, and 86.8 % in the African continent (International Labour Organization, 2010).

Agriculture is considered to be a solution to the socio-economic challenges facing South Africa, particularly in the rural areas where farming is practised (Ntshangase, 2016). The South African National Planning Commission (NPC) has set the goals for enhancing rural development and improving job creation (creating more than a million jobs) through the agricultural sector by 2030 (NPC, 2013). The importance of agriculture cannot be emphasised enough in a country like South Africa, which is faced with rising levels of unemployment, poverty and inequality. Statistics South Africa (Stats SA, 2020) shows that the unemployment rate in South Africa currently stands at 30.1 %, with youth unemployment higher, at 59.0 %, in the first quarter of 2020. The rising unemployment rate has a negative impact on rural livelihoods, and agriculture can play a pivotal part in the alleviation of this challenge (Ntshangase, 2016).

The South African agricultural sector is twofold: it is comprised of the commercial and smallholder (which includes subsistence agriculture) sectors (Pienaar, 2013). According to the Stats SA, 2017 report, the commercial sector is dominated by white farmers, with 40 122 large-scale farming enterprises, while smallholder farmers number approximately 2 million, and are mostly farming households (Cousins 2013). Most of these households are found in former bantustans and their agricultural practices are mostly rain-fed, with small plot sizes that are 0.5 hectares or less (Vink and Van Rooyen, 2009). The country's smallholder farming sector faces

various challenges, including lack of resources, inadequate storage and processing facilities, inputs, market, and credit access, as well as high transaction costs (Hall and Aliber, 2010).

After 1994, the government of South Africa pursued efforts to prioritise the agricultural sector and offer solutions to the challenges facing smallholder farmers (Tregurtha and Vink, 2008). The aim of the government was to encourage agricultural participation, as well as tackling the challenges of economic growth, poverty reduction, joblessness and inequality (Zamxaka, 2015). The efforts came through various support programmes and policy initiatives with special focus on women and youth. Such programmes include the 2001 Land Redistribution for Agricultural Development Programme (LRAD), which was intended for land redistribution to black farmers, with the main focus on youth and women (DAFF, 2012). Others included the Comprehensive Agricultural Support Programme (CASP), the Land Care programme (Zamxaka, 2015) and Micro Agricultural Financial Institutions of South Africa (MAFISA). Other policy initiatives include the Reconstruction and Development Programmes (RDP), the Employment Redistribution Strategy (GEAR), and the Accelerated and Shared Growth Initiative for South Africa (AsgiSA).

The government also initiated programmes and policy initiatives that are youth-specific, such as the Youth in Agriculture and Rural Development (YARD), Agriculture Youth Development Initiative for South Africa of 1998, the Rural Development and Land Reform Youth Empowerment Strategy of 2008 (FANRPAN, 2012) and recently, the National Policy for Beneficiary Selection and Land Allocation of 2020. There is also several initiatives by the South African organised agriculture to stimulate interest and encourage youth involvement in agriculture. For instance, GrainSA in partnership with Maize Trust and the AgriSETA have the schools programme which is intended to highlight the "urgent" necessity for youth to get involved in the sector as farmers and other agriculture related professions. The introduction of these initiatives (by government and organised agriculture) are aimed at promoting youths' involvement in farming and agriculture-related activities because the sustainability and expansion of the sector not only relies on their active participation, but also on their creative capacity, physical strength and effective comprehension capabilities (Kimaro *et al*., 2015; Cheteani, 2016; Giuliani *et al*., 2017). Active youth involvement has the potential to lessen the challenges of food security, ageing farm populations, and youth unemployment (Bagson and Kuuder, 2013). Therefore, this necessitates the need to attract the youth to rise up and take on agriculture in rural agricultural societies (Man, 2012).

However, despite these initiatives and recognising the importance of engaging youth in agriculture, their participation remains a challenge (Man, 2012). Various reasons and constraints have been identified as the cause of the lack of youth participation in agriculture, including non-competitive salaries, the physical nature of the work in the sector, and lack of information on the diverse jobs within the industry (Kidido *et al*., 2017). Muthee (2010) cited negative perceptions, and lack of knowledge and awareness as the causes of disinterest. Cheteni (2016), on the other hand, cited attitudes and negative perceptions. White (2012) and Tafere and Woldehanna (2012) observed that youth prefer and aspire to occupations outside agriculture since non-farming occupations are perceived to be more economically rewarding, stable, and not "back-breaking".

With all the above factors considered, literature also suggests that the youth remain a highly diverse group of people (Giuliani *et al*., 2017), and it is important to acknowledge that they are not a homogeneous group, but differ in terms of backgrounds, ideas, ambitions, and aspirations (Leavy and Smith, 2010; Giuliani *et al.,* 2017). Youths' aspirations have direct effects on the choices they make regarding agriculture (Anyidoho *et al*., 2012) and are important psychological factors that could determine their participation in agricultural-related activities (Tripathi *et al*., 2018). Furthermore, aspirations not only provide a better understanding of the life path that young people want to take, but also enable marginalised groups to exercise their 'voice' and reflect on ways to change their situation (Giuliani *et al*., 2017).

Therefore, to understand their needs and challenges, there is a need to understand the youths' aspirations and perceptions, and how they can be matched with emerging strategic visions and opportunities in relation to agriculture (FANRPAN, 2012). It is against this background that this study seeks to understand and capture the aspirations and perceptions of the youth towards agricultural participation.

1.2 Problem Statement

The South African government has given attention to agriculture and invested in various support programmes and initiatives to enhance youth agricultural participation. Youth participation in agriculture has become a focal point at the centre of government's strategic policies such as the NDP (Sinyolo and Mudhara, 2018). However, youth agricultural participation remains low (Man, 2012).

Research has been undertaken in the field of agriculture with consideration of youth and levels of youth participation in the sector. Several factors have been identified as the causes of the lack of youth participation in agriculture. These include, but are not limited to, poor livelihood assets endowment (like land, credit, market access, extension support, and production inputs) and government support. However, limited attention has been paid to other important factors such as aspirations and perceptions, which are relatively unexplored by researchers and therefore remain poorly understood (Leavy and Smith 2010; Giuliani *et al*., 2017; Njeru, 2017).

Studies in the social sciences, regarding the aspirations of youth, are mostly limited to academic aspirations and their influence on young people's career choices (Schaefer and Meece, 2009; Aragaw, 2014). Some studies in the agricultural field (Nnadi and Akwizu, 2008; Adekunle *et al*., 2009; Ahaibwe *et al*., 2013; Naamwintome and Bagson, 2013; Kimaro *et al*., 2015; Akpan *et al.,* 2015; Anania and Kimaro, 2016) in relation to youth involvement in agriculture tend to focus largely on socio-demographic and economic factors that constrain youth involvement in agriculture (such as dependency status, age, size of the household, family income, lack of start-up capital, poor credit facilities, meagre storage facility, implements, and farmland). Other studies (Anyidoho *et al*., 2012; Kimaro *et al*., 2015; Zantsi, 2016; Douglas *et al*., 2017) have shifted the focus from socio-demographic and economic factors and assets endowment to perceptions and aspirations. However, the studies tend to overlook the influence of access to livelihood assets and how they shape youths' aspirations and perceptions towards participation.

Nonetheless, some of these studies reflect a strong relationship between young people's aspirations and perceptions, access to livelihood assets, and the choices they make in relation to agricultural participation (Nataraju, 2015; Kimaro *et al*., 2015; Douglas *et al*. 2017; Giuliani *et al*., 2017; Bahta *et al*., 2018). For example, the studies of Nataraju (2015) Kimaro *et al*., (2015); Kising'u (2016); Njeru (2017) show that access to livelihood assets not only influences young people's aspirations and perceptions, which in turn influences their interest to participate in agriculture, but also directly influences youth participation in agriculture.

However, most of these studies did not specifically consider understanding the perceptions and aspirations of youth towards agriculture as a means of a livelihood and an employment opportunity. The lack of evidence on these important aspects limits the scope for a discussion on the livelihood improvement of young people through agricultural participation. Hence, this research study primarily intends to explore the perceptions and aspirations of the youth towards

participation in agriculture, under rain-fed production in the regions of the Free State province of South Africa.

1.3 Research Objectives

This study primarily aims to explore the influence of the youths' perceptions and aspirations towards participation in agriculture, in two identified areas in the Free State province.
The specific objectives include:

- To measure the youth's perceptions and aspirations towards participation in agriculture.
- To determine the influence of livelihood assets, perceptions, and aspirations of youth towards agricultural participation.

1.4 Outline of the Study

Chapter 1 offers comprehensive background information regarding the research topic and presents the research objectives. **Chapter 2** gives a review of literature and introduces the conceptual framework employed in this study. **Chapter 3** consists of two sections. The first section offers a description of the study area and data, which includes the development of the questionnaire, the sampling procedure followed in this study and respondents' characteristics followed. The second part gives a description of the procedures employed in the analysis of the study's specific objective. **Chapter 4** provides a detailed discussion on the results and findings of the study through data analysis and interpretation. Finally, **Chapter 5** provides a summary of research findings and results, as well as discussions, conclusions, and recommendations.

CHAPTER 2:
LITERATURE REVIEW

This chapter provides a literature review on who the youth are and youth participation in agriculture, from an international and South African perspective. The specific areas discussed consist of the youth, youth participation in agriculture, access to resources for youth participation, the role of agriculture in the economy, perceptions, aspirations and the conceptual framework.

2.1 The Youth

The definition of youth differs between various cultures and different societies (National Youth Policy of South Africa; NYPSA, 2014). This suggests that various nations hold different ideas of who the youth is, even though they are likely to be classified under a particular age category.

Notwithstanding that the 15- to 24-year-old age ranges are normally utilised by the organisations of the United Nations (UN), there is no consensus on the meaning of 'youth' (Losch, 2014). 'Youth' is better understood as that phase of change from the childhood period of dependence to the independence stage of adulthood. The UN definition of 'youth' refers to individuals in the age category of 15 and 24 years of age (United Nations Department of Economic and Social Affairs, 2013). The African Youth Charter (2006) and Kidido *et al*. (2017) refer to the 'youth' as being those people within the category of 15 to 35 years of age who form part of the active labour force. This youth categorisation is similar to that of the National Youth Policy (NYP) of Ghana (National Youth Policy, 2010).

In South Africa, different approaches to youth profiling and categorisation are used. For instance, the National Youth Development Policy Framework (NYDPF, 2002) defines youth as young people between 14 and 34 years of age, while Stats SA (2018) refers to youth as those people between the ages of 15 to 34. However, for historical reasons, the youth definition adopted after 1994 refers to the age group of persons between 18 and 35 years of age (FANRPAN, 2012). Therefore, for the purpose of this study, youth will refer to the active involvement of young people aged between 18 and 35 years, as is defined by the South African Youth Commission Act of 1996.

2.1.1 Youth Population

The youth represent the greatest portion of the population of Sub-Saharan Africa (SSA), with more than one-third of individuals ranging between 10 and 24 years of age. The United Nations Population Fund (UNFPA) reported SSA to have a record of the highest number of the youth, which increases significantly as compared with other parts of the world (UNFPA, 2012). According to the World Bank (2014), half of the Sub-Saharan African population is under the age of 25 and it is estimated that the population will be further increased by half a million 15-year-olds by the year 2035 (World Bank, 2014).

In Tanzania, young people are estimated to make up at least 35.5 % of the country's general population, while the youth in Nigeria constitutes about 60 % of the entire Nigerian population (Vision 2010 Report, 2005). The majority of Uganda's population consists of the youth, making up to 78 % of the entire population (Ahaibwe and Lwanga, 2013). South Africa, on the other hand, has a total population estimate of 50 million, where young people account for the greatest age group of the entire population, amounting to about 80 % (Kimaro *et al*., 2015).

Nearly half of the country's population is recorded as being below the age of 25. It is estimated that the youth population group in the country continues to grow, year on year, higher than the national average population growth (Kimaro *et al*., 2015). The increase in youth numbers signifies the chance to fast-track the growth of the economy as well as the achievement of poverty reduction. However, this can only be attained if countries invest consistently in the current and future youth generations (UNFPA, 2012). According to the Organisation for Economic Co-operation and Development (OECD), youth unemployment remains a worldwide challenge, irrespective of the country's level of social and economic growth (OECD, 2009).

2.1.2 Youth unemployment

Youth unemployment is a global phenomenon and is recognised on national and global development agendas. The International Labour Organization (ILO, 2013) has reported the global youth unemployment rate to be at 12.6 %. In South Africa, the working-age population showed an increase of 0.4 % at the beginning of 2018, in comparison with the last quarter of 2017. An increase in job creation (up by 206 000), as well as joblessness (up by 100 000), brought about an increase in the force of labour engagement level of 59.3 % over the quarter (Stats SA, 2018). The recent South African labour survey shows an increase of 1.4 % in

unemployment, from 27.6 % in the first quarter of 2019 to 29.1 % in the fourth quarter of 2019 (Stats SA, 2019).

The younger generation in South African remains excluded from the labour market. Moreover, the issue of joblessness among young people is not only a South African problem, but also a worldwide problem. According to the ILO (2017), over 71 million young people were jobless during the survey period: this is a group of young people between 15 and 24 years of age around the world, with the majority of them trapped in the continuous cycle of unemployment.

While the high rate of unemployment affects everyone (youth and adults), the youth (15–24 of age) are the most affected, and with the current South African youth unemployment rate standing at 58.1 %, this statistic suggests that at least one out of three South African youth was jobless at the beginning of 2019 (Stats SA, 2019). Most of the youth have lost hope in the job market and are not involved in education and training to build and advance their skills (Stats SA, 2018).

Given the challenges of youth unemployment, the agricultural sector has the capacity to get the youth involved in the sector and provide the youth with the required training and education to capacitate the youth and lead the youth towards success in agriculture (Eissler and Brennan, 2015). The following section focuses on the role of the youth in agriculture as a livelihood strategy and an alternative solution to the youth unemployment challenges.

2.1.3 The role of youth in Agriculture

The youth comprise an essential part of the human capital and are expected to assume the obligation of advancing the rural and agricultural industry in the future (Butt *et al*., 2011). The influence that agriculture has on the returns of farmers' rural expansion relies on the engagement of young people who are seen as the prospective workforce (Kimaro *et al*., 2015). The youth are considered for their drive for innovation, ability to take risks, and greater physical strength, as well as fast learning capabilities (Umeh *et al.*, 2011). The rural youth present the opportunity for producing agricultural business drive (Chikezie *et al*., 2012). All of this is because of the ability of the youth to assimilate new knowledge and exhibit flexibility to explore new and alternative ways and methods of doing things, as compared with the older farmers (Daudu, 2009).

The African agricultural sector has the capacity to provide employment, directly and indirectly. However, the sector needs to make opportunities available to young people so that they can

become actively involved in and benefit from the sector. Giuliani *et al*. (2017) emphasise the importance of having a broader view of the agricultural sector when formulating strategies in support of young people's involvement in agriculture and thus acknowledge their heterogeneity in society (Giuliani *et al*., 2017).

On the adoption of a holistic view of agriculture, Giuliani *et al*. (2017) argued that agriculture should not only be confined to primary crop and animal husbandry, but should also be seen as covering an extensive variety of activities, including home food gardening, drafting agricultural policies, value chain activities such as, processing, distribution, marketing, and agricultural commodity trading. However, due to the lack of capacity-building initiatives, it is difficult for the youth to fully realise their potential and exploit the opportunities available to them within the value chain (FANRPAN, 2011). It is important to have a holistic perspective of the agricultural value chain so as to better understand the available opportunities that youth can exploit. It is therefore important that the youth get involved in the sector and participate in agriculture and related activities. The following section will discuss the current situation of the youth in the agricultural sector and youth participation in agriculture.

2.2 Youth Participation in Agriculture

Existing literature suggests that agriculture is a crucial industry that has the capacity to create jobs and employ young people in Africa (Afande *et al*., 2015). Currently, agriculture is a key component in the lives of the youth and is expected to remain so in the future (FAC, 2011). It is therefore very important for the youth to take an active role in agricultural activities for ensuring their own economic independence, food security and the future of agriculture. The agricultural sector is well-known to offer opportunities to the youth and is the biggest employer of the people of SSA (Eissler and Brennan, 2015). The sector's capacity to provide jobs for young people is globally acknowledged. Agriculture could indeed be the tool to alleviate or reduce the levels of rising youth unemployment (Anyidoho *et al*., 2012). However, regardless of the opportunities available in the sector, the participation of young people remains minimal (Mibey, 2015), and it is the people in this demographic sector who are expected to take a leading role in the revitalisation of agriculture because of their creative ability (FAC 2011; Ahaibwe *et al*., 2013).

It is not known what the number of young people engaged in agriculture is, but measures have been put in place to stimulate the interest of young people towards farming and related activities

through the establishment of programmes such as Youth in Agriculture and Rural Development (YARD), which runs in some parts of South Africa (Ntshangase, 2016). However, the disinterest of the youth in agriculture is growing, despite the measures put in place and their acclaimed mental and physical strengths (Kimaro *et al*., 2015). The youths' minimal or poor involvement in the sector is reflected by the increasingly ageing South African farmer population, where more than 66 % of farmers are over 50 years old, and 48 % of these are over the age of 61 (Ntshangase, 2016).

Youth participation in agriculture is reduced by numerous challenges, including inadequate institutional framework for channelling, mobilising and developing distinctive aspirations, abilities, and experiences of the rural youth towards agricultural activities (Kasolo, 2013). The economic "push factors", such as unemployment, the shortage of credit, and rural poverty, were the utmost important factors found to explain the low youth engagement in agriculture (Akpan, 2010).

White (2012) states that, in order to understand the reasons behind low participation of the youth in agriculture, special attention has to be given to problems such as the decline of farming activities, the government's disregard of subsistence agriculture and rural infrastructure, and the challenges relating to land access. Youth participation must also be complemented with the necessary training and resources (Brooks *et al*., 2012). Another important aspect for government's agricultural agencies to look at in their efforts to attract the youth into farming is the need to make intensive efforts in making the production machinery, agricultural inputs and resources not only readily available, but also affordable (Mbeine, 2012). The youth clearly have a role to play in the agricultural sector, as the youth can participate in various levels of agriculture and generate livelihoods through agriculture-related activities. It is important, however, that the youths' enthusiasm be met with opportunities. The following section focuses on the role of agriculture in the economy.

2.3 The Role of Agriculture in the Economy

Agriculture plays a significant role in the economies of developing countries by forming the basis for food production and serving as a source of revenue as well as job creation for the rural communities (Khanna and Solanki, 2014). The agricultural sector is responsible for a relatively small percentage of the world's economy; however, it is essential to most livelihoods (Alston and Pardey, 2014). It is understood that the share of the agricultural population in the whole

populace is 67 % and that agriculture accounts for 39.4 % of the gross domestic product (FAO, 2000). According to FAO (2000), some countries derive more than 30 % of the GDP from agriculture, while others contribute an agricultural output of about 50 %, and for most countries, 43 % of the total exports consist of agricultural goods (Khanna and Solanki, 2014).

The World Bank (2012) estimated that, worldwide, more than 1 billion people were involved directly in primary agriculture in 2012, although agriculture represented only 2.8 % of total income. However, agriculture today represents a larger portion of the general revenue and job creation in low- and middle-income countries. For instance, in India, farming accounts for 18 % of nationwide revenue and 54 % of employment. Looking beyond direct employment, the Food and Agriculture Organization (FAO) (2013) reported that in 2010, over 2 billion persons worldwide relied upon farming to sustain their livelihoods, either as part of the workforces or otherwise as children. There seems to be a general consensus that agriculture can offer employment opportunities and offer an important livelihood strategy for the youth. The opportunities offered in the sector are discussed in the section that follows.

2.3.1 Opportunities available in the agricultural sector

The agriculture sector offers great job prospects for young people, particularly in the SSA region (Bosompem *et al*., 2011). The sector offers numerous economic and job opportunities, beyond primary agriculture. These opportunities are found in agribusiness (entrepreneurship) and the value chain (which includes the primary production level, storage, agro-processing, the marketing stage, and ultimately, to the end-user). The youth may discover that their skills, interests, or perhaps abilities are better associated with aspects of the agriculture value chain other than actual primary agriculture. Hence, it is important that the youth must become aware of other business and employment opportunities that are available in the sector within the value chain.

The value-chain opportunities available for the youth include agricultural inputs distribution, farm financing, the production of processed goods based on farm crops, and the marketing as well as the sale of farm outputs (Ahaibwe *et al.*, 2013). Another essential part of the value chain comprises self-employment in the post-production part of the value chain. Self-employment depends more on the transportation of raw and processed agricultural produce to local markets, which entails small-scale trading of agricultural output, transport, and small agribusinesses (Proctor and Lucchese, 2012).

There are also opportunities for the youth within agribusinesses, which include farming and services that establish the supply chain, from production on the farm, through processing, to wholesaling and selling. These activities within agribusiness can create employment opportunities and income for the youth (Yami *et al*., 2019). For example, the African food and beverage industry is estimated to become an over one-trillion-dollar industry by 2030, and potentially offers increased employment opportunities to the youth (Yami *et al*., 2019).

Showing the youth that there is a diversity of job opportunities in and around the agricultural sector, and exposing them to these career opportunities, will help them to imagine greater alternatives for themselves. The sector, however, has much to do to attract young people. There is a need for a more dynamic agricultural sector that is more appealing than it is currently (Brooks *et al*., 2012). The Global Partnership Youth Employment (GPYE) (2014) found that there is also a greater need to invest in education, innovation in agriculture, market infrastructure and development of the business environment. Ultimately, the youth must begin to look at the agricultural industry in a positive light (Institute of Development Studies, 2012).

The youth will also need to take advantage of the opportunities that comes in form of programmes by both government and organised agriculture (i.e. Grain SA). Some of the development programs by Grain SA include the schools programme, which promotes agriculture and encourages the youth to join the sector, and a study group program which plays an important part in development through better access to resources for the youth. According to Smith (2016) participation of youth in programs initiated by organised agriculture proves to be beneficial for the youth. The youth that subscribe to programs by Grain SA enjoys the benefits of support, training, mentorship, and inputs subsidies (Smith, 2016).

It is therefore, in the interest of the youth to exploit the opportunities offered by institutions of government and organisation within the sector. However, the challenge of low youth participation in agriculture persist, despite opportunities available in the sector and initiative put in place by organised agriculture to encourage them to engage in agriculture and related economic activities. In the following section, focus is given to the factors that constrain the youth from participating in agriculture and related activities.

2.3.2 Constraints to youth participation

The integration of young people in agricultural and farming projects is important for developing the agricultural industry (Daudu, 2009), and could offer sustainable livelihood

support for the youth (Kidido *et al*., 2017). However, instilling the youth with enthusiasm to participate in agriculture is a challenge because the youth seem to have occupational ambitions completely outside farming (Tafere and Woldehanna, 2012). Most youth seem to have a strong disinterest in agriculture and are reluctant to get involved and exploit the opportunities available within the sector. This has not only resulted in mass youth unemployment, but also a lack of sustainable livelihoods among the youth (Chikezie *et al*., 2012).

There exists a diverse extensive theoretical and empirical literature that has expansively examined the challenges young people are faced with as they attempt to either participate in or actively engage in various agricultural activities. Sumberg *et al*. (2012) cited the "pull and push" factors as the forces leading to young people's low level of interest towards agriculture. According to Sumberg *et al*. (2012), the factors that pull young people away from rural areas and agriculture include the better access to schools and the availability of better jobs with decent salaries in urban areas.

The "push" factors relate to elements of the economy, agricultural structures and changes that hinder the youth in gaining access to resources required for production (Proctor and Lucchese, 2012). Limited land access remains at the core of the push factors that drive the youth away from agriculture. For instance, in the Kenyan context, the barrier to young people's involvement in farming and agriculture is poor access to productive land (Proctor and Lucchese, 2012). Kenyan farmers are between 50 and 60 years of age and are reluctant to let go of the land they own unless it is through means of inheritance. The factors that discourage the youth from participating include the use of primitive machinery, sparse financial allocations to agriculture in most developing countries and poor rural infrastructure, as well as poor schools, markets and roads, which are some of the many factors that discourage active participation in agriculture (Njoku, 1999). Poor policies and the poor performance of the agricultural sector, lack of credit, rural poverty and poor economic returns of the sector have also, to some degree, led to the disinterest and limited participation of the youth, despite the opportunities available in the sector (Kimaro *et al*., 2015).

Although part of the dialogue about young people's participation in farming and related activities suggest that agriculture is a potential solution for reducing the high youth unemployment, Noorani (2015) has argued that young people's difficulty in achieving success or considering the option of pursuing agriculture lies in their inability to gain access to key production resources. Leavy and Smith (2010) share the same sentiments and re-affirm the opinion that the likelihood of the youth demonstrating interest in agricultural participation will

be determined by their capacity to gather and gain access to the required resources for farming purposes. The following section illustrates the importance of gaining access to livelihood assets for youth participation in agriculture, in the context of the sustainable livelihood framework.

2.4 Access to Resources for Youth Participation

Resources accessibility is important for any individual to venture into farming, especially the youth (Noorani, 2015; Juma, 2017). To better explain the importance of resource access as a means to improve agricultural participation, the study finds relevant the sustainable livelihood framework (SLF), depicted in Figure 2.1 below, as an applicable tool for analysis. A detailed discussion on the SLF is provided below.

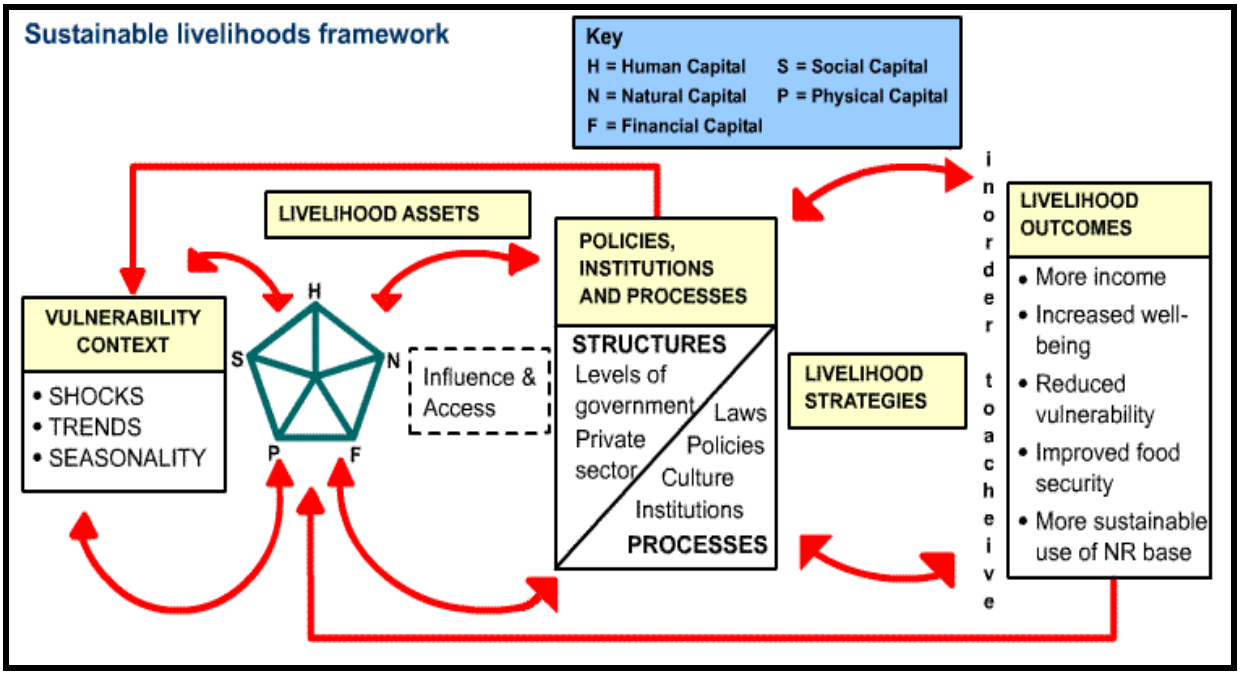

Figure 2.1: Sustainable Livelihood Framework
Source: Livelihood.Org

The SLF is a tool established by the Sustainable Rural Livelihoods Advisory Committee (SRLAC) to advance the understanding of livelihoods, principally the livelihoods of the poor (DFID, 1999). The framework is made up of five (5) key components, namely vulnerability context, livelihood capitals, transforming structures and processes, livelihood strategies, and livelihood outcomes (Chipfupa and Wale, 2018).

The first element, the vulnerability context, frames the external environment where people exist and it arises when individuals are faced with a threat or shock and have insufficient capability

to respond effectively (DFID, 1999). The second component is livelihood assets, which seeks to attain an understanding of people's strengths, herein referred to as "assets" or "capitals". Because the framework is built on the understanding that access to assets is vital for individuals to achieve positive livelihoods, the assets identified by the SLF as being those upon which a positive livelihood is built are human capital, social capital, natural capital, physical capital, and financial capital (DFID,1999).

The SLF places more emphasis on the third element, which comprises policies, institutes, and processes that have an influence on the ability of people to achieve the feeling of inclusion, as well as their wellbeing, and which also determine the accessibility of assets while directly influencing processes associated with decision making (DFID, 2000). The fourth element comprises livelihood strategies, which are composed of an array of combined activities and choices that individuals undertake to attain livelihood goals (DFID, 2000) and, ultimately, livelihood outcomes that are the achievements of the livelihood strategies, such as increased income and well-being, reduced vulnerability and better food security, as well as the sustainable use of natural resources (DFID, 2000).

The framework is about the scope, the individual's way of thinking about the goals, and the priorities followed for the purpose of development and pursuing associated opportunities and constraints (Jimah, 2016). Fundamentally, the SLF views people as operating within the context of vulnerability where they gain access to assets or factors that aid in the reduction of poverty (DFID, 1999). The assets form the foundation of what livelihoods comprise; it is by making use of these assets that a positive livelihood outcome can be achieved (Zantsi, 2016). However, these assets gain their significance and importance through the overall social, institutional and organisational environment (policies, institutions, and process).

The environment also impacts on the livelihood strategies and ways of combining and utilising resources that are available to people in their quest for attaining beneficial livelihood outcomes that meet their own livelihood objectives (DFID, 1999). The SLF can be useful in livelihood studies and can be used to reach different objectives. The framework has been used since the 1990s in the publications of developmental organisations such as CARE, International Department for International Development (DFID), United Nations Development Programme (UNDP), and Oxfam (Carney *et al*., 1999).

The livelihood approach of CARE is centred on the relationship between a person's capabilities and access to human, social and economic assets, and prioritises income increase or

employment and food security, as well as the existence of economic activities (Carney *et al*., 1999). The UNDP approach focuses on increasing access to human, social, natural, physical and economic assets (Carney *et al*., 1999). DFID, on the other hand, promotes sustainable livelihood and improved access to resources, thereby encouraging efficient running processes and institutions for efficient asset accessibility (Jimah, 2016). According to Carney *et al.* (1999), the DFID and Oxfam place their emphasis on human, social, natural, physical and financial assets.

However, DFID focuses its approach on the accessibility of assets and transforming structures and processes, while Oxfam's approach is focused in enhancing capabilities, equity, working towards safeguarding relations between policy changes, and livelihood empowerment (Carney *et al*., 1999). The SLF comprises the following relevant components for this study: the livelihood asset component, access to livelihood assets, the context in which persons access livelihood assets, and adopted livelihood strategy, as well as the activities undertaken. The livelihood asset component demonstrates the available asset options for persons and comprises the five (5) livelihood assets (natural capital, physical capital, human capital, financial capital and social capital). The assets are discussed hereunder.

2.4.1 Natural Capital

Natural resources are defined as the natural resources base, such as land, water, and other biological resources that are used to generate livelihoods (Ellis, 2000). Natural resources play an essential role, particularly in rural areas where a great majority of persons are involved in an agricultural activity of some sort. The available natural assets determine the farming possibility and productivity level. The natural resources are not only important for the creation of livelihood, but for the sustenance of life too. The variety of natural resources may be comprised of intangible public goods, such as climate and biodiversity, resources like land and trees, as well as water that is directly used for production purposes.

- **Access to Land**

Land access is essential for young people trying to find means to make a living through farming in the homelands. Gaining land access is a primary prerequisite for initiating the process of farming and may provide reliable access to nutritious, quality food for most families, while also providing job opportunities and creating revenue (Kidido *et al*., 2017). While gaining

access to productive land is a prerequisite to farming, it is very challenging for the youth to get (Njenga *et al*., 2012) especially under the current land tenure system in many African countries.

Agriculture is primarily a land-dependent activity and young people are systematically left out from obtaining productive and arable land. This effectively discourages them from being actively involved in the sector (Afande *et al*., 2015). Limited access to land has been identified as one of the socio-economic factors that affect and discourage youth participation in agriculture (Divyakirti, 2015). White (2012) states that the challenges facing the youth in acquiring land for farming, as well as opportunities related to agriculture, have become even more prevalent, especially in the world where leadership is reserved for old people.

Many young people who do not have the opportunity to make use of or own family land have opted to pull out from family-owned farms and to seek alternative livelihoods, or work as labourers or sharecrop tenants elsewhere (Amanor, 2008). A study conducted in Southern Ethiopia by Bezu and Holden (2014) confirmed that the youth would rather choose a non-farm occupation over agriculture-related employment because of limited access to the land. In Ghana, poor land access has disadvantaged the local youth and forced a majority of young people to disengage from agriculture or pursue other ways to sustain their livelihoods (Kidido *et al*., 2017).

2.4.2 Physical capital

Physical resources refer to the communal, publicly or privately owned tools, equipment and infrastructures that are available to the people and which can assist people in establishing a foundation for generating livelihood and becoming productive (DFID, 1999). Public infrastructure, such as that for the provision of water and electricity, proper roads, storage infrastructure, and machinery, as well as the availability of important information, help individuals to achieve their basic needs and to be more productive (Juma, 2017). Secure shelter and equipment needed to sustain livelihoods are also vital, and for farmers, this might include livestock and farming tools.

- **Access to Infrastructure**

The rural areas of Africa are known to face major infrastructural challenges, both physical and social infrastructure, that are driving the youth to urban centres (Afande *et al*., 2015). Mugisha and Nkwasibwe (2014) argue that making resources, such as reliable electricity, better quality

roads, entertaining amenities, internet, quality primary healthcare, and water and sanitation, available in rural areas will be instrumental in enabling the youth to participate actively in agriculture.

In a similar case, Kising'u (2016) asserts that the majority of young people experience challenges in accessing information due to the poor information infrastructure regarding agriculture. The youth lack information regarding the opportunities that are available in the sector, thus giving rise to the one-dimensional perception held by most young people.

- **Access to Markets**

Market access provides farmers with the capacity to obtain farming inputs and farm services, as well as the competence to get the production output to the consumers (International Fund for Agricultural Development, 2010). Markets offer farmers the opportunity to generate income, which contributes to reducing poverty in developing countries (van Schalkwyk *et al*., 2012). However, various challenges limits market access to most South African smallholder producers which is an important factor in gaining sustainable livelihoods from farming. Some of these challenges include poor relations between various players, characterised by high level of distrust, poor confidence in the capacity of smallholder to meet market requirements with regard to output quality and volumes Chipfupa and Wale (2018) and physical distance to market, which is a challenge for youth farmers who a far from the market and have to travel considerable distance, especially if they do not have access to transportation (Zamxaka, 2015).

Since the rural youth are an important for the future of the agricultural industry, their access to markets is key for boosting productivity, increasing incomes, and reducing poverty and hunger in the future. Yet, the youth in developing countries face several challenges that are beyond those faced by smallholder farmers while trying to gain access to markets (FAO, 2012). According to FAO (2012), most youths do not have the necessary knowledge and marketing skills; young people do not have the necessary corporate skills and are less informed about prices than most other smallholder farmers are.

2.4.3 Human Capital

Human resources can be said to include individuals' levels of education, as well as the quality of their health (Ellis, 2000). These resources are necessary and are, therefore, required for

creating income and also reflect the quantity and quality of labour force, allowing people to follow different livelihood strategies and achieve their livelihood objectives (Phakathi, 2016). Human resources have both quantitative and qualitative dimensions. The quantitative dimension is reflected by the amount of labour that a household can mobilise, which is associated with its size and composition. Skills and knowledge represent the qualitative dimension of human capital (Jimah, 2016).

- **Access to Education and Training**

Negative perceptions towards agriculture held by the youth may be attributed to numerous factors, the most notable one being education (Nxumalo and Oladele, 2013). Afande *et al*. (2015) state that most of the youth still face difficulty in acquiring information regarding farming and the farming business. They lack awareness of the opportunities that the sector has to offer, as many cannot see agriculture beyond primary production (FAO, 2014). According to Afolami *et al.* (2012), poor access to education is not the only challenge for youth in rural areas, but the quality of education is too. Afolami *et al.* (2012) state that the agricultural syllabus disappeared from most African schools, despite the need for it to be offered at elementary school level. It must be emphasised that there is a need for consideration to be given to the provision of improved agricultural training and education and the provision of all the necessary information in all key institutions like schools, municipal offices and libraries (FAO, 2014).

2.4.4 Financial Capital

Financial assets refer to the various financial resources that individuals may make use of to accomplish their livelihood objectives, such resources may, among other things, comprise cash flows, savings, credit-providing institutions, remittances and social grants (Ellis, 2000). Other than earned income, the most common types of inflows include pensions, or other transfers state transfers, and allowances. According to DFID, financial capital is possibly the most versatile of these assets; however, for most poor people, financial assets are the most difficult to attain. For most rural people, financial income is derived from temporary employment, vegetable production, livestock sales, remittances, and social grants (Alemu, 2012; Chipfupa and Wale, 2018).

- **Access to Social Grants**

Government social grants are an essential income source for the majority of poor people in South Africa. Most people in rural areas regard social grants (child support and older person grants) from government as a primary source of household income (Phakathi, 2016). Social grants play an important role in support of the livelihoods of the poor, as the majority are unemployed (Zantsi, 2016).

Some of the people who are involved in farming activities are not only able to buy agricultural inputs, but also to secure basic household needs. Therefore, social grants are playing an important role in farming, particularly smallholder agriculture. However, Chipfupa and Wale (2018) state that further financial support, through credit, is needed to improve long-term capital investment and better income.

- **Access to Finance (Credit/loans) and Savings**

Access to capital and credit for smallholders continues to be a major problem and has been the subject of analysis for decades in Africa (Brooks *et al*., 2012). Most young people struggle to obtain capital assistance for agricultural commitments (Gichimu and Njeru, 2014). They are often not sufficiently creditworthy to obtain credit/loans or financial assistance from financial institutions because they fail to provide collateral security that is acceptable to banks and other financial institutions (Afande *et al*., 2015). Juma (2017) states that access to finances allows for the buying of farm inputs, remunerating farm workers and renting of land. Similarly, Ahaibwe *et al.* (2013) argued that access to credit, loans and sufficient savings promotes the likelihood of an individual gaining access to productive inputs and important resources for agricultural promotion.

However, the youth, particularly in rural areas, are reluctant to take loans due to their poor repayment ability (FAO, 2010). In some instances, youth with reputable businesses ventures are at an advantage in obtaining loans over the youth without established businesses or start-ups (McNulty and Nagarajan, 2005). Savings are another important source of income for the youth because they allow not only for the procurement of agricultural necessities, but also help them in times of emergencies, as well as to build assets (McNulty and Nagarajan, 2005).

2.4.5 Social Capital

Social capital is defined as the ability of individuals to make use of the social networks and institutions available to them (Chipfupa and Wale, 2018). Sirianni and Friedland (1997) refer to social capital as comprising the connections of social organisations, norms, and networks that people can initiate, with the purpose of dealing and solving common problems. Sirianni and Friedland (1997) further state that such networks involve activities of "civic engagement", such as volunteerism and participation in neighbourhood associations, service clubs, and charitable groups. Social capital is important because it determines access to other capital assets (land title, credit access, and equipment) that have implications for resource allocation (FAO, 2001).

- **Access to Extension and Support Services**

Access to extension and support services is, among other things, the most necessary interventions required in the agricultural sector (Khapayi and Celliers, 2015). Extension and support services entail the provision of important information regarding agricultural inputs, the practical use of land, and market information (Ahaibwe *et al*., 2013). The provision of these services and support is important for increasing youth knowledge and skills in relation to farming (Ntshangase, 2016) and other important factors such as rural development, food security commercialisation, and poverty alleviation, as well as income generation of emerging farmers (Khapayi and Celliers, 2015).

2.5 The Perceptions of Youth towards Agriculture

While agriculture is identified as providing a possible solution to some economic challenges and joblessness among young people, the youth seem to view farming and agriculture in a negative light (Jeffrey *et al*., 2010). According to Ntshangase (2016), young people's perceptions and attitudes improve in the process of a socialisation that occurs in their households, at school, and within their network of friends. The primary socialisation agent of the youth is the household, which is the place in which young people's opinions and insights about small-scale agriculture become influenced (Jones, 2009). Peer groups, on the other hand, are individuals of the same or similar age who have a mutual relationship. Muwi (2012) states that these peer groups are the space where young people would understand themselves better, without the socio-economic status attributed to them by parents. Schools also play a role in the

socialisation process, as schools educate the youth, who thereby gain the kind of knowledge that neither their parents nor peers can offer them (Jones, 2009). The education process takes place as the youth interact with their teachers, and anything that the youth learn at school may have an impact on how they ultimately view agriculture.

Previous research (Kritzinger, 2002; Mibey, 2015; Njeru, 2017) regarding the youth affirms the negative perceptions that young people have towards agriculture and farm life in general. Furthermore, it can be confirmed that young people's non-participation in the agricultural sector is perpetuated not only by low financial income, or the apparent challenges of the unavailability of the factors of production, or the poor access to resources (such as land, physical capital and other inputs), but also by their attitudes and perceptions.

Kusis *et al*. (2014) found that Lithuanian and Latvian youth based their perceptions of agriculture from reinforced stereotypes of "old" ways of farming, including back-breaking hours in the field, low skill requirement and low wages. In Tanzania, Leavy and Smith (2010) revealed that young people perceived agriculture as a dull job with poor amenities. In South Africa, teenage girls were found to be critical of the 'low status' ascribed to farm children, compared with those living in towns, as well as of aspects like alcohol abuse, gossip, jealousy, lack of privacy, boredom, social isolation of farm workers, and restricted leisure opportunities (Kritzinger, 2002).

Contrary to the findings of the reviewed literature, which confirms the negative perceptions held by the youth and their disinterest in participating in agriculture-related activities, Chikezie *et al*. (2012) found that some of the youth did have positive perceptions about agriculture and actively participated in most farming activities. Their findings confirmed those of Adesope (1999) and Roy (2003), whose studies identified active engagement of the youth, with positive attitudes towards agriculture regarding farming and related activities. Chikezie *et al*., (2012) further state that strong, innovative young people who show enthusiasm and great energy must be supported in their involvement for the purpose of improving food security, nation building, and encouraging agricultural development.

2.6 Aspirations

According to MacBrayne (1987), aspiration refers to a person's wish to acquire a specific position or objective, such as a particular employment position or education level. Bernard and Taffesse (2012) referred to aspiration as an indication of intention or ambition and a desire to

achieve a particular goal. Aspirations include jointly the choices and principles upheld, as well as the challenges known to persons regarding the future (Bernard and Taffesse, 2012). Importantly, aspirations differ between individual persons, groups and households (Brown, 1999), and play an important role in decision making and in how individuals view and perceive their life outcomes (Schaefer and Meece, 2009).

2.6.1 Formation of Aspirations

Aspirations are formed early in childhood, and they are improved and reformed as a result of different experiences, choices and information, as well as the awareness of individuals regarding their capabilities and exposure to opportunities (Leavy and Smith, 2010). Aspiration formation can be associated with increased levels of education, technologies of communication and access to information, and can be driven by factors such as family and peer group influence (Sumberg *et al*., 2012).

Parents are found to have a great influence on the formation of children's aspirations, together with the career adoptions of classmates, work-related incomes, advice from friends, and various other aspects that enter into the choices made by youths (Kelsey, 1954). Furthermore, Kelsey (1954) states that parents attempt to create their wishes for the future of their children based on their experiences and living context, which then influence the aspirations of their children. Jacobs *et al*. (2006) stated that parents' beliefs have an impact on parenting behaviours and expectations, which in return will affect child outcomes, such as education and occupation choices. In the following section, both educational and occupational aspirations of young people are discussed.

2.6.1.1 Educational Aspirations of youth

Sumberg *et al*. (2012) indicate that education is one factor playing a key role in influencing youth aspirations. Anyidoho *et al*. (2012) found that the educational attainment and involvement of the youth in farming in Nigeria was rooted in their aspirations. Most studies around the aspirations of the rural youth make an important contrast in the inequalities between rural and urban educational opportunities. Naukkarinen (2017) states that rural youth are perceived to be disadvantaged in their access to educational and employment opportunities, which has a great impact on their aspirations.

According to Middleton and Grigg (1959), youths in rural areas are likely to have lower aspirations in relation to education and occupation, as opposed to those in urban areas, since the urban-based youth are more exposed to more opportunities. However, Morrison and Akerman (2008) and Byun *et al*. (2012) argued that, regardless of their geographical location, young people whose parents and teachers have greater expectations for them are more likely to have higher educational aspirations. For instance, young people whose parents want them to attend college are more likely to aspire to attend college. Byun *et al*. (2012) thus emphasise the importance of social capital over socio-economic status, and point out, according to their findings, that parents' levels of education were very important in influencing the aspirations of young people in education.

2.6.1.2 Occupational aspirations of youth

Young people, generally, have somewhat minimum occupational attainments (Haller and Sewell, 1957). People who are brought up in farming communities tend to have little success in careers other than farming. According to Haller (1958), children growing up in agriculture-inclined households could not easily aspire and succeed in careers out of farming and agriculture. In other countries such as Ethiopia with major food security challenges, it is becoming difficult to find youth that aspire to take up farming as a livelihood strategy. This, according to Tafere and Woldehanna (2012), is a great challenge since children are brought up to aspire to employment in fields unrelated to agriculture, thus leaving the future of agriculture at risk.

2.6.1.3 Youth Aspirations towards agriculture

Life choices and outcomes are partly affected by aspirations, and ultimately, these aspirations inform the choices that youth make regarding agriculture (Anyidoho *et al*., 2012). The choice to engage in agriculture and the utilisation of resources may also be a result of both external and internal motivations (Juma, 2017). External motivations could involve family, friends, mass media or extension officers, while internal motivations, on the other hand, include perceptions, interests, and willingness to participate in agriculture-related activities.

Sergo (2014) is of the view that, with the influence of a globalised world, developing communications and media exposure, young people have developed to understand the rural–urban disparities and hence aspire to livelihoods unrelated to agriculture. According to Yisak

and Tassew (2012), young people change their farming aspirations to non-farming aspirations as they grow older. This is because as the youth grow older, they tend to choose occupations related to their parents (Yisak and Tassew, 2012). Similarly, Getnet and Asrat (2014) adds that young people look down on agriculture as they grow due to their perceived attitude that it is difficult, dull and demeaning. Finally, Sergo (2014) cited landlessness and the unavailability of the necessary resources needed for farming as major factors for the youth not to aspire to participate in agriculture, especially those who are early school leavers.

2.6.2 Measuring Aspirations

There are potentially numerous factors that may be linked to aspirations (Bernard and Taffesse, 2014). For instance, Ray (2006) states that aspirations are entrenched in an individual's 'aspiration window', that is, an individual's intellectual world and social circle on which they rely to measure what is practical for themselves. The individual's aspirations are influenced by the size and structure of their network of contacts. Nonetheless, aspirations are likewise moulded by the person's unique life experience (Bernard and Taffesse, 2014).

Bernard and Taffesse (2014) further argue that aspirations, like all attitudinal qualities, are not directly observable and are difficult to perceive. In addressing the problem and measuring aspirations, Bernard and Taffesse (2014) propose two possible alternatives. Firstly, indirect, which comprises a combination of assumptions regarding the determinants of aspirations or the individual's pattern of decisions and related results, together with information on real decisions. For instance, it is anticipated that an individual who has a narrow 'aspiration window' will have a low level of aspirations (Bernard and Taffesse, 2014). The second alternative approach that may be employed to produce data of exceptional quality, but only if the implementation is done carefully, is to pose questions directly to individuals about their aspirations (Bernard and Taffesse, 2014).

A direct approach was used by Beaman *et al*. (2012) in one study; however, the participants were parents and were asked direct questions in relation to their aspirations for their children. A similar approach was used to directly measure youth educational and occupational aspirations by Edington (1976). Students were surveyed using a questionnaire that provided "fixed-choice stimulus questions" in order to elicit responses from the youth (Edington, 1976). Another direct method of approach was used by Nichols, Kotchick, McNamara, Barry and Haskins (2010). Nichols *et al*. (2010) used the Educational Aspiration Scale (EAS), which is a

self-item report questionnaire, to assess the level at which the youth aspire to obtaining the highest level of education, with the highest level score in this regard indicating a higher formal educational aspiration, while the lower would mean the lower aspiration level. There are different ways in which aspiration can be determined and measured, with most studies preferring a direct measuring of aspirations with the use of structure instruments. In the following section, a conceptual framework for the study is introduced and discussed thoroughly.

2.7 Conceptual Framework

The SLF is a commonly utilised tool in research and has been used for analysis by several studies (Hadebe, 2016; Jimah, 2016; Chipfupa and Wale, 2018). The framework has notable strengths which include its flexible design and its openness that allows for adaptability to various contexts where it is employed (Kollmair and Gamper, 2002). It can be used as an analytical instrument in order to pinpoint development priorities and new activities prior to undertaking any development activity, and it can be utilised as a means structuring ideas and applied in a livelihood form of analysis to evaluate how development activities are suitable in the livelihood of the poor (Kollmair and Gamper, 2002). However, the framework also has limitations.

The SLF framework does not reflect the influence of aspirations and perceptions of individuals in pursuing agriculture as a livelihood strategy, which this study identifies as important factors that influence youths' interest to participate in agriculture. Although it can be argued that aspirations are incorporated in the livelihood outcomes, the listed livelihood outcomes do not necessarily reflect the aspirations and perceptions of rural youth as they differ from one person to the next (Zantsi, 2016). The SLF limits itself only to consideration of the influence of institutions, culture, and beliefs, and therefore does not represent a clear picture of youths' aspirations and perceptions towards agriculture. This study has developed a conceptual framework, as shown in Figure: 2.2 below. This framework attempts to address the limitations of the reviewed frameworks and build on their strengths for the context and nature of this dissertation. It is worth noting that the framework is based on the SLF.

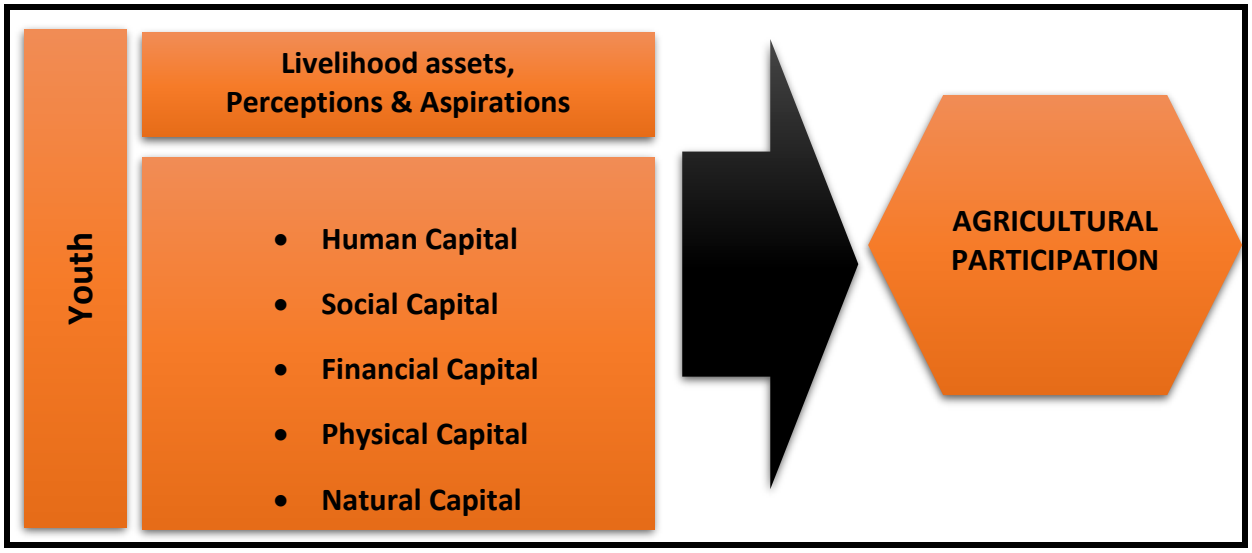

Figure 2.2: Conceptual Framework Adapted from the SLF

This framework (Figure 2.2) suggests that access to or ownership of the five livelihood assets (human, social, natural, physical, and financial) has an influence on an individual's aspirations and perceptions, which influences participation in agricultural activities. Furthermore, the framework suggests that access to resources can directly influence participation.

2.8 Methods Used in Similar Studies

This study has reviewed literature in relation to agriculture and participation of youth in the sector and acknowledges and appreciates the work done by other researchers. The literature reviewed and the work done has inspired the planning of, and provided guidance towards, the formulation of this study. The following segment offers a review of related studies with regard to the methodologies that they have employed and adopted for information interpretation.

Several of the empirical studies reviewed regarding the youth and agriculture, such as Kimaro *et al*. (2015), Zamxaka (2015), Adesina and Favour (2016), Zantsi (2016), Cheteani (2016), and Chipfupa (2018), had collected data by using structured questionnaires and interviews. These studies applied various methods, such as stratified random sampling and simple random sampling, and had variously analysed data both qualitatively and quantitatively with the use of Principal Component Analysis (PCA), Cluster Analysis (CA), and the Statistical Package for Social Science (SPSS) computer software. Chipfupa (2017) used the sustainable livelihood approach to guide his study, Chipfupa (2017) and Zamxaka (2015) applied stratified random

sampling methods. On the other hand, Zantsi (2016) and Njeru (2017) employed sample random sampling methods.

In their study, Kimaro *et al.* (2015) used a Likert scale of 1–5 to measure the attitudes of youth towards agriculture, with the scale being "Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree". A retrogression method appears to be the most preferred model for the studies reviewed. Adesina and Favour (2016) and Zamxaka (2015) adopted Multiple Linear Regression in their studies. On the other hand, Cheteani (2016), Magagula and Tsvakirai (2019), and Mbah *et al*. (2016) preferred a binary logistic regression model.

2.9 Conclusion

Agriculture plays a significant role in economies, worldwide, through its contribution to poverty reduction, employment creation, and food security. It is evident from the literature that agriculture is an important livelihood strategy in various parts of the world and can provide a solution to the socio-economic challenges experienced by the youth. Most of the youth (18–35) find themselves trapped in poverty and unemployment, despite the promising opportunities highlighted in agriculture, and the important role and contribution the youth can make in agriculture. Literature points out the lack of access to sustainable livelihood assets, as well as negative perceptions and negative aspirations towards agriculture, as being substantial hindrances to youth participation in agriculture.

The sustainable livelihood assets include human, social, physical, natural and financial capitals. Access to these livelihood assets is important for the youth who have aspirations to participate in agriculture and related activities, with the purpose of improving their socio-economic status. However, access to livelihood assets alone is not enough to achieve youth agricultural participation. The challenge still remains in the negative perceptions and aspirations that the youth have towards agriculture. The negative perceptions held by the youth regarding agriculture and related activities drive them away from agriculture. Negative perceptions are perpetuated by misinformation, lack of production resources, and the negative attitudes that the youth have towards agriculture. Efforts to promote agriculture and invest in rural infrastructural development are needed to shape the youths' perceptions regarding agriculture. Such efforts should include improved youth programmes, resource access, and information. Another important aspect comprises aspirations, and it should be kept in mind that youth aspirations are formed early in their childhood and improve or change completely as they grow older and

become exposed to further information and opportunities. Parents, peers and the schools play an important role in the formation of youth aspirations. Most young people do not aspire to participate in agriculture and related economic activities. Some of the reasons from literature identify poor access to sustainable livelihood assets and lack of opportunities.

It is evident from the literature reviewed that sustainable livelihood assets have an influence on youths' perceptions and aspirations, and the youths' decisions to participate in agriculture. Perceptions and aspirations can be measured both directly and indirectly. The direct method would be where the youth are asked direct questions in relation to their aspirations. Other methods would be through the use of a Principal Component Analysis (PCA) to generate indexes. To determine the influence of livelihood assets, perceptions and aspirations towards participation in agriculture, a binary logistic model is considered. A more in-depth discussion regarding the methods and procedures will be provided in the following chapter.

CHAPTER 3:
DATA AND RESEARCH METHODS

3.1 Introduction

This chapter introduces the selection of the study areas, the description of the study areas, sampling procedure, the data collection procedures, the data description and procedures, the methodological approaches employed in this research, and finally, the variables used in the analysis are briefly clarified.

3.2 Data

3.2.1 Selection criteria of the study areas

The area selection criteria were formulated in accordance with the findings of the Water Research Commission (WRC) Project (K5/2789//4). The Free State is the province the WRC project has taken interest in, following the recommendation by the Department of Agriculture and Rural Development (DARD). The province is the third largest province in South Africa and consists of the Lejweleputswa, Thaba Mofutsanyana, Xhariep, and Fezile Dabi District Municipalities and the Mangaung Metropolitan Municipality, as shown in Figure 3.1.

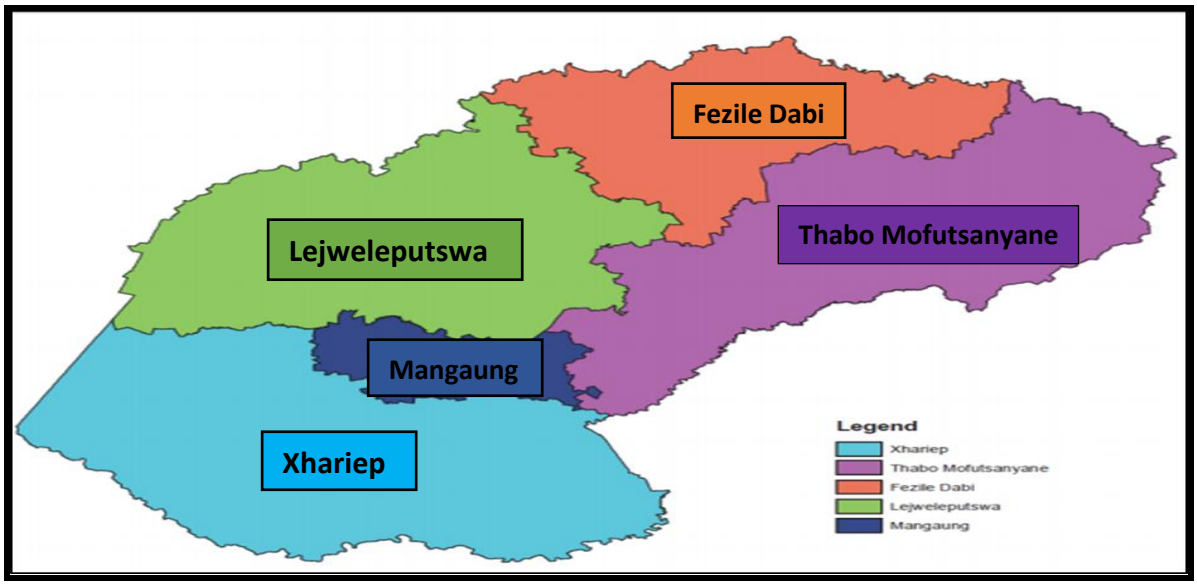

Figure 3.1: Free State map showing the five districts
Source: Stats SA (2014a)

The districts selected within the Free State province were the Thaba ‘Nchu, in the Mangaung Metropolitan Municipality, and QwaQwa in Maluti-A-Phofung local municipality, in the Thabo Mofutsanyana District. The two areas of interest were selected, given the following considerations:

- They are both dryland-farming areas
- They are both affected by high levels of youth unemployment
- The research done in both areas has been limited regarding the participation by youth in dryland farming.

The aforementioned factors are considered, and the consensus is that youth unemployment is a major challenge in the two districts. Furthermore, the limited research regarding the youth in dryland areas suggests that a study regarding the youth would add value to the areas selected.

3.2.2 Study area

The study is intended to assess the participation of youth in agriculture, considering the shared vision that the agricultural sector is a viable basis for livelihood support and the idea that the participation of young people is important. QwaQwa and Thaba ‘Nchu are home to many young people who share in the idea that agriculture could be the solution to the prevalent problems of desperate poverty and youth unemployment.

The study was conducted in the QwaQwa and Thaba Nchu areas, both of which are located in the Free State province of South Africa (see Figure 3.1). The Free State is the third-largest province in South Africa. It covers an area of 129 825 km² and ranks second smallest in terms of population, accounting for 5.1 % (2.8 million) of the country’s population (Stats SA, 2018). The province also has the second-lowest population density in the country. Of the entire provincial population, at least two-thirds of people speak Sesotho, followed by Afrikaans, and less than 10 % speak isiXhosa. The economy of the province is centralised around agriculture, mining, and manufacturing. Its capital is Bloemfontein, and other important towns include Welkom, Kroonstad, Bethlehem, and areas in former homelands such as Botshabelo, Thaba ‘Nchu, and QwaQwa.

QwaQwa is a former Bantustan (“homeland”) located in the central eastern part of South Africa. It is part of the Maluti-A-Phofung (M-A-P) Local Municipality (Figure 3.1), which

forms part of the Thabo Mofutsanyane District Municipality. QwaQwa covers a land area of 655 square kilometres in the eastern part of the Free State province, bordering on Lesotho. The town is well known for its wonderful mountain scenery. Mountain slopes are covered with a thick layer of grass best suited for grazing, and the soil in the valleys has been described as 'rich, loamy and the best suited for agriculture' (Koatla, 2012).

Thaba 'Nchu is a rural town situated within the Mangaung Metropolitan Municipality (Figure: 3.2), in the Motheo District of the Free State Province, South Africa. The town is located 63 km east of Bloemfontein and 17 km east of Botshabelo. Thaba 'Nchu covers a land area size of 36.39 km2 and comprises the town itself and 42 small villages scattered around the town. The predominant economic sector in these villages is that of subsistence agriculture.

3.2.3 Sampling procedure

The study examines a sample size of 178 youth respondents and has employed a stratified random sampling method to choose a sample. This method allowed the researcher to choose, at random, a group of youth from the villages around QwaQwa and Thaba Nchu. These respondents have been categorised in terms of their backgrounds. The groups consisted of youth between the ages of 18 and 36. The sample comprised males and females who were participating in agriculture and related activities as well as those who were not participating in agriculture or related activities. The two categories of youth (Participating and non-participating) were important in this study to determine the existing differences in terms of sustainable livelihood resources between those who are participating and those who are not participating in agriculture and related activities. Determining the background of youth in terms of their resources was important to provide better intervention strategies and what should be considered precisely in terms of resources that are needed among both categories of youth in the regions.

3.2.4 Questionnaire

The project obtained ethical clearance from the University of the Free State (no: *UFS-HSD2018/0947*) for the purpose of the data collection in this study. The study used primary data, which was collected through the use of structured questionnaires. Before data was collected, the questionnaire was pre-tested by the research team. The questionnaires were available in English. However, to ensure clarity and ease of comprehension for the respondents

during the interviewing process, the enumerator read out questions and translated them to Sesotho or Setswana, depending on a respondent's preferred language.

The questionnaire (Appendix A) was structured in such a way that the first section captured access to livelihood assets (human, social, physical, financial, and natural capital), as well as psychological capital (hope, efficacy, resilience, and optimism). The second section covered respondents' perceptions and aspirations, as well as their willingness, interest and agricultural participation. This was done for the purpose of creating the perception and aspiration indexes for the two regions within the Free State. The last part of the second section of the questionnaire further covers willingness, interest and agricultural participation.
The questionnaire is comprised of open-ended and closed-ended questions. Respondents were able to openly express their opinions when given open-ended questions. The closed-ended questions, on the other hand, allowed the researcher to obtain information with ease, while not taking too much of the respondents' time.

3.2.5 Survey

The data for the study was collected from August 2018 to November 2019 in the respective areas. Data was obtained from youth (18 – 36) respondents through structured questionnaires (Appendix A) implemented by a team of research assistants (herein referred to as enumerators) at the University of the Free State (UFS), Department of Agricultural Economics. For the purpose of consistency in interpretation and clarity, each enumerator who administered the questionnaire helped each respondent in responding to the questions in the questionnaire. Each respondent answered the questions in the questionnaire through the help of an enumerator, with the enumerator reading the questions to the respondent and then writing down the responses.

3.2.6 Description of respondents

The following section presents the descriptive statistics of the research study. A total of 178 youth respondents were interviewed, through a questionnaire. The questionnaire was divided into two sections, the first section covered the sustainable livelihood assets (human capital, natural capital, physical capital, financial capital, social capital) and the second section measured the youths' perceptions, aspirations, willingness, interest and agricultural participation.

The statistics shown below in this section are focused on the youths' access to the SLA (including household demographics), education levels, agricultural experience, access to agricultural training, access to land, access to extension and support services, access to infrastructure, access to markets, access to finance and credit, youth perceptions and aspirations.

- **Agricultural participation**

The study used a total sample size of 178 respondents in the QwaQwa and Thaba 'Nchu areas, comprised of youth between the ages of 18 and 36. The data regarding the participation status of the youth was collected and analysed. Table 3.1 presents the distribution of youth participation status in frequency and percentages.

Table 3.1: Agricultural Participation

Agricultural participation	Frequency	Percent (%)
No	91	51.1
Yes	87	48.9
Total	**178**	**100.0**

Source: Field Survey (2018/2019)

Table 3.1 shows that 51 % of the respondents were not participating in agriculture, while 49 % percent of the youth were then currently involved in farming. From the table above, it can be concluded that almost half of the young people in the QwaQwa and Thaba 'Nchu areas were not participating in agriculture and related activities.

3.2.6.1 Human Capital (Household Demographics)

- **Age, Farming experience and household size**

A respondent's age, farming experience, and household size are deemed important factors in this study. Knowing the age and the actual number of years of farming experience of the youth provided a clear picture of the participation likelihood of persons with varying years of experience, across different ages. Farming experience can also be indicative of the level and extent of exposure to farming and related activities. Agricultural or farming experience may be acquired in different ways, with some of the respondents having acquired experience through partial involvement (assisting in home gardens/livestock rearing), and others through value chain activities and employment in the sector, while others did not have any experience or exposure to agriculture and farming, at all.

Experience varies from one respondent to the next, depending on the level of participation and the extent of exposure and participation; for instance, children born in farming families get to be exposed from a young age through family businesses or homestead farming. Finally, household size is also an important factor that is expected to have influence on whether or not the youth will participate in agriculture. A larger household size could imply a greater capacity to work, and better efficiency. The study obtained data on the age, farming experience, and household size of the youth in Thaba Nchu, and the results are presented in Table 3.2 below.

Table 3.2: Age, Farming Experience and Household Size distribution of respondents

Variable	Age	Farming Experience	Household Size
Minimum	18	0	1
Maximum	36	27	13
Mean	25.33	2	4
Median	25.00	27	5
Mode	23	0	5
Standard Deviation	4.625	4.063	2.211

Source: Field Survey (2018/2019)

The respondents in the sample size of 178, which comprised males and females in the study areas, ranged in age from 18 to 36. The mean was 25.33, with a median of 25.00, a mode of 23, and a standard deviation of 4.625. Table 3.2 shows that most young people who participate in agriculture are likely to be in the age range between 23 and 25. This could be attributed to the assumption that this is the age when they are more active and are likely to engage in agriculture and job hunting for their employment and generating income.

The farming experience of the youth respondents ranged from 0 (no experience), an average of 2, to a maximum of 27 years of experience. The mode for experienced was 0, the median was 27, with a standard deviation of 4.063. Although the majority of the respondents indicated having no experience at all in agriculture and related activities, the fact that some respondents stated that they have experience may be a reasonable indicator that there is some degree of interest and willingness to participate in agriculture and related activities by the youth in these respective areas. Finally, the household size ranged from 1 person in a household, a mean of 4,

a median of 5, a mode of 5, with a standard deviation of 2.211, to the maximum number of household members of 13, in both QwaQwa and Thaba 'Nchu.

- **Gender**

Generally, it believed that females in rural areas are more active in agricultural participation than males (Zamxaka, 2015). According to Muchara (2011) female agricultural participation is particularly seen in household farming and related activities. Table 3.3 provides insight on the gender distribution as far as agricultural participation is concerned.

Table 3.3: Gender Distribution of Respondents

Gender	Frequency	Percent (%)
Males	103	57.9
Females	75	42.1
Total	**178**	**100.0**

Source: Field Survey (2018/2019)

Table 3.3 above indicate that the data was collected from a total sample size of 178 respondents, where 103 were males and 75 were females. Therefore, 58% of the respondents were males and 42% were females. The statistics indicated that males are more involved than females and this could be because of the physical nature of agriculture related activities (Mbah *et al.* 2016).

- **Marital status**

The analysis of an individual's marital status is important in this research as it not only reflects the level of the respondent's responsibility, but also helps to see the likelihood of participation in agriculture between those who are single or otherwise. The survey data on the marital status of the youth is presented in Table 3.4. The data presented below reveals that 89 % of the respondents were single, while 11 % fell into the category of married, divorced or widowed, shown there as "otherwise".

Table 3.4: Marital Status of Respondents

Marital status	Frequency	Percent (%)
Otherwise	20	11.2
Single	158	88.8
Total	**178**	**100.0**

Source: Field Survey (2018/2019)

- **Education Level**

The education levels of the respondents are important for gaining an understanding of the level of education of the youth in QwaQwa and Thaba 'Nchu, and whether it has any significance towards participation in agriculture and related activities. The education level of the youth also indicates the human capital endowment of individuals. It is expected of individuals with the highest education level to have the capacity to make sensible interpretations of information and to make better use thereof, than those with lower educational attainments are (Phakathi, 2016).

Table 3.5 presents the different levels of education, ranging from no education, matric (grade 12), grade 11 or less, degree /diploma, and higher. The different levels are briefly elaborated in Table 3.5.

Table 3.5: The Levels of Education of Respondents

Variable	Frequency	Percent (%)
Degree / diploma and higher	9	5.1
Matric	94	52.8
Grade 11 or less	71	39.9
No education	4	2.2
Total	**178**	**100.0**

Source: Field Survey (2018/2019)

'No education' is a category that represents the young people who have not attained any form of formal education, Grade 11 or less simply indicates 11 (or less) years of schooling, while matric (grade 12) is meant to indicate the completion of the national senior certificate (NSC).

The last level is degree, diploma and higher, which is measured to see if a respondent has either a degree, a diploma and higher. The purpose of this was to establish the levels of education of the respondents in the two areas and ascertain whether or not education level has an influence on the decision to participate or not.

Table 3.5 offers a statistical representation of individuals in the sample size who had indicated their levels of education, and it is clear to see from the results above that only 2 % of the youth in the sample size of 178 indicated having no formal education, while 98 % indicated having received formal education. Out of the sample, 40 % have Grade 11 or less, 53 % have matric, and lastly, only 5 % of the respondents have either a degree/diploma or higher qualification.

- **Access to agricultural education and training**

Agricultural education and training comprise important aspect in human capital development, and it is, therefore, necessary to pay attention to these factors, which seems to have been often overlooked in QwaQwa and Thaba 'Nchu. It is in this regard that the study intended to ascertain whether a respondent had received an agriculture-related tertiary education, or had previously received any form of agricultural training. This information was sought because a fruitful training programme would lead not only to improved entrepreneurial capacity, but would also influence the willingness to take action (Chipfupa and Wale, 2018).

Table 3.6: Agricultural Education

Agric Education	Frequency	Percent (%)
No	171	96.1
Yes	7	3.9
Total	**178**	**100**

Source: Field Survey (2018/2019)

Table 3.6 above shows that most of the youth (96 %) in the two regions of the Free State did not have any tertiary agricultural education, and only 4 % indicated having received agricultural education. Some respondents cited lack of funding opportunities required to further their education, and others reported having no interest in attaining a tertiary agricultural education.

Table 3.7: Agricultural Training

Agric Trainng	Frequency	Percent (%)
Yes	18	10.1
No	160	89.9
Total	**178**	**100**

Source: Field Survey (2018/2019)

Furthermore, Table 3.7 shows that the majority (90 %) of the respondents had not received agricultural training at the time of the survey conducted for this research. The data shows that only 10 % of the respondents had received agricultural training.

- **Main Occupation**

The main occupation of a respondent is regarded as an important factor in this study. This aspect assists in clearly understanding the willingness of respondents to participate in

agriculture and related activities, depending on whether they are unemployed, employed self-employed, or are fulltime farmers. Table 3.7 below presents the statistics on the occupation of the respondents.

Table 3.8: Main Occupations of Respondents

Main Occupation	Frequency	Percent (%)
Full-time farmer	9	5.1
Employed	25	14.0
Self-employed	15	8.4
Student	30	16.9
Unemployed	99	55.6
Total	**178**	**100.0**

Source: Field survey (2018/2019)

From the data presented in Table 3.8, out of the sample size of 178 respondents, only 5 % of the respondents were farming full-time, 14 % were employed, 8 % were self-employed, 17 % were students at tertiary institutions, and the majority at 56 % were unemployed.

3.2.6.2 Natural Capital

- **Access to land**

Land ownership and access to land are considered primarily to constitute an important factor in this research, as ownership of land and access thereto are important for direct agricultural production, as land can be used as collateral for securing financial capital from financial institutions (Darkey *et al*., 2014) and this would increase the likelihood of youth participating in agriculture. For instance, those members of the youth who have access to or own land are more likely to participate in agriculture and related activities than those without land are. The table below presents the results for the young people in the QwaQwa and Thaba 'Nchu areas who own and have access to land. Table 3.9 shows that 60 % of the respondents do have access to land, while 40 % do not have access to the land.

Table 3.9: Analysis of Land Access

Access to land	Frequency	Percent (%)
Yes	106	59.6
No	72	40.4
Total	**178**	**100.0**

Source: Field Survey (2018/2019)

3.2.6.3 Financial Capital

- **Access to finance (credit/loans) savings**

Access to finance and credit is vital for buying agricultural inputs and leasing of land and implements. The youth who participate in agriculture obtain finances from various sources, including their own personal savings, government social grants, and credit from financial institutions.

Social Grants

Table 3.10 below shows information on grant usage for agricultural purposes by the youth. Most of the youth (82 %) do not use grants to buy agricultural inputs, while some (18 %) do use grants to buy agricultural inputs.

Table 3.10: Grant Use for Buying Agricultural Inputs

Grant use for inputs	Frequency	Percent (%)
Yes	33	18.5
No	145	81.5
Total	**178**	**100.0**

Source: Field survey (2018/2019)

Savings and credit (or loan)

This study views savings and credit as constituting a vital form of an individual's financial endowment. Access to savings and credit are vital factors that can impact upon the youths' willingness and interest to participate in agriculture and related activities. Access to savings and credit/loans can enable farmers to purchase productive resources and implements (Chisasa and Makina, 2012). Credit access also helps the poor in improving their livelihoods through consumption, thus relieving them from short-term financial income vulnerability (Okurut *et al*., 2004). The survey data on youth access to savings and credit /loans is presented in Table 3.11 and Table 3.12.

Table 3.11: Access to Savings

Savings	Frequency	Percent (%)
Yes	53	29.8
No	125	70.2
Total	**178**	**100**

Source: Field survey (2018/2019)

The survey data presented in Table 3.11 shows that only 30 % of the youth have some form of savings and the 70 % do not have savings.

Table 3.12: Access Credit (or Loan)

Credit/Loan	Frequency	Percent (%)
Yes	6	3.4
No	172	96.6
Total	**178**	**100**

Source: Field survey (2018/2019)

In relation to credit/loan, 3 % of respondents reported having taken credit or loans, and 97 % reported having not taken any credit or loans in the 12 months prior to the survey. The statistics are as expected, since the youth do not want to be in debt, while some also lamented the lack of collateral. Some of the youth who had taken credit from micro-lenders or loan 'sharks' indicated experiencing discomfort, as interest charged by micro-lenders and loan sharks was high.

3.2.6.4 Social Capital

- **Access to extension services and government support**

Access to extension services and government support services could provide some of the essential elements for retaining the youth in agriculture and attracting those who are not involved. Contact with extension officers could assist with the sharing of important information for the youth who are participating in agriculture, which would improve the youths' knowledge and skills. Government support (which might come through training, financing, mechanisation, and provision of production inputs) may play an important role in ensuring the continuous participation of youth in agriculture, and has the ability to change the perception of the youth regarding agriculture. The study, therefore, found extension services support and government support as important elements that would change perceptions and encourage the participation of youth in agriculture. Tables 3.13 and 3.14 present the data on the youths' access to extension and government support in the two study areas.

Table 3.13: Extension Contact

Extension Contact	Frequency	Percent (%)
Yes	48	27.0
No	130	73.0
Total	**178**	**100**

Source: Field Survey (2018/2019)

Table 3.13 indicates that some of the youth do have contact with extension officers, while others do not. Table 3.13 shows that 27 % of the youth had extension contact/support, and 73 % did not have extension contact and support.

Table 3.14: Beneficiary of Government Support

Government Support	Frequency	Percent (%)
Yes	7	3.9
No	171	96.1
Total	**178**	**100**

Source: Field Survey (2018/2019)

The data in Table 3.14 shows that 4 % of the respondents indicated having received government support, while most (96 %) respondents did not have government support. While inputs in a form of seeds are provided by the government in both areas, it is clear that most of the respondents did not get to enjoy this benefit. Some of the respondents lamented inconsistency in the provision of inputs, while others mentioned that they only received inputs once, but had never received any financial assistance from the government. It is concerning to see these results, given the challenge of input price increases and low government support. These two challenges could be discouraging factors for many young people who participate in agriculture.

- **Co-operative, Youth club and Social media group Membership**

Membership in social organisations serves as an important platform for the youth to pursue agriculture. Membership of co-operatives, youth clubs, and social media groups provides a platform for interaction, networking, and information sharing among individuals on matters of mutual interest. These platforms offer the opportunity for the youth to learn through communication and digital marketing, thus increasing their chances of gaining effective networking skills and participating in agricultural activities. If used effectively, these social platforms could be important tools of extension and promotion of agricultural production, and a source of market information (Muktar *et al*., 2015). Tables 3.15 to 3.17 present the survey data on social platform membership by the youth in Thaba ‘Nchu and QwaQwa.

Table 3.15: Youth membership in a Co-operative

Co-op Membership	Frequency	Percent (%)
Yes	22	12.4
No	156	87.6
Total	**178**	**100**

Source: Field Survey (2018/2019)

The data in Table 3.15 shows that 12 % of the youth were members of a co-operative, while 88 % of the youth were not. The respondents cited distrust among co-operative members, poor leadership and conflict over resources as reasons for not being members in a co-operative.

Table 3.16: Youth membership in an agricultural youth club

Youth club Membership	Frequency	Percent (%)
Yes	10	5.6
No	168	94.4
Total	**178**	**100**

Source: Field Survey (2018/2019)

Table 3.16 shows that 6 % of respondents were part of a youth club, while 94 % were not part of a youth club. The respondents indicated that there are no agricultural youth clubs in their respective areas, and other reported to not have any knowledge of existing youth clubs (if there were any) in their communities.

Table 3.17: Youth membership of a social media group

Social Media group Membership	Frequency	Percent (%)
Yes	82	46.1
No	96	53.9
Total	**178**	**100**

Source: Field Survey (2018/2019)

Those of the youth who formed part of social media groups numbered 46 %, while 54 % were not part of social media groups. However, low social media group membership could be attributed to, among other things, high data costs, no interest, and lack of smartphones.

3.2.6.5 Physical Capital

- **Own Livestock**

Livestock ownership is an important part of forming individuals' physical capital, since it is not only easily convertible to cash income, but also represents the wealth status of the people in rural communities such as QwaQwa and Thaba 'Nchu. The respondents were asked if they owned any livestock in order to understand how they are involved in agriculture and related activities, and how they are endowed in terms of physical capital. Table 3.13 below show the results from both the study areas.

Table 3.18: Analysis of Livestock Ownership

Livestock Ownership	Frequency	Percent (%)
Yes	51	28.7
No	127	71.3
Total	**178**	**100.0**

Source: Field Survey (2018/2019)

Table 3.18 shows that 29 % of the respondents had livestock, while 71 % did not have any livestock. The results above indicate that livestock ownership is quite low among the respondents. This outcome is not surprising because most of the youths carry out garden farming and only assist with other activities, including livestock rearing. Some of the reasons that might be attributed to this outcome could be the challenges of poor rainfall (drought) in the study areas, worries of livestock theft (especially small heads of stock), and the costs associated with livestock production and ownership, such as vaccines, salaries of livestock watchmen, and purchases of animal feed.

- **Market Access**

Market access is a very important factor that the study took interest in as far as youth participation in agriculture is concerned. Accessibility to the market is a key success factor, most particularly in smallholder farming, because it motivates farmers to maximise production and contribute to household income and, ultimately, to food security (Machethe, 2004). Table 3.19 below provides the results in terms of market access by the youth in both QwaQwa and Thaba 'Nchu.

Table 3.19: Analysis of Market Access

Market Access	Frequency	Percent (%)
Yes	44	24.7
No	134	75.3
Total	**178**	**100.0**

Source: Field survey (2018/2019)

The Data in Table 3.19 shows that the majority of the respondents do not have access to the market, with 25 % percent of the respondents indicated having access to the market, while 75 % did not have access to the market. The youth indicated the challenges of poor road infrastructure, lack of transportation, and distance as factors limiting market access.

3.3 Methods

The study applied both qualitative and quantitative methods of analysis. A descriptive statistics (frequency, standard deviation, and percentages) analysis was used to capture the access to livelihood assets, which were analysed using the Statistical Package for Social Sciences (SPSS). The SPSS was also used to perform PCA to generate indexes according to youths' perceptions and aspirations. The indexes were used to calculate the indexes scores which were further used along with the SLA as independent variables in the Binary Logistic Model to determine the influence of livelihood assets, perceptions, and aspirations towards agricultural participation. The following section of the work will present a detailed presentation on measuring perceptions and aspirations, and will also discuss the procedure that was followed to generate the indexes using PCA in SPSS.

3.3.1 Measuring Perceptions and Aspirations

To measure both the perceptions and aspirations of the youth towards agriculture, a list of statements was used in the questionnaire. Two lists, one comprising 21 statements and the other, 6 statements, as shown in Tables 3.20 and 3.23, respectively, were used. These statements were used to generate the two indexes (Perception and Aspiration Indexes) through using a PCA. The PCA is the common technique used by researchers to create various indices (Hadebe, 2016). A PCA is a preferred technique in empirical analysis for its ability not to only derive from the data set the essential information, but also to reduce several variables of data into smaller and manageable dimensions, the simplification of data description, and for the analysis of interpretations and variables (Phakathi, 2016).

3.3.1.1 Measuring Perceptions

To measure perceptions, the questionnaire tested the respondents on a Likert scale for 21 statements. For perception, the questionnaire tested general perceptions, perceptions towards smallholder agriculture, and technology perceptions. One of the statements included was that

"smallholder agriculture is not a profitable venture", and the responses were categorised and collected by means of a five-point Likert scale, ranging from: 1 = strongly agree; 2 = agree; 3 = neutral; 4 = disagree; 5 = strongly disagree. The preference for a 5-point Likert scale was encouraged by the fact that it is practical to use and offers rationally strong correlation coefficients by reducing limiting data distortions (Conradie and Piesse, 2016).

Table 3.20: Statements Measuring Youth Perceptions towards Agriculture

Statements	
STAT 1	Primary rain-fed agriculture can offer better livelihood support and is the best way to alleviate poverty
STAT 2	Primary rain-fed agriculture is unattractive, dirty and backbreaking
STAT 3	Primary rain-fed agriculture is an option for under-achieving Students and adults
STAT 4	Primary rain-fed agriculture is reserved for old uneducated people
STAT 5	I find that primary rain-fed agriculture is attractive to me as a young person
STAT 6	Primary rain-fed agriculture would be the last choice if other non-farm options are available
STAT 7	I have seen elders improving their life through primary rain-fed smallholder agriculture
STAT 8	I prefer irrigated smallholder agriculture to rain-fed smallholder farming
STAT 9	Value adding agricultural activities are physically demanding
STAT 10	I prefer an office job than an outside / field job
STAT 11	I can be wealthy / rich through engagement in agricultural value chain economic activities
STAT 12	The youth can engage in agricultural value chain activities related businesses
STAT 13	Smallholder agriculture is not a profitable venture
STAT 14	Participation in agricultural economic activities will lead to economic empowerment of young people
STAT 15	Most people known to me love agriculture and agriculture related businesses
STAT 16	I believe most people known to me will support me if I choose to initiate agricultural business
STAT 17	Agriculture creates employment for the majority of the rural poor
STAT 18	The use of technology makes farming easier
STAT 19	Technology complicates farming
STAT 20	You cannot rely on technology for farming and related activities
STAT 21	Morden technology will improve youth participation in agriculture

Source: Survey (2018/2019)

- **Determining Perceptions and aspirations Indexes**

A factor analysis was done using a verimax rotation, the Kaiser Normalisation, and PCA. The steps followed were, firstly, to perform and generate the correlation matrix for perceptions and aspirations statements to check for correlation between the variables in the analysis (represented by the diagonal line that shows a perfect correlation between variables). In order

for the analysis to proceed, a minimum of three variables in the correlation matrix must be greater than 0.5. Any variable that does not comply with the required 0.5 benchmark is to be excluded, and the analysis shall be repeated until all factors represented in the diagonal line comply with the rule of 0.5 or greater.

The determination of communalities follows after the generation of the correlation matrix. This step helps to identify the statements that must be excluded from the component analysis. The variables with communalities of either 0.50 or greater are retained, and those with communalities less than 0.50 are excluded. A factor loading greater than 0.50 is considered strong, and any variable less than 0.50 is ultimately excluded from further processes.

The construction of the principal component is the next step in the procedure. The construction of a principal component helps the researcher to calculate the eigenvalues of the variables, and factors with eigenvalues of greater than one are then considered. Factors with eigenvalues less than one are removed as they indicate multi-collinearity. The eigenvalues are determined with the use of a correlation matrix to indicate the relationship between variables.

The next step in the procedure is the identification of the complex structure, which is done by observing the rotated matrix. A complex structure is confirmed if the variables in the components do not comply with the 0.5 requirement, and therefore in such an instance, the PCA must be repeated. Finally, the important step is to determine and ascertain strong internal consistency between the statements by using a Cronbach's alpha. It is important that the components must adhere to the 0.7 or greater requirement to confirm consistency. The components that adhere to the specified eigenvalue requirements, and explain the higher percentage variance, are used as indexes in the binary logistic regression model.

- **Perception Index**

The perception index was created with the use of 21 statements to determine the youths' perceptions towards agriculture. To create the index, a factor analysis was done by using a verimax rotation, the Kaiser Normalisation, and PCA, as required. A correlation matrix was performed with all the 21 initial statements to check for correlation between the variables in the analysis. A diagonal line was observed and showed a perfect correlation between variables.

Importantly, more than three variables within the correlation matrix were greater than the specified 0.5 requirement, and consequently the analysis was continued. None of the variables was found to be less than 0.5 and therefore no variables were excluded at this stage. The next step was to check the suitability of the data with the use of the Kaiser-Meyer-Olkin Measure of Sampling Adequacy, as shown in Table 3.21.

Table 3.21 sets out the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity which were derived from PCA, and indicates the KMO is 0.761, and thus greater than 0.5. This complies with the rule for the adequacy of the data, as required by the PCA, and the Bartlett's Test of Sphericity was significant, at 0.000, which suggests that the data is suited for the factor analysis.

Table 3.21: Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.761
Bartlett's Test of Sphericity	Approx. Chi-Square	755.113
	df	136
	Sig.	.000

The next step was to observe the anti-image matrices of the analysis. The measure of sampling adequacy for the variable is shown on the diagonal line of the anti-image correlation matrix. It is important that the correlation coefficients all be greater than 0.5. Should the researcher observe any variable that does not adhere to this rule, then that particular variable is to be removed in order to continue with the PCA.

- **Communalities**

The next step was to determine the communalities. The rule dictates that for each statement, the communality must be either 0.5 or greater. If this rule is not adhered to, then the statement should be excluded. When the communalities are excluded, the component analysis will determine the factors to be included in each component (Nieuwoudt, 2016). The statements with communalities of greater than 0.5 and were retained. The statement that had communalities below the required 0.5 was removed.

The statements removed were STAT 2, STAT 5, STAT 20 and STAT 21. After the removal of these statements, the researcher proceeded to generate the Principal Components (PC). The component generation starts with the calculation of eigenvalues of the variables, and factors to be included in the PC should have an eigenvalue of greater than 1. The eigenvalues are determined with the use of a correlation matrix and show the relationship between variables. The rotated component matrix (referred to as loadings) shows the estimates of the correlations between each of the variables and the estimated components generated.

- **Rotated Component Matrix**

Table 3.22 shows the rotated component matrix, which depicts the six generated components with statements that have higher factor loadings in the respective components. The observed components all had eigenvalues higher than 1. The Cronbach's alphas for the perception index that was used for this study were 0.70, 0.711, 0.708, 0.757, 0.749 and 0.770 for the respective components. All the components comply with the acceptable requirement, as they are all higher than 0.7.

Table 3.22: Components with Statements with Higher Factor Loadings

	Comp 1	Comp 2	Comp 3	Comp 4	Comp 5	Comp 6
Eigen value	**4.131**	**2.128**	**1.221**	**1.192**	**1.141**	**1.014**
Cumulative percentage	**24.299**	**36.814**	**43.997**	**51.011**	**57.726**	**63.688**
Cronbach's alpha	**0.700**	**0.711**	**0.708**	**0.757**	**0.749**	**0.770**

Source: Survey (2018/2019)

The Cronbach's alpha for the index shows an acceptable level of consistency, and this implies that the statements were all reliable to use to measure youths' perceptions towards agriculture. Finally, for every component generated, the perception index scores were obtained from PCA and standardised between 0 and 100. The component scores were then used as indexes and included in the binary logistic regression model, together with the SLA, to determine the influence of SLA, and the perceptions and aspirations of youth towards agricultural participation.

3.3.1.2 Measuring Aspirations

To measure aspirations, a total of 6 statements were used (Table 3.23). The responses for aspirations were collected using a five-point Likert scale (1 = strongly agree; 2 = agree; 3 = Neutral; 4 = disagree; 5 = strongly disagree).

Table 3.23: Statements Measuring Youth Aspirations towards Agriculture

Statements	
STAT 1	I aspire to be involved in rain fed farming
STAT 2	I aspire to be a successful farmer
STAT 3	I aspire to become a commercial farmer one day
STAT 4	I aspire to increase my agricultural production at a later stage
STAT 5	I aspire to acquire agricultural training and education
STAT 6	I aspire to an occupation beyond farming, especially primary agriculture

Source: Survey (2019)

- **Aspiration Index**

To create the aspiration index, a factor analysis was done using a verimax rotation, the Kaiser Normalisation, and PCA. A total of six statements were used, and the correlation matrix for aspirations was generated to check for correlation between the variables in the analysis. A diagonal line that shows a perfect correlation between variables was observed and therefore allowed for continuation. All the statements complied with the requirements as they were all greater than 0.5. The next step was to check the suitability of the data with the use of the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (see Table 3.24).

Table 3.24 below presents the Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity that was derived from PCA. The KMO is 0.806 and greater than 0.5 and complies with the rule for the adequacy of the data as required by the PCA, and the Bartlett's test of sphericity was significant at 0.000, which suggests that the data is suited for the factor analysis.

Table 3.24: KMO Measure of Sampling Adequacy and Bartlett's Test of Sphericity

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.806
Bartlett's Test of Sphericity	Approx. Chi-Square	453.374
	df	10
	Sig.	.000

- **Communalities**

A communality table was generated to determine the communalities. As the rules require, each statement in the communality table must be either 0.5 or greater, and a statement that does not comply with this rule is removed from the PCA. Therefore, the statements with communalities of greater than 0.5 were retained, and the statement that did not comply with the requirement (below the required 0.5) was removed by the researcher.

- **Component Matrix**

The component matrix, with a single component that consists of factor loading of greater than 0.5, was generated (as depicted in Table 3.25). Component one will be briefly discussed. After the removal of the first statement (with factor loading of less than 0.5), the component consists of STAT 2 – STAT 6, which all relate to the aspirations of the youth towards agriculture and training. The statements were formulated to test the youths' aspirations towards agricultural participation, with the purpose of understanding what their goals are and where their interests lie in agriculture.

The aspiration component had an eigenvalue higher than 1 and the Cronbach's alpha for the aspiration component was 0.853; therefore, the component complies with the acceptable requirement, as they are all higher than 0.7.

Table 3.25: Aspiration Component with Higher Factor Loading

	Comp 1
Eigen value	**3.288**
Cumulative percentage	**65.765**
Cronbach's alpha	**0.853**

Source: Survey (2018/2019)

The Cronbach's alpha for the index shows an acceptable level of consistency and implies that the statements were all reliable to use to measure the youths' aspirations towards agriculture. The aspirations scores were generated from PCA for the component and standardised between 0 and 100. The component scores were then used as an index and included in the binary logistic regression model to determine the influence of SLA, perceptions and aspirations of youth towards agricultural participation.

The study provides an extended discussion on PCA and both the perception and aspiration indexes in the results section in the next chapter, under the first sub-objective. The Aspirations

Index score was generated for component one and standardised scores between 0 – 100 were then calculated.

3.3.2 Determining the influence of livelihood assets, perceptions and aspirations of youth towards agricultural participation

The study employs the binary logistic regression model to test the relationship between the dependent variables and independent variables. The dependent variable analysed in this study was the participation of youth in agriculture (and related economic activities); thus, the participation of youth in agriculture was measured as a binary dummy variable (1 = participation, 0 = Not participating).

- **Binary Logistic Model**

A binary logistic regression model was used to investigate youth participation in agriculture in the two study regions of the Free State province. The independent variables to be included in the binary logistic model are shown in Table 3.26 below. A binary model is best suited for use when the dependent variable takes only two options as a response (Gujarati, 2002). This model is therefore used when the dependent variable is not continuous, but only has the outcome of either 1 or 0 (Hill *et al*., 2001). In this study, youth participation is understood as either participating or not participating, as already mentioned above. The participating youth are those who are involved in agriculture through any activity of their choice, and those who are not participating are those who are currently (at the time of data collection) not taking part in any farming or agriculture-related activities. The binary logistic model was preferred for its user-friendly functions and flexibility. As outlined above, this model was adopted due to the binary nature of the dependent variable (participation). Hence, the logistic model is specified as follows:

$$\mathrm{Y} = \beta_0 + \beta_1 X_1 \quad + \beta_2 X_2 + \beta_3 X_3 + \beta_0 \ldots\ldots \beta_{15} X_{15} + \mu_i \qquad (1)$$

where: Y is the dependent binary variable (participation = 1; otherwise = 0), ß0 represents the intercept, while ß1 is the coefficient of variable X1, and X1 is the independent variable and the error term. The ß1 ß2 ß3 will be obtained from SPSS and will be used to interpret how strongly

each of the independent variables influences the Y variable. The independent variables (Table 3.26) that will be tested in the binary logistic model were selected based on literature, theory, and evidence of previous studies. Table 3.26 below provides the dependent variable and a list of independent variables, with the descriptions of variables to be included in the model to determine the relationship between agricultural participation and the independent variables.

The variables examined in the study are clarified and briefly explained in Table: 3.26.

Table 3.26: Variables Hypothesised in the Model to Influence Participation in Agriculture

Variables		Unit	Type of Variable	Expected sign
DEPENDENT VARIABLE				
Y	Participation	1 = Yes ; 0 = No		
INDEPENDENT VARIABLE				
HUMAN CAPITAL				
X_1	Age	Actual years (Number)	Continuous	+
X_2	Household size	Actual number of members	Continuous	+/-
X_3	Farming experience	Actual number of years	Continuous	+
X_4	Gender	1 = Male ; 0 = Female	Categorical	+/-
X_5	Marital Status	1 = Married ; 0 = Unmarried	Categorical	+/-
X_6	Degree/Diploma or higher	1 = Yes ; 0 = No	Categorical	+
X_7	Grade 12 (NSC)	1 = Yes ; 0 = No	Categorical	+
X_8	Grade 11 or less	1 = Yes ; 0 = No	Categorical	+
X_9	No Education	1 = Yes ; 0 = No	Categorical	+
X_{10}	Employed	1 = Yes ; 0 = No	Categorical	-
X_{11}	Full-time Farmer	1 = Yes ; 0 = No	Categorical	+
X_{12}	Student	1 = Yes ; 0 = No	Categorical	+
X_{13}	Agricultural training	1 = Yes ; 0 = No	Categorical	+
NATURAL CAPITAL				
X_{14}	Access to land	1 = Yes ; 0 = No	Categorical	+
SOCIAL CAPITAL				
X_{15}	Ext and support services	1 = Yes ; 0 = No	Categorical	+
X_{16}	Member of a Co-op	1 = Yes ; 0 = No	Categorical	+
X_{17}	Member of a Youth Club	1 = Yes ; 0 = No	Categorical	+
X_{18}	Member of a SM Group	1 = Yes ; 0 = No	Categorical	+
PHYSICAL CAPITAL				
X_{19}	Household Income	1 = Yes ; 0 = No	Categorical	+
X_{20}	Access livestock	1 = Yes ; 0 = No	Categorical	+
X_{21}	Access to market	1 = Yes ; 0 = No	Categorical	+

FINANCIAL CAPITAL				
X_{22}	Access Credit/loan	1 = Yes ; 0 = No	Categorical	+
X_{23}	Access to Savings	1 = Yes ; 0 = No	Categorical	+
X_{24}	Grant use for agriInputs	1 = Yes ; 0 = No	Categorical	+
PERCEPTIONS				
X_{25}	EconomicMotivation	Perception Index (PCA)	Continuous	+
X_{26}	Agric Value chain activities	Perception Index (PCA)	Continuous	+
X_{27}	Interest in Agric	Perception Index (PCA)	Continuous	+
X_{28}	Attractive of Agriculture	Perception Index (PCA)	Continuous	+
X_{29}	Inclusiveness of agriculture	Perception Index (PCA)	Continuous	+
X_{30}	Rain-fed farming as a livelihood strategy	Perception Index (PCA)	Continuous	+
ASPIRATIONS				
X_{31}	AspAgricParticipation	Aspiration Index (PCA)	Continuous	+

Variables explained

Participation: The dependant variable measures youths' participation in agriculture and related activities. Participation will be expressed as either 1 = participate, or 0 = not participate. For the purpose of this study, we shall refer to participation by means of demonstration of effort to actively pursue agriculture and related activities. This will be shown by how respondents participate, what constrains their participation, and their contribution is to agriculture.

Human Capital

Age: This variable is indicated as a real number of years for the respondent. Individuals who are older than the 18 are at a legal age to engage independently in the formal employment sector. The age level of persons influences their improved perception and self-realisation of the significance of agriculture in development. According to Kimaro *et al*. (2015), the participation of rural youth in agriculture is influenced by their "oldness" and therefore, older persons are likely to participate in agricultural activities. The age factor is expected to have a positive influence on an individual's participation in agriculture.

Household size: The household size variable is used to determine the number of people living together in the same household for more than three days a week. An increase in household size could mean an increase in workforce / labour and enhanced agricultural productivity (Zamxaka, 2015).However, according Hadebe (2016), larger households do not always mean increased

productivity and participation because larger households tend to have growing demand for own household consumption and are less productive. The household size factor is expected to have either a positive or a negative influence on participation in agriculture and related activities.

Farming experience: With farming experience, the study measures the number of years of involvement in agriculture and related activities by a youth respondent. Farming experience generally relates with gaining of improved agricultural skills Muhammad-Lawal (2009), which is important for sound decision making and effective production. It is expected of an individual with long-term experience in agriculture to have a positive perception and aspire towards continuous participation in agriculture and related activities.

Gender: Gender is a dummy variable intended to capture the gender of a respondent, expressed as either 1 = Male, or 0 = female. Males are more likely to participate in agriculture and related activities than their female counterparts are because of the physical nature of agriculture related activities (Mbah *et al*. 2016). According to Kimaro *et al*. (2015) gender is one of the indicators for which determines rural youths' participation in agriculture. The gender factor is expected to have either a positive or a negative influence in participation in agriculture and related activities.

Marital status: Marital status was used to determine the relationship status of the respondent. The variable is expressed as either 0 = otherwise, or 1 = Married. The marital status of rural youth is well associated with their participation in agricultural activities (Proctor and Lucchese, 2012; Kimaro *et al.*, 2015). Therefore, the marital status of youth respondents is expected to have either a negative or a positive influence on their interest in participating in agriculture and related activities.

Employed: For this study, it is important to know the employment status and how the youths are employed, which will lead to an understanding of whether or not the youths' employment status has an influence towards agricultural participation. The variable "employed" refers to the youth who are formally employed (whether temporarily, self-employed, or engaged in a regular salaried job) and work for at least five hours a week. The expectation is that the youth who are employed may not be involved in agriculture and related activities. It is assumed that being employed would mean that the individual already has commitments and responsibilities, and may be constrained by time from engaging in farming and agricultural activities.

Fulltime-farmer: Fulltime-farmer refers to the youth who are involved in farming on a full-time basis (either as an individual or as part of a co-operative). From the purpose of this study, a fulltime-farmer refers to a youth person whose primary job and focus are on farming. Youth who are engaged full-time in farming are more likely to hold positive perceptions regarding agriculture and are expected to aspire to participate in agriculture and related activities.

Degree or higher: Degree or higher is a variable used to determine the educational status and level of the youth, and refers to the youth who have completed a bachelor's degree or a post-graduate qualification. The youth with degrees and higher tend to aspire to opportunities outside agriculture (Yami *et al*. (2019), in urban areas it is expected that the youth with tertiary qualifications will less likely be interested in agricultural participation, unless in an exceptional case, where the degree they have is agriculture-related (Magagula and Tsvakirai, 2019).

Grade 12 (NSC): The variable 'Grade 12' refers to the youth respondents who have attained a National Senior Certificate (herein referred to as 'Grade 12'). The youth with Grade 12 have, to some degree, limited opportunities and therefore are expected to opt for agricultural participation to earn an income and improve their livelihoods.

Grade 11 or less: Grade 11 or less is used measure the level of education of the youth. In this research, Grade 11 or less refers to the youth whose level of education attained is Grade 11 or less. The youth in this category are likely to have limited occupational and educational opportunities. It is therefore expected that youth in this bracket will likely participate in agriculture and related activities.

No Education: In this study, the variable 'No education' (the base category) refers to a youth member who has not attained any level of formal education. The youth with no level of education are mostly found in rural areas where agriculture is mostly practised. The youth in this category are constrained in terms of job opportunities in other sectors, and agriculture is the only available option to them (Kimaro *et al*. 2015). It is expected that the youth with no education to show the highest likelihood of agricultural participation.

Access to agricultural training: Access to agricultural training is important in this study for gaining an understanding of the influence that training has on the youths' agricultural participation. The variable was used to measure whether the youth respondents had received or

undergone any form of agricultural training. This variable will show the level of agricultural education and training that a respondent has been exposed to. It is expected that an individual with agricultural training and education will have a positive perception towards, and aspire to participating in, agriculture and related activities.

Natural Capital

Access to land: Access to land is important for primary agricultural production and remains one of the important resources for agricultural participation. This variable measures whether the youth respondent has access to the land for agricultural production or any other related activities. Various studies (Amanor, 2008; White, 2012; Afande *et al*., 2015; Divyakirti, 2015) have found that lack of access to land is a significant constraint to youth involvement in agriculture. Access to land is, therefore, seen as an essential resource to encourage youth participation (Proctor and Lucchese, 2012). It is expected that youth with access to land, either through renting or ownership, are likely to have positive perceptions towards agriculture and aspire to participate in agriculture and related activities.

Social Capital

Access to extension and support service: Extension and support services are important factors for improving agricultural participation. With this variable, the study seeks to measure whether the youth have access to extension services and support in the form of inputs, information and advice. Bahta *et al*. (2018) and Juma (2017) emphasise the importance of extension support services for achieving improved agricultural participation. It is expected of young people with access to support and extension to have positive perceptions and to aspire more to participate in agriculture and related activities.

Membership of a Cooperative: Co-operative membership is identified as an important factor for youth agricultural participation. The study measures the access and membership status of the youth to an agricultural cooperative to ascertain the influence this membership has on youth participation in the areas of interest. It is expected for the youth who are involved in a cooperative to have positive perceptions towards agriculture and to aspire to participate in agriculture and related economic activities, as compared with the youth who are not members of a cooperative.

Member of a youth club: With regard to membership of a youth club, the study intends to measure the membership status of the youth in any agricultural youth club (like YARD). The youth who are members of a youth club are expected to hold positive perceptions towards agriculture and to aspire to participate in agriculture and related activities.

Member of a social media group: Social media provides a platform for effective communication, networking, information sharing, and digital marketing for the youth. This variable measures the membership status of the youth in agriculture-related social media groups. It is expected that the youth who are signed up to a social media group that is agriculture-related will have positive perceptions and aspire to participate in agriculture and related activities.

Physical Capital

Access to infrastructure: The variable 'Access to infrastructure' measures access to the infrastructure required for production. Infrastructure may, in this case, be any physical assets, including livestock, machinery, and equipment, that a youth respondent has. Njoku (1999) states that the lack of access to infrastructure discourages youth participation, and according to Njoku (1999) and Mugisha and Nkwasibwe (2014), access to infrastructure will promote participation. It is expected that the youth who have access to infrastructure will have positive perceptions and aspire to participate in agriculture and related activities.

Access to Market: The study identifies market access as an important aspect for agricultural participation and uses the variable to measures the availability of and access to the market for the youth participating in agriculture. Market access is an essential factor influencing participation in remunerative agricultural activities (Khapayi and Celliers, 2015). It is expected for the youth with access to an established market to have a positive perception and aspire to participate in agriculture and related activities.

Financial Capital

Access Credit/loan: To measure the youths' access to financial assistance, the study uses the variable 'Access to Credit/loan'. This variable specifically takes into consideration access in the last year (twelve months) preceding the running of the questionnaire. Access to credit is an

important factor for youth participation (Kimaro *et al*., 2015; Afande *et al*., 2015; Juma, 2017). Young people with access to finances, whether it is money they have, access through financial institutions in the form of credit, or a loan, are expected to have positive perceptions and aspire to participate in agriculture.

Access to Savings: Savings (formal and informal) are an important source of income for the youth. This variable measures whether or not the youth have access to savings. Savings may be generated from production output, personal savings, or informal savings. It is expected that the youth who have access to savings will be more likely to participate in agriculture and related activities.

Social Grant use for buying agricultural inputs: Social grants are an important source of income for the rural communities. The study seeks to determine youth respondents' access to social grants, and the use of grant money for purchases of agricultural inputs, and to finance other agricultural operations. The expectation is that the youth who have access to social grants and use these for agricultural activities are likely to participate in agriculture and related activities.

Perceptions

Economic Motivation: The economic motivation variable was used to measure the perception of the youth regarding the economic returns associated with agriculture as being a motivation to participate in agriculture and related activities. It is expected that the youth who perceive agriculture as economically motivating (rewarding) are likely participate in agriculture and related activities. If the youth find motivation in the perceived economic returns associated with agriculture, they will have a better perception of the sector and aspire to participate.

Agricultural Value-chain activities: Agricultural value-chain activities can offer the youth opportunities beyond primary agriculture, and the study uses this variable to measure the youths' perceptions regarding agricultural value-chain activities. It is expected that the youth who hold a positive perception regarding agricultural value-chain activities will have an increased likelihood of participating in agriculture and related activities.

Interest in Agriculture: The variable 'Interest in Agriculture' was used to measure the youths' perceptions of interest in agriculture and related activities. The youth who hold positive perceptions regarding agriculture and have an interest in agriculture are expected to be more likely to participate in agriculture and related activities.

The Attractiveness of agriculture: This study uses the variable 'Attractiveness of agriculture' to measure the perception of youth regarding the attractiveness of agriculture. The attractive agricultural sector will change the way the youth feel and view agriculture, thus encouraging them to exploit the opportunities that the sector has to offer. It is expected that the youth who perceive agriculture as attractive would likely aspire to participate in agriculture and related activities.

Inclusiveness of agriculture: To measure the youths' perceptions regarding the inclusivity of agriculture, the study used the variable 'Inclusiveness of agriculture'. An inclusive agricultural sector can potentially offer inclusive occupational and economic opportunities for the youth, thus shaping their perceptions about agriculture. The expectation is that the youth who perceive agriculture as inclusive are likely to participate in agriculture and related activities.

Rain-fed farming as a livelihood strategy: Rain-fed farming contributes to household income and food security. Therefore, youth can take part in rain-fed farming to supplement income and create employment for themselves. For this study, it is important to measure the youths' perception towards rain-fed farming as a viable livelihood strategy. The youth who perceive rain-fed farming as a viable livelihood strategy are expected to have an increased likelihood of participating in agriculture and related activities.

Aspirations

Aspiration towards agricultural participation: Youths' aspirations towards agricultural participation are important in this study, and therefore this variable was used to measure the aspirations of youth towards agriculture. Knowing the youths' aspirations will serve as an indicator of their willingness to make an effort to participate in agriculture. It is expected that the youth who have high levels of aspiration towards agriculture will aspire to pursue occupations and economic opportunities in agriculture, which will likely lead to participation in agriculture and related activities.

3.4 Chapter Summary

The aim of the chapter was to provide details on the research areas, the questionnaire and data capture, and lastly, the procedure used towards achieving the aims of the research. Furthermore, the data collection methods were explained, together with the variables used and, ultimately, the empirical methods of approach used, which included the use of PCA and the binary logistic regression model. This study was conducted in selected villages of Thaba 'Nchu and QwaQwa, in the Free State province. The data was collected in 2018/2019 in the above-mentioned regions, through the use of a questionnaire.

The questionnaire was designed to capture details of the livelihood assets, perceptions and aspirations of the youth respondents (18–36 years) towards agricultural participation in the two study regions of the Free State province. The instrument was administered by five (5) enumerators, who explained the questions thoroughly to the respondents and assisted where necessary. The empirical methods of data analysis employed in the study include the use of a PCA to derive the perceptions and aspirations indexes. The study employed the binary logistic regression model, and ultimately the data was analysed using the SPSS computer software to test the association of independent variable towards the dependent variable.

CHAPTER 4:
RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results, data analysis and interpretation of the study, which was conducted in areas of QwaQwa and Thaba 'Nchu in the Free State province. The chapter presents discussion on measuring youths' perceptions and aspirations, and presents the results obtained from the PCA (Perceptions and Aspiration indexes) in the first section, followed by discussion on the influence of livelihood assets, aspirations, and perceptions of youth towards agricultural participation. A binary logistic model was used to determine the influence of SLA, aspirations, and perceptions towards agricultural participation. The explanatory variables in the binary logistic model were tested for their significance and a discussion of significant variables is provided, followed by conclusions made based on the study results.

4.2 Measuring Youth Aspirations and Perceptions

The perceptions and aspirations indexes were created using PCA, and six (6) components for the perception index were extracted, and 1 component for the aspiration index was extracted from the PCA (Tables 4.1 and 4.2) and retained through the use of a Pearson correlation with the application of the Keiser criterion of eigenvalues greater than one (1). The two indexes are discussed in further detail below.

4.2.1 Perception Index

A PCA was conducted with an initial total of 21 statements to measure the youths' perceptions, and those with a communality less than 0.5 were excluded from the PCA. The statements that were removed were STAT 2, STAT 5, STAT 20 and STAT 21. After the removal of the statements (STAT 2, STAT 5, STAT 20 and STAT 21), the factor analysis was repeated as required. Out of 21 statements used, a total of 17 statements (Table 4.1) were retained as they complied with the rule. A total of 6 components were extracted and renamed accordingly (Table 4.1). A brief discussion of the factors used to measure perceptions and aspirations is

provided, as well as a discussion of the statements, component naming and measuring of youths' perceptions.

Table 4.1: Principal Component Analysis (Rotated Component Matrix)

Rotated Component Matrix						
Variable	**Components**					
	Economic motivation	**Agricultural value chain activities**	**Interest in agriculture**	**Perception on attractiveness of agric**	**Inclusiveness of agriculture**	**Rain-fed farming as a livelihood strategy**
STAT 1	-.028	**.745**	.287	.001	-.316	.151
STAT 3	-.152	.042	**.603**	.244	.160	-.250
STAT 4	-.287	-.120	.230	.305	**.639**	-.011
STAT 6	-.113	-.127	.007	**.755**	.171	.001
STAT 7	.255	.209	-.244	.297	-.324	**.590**
STAT 8	.032	.143	-.071	.027	.319	**.726**
STAT 9	.122	.122	.217	**.721**	.022	.095
STAT 10	.084	.073	.162	.044	**.765**	.130
STAT 11	.412	**.694**	-.148	.025	.061	.057
STAT 12	.288	**.737**	-.204	.009	.235	.131
STAT 13	-.085	.032	**.686**	-.022	.183	-.037
STAT 14	**.644**	.334	-.296	.077	-.073	.028
STAT 15	**.573**	-.032	.235	-.215	-.072	.394
STAT 16	**.798**	.078	-.097	-.090	-.057	.047
STAT 17	**.806**	.168	-.141	.064	.050	.104
STAT 18	**.511**	.300	-.007	.340	-.050	-.295
STAT 19	-.077	-.403	**.582**	.171	-.003	.099
Eigen value	**4.131**	**2.128**	**1.221**	**1.192**	**1.141**	**1.014**
Cumulative percentage	**24.299**	**36.814**	**43.997**	**51.011**	**57.726**	**63.688**
Cronbach's alpha	**0.700**	**0.711**	**0.708**	**0.757**	**0.749**	**0.770**

Source: Field Survey (2018/2019)

- **Components**

Economic Motivation

The economic motivation of youth farmers (and aspirant youth farmers) refers to the extent to which they intend to achieve higher economic returns, either through pursuing an occupation or participation in any agriculture-related activities (Jayapuria, 2015). The first component (Economic Motivation) explains 24.30 % of the variation. Statements from this component with higher factor loadings included STAT 14, STAT 15, STAT 16, STAT 17 and STAT 18. STAT 14 relates to the economic empowerment of young people through agriculture. The statements, STAT 15 and STAT 16, relate to perceptions towards agricultural businesses, while STAT 17 is related to employment, and the last statement, STAT 18, is related to the youths' perceptions towards agriculture and the use of technology for production. The statements (STAT 14, STAT 15, STAT 16, STAT 17 and STAT 18) under Component 1 (Economic Motivation) relate to the economic perceptions, and these statements measured how the youth perceive agriculture, and whether the perception they hold would serve as motivation for participation in agriculture. Accordingly, the component was named '***Economic Motivation***'.

Agricultural value-chain activities

Agricultural value-chain activities offer numerous opportunities to the youth and it is necessary for the youth to take up these opportunities for self-employment and livelihood support. It is important to know the youths' perceptions towards agricultural value-chain activities, as these will indicate the youths' willingness and likelihood to participate in agriculture and related value-chain activities. The second component (agricultural value-chain activities) explains the variation of 36.81 %, and reflects the statements STAT 1, STAT 11 and STAT 12 as the higher loading factors. STAT 1 related to livelihood support through agricultural participation along the value chain, and STAT 11 and STAT 12 related to agricultural engagement and benefits of participation along the value chains. This Component 2, was then named '***Agricultural value chain activities***'.

Interest in agriculture

The likelihood of the youth participating in agriculture and related activities to exploit opportunities in the agricultural sector also relies on the level of interest the youth have concerning agriculture. The third component (interest in agriculture) explained the variation of

43.99 % and reflected the statements STAT 3, STAT 13 and STAT 19 as having the highest factor loading. The two statements are about having a negative perception of agriculture and showing less interest. The statements were designed to test the interest of the youth towards agriculture and farming. The component was then named '***Interest in agriculture***'**.** Agricultural participation is made easier among the youth who have a high level of interest in and positively perceive the activities associated with agriculture, as these members of the youth seek more information regarding the activities of their interest and the occupational opportunities available to them. The higher the level of perception of interest is, the more likely it is that the youth will make efforts to participate willingly.

Attractiveness of agriculture

The general image of agriculture and related activities is not appealing enough to most of the youth. The challenges as pointed out in literature for this less appealing image of agriculture include poor remuneration, low productivity, dearth of infrastructure, and lack of resources. An improved image and availability of resources would make the sector attractive and encourage youth to participate in various activities related to agriculture and to take advantage of the occupational opportunities the sector has to offer. The fourth component had STAT 6 and STAT 9 with the highest loading factors, and explained the variation of 51.01 %. The 6th and 9th statements were meant to test the perception of farming and related activities in order to ascertain how the youth generally feel about agriculture and whether that would make agriculture attractive for them to participate in. Component 4 was then named '***Attractiveness of agriculture***'. Youth with a high level of perception regarding the sector's attractiveness are likely to participate in agriculture and related activities.

Inclusiveness of agriculture

Agriculture is seen as providing an occupation reserved for old people and uneducated persons with failed aspirations. Component 5 (agricultural inclusiveness) shows statements STAT 4 and STAT 10 as having higher loading factors. This component explained the variance of 57.73 %. STAT 4 and STAT 10 were designed to test the inclusiveness of agriculture to ascertain whether the perception of young people about agricultural inclusiveness across different age levels would lead to participation or not, should they had other options. The component was then named ***inclusiveness of agriculture***. An inclusive agricultural sector will encourage the youth to explore the opportunities within the sector and pursue efforts to further transform the sector. Youth with high perceptions regarding the inclusivity of the sector are

likely to aspire to participate in agriculture and create employment for themselves, and so improve their own livelihoods.

Rain-fed farming as a livelihood strategy

Dryland agriculture not only contributes to household food security, but can also supplement household income. Dryland agriculture can also provide sustainable livelihoods to the youth in rural areas were dryland farming is practised. The last component, number 6 (rain-fed farming as a livelihood strategy) explains the variance of 63.69 %, and had STAT 7 and STAT 8 as the statements with higher loading factors. The two statements both related to the perceptions towards smallholder rain-fed farming as a livelihood strategy of choice. The statements were meant to see how the youth would perceive the two systems (irrigation and rain-fed) and how this would affect their choice and, ultimately, participation. The component was then named '***Rain-fed farming as a livelihood strategy***'. The youth who perceive rain-fed farming as a viable livelihood strategy will have a positive perception towards agriculture under dryland system of production, and are likely to have an increased likelihood of participating in agriculture and related activities.

The six perceptions factors were used in this research to determine the youths' perception scores. The factors comprised economic motivation, agricultural value chain activities, Interest in agriculture, the attractiveness of agriculture, inclusiveness of agriculture, and rain-fed farming as a livelihood strategy. The calculated perception scores indicate the levels of perception of the youth towards agriculture. The following section provides a detailed discussion regarding perception scoring.

4.2.2 Perceptions scoring

An average score for each component was calculated and these are represented in the graph shown in Figure 4.1 below. The scores were derived from PCA, and standardised scores were used to calculate each component score, with the standardisation being calculated between 0 and 100. The component that is closer to zero indicates a lower score, and a score closer to a hundred indicates a higher score. The youth were scored concerning to their perceptions of economic motivation, agricultural value-chain activities, interest, the attractiveness of agriculture, inclusiveness of agriculture, and rain-fed agriculture as a livelihood strategy. The perception scores of the youth are shown in Figure 4.1 below.

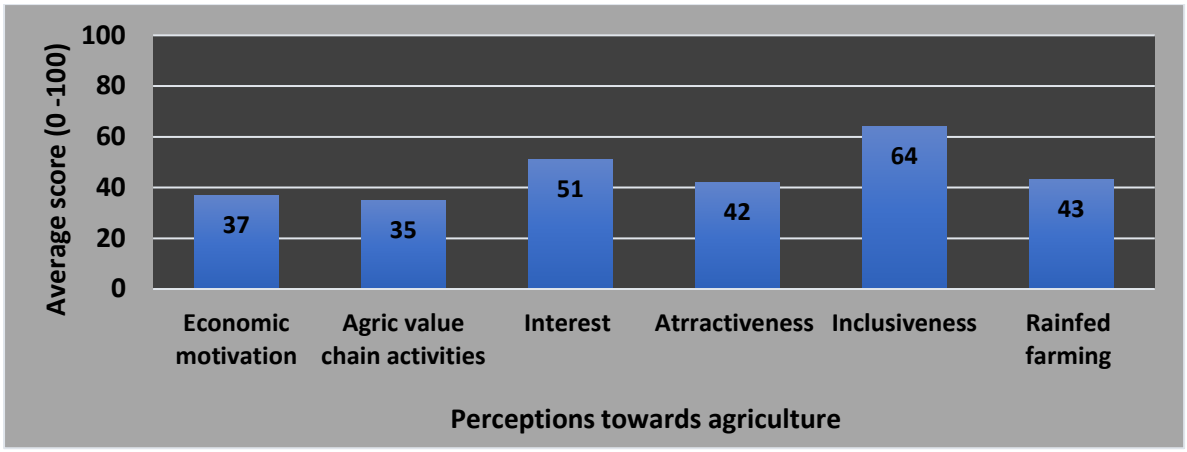

Figure 4.1: Score distribution for agricultural perceptions among the youth in QwaQwa and Thaba 'Nchu

Figure 4.1 shows the scores for the youth in QwaQwa and Thaba Nchu, and the average score ranges from the lower to the higher limit, with the lowest score being 35 and the highest 64. The lowest score observed for perceptions towards economic motivation interest is 51, which represents the second highest of the scores, and inclusiveness of agriculture averages at the highest score of 64.

The scores in the graph for economic motivation indicate that the youth in both areas perceive agriculture to be less economically motivating. The score is expected, given the reality that the majority of young people do not see agriculture as a profitable business venture. This perception is also potentially perpetuated by the low wages earned by farmworkers. The agricultural value chain score shows that the youth perceive participation in agricultural value chains as less beneficial and not good enough to pursue as a livelihood support strategy. The average score for interest is slightly above 50, and shows that the youth in QwaQwa and Thaba ‘Nchu perceive agriculture as being somewhat fairly interesting. This result disproves the conventional narrative that young people perceive agriculture as less interesting.

The attractiveness of agriculture shows a score of 42, which indicates that the youth find agriculture less attractive, and this result is consistent with literature findings that young people find agriculture unattractive. A contributing factor to this could be the low resource access and misinformation. The youth tend to see farming as a difficult job that is physically demanding and dirty.

Inclusiveness shows a score of 64, which is the highest of the 6 components. The results indicate that the youth in the two Free State study regions perceive agriculture as an inclusive

venture or activity. The youth do not perceive agriculture as an activity reserved for certain individuals.

Lastly, the 6th component is rain-fed agriculture. The component score shows that the youth perceive rain-fed agriculture as less appealing than irrigation farming as a livelihood strategy.

4.2.3 Aspirations Index

In determining the aspiration index (Table 4.2) for QwaQwa and Thaba 'Nchu, a total of 7 statements were included in the PCA. From the 6 statements, 1 statement (with a factor loading of less than 0.5) was excluded, and 5 were retained in the PCA. Only one component was extracted, for the statements; 2 – 6 (as shown in Table 4.2) that all relate to aspirations of youth towards agricultural activities. The statements with commonality ratings greater than 0.5 thresholds are reflected in bold in Table 4.2, and the one statement (STAT 1: I aspire to be involved in rain-fed farming) that had a commonality rating below the specified 0.5 threshold was removed and thus not considered. The factor analysis was then repeated and concluded with the retained six statements shown in Table 4.2 below.

Table 4.2: Component Matrix for the Statements Measuring Aspirations towards Agricultural Participation

Statements		Component
		Aspiration towards agricultural participation
Stat 2	I aspire to be a successful farmer	**.772**
Stat 3	I aspire to become a commercial farmer one day	**.806**
Stat 4	I aspire to increase my agricultural production at a later stage	**.849**
Stat 5	I aspire to acquire agricultural training and education	**.798**
Stat 6	I aspire to an occupation beyond farming, especially primary agriculture	**.827**
Eigen value		**3.288**
Cumulative percentage		**65.765**
Cronbach's alpha		**0.853**

Source: Field Survey (2018/2019)

The statements listed in Table 4.2 are STAT 2; STAT 3; STAT 4; STAT 5 and STAT 6. The statements were formulated to test the youths' aspirations towards agriculture to understand what their goals are, where their interests in agriculture lie, and whether having aspirations

towards agriculture would influence them to participate or not. The component was therefore named ‘aspirations towards agricultural participation’.

- **Component**

Aspirations towards agricultural participation

Aspirations are influenced by various factors and may also be influential upon the choices that the youth make regarding the directions they want to take in life. Literature states that the youth do not aspire much to participate in agriculture and related activities because of misperceptions, poor livelihood access, and lacking government support, among other things. The extracted component, aspirations towards agricultural participation, explains a total variance of 65.765 %, with an eigenvalue of 3.288, which is greater than one. The statements all relate to the youths’ ***aspirations towards participation in agriculture and related activities***. The youth that have aspirations in agriculture are likely to take up occupational opportunities in agriculture and participate in related activities.

The Cronbach’s alpha for the Aspiration Index was calculated for the component. The Cronbach’s alpha was 0.853 and complies with the acceptable requirement, as it is greater than 0.7. This Cronbach’s alpha for the index shows an acceptable, strong level of internal consistency and implies that the statements were all reliable to measure youths’ perceptions towards agriculture.

The single aspiration factor, ‘aspirations towards agricultural participation’, was then taken and utilised for further analysis to determine the youths’ perception scores. The calculated score serves as an indication of the level of aspirations of the youth towards agricultural participation. A detailed discussion is provided in the following section regarding aspiration scoring.

4.2.4 Aspiration Scoring

The calculation of average scores was done, and the score for the one component of an aspiration index is presented in the table below. The scores were derived from PCA, and standardised scores were used to calculate each component score, with the standardisation being calculated between 0 and 100. The component that is closer to zero indicates a lower score and a score closer to a hundred indicates a higher score. The youth were scored in terms

of their aspirations towards agricultural participation. Table 4.3 shows the average aspiration score for the youth in both QwaQwa and Thaba Nchu.

Table 4.3: A Score for Youth Aspirations towards Agriculture

Component 1	Aspiration towards agricultural participation
Minimum score	0
Average Score	37
Maximum score	100
Mode	40
Median	43.73
Standard Deviation	15.47

Source: Field Survey (2018/2019)

Table 4.3 shows the minimum score of zero, an average aspiration score of 37, and a maximum score of one hundred. The mode is 40, the median is 43.73, and the standard deviation of 15.47. The average score of 37 reflects a very low aspiration level towards agricultural participation.

The low score proves the widely shared narrative in literature that the youth do not aspire to participate in agriculture and related activities. Some of the factors that influence low aspirations towards agricultural participation in agriculture include challenges of access to productive resources, negative perceptions, lack of knowledge about the opportunities available in the agricultural sector, and the "unattractive" image of agriculture. The low score therefore confirms the findings in literature that most young people in rural areas do not aspire to participate in agriculture and are likely to aspire to career opportunities outside agriculture.

4.3 The influence of livelihood assets, perceptions and aspirations of youth towards agricultural participation

4.3.1 Binary Logistic Regression Results

Several aspects are considered to determine the goodness of fit of the Binary Logistic Regression. As seen in Table 4.4, the Hosmer and Lemeshow Goodness-of-Fit test suggests that the model is a good fit, as the significance is greater than 0.5 (Chan, 2004).

Table 4.4: Hosmer and Lemeshow Test of Model Goodness of Fit

Hosmer and Lemeshow Test			
Step	**Chi-square**	**df**	**Sig.**
1	.867	8	.999

Omnibus test for model coefficients that are used to observe the latest model that includes the explanatory variables is significantly improved over the baseline model with only the intercept. The omnibus test uses Chi-squares to show the difference between the Log-likelihoods of the baseline model and the latest model. Table 4.5 shows that the *Chi-square* is 173.211, the *df* = 31 and $p = 0.000$, which implies that the binary logistic model is significant.

Table 4.5: Omnibus Test of Model Coefficients

Omnibus Tests of Model Coefficients				
		Chi-square	**df**	**Sig.**
Step 1	Step	173.211	31	.000
	Block	173.211	31	.000
	Model	173.211	31	.000

The following section provides a discussion of the results obtained from the binary logistic regression model. A brief discussion of the dependent variable is given, followed by the independent (*X*) variables used in determining the influence of SLA, aspirations and perceptions of youth towards agricultural participation.

The dependent (*Y*) variable in this study is *Participation***,** which refers to the youths' participation status. Participation is expressed as either 1 = participate, or 0 = not participate. The youth who participate are those who are involved in any farming or agriculture-related activities, and those who do not participate are those who are currently not participating in any farming or agriculture-related activities. The independent variables were included in the model to test their influence towards the dependent variable as specified above.

Table 4.6 indicates the results for the 31 independent variables that were included in the model. The variables included in the binary logistic model were: total number of household, age, gender, marital status, number of years of experience in farming or agriculture-related activities, access to agricultural training, land access, livestock ownership, grant use for agricultural inputs, access to savings, access to credit or loan, co-operative membership, youth club/group membership, social media group membership, extension contact, full-time farmer,

employed, self-employed, student, matric, grade 11 or less, degree/diploma and higher, market access, household income, aspiration index, and perception index (interest in agriculture and attractiveness of agriculture).

The results that follow (Table 4.6) will be discussed in terms of the sign of the coefficient and significance towards the independent variable. The sign of the coefficient will be either positive or negative. The negative sign of the independent variable indicates a negative relationship towards the dependent variable, which means that the independent variable is "less likely" to result in participation. The positive sign indicates the positive relation towards the dependant variable, which means that independent variable is "more likely" to result in participation. The significance of the independent variable towards the dependent variable means the independent variable has a *P-value* of greater than 0.05. All the significant variables are indicated with an asterisk ("*"; "**"; "***") next to them, and differ in terms of the level of significance.

Table 4.6: The Binary Logistic Results

Independent Variables		(B)Coefficient	(S.E) Standard Error	(Sig.)Significance
HUMAN CAPITAL				
X_1	No of HH members	.039	.173	.822
X_2	Age	-.471	.158	.003***
X_3	Gender	.558	.891	.532
X_4	Marital status	-.312	1.139	.784
X_5	Farming Experience	.578	.248	.020**
X_6	Agricultural Training	-1.501	1.319	.255
X_7	Fulltime Farmer	1.087	1.607	.499
X_8	Employed	4.255	1.381	.002***
X_9	Self-employed	5.361	2.048	.009***
X_{10}	Student	-1.272	1.116	.254
X_{11}	Matric	1.872	1.871	.317
X_{12}	Grade 11 or less	.407	1.841	.825
X_{13}	Degree/diploma and higher	3.054	2.831	.281
NATURAL CAPITAL				
X_{14}	Land Access	-5.827	1.310	.000***
SOCIAL CAPITAL				
X_{15}	Member Of a Co-op	-1.953	1.324	.140
X_{16}	Youth Club /group Memb	-2.621	1.798	.145
X_{17}	Social media group(s) Memb	-1.087	.856	.204
X_{18}	Ext Contact	-1.714	.965	.076*
PHYSICAL CAPITAL				
X_{19}	Own Livestock	-1.044	1.034	.313
X_{20}	Market Access	-3.051	1.098	.005**
FINANCIAL CAPITAL				
X_{21}	Grant Use for Agricultural Inputs	-1.933	1.135	.089*
X_{22}	Access to Savings	-3.185	1.074	.003***
X_{23}	Access to Credit or Loan	-.785	1.536	.609
X_{24}	Household income	.000	.000	.161
PERCEPTIONS				
X_{25}	Economic motivation	.109	.359	.762
X_{26}	Agricultural Value Chain	.558	.404	.168
X_{27}	Interest in agriculture	1.000	.496	.044**
X_{28}	Attractiveness of agriculture	.797	.448	.075*
X_{29}	Percep on agriculture inclusiveness	-.174	.432	.687
X_{30}	Rain fed farming as livelihood strat	.552	.381	.148
ASPIRATIONS				
X_{31}	Asp towards AgricParticipation	-.109	.443	.805

-2 Log likelihood	73.459[a]
Nagelkerke R	0.830
Sig.	0.000

Note: Significant variables influencing agricultural participation at 0.01 (***), and 0.05 (**) and 0.1 (*)

Out of all the thirty-one (31) variables included, 11 predictor variables were found to have a significant influence on agricultural participation. Five of the significant variables were positive (number of years of experience in farming or agriculture-related activities, employed, self-employed, interest in agriculture, and attractiveness of agriculture), which indicates a positive association with the likelihood of agricultural participation in QwaQwa and Thaba 'Nchu. Age, land access, grant use for agricultural inputs, access to savings, extension contact, and market access were negative, which indicates the decrease in the likelihood of agricultural participation. The following section of the study provides a detailed discussion of the results obtained from the binary logistic model.

- **Human Capital**

As part of the important human capital, age was found to be negatively correlated to agricultural participation, at 1 %. The results simply mean that the older an individual is, the less likely that individual is to participate in agriculture, and the younger a person is, the more likely it is for that person to participate. The expectation was that, as the youth grow older, they would likely take on agriculture as a livelihood strategy because they are assumed to be more experienced and knowledgeable, and to embrace agriculture more. However, it is an interesting observation that the youth would be more likely to participate in their early youthful life, than they would as they grow older. This can be attributed to the unemployment challenges faced by youth between 18 and 25 years of age. This category of youth is also energetic and physically strong (Umeh *et al*., 2011; Chikezie *et al*., 2012), and therefore would be likely to pursue agriculture to create employment for themselves and generate income.

The number of years of experience in farming and related agricultural activities was positively significant, at 5 %. The results suggest that, as a youth's farming experience increases, the more likely it is for that youth to participate in agriculture. These results mean that the more experienced the youth are, the more likely it for them to participate, as compared with those

youth without farming experience. Given the results, it can be stated that as the years of farming experience increase, the youth become more knowledgeable on agriculture and farming through their years of active participation. Farming experience is therefore crucial for youth engagement in agriculture, and this outcome is consistent with the expectations of this study. Furthermore, the results are also consistent with the findings of Kasolo (2013), who stated that farming experience is important for increased youth participation in the sector. Kasolo (2013) further stated that most rural youths lack the necessary farming experience and that is partly the reason for poor participation from the youths' side.

In terms of occupation, the results are compared to the basis, 'unemployed'. The results show that youth who are employed or self-employed (both positively significant at 1 %) are more likely to be involved in agriculture than those who are unemployed. It was expected that being employed would be negatively related to agricultural participation, given the time constraints and commitments to other responsibilities; however, the results prove otherwise. This could be because youth who are employed may take time to assist and engage in agricultural activities in their spare time, when their time allows, or that those who are self-employed are engaged in agriculture-related value chain activities (through entrepreneurship). Another assumption would be that youth members who are employed have the financial income that can be used for farming operations and for attaining other farming necessities such as agricultural inputs. The result can be attributed to fact that agricultural production is a cost-intensive activity. Therefore, youth members who are employed may be encouraged to participate in agriculture as a means to generate extra income.

- **Natural Capital**

As part of the natural capital, land access was negatively significant, at 1 %, to agricultural participation. These results suggest that the youth without land access will less likely to participate, while youth with land access will be more likely to participate. Land access was expected to have a positive influence on agricultural participation because land is a fundamental resource for agricultural production. The results are in line with the findings of Njenga *et al*. (2012) who posited that land is a prerequisite for agricultural participation, and is a necessary resource that must be made available for the youth who have prospects of pursuing agriculture (Brooks *et al*., 2012). Poor access to land by the youth results in many youths walking away from farming and becoming discouraged from agricultural participation (Njenga

et al., 2012). It is, therefore, important that the youth gain access to productive land to participate in agriculture (FAO, 2011).

- **Social Capital**

Extension contact was also negatively significant, at 10 %, to participation. This result implies that youth who do not have contact with an extension officer are less likely to participate in agriculture. Contact with extension officers places the youth at an advantage of receiving important information, guidance and support. The youth without extension contacts do not have the benefits of information access, guidance and support. Extension contact and support are widely seen in literature as constituting one of the most important requirements for improved agricultural participation, and were expected to positively influence participation. The results are consistent with the findings of Bahta *et al*. (2018) and Juma (2017), who emphasised the importance of having access to extension contact and support for enhancing agricultural participation. It can, therefore, be concluded that efficient and improved extension support services are vital for the youth to participate in agriculture.

- **Physical Capital**

Market access was significant and negatively related to participation. If a person has no access to the market, the results suggests that those youth with no market access are less likely to participate in agriculture, as opposed to those who have market access. It was expected that market access and participation would be positively related, because market access offers various advantages to the youth, including gaining access to inputs and access to farm services, and makes it convenient for distribution of production to consumers, thus encouraging participation. The results are consistent with the findings reported by Khapayi and Celliers (2015) who found market access to be an important factor influencing participation in remunerative agricultural activities. Market access is a challenge for the majority of youth in rural areas and this hinders youth participation in agriculture. Therefore, issues of market access (as well as making available market information to the youth and reducing market distance) require attention if enhanced agricultural participation by the youth is to be achieved.

- **Financial Capital**

Social grants used for buying agricultural inputs (e.g. seeds, fertilizers, and feeds) were significantly negative, at 10 %, to agricultural participation. This result suggests that if social grants are not used for the purpose of buying agricultural inputs, the likelihood of participation in agriculture is decreased. This simply means that it is more likely that the youth who spend social grants on agricultural inputs will participate in agriculture, and less likely for those youth who do not. Social grants form an important source of income for the majority of the people (including youth) in rural areas due to the high unemployment rate. The results support the assertion that social grants play an important role as an enabler for agricultural participation though spending on regular farming needs such as inputs.

Having savings was significant, at 1 %, and negatively related to agricultural participation. This means that youth without savings, compared with those who have savings, are less likely to participate in agriculture. It was expected for savings and any form of financial capital to have a positive influence on agricultural participation. Literature points out the importance of savings as a source of income that can be used for purchasing agricultural inputs and thus enable youth farmers to achieve some of their operational goals (Afande *et al*., 2015; Juma, 2017). Savings (including non-farm savings) can be an important source of start-up capital for the youth to start agribusinesses and allow for purchasing farm inputs, land access (renting), and financing of farm-related operations (Khue *et al*., 2016). The youth should consider savings clubs (stokvels), and opening formal savings bank accounts to enable them to run sustainable farming enterprises. The results are consistent with the findings of Ahaibwe *et al*. (2013) who stated that access to credit and sufficient savings promotes the likelihood of agricultural participation through various activities.

- **Perceptions**

Interest in agriculture was positively significant to agricultural participation, at 5 %. This result implies that, if a person perceives agriculture as interesting, he or she is more likely to participate than those who do not perceive agriculture as interesting. The positive relation between interest and youth agricultural participation was expected. The results are consistent with the findings of Swarts and Aliber (2013) who found that interest in agriculture will stimulate enthusiasm in the youth and lead to participation. It is observed in literature that the

long-standing decline in youth participation in agriculture has been influenced by poor perceptions held by the youth regarding agriculture (Kising'u, 2016). Most youths perceive agriculture as a less interesting activity due to the low-income returns associated with agriculture, lack of incentive schemes and dearth of infrastructure, and this has led to low participation of youth in agriculture (Mibey, 2015). Notwithstanding this, the results show that perceived interest in agriculture is likely to encourage youth participation. It is therefore important to stimulate interest in the youth by making available improved resources (and physical infrastructure), improved salaries and incentive schemes, and by investing in changing the youths' perceptions about agriculture. If their perceptions are improved, the youth will find agriculture interesting and attractive enough to participate in.

With respect to the attractiveness of agriculture, the outcome is significant and is positively related to participation. That means that, the more the youth perceive agriculture as attractive, the more likely they are to participate, as opposed to a person who perceives agriculture less attractive. This outcome is as expected in the study, as it was hypothesised that the perception of "attractiveness of agriculture" will be positively related to agricultural participation. This is consistent with literature that the perception that agriculture is unattractive contributes to low participation (Afande *et al*., 2015). The results are in line with the finding of Gichimu and Njeru (2014) whose findings suggested that an attractive agricultural sector will encourage the youth to participate in agriculture. Efforts need to be made to make farming attractive and improve youth perceptions regarding agriculture, and this could be addressed by making agriculture more remunerative, improving extension services and inputs support, and making productive land available to the youth (Kimaro *et al*., 2015; Ntshangase, 2016).

4.4 Conclusion

Although the youth in both Thaba 'Nchu and QwaQwa participate (to some extent) in agriculture and related activities, a relatively high (51 %) proportion of them is still left out from participation due to various factors, as indicated in literature. The study found that youth aspirations and perceptions had, to some degree, contributed to the youths' decisions to participate in agriculture or not. From the results, it is observed that the youth had low scoring regarding both aspirations and perceptions towards agriculture.

The results show that the youth in the two study regions had an aspiration score of 37, which was calculated regarding the youth aspirations towards agricultural participation. The scoring was done with the standardisation score between 0 and 100, which means that a score closer to zero constitutes low level of aspiration towards agricultural participation, and a score closer to the opposite extreme of 100 signifies higher aspiration towards agricultural participation. Therefore, for the youth in the two Free State study regions, the aspiration towards participation is low. The low aspiration held by the youth towards participation can be attributed to various factors, such as negative attitudes, negative perceptions, and lack of sustainable livelihood assets (including financing/credit, physical infrastructure, government support, training, market access and lack of farming experience).

The youth also have poor perception scorings towards agriculture. The perceptions of the youth were measured regarding economic motivations, agricultural value-chain activities, interest, inclusiveness, and rain-fed farming. The perception scores for "economic motivation", "agricultural value-chain activities", "attractiveness of agriculture", and "rain-fed farming" were low, with average scores of 37, 35, 42, and 43, respectively. However, the average perception score for "interest" and "inclusiveness of agriculture" were 51 and 64, respectively, indicating better perception by the youth regarding agriculture for these two aspects.

The results for the youth perceptions towards agriculture show how poorly the youth perceive agriculture and related activities. Most of the youth do not see agriculture as a livelihood strategy and continue to shy away from the sector. The negative perception that the youth hold regarding agriculture has been emphasised in literature, and this is seen as driving the youth away from active participation in the sector, thus leaving them unemployed and economically disempowered. However, the results also show that there is a level of interest in the youth regarding agriculture and an improved perception in the inclusivity of the sector. This could be because most youths are raised in households that practise garden farming for household consumption, and some of them (youth) are partially involved in household production. Even though this is the case, the youth are still deterred by the struggles of resource access and lack of government support.

The results from the binary logistic model suggest that the variables tested in the model have a significant relationship with participation by the youth in agriculture. The adopted model included 31 variables, and 11 of all the variables have an influence on youth participation in agriculture in both QwaQwa and Thaba 'Nchu. The independent variables that significantly relate to participation were age, the number of years of experience in farming and agriculture-

related activities, land access, grant use for purchasing agricultural inputs, savings, extension contact, being employed, being self-employed, market access, interest in agriculture, and the attractiveness of agriculture.

These results show the importance of gaining access to livelihood assets and of positive aspirations and perceptions towards agriculture for achieving enhanced youth participation in the sector. The outcome of these results confirms the findings of literature regarding livelihood asset accessibility for enabling youth participation in agriculture. There is much that needs to be done in changing the image of agriculture to make it more attractive and appealing to the youth, for they are the generation that is expected to rise and not only transform the sector, but also revive it to prosperity. In order to get the youth into agriculture, ease of access to important livelihood assets is a necessity and an investment in changing the perceptions of youth is needed, as well as understanding their aspirations.

CHAPTER 5:
SUMMARY AND RECOMMENDATIONS

5.1 INTRODUCTION

Chapter 5 provides a summary of the four chapters of this dissertation and draws a conclusion from the literature and findings of the study. Lastly, this chapter will put forward certain recommendations that may be instrumental for achieving increased youth participation in agriculture and related activities, for the sustainability of the sector, livelihood improvement, and reduction of youth unemployment.

5.1.1 Introduction and Background

Agriculture is the backbone of many countries around the world and continues to play a fundamental role in the alleviation of poverty and hunger throughout Africa and the rest of the world. The agricultural sector also continues to make an important contribution to economic growth and food security. Evidence from literature suggests that agriculture is an important source of income and an important livelihood strategy for the majority of the African people, and South Africa is no exception. The sustenance of the agricultural relies on the youth participation in the sector, as they are the leaders of tomorrow, and are endowed with great learning capabilities, energy and physical strength.

South Africa is currently battling an increasing level of unemployment and the youth population is mostly affected. The government has since resolved through the National Development Plan (NDP) to create over one million jobs through agriculture by 2030 as a means to end youth unemployment. In the efforts to achieve this objective, various initiatives have been instituted that seek to stimulate the interest of the youth to participate in agriculture and related activities; however, the youth has still shown reluctance to participate in their numbers. The challenges as identified in literature include, but are not limited to, negative perceptions, lack of productive resources (e.g. land), lack of access to financial capital, and lacking physical infrastructure, education and training, market access, extension and government support, as well as rural outmigration and poor profitability.

Most young people tend to aspire to occupations beyond agriculture and as a result leave rural areas for the urban centres in pursuit of other opportunities that are perceived to be more economically rewarding. In view of the outlined challenges, the neglect of agriculture by the youth thus leads to declining productivity, food insecurity, and rising youth unemployment. Considering this background, it is imperative to understand that the youth are heterogeneous and have varying socio-economic backgrounds, ambitions, ideas, perceptions, and aspirations. Therefore, the decisions that they make regarding agriculture are directly impacted upon by these factors, to some extent. It is therefore very important to start by gaining a better understanding of the youths' aspirations and perceptions regarding agriculture, and of the decisions that would lead them either to participate in agriculture or not to participate.

5.1.2 Problem Statement and objectives

Despite the vast entrepreneurial and employment opportunities the agricultural sector has to offer, and all the efforts made by the government to stimulate interest and enthusiasm in the youth regarding agriculture, there is still minimal participation by the youth in agriculture. The South African government has invested in various support programmes and initiatives to enhance youth agricultural participation. However, there seems to have been no real success in achieving youth involvement in the agricultural sector.

The low participation of youth in agriculture has been attributed to various factors, including poor livelihood assets endowment (such as land, credit, market access, extension support and production inputs). However, not much has been done to explore other important factors, such as aspirations and perceptions, and thus those other factors remain poorly understood. A poor understanding of these factors makes it relatively challenging to find deliberate strategies for developing young people through involvement in agriculture. There is, therefore, a necessity to better understand the aspirations and perceptions of the youth towards participation in rain-fed agriculture, in the two study regions of the Free State province of South Africa.

The main objective of this research is to explore the influence of the youths' aspirations and perceptions towards participation in agriculture. The main objective was realised through the following sub-objectives: measuring the youths' aspirations and perceptions towards participation in agriculture and determining the influence of livelihood assets and aspirations and perceptions of youth towards agricultural participation.

5.2 Literature Review

5.2.1 The Youth

There is no fixed definition of youth yet, as the definition differs among different cultures and societies around the world. The UN defines youth as being a category of those young people between the ages of 15 and 24, while the Kenyan government's National Youth Policy refers to the youth as being those between the ages of 15 and 35, and in South Africa, the youth are referred to those young people between the ages of 15 and 35, or 18 and 35, according to the definition of the South African Youth Charter of 1996. Some countries use other age categories to define youth. However, 'youth' can generally be defined as that period of change from childhood to adulthood where independence is realised.

The youth make up the majority of the population in the Sub-Saharan Africa region, and they are expected to grow further in numbers in years to come, as compared with other parts of the world. The challenge that is facing the global youth population now is youth unemployment, which has become the centre of the worldwide development agenda.

South Africa has a population of 58. 8 million, and the youth constitute nearly a third of the population, at approximately 17.84 million. Currently, 55.2 % of the youth are reportedly unemployed, and this has left most young people discouraged with the job market. Agriculture has been identified as a solution to the problem of rural development and youth unemployment. The government hopes to create more than 1 million jobs within the agricultural sector by the year 2030. This is to achieve increased employment and reduced poverty, more especially among the rural communities in the country.

5.2.2 The role of youth in Agriculture

Young people are important assets to every nation that is entrusted with the responsibility of changing the face of the agricultural sector in the years to come. The agricultural sector needs the youth for their innovativeness, physical strengths and their ideas, and if they are willing to participate in the sector, their contribution could be an important one. The agricultural sector has the capacity to provide employment to the youth, if the opportunities are made available and the youth are ready to exploit them.

The youth need to be aware that there are various opportunities in agriculture, and begin to see agriculture beyond primary crop and animal husbandry activity. The youth need to see the range of other activities that are available, such as home food gardening, value-chain participation, drafting agricultural policies, marketing, and agricultural commodity trading. It is also possible for the youth to contribute to the development of agriculture at various levels, including the value chain. However, due to the lack of capacity-building initiatives, it is difficult for the youth to fully realise their potential and exploit the opportunities available to them within the value chain (FANRPAN, 2011). It is important to have a holistic view of the agricultural value chain in order to better understand the opportunities available to young people.

5.2.3 Youth Participation in agriculture

The broader finding of literature suggests that agriculture is a vital industry, with great potential for youth employment creation. However, the dominating narrative is the fact that young people lack the much-needed enthusiasm to take up agriculture as a livelihood strategy. The South African government has pursued efforts to address this issue through various youth programmes, such as the Youth in Agriculture and Rural Development (YARD), the National Youth Development Agency (NYDA) and others.

Various reasons are cited in literature for the apparent lack of interest and willingness of the youth to participate in agriculture: the economic "push factors" such as unemployment, the shortage of credit, and rural poverty (Akpan, 2010). Other factors include the lack of production resources and a distorted narrative around the agricultural sector. The decline in agricultural participation requires the government to look into problems such as the decline of rural life and farming. Government should pay attention to subsistence agriculture, rural infrastructure and the challenges that the rural youth with prospects of pursuing agriculture have concerning land access, and complement youth participation with necessary training and resources (Brooks *et al*., 2012).

5.2.4 Access to resource for youth participation

Resource accessibility is important for any individual to venture into farming, especially the youth (Juma, 2017; Noorani, 2015). To better explain the importance of resource access as a

means to improve agricultural participation, the study finds the sustainable livelihood framework (SLF) relevant as an applicable tool for analysis. The SLF demonstrates the available asset options to persons, and includes the five (5) livelihood assets (natural capital, physical capital, human capital, financial capital and social capital). Natural resources involve land and water, physical resources include machinery and equipment, human resources include relevant agricultural information, agricultural education and training, financial resources are finances and credit, and social resources involve extension and support services. The assets are discussed hereunder.

The *natural capital* includes the tangible and non-tangible resources of climate and biodiversity, water, and land. These resources form part of the most important capital needed for agricultural production and livelihood creation. Access to land is the most essential resource for young people trying to make a living through agriculture. Land access, obtained by leasing, if necessary, can open opportunities for self-employment and production of nutritious food, thus creating income for the youth. However, there are still challenges in gaining access to land.

Physical capital includes physical assets such as equipment and infrastructure. Some of the resources include electricity, roads, schools, and the availability of important information to enable the youth to achieve their primary needs and to be more productive. Safe shelter and equipment required to support livelihoods are also important, and for farmers, this may include livestock and tools for farming. There are still major challenges in rural areas when it comes to infrastructure, and this discourages young people from taking part in farming activities. Livestock is also an important physical asset, although the majority of young people do not have access to it.

Human capital could include things like an individual's education, as well as the quality of their health (Ellis, 2000). These resources are necessary and are, therefore, required for creating income. Access to education and training is partly the challenge that most youth residing in rural areas are faced with; hence, making available the proper access to agricultural education is necessary for enhancing agriculture.

Financial capital includes cash flow, credits and savings, and other income derived from pensions and remittances. Access to credit and savings is essential for the buying of inputs,

paying workers and paying for other farming activities. However, the youth have challenges in securing loans and credit due to their lack of collateral.

Social capital relates to the connections and networks that people can form in dealing with common issues. Cooperative membership, social media group membership, extension services and government support are identified in literature as comprising the important social contacts that are necessary for young people in farming. These networks can be an important platform for information sharing and skills development. Access to these social resources is therefore important for encouraging participation in agriculture and related activities.

5.2.5 Youth perceptions towards agriculture

Young people's perceptions and attitudes are primarily influenced by household socialisation and school, as well as by the networks they form. Everything that the youth learn through school, peers and within their home has an impact on the way that they view agriculture. Research studies show that young people hold very negative perceptions and attitudes towards agriculture, even though agriculture is said to be the solution for joblessness and poverty alleviation. The youth see agriculture as providing low status jobs that are reserved for old, uneducated people. Therefore, it can be said that the youths' decisions to participate in agriculture can be influenced by the way in which they see agriculture. Young people with positive perceptions towards agriculture are likely to participate in agriculture, as opposed to those with negative perceptions.

5.2.6 The aspirations of youth towards Agriculture

Aspirations are the specific goals that individuals strive to achieve, which might be pursuing jobs, education, or specific employment positions. Aspirations differ from one person to the next and play a vital role in decisions made regarding life and in what a person hopes to achieve. Aspirations are formed at a young age and may change as a person grows, and the more so when an individual is exposed to different environments and opportunities. Parents, school and peers are found to have an influence in shaping aspirations, whether these are occupational or educational aspirations.

The inequalities between urban and rural children in terms of educational opportunities have a great impact on their aspirations. It has been observed that children in rural areas are

disadvantaged in both employment and educational opportunities, hence the have low educational and occupational aspirations. The youth also have low aspirations towards agriculture and tend to aspire for occupations beyond agriculture.

5.2.7 Methods used in similar studies

This study has reviewed literature in relation to agriculture and participation of youth in the sector, and acknowledges and appreciates the work done by other researchers. The literature reviewed and the work done has inspired the planning and guided the formulation of this study. The following segment offers a review of related studies with regard to the methodologies that they have employed and adopted for information interpretation.

Studies reviewed have made use of various methods that included the use of questionnaires, structured interviews and surveys. These studies also used both qualitative and quantitative approaches, with stratified and random sampling being the preferred sampling methods used, and SPSS was the preferred statistical computer software to use (Kimaro *et al*., 2015; Zamxaka, 2015; Adesina and Favour, 2016; Zantsi, 2016; Cheteani, 2016; Chipfupa, 2017).

The Sustainable Livelihood Framework (SLF) was a preferred tool for Chipfupa (2017) and Zamxaka (2015), who used stratified random sampling, while Zantsi (2016) and Njeru (2017) employed a sample random sampling method. A Likert scale was used in the study by Kimaro *et al*., (2015) to measure youth attitudes towards agriculture, and the scale used was "Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree". A retrogression appears to be the most preferred model used for the studies reviewed. Adesina and Favour (2016) and Zamxaka (2015) in their studies adopted Multiple Linear Regression. Cheteani (2016), Magagula and Tsvakirai (2019), and Mbah *et al*., (2016), on the other hand, preferred a binary logistic regression model.

This study draws lessons from the theories, methodologies and different frameworks that have been used by different researchers. This study has developed a framework from the already existing theories and will, therefore, be guided by the developed framework, as inspired by the original SLF adapted by Chipfupa (2017). The study further resolves to employ both qualitative and quantitative methods of approach.

5.3 Data and Methods

5.3.1 Study areas

The study was conducted in the Free State (FS) province of South Africa. From the five district municipalities (Xhariep, Lejweleputswa, Fezile Dhabi, Motheo, and Thabo Mofutsanyana) that make up the Free State province, the study took interest in the Mangaung Metropolitan Municipality (MMM) and Thabo Mofutsanyana (TM) district municipality. The areas of interest comprised Thaba 'Nchu in the MMM and QwaQwa in the TM District Municipality.

Both the MMM and TM District Municipality are rain-fed and are known for their medium agricultural potential. The two municipalities are characterised by high youth unemployment and desperate poverty. QwaQwa is a former "homeland" in the Maluti-a-Phofung Local Municipality, located in the eastern part of the Free State province. The area is close to the Lesotho border and is famously known for the beautiful mountain views. Mountain slopes are covered with thick layers of grass best suited for grazing, and the soil in the valleys has been described as "rich, loamy and the best suited for agriculture". Thaba 'Nchu is a former "Bantustan" located in the MMM, in the Free State province, 63 km east of Bloemfontein, and the area is known for its predominantly subsistence agricultural economic activities.

5.3.2 Data collection

Primary data was collected in Thaba 'Nchu and QwaQwa from a sample size of 178 youth respondents between 18 and 36 years of age, using a structured questionnaire. A stratified random sampling method was preferred for the study. The questionnaire used was written in English and was translated into Sesotho during data collection to ensure better understanding and interpretation by the respondents. The questionnaire included both open- and closed-ended questions to obtain information with ease and enable easier coding of data.

5.3.3 Methods

The study employed both qualitative and quantitative methods, and in order to achieve the specific objectives of the study, the analytical and empirical approaches used in this research

were descriptive statistics, Principal Component Analysis, and a Binary Logistic Regression Model.

The descriptive statistics provided the statistics on the respondents' household demographics and the livelihood assets available to the youth. The results were presented in tables and graphs for ease of interpretation. The PCA was used to extract the two indexes (percIndex and aspIndex) through using SPSS to measure youths' perceptions and aspirations towards agriculture (Sub-objective 1). The perception index was derived from using 21 statements from the questionnaire that measured perceptions, and 7 statements were used for measuring aspirations towards agriculture.

The Binary Logistic Regression Model was used to determine the relationship between the sustainable livelihood assets and perceptions and aspirations towards agriculture (Sub-objective 2). Thirty-one predictive variables, including the indexes, were put into the regression to determine the relationship.

5.4 Results and Conclusion

5.4.1 Youths' perceptions and aspirations towards participation in agriculture

The PCA was used to generate the two indexes (percIndex and aspIndex) from SPSS. A total of 21 and 7 statements, designed to test youth perceptions and aspirations towards agriculture, were put into the PCA, and six (6) perception indexes were extracted from the data and one (1) aspiration index. The perception indexes were named as follows: economic motivation, agricultural value chain activities, interest in agriculture, attractiveness of agriculture, perception on the agriculture inclusiveness, and rain-fed farming as a livelihood strategy. The one component extracted for the aspirations index was named 'aspirations towards agricultural participation'.

The six components' score averages were calculated for the perception indexes, and the scores show that the youth have low perception scores below the average of 50, with the highest score being 64. Perceptions regarding economic motivation were low, at 37. In terms of agricultural value-chain activities, the score was at the lowest, averaging at a score of 35, while attractiveness and rain-fed farming averaged at 42 and 43, respectively. The average score regarding Interest was 51, and inclusiveness showed the highest score of 64. These scores

indicate that much improvement is needed in improving youth perceptions towards agriculture. Most attention must be given to improving the productivity of agricultural enterprises, improving wages, developing smallholder rain-fed farming, and investing in making agriculture more attractive to the youth.

The aspiration score was low, at 37, which indicates that the majority of the youth still aspire less towards agricultural participation. Youth with an interest in agriculture are faced with numerous challenges that lead to low levels of aspiration towards agricultural participation. The challenges, as consciously discussed in literature, include poor access to livelihood assets, negative perceptions, and lack of government support. If the sector is to achieve increased youth participation in agriculture and improved youth aspirations towards agriculture, these issues need to be addressed.

5.4.2 The influence of livelihood assets, aspirations, and perceptions towards agricultural participation

The results from the analyses of the influences of livelihood assets, aspirations and perceptions of youth towards agricultural participation, using the binary logistic regression, indicate that agricultural participation is negatively affected by age, land access, grant use for purchasing agricultural inputs, savings, and market access. This means that an increase in either of these independent variables may be associated with an increase in the likelihood of agricultural participation in QwaQwa and Thaba ‘Nchu. The other independent variables that were found to have a negative sign were number of years of experience, employment, being self-employed, extension contact, interest in agriculture, and attractiveness of agriculture. This means that an increase in either of these variables may be associated with a decrease in the likelihood of agricultural participation in the two study areas of the Free State province.

Human Capital

What the results suggest in relation to age is that the age of a person plays an important role in that person making the decision whether to participate in agriculture or not. The results indicate that a younger person is more likely to participate in agriculture and related activities than they are, as they grow older. This could possibly be because the youth, in their prime years, have

more energy, are physically strong, and can easily adjust to new technologies and better ways of doing things in the space of agriculture than their older counterparts are.

The number of years of experience is also a significant factor in the likelihood of agricultural participation. From the results, it can be concluded that the accumulation of experience increases the chances of a person participating in agriculture and related activities. What can be deduced from this result is that experience is a great teacher, it builds confidence and resilience, and shapes one's perceptions for the better; hence, the higher likelihood of participation. People without experience, however, may not have the necessary technical know-how about production, and they may have lower confidence and thus less resilience and hold negative perception towards agriculture.

The employment status of individuals plays an important role in the likelihood that they will participate in agriculture. The results indicate that people who are employed, whether self-employed or employed elsewhere, are more likely to participate in agriculture. The possible reason for this could be due to the assumption that some people look down on agriculture and leave rural areas for urban areas to seek occupations and opportunities unrelated to agriculture.

Natural Capital

With regard to land access, it can be deduced from the results that access to land is one of the most important factors that influence the likelihood of participation in agriculture. The results show that no having access to land may decrease the likelihood of participation in agriculture. It can be concluded that land is a primary resource for agricultural participation, and that those members of the youth who have land may be motivated to use it for production, while those without land will either opt out or aspire to pursue something unrelated to primary agriculture.

Financial Capital

The results indicate that social grants, as a means of income, have an influence on the likelihood of agricultural participation. What can be learned from the results is that people who have grants (or not) and do not use social grants for any agricultural inputs are less likely to participate in agriculture, as opposed to those who have grants and use their grants for purchasing agricultural inputs. The conclusion that can be made here is that grants have an important role to play in enabling recipients to buy necessary inputs for production and

achieving other operational activities in relation to agriculture. Another thing that renders social grants as an important source of income and an enabler for agricultural spending can be attributed to the fact that most of the rural people are reliant on social grants as an important part of household income, since the majority are unemployed.

Savings play an important role in agricultural participation. The results show that persons without savings are less likely to participate in agriculture than those who have savings. Savings may offer one of the best ways through which youth can achieve other objectives in relation to agriculture. Savings allow for the purchasing of agricultural inputs, may contribute towards transportation costs and other farm activities, and make it less financially straining to engage in farming activities. It is in this regard that the results suggest that persons with savings may participate, as opposed to those without savings.

Social Capital

Extension contact is an important factor in relation to agricultural participation. The results show that people who do not have any form of contact with extension officers will be less likely to participate, whereas those who do have contact will participate. Extension contact provides the ability to change perceptions about agriculture and offer a platform for knowledge transfer, education, and proper guidance. Young people with access to extension services are better positioned because they receive relevant information and have professional mentorship, and thus have better chances of participation and making success within agriculture than their counterparts do.

Market access is one of the important factors that influence agricultural participation. The results indicate that having no access to the market will decrease the likelihood of participation in agriculture. What can be concluded from this result is that having a market allows people to sell their produce and generate income from sales. However, if there is no market, the chances of making a success in an agricultural enterprise will be slim, and this leads to lessened enthusiasm.

Perceptions

Perceptions comprise yet another factor that plays an important role in the likelihood of youth participation in agriculture and related activities. The results show that if agriculture is perceived as being interesting and attractive, the likelihood of participation will be higher. Perceptions allow people to make sense of their surroundings and build their own understandings from their perceived impressions, and ultimately make choices and decisions in relation to the direction that they wish to take. Therefore, if young people have a positive view and perceptions towards agriculture, they will be more likely have interest and most likely participate than those with negative perceptions and attitudes will.

5.5 Conclusion

The study aimed to explore and capture the aspirations and perceptions of young people towards agriculture, and has on the basis of the results and findings, concluded that agricultural participation relies on access to important livelihood assets, and positive aspirations and perceptions. Agriculture can be an important source of income and livelihood strategy, provide employment, and contribute to food security. The focus should be on getting the youth to engage and participate in agriculture because they have the right energy and potential to change the outlook of the sector.

The role of government and its pursuit strategies are acknowledged; however, more needs to be done in terms of improving youth participation in agriculture. This study therefore identifies three vital factors that influence youth participation in agriculture: access to livelihood assets, aspirations, and perceptions. The important livelihood assets as highlighted in this study include land, finance (savings, credit and social grants), extension support, and market access. It is important that these assets be made available to the youth in order to encourage participation.

The other aspects are related to youth perceptions and aspiration, as the youth generally have low perceptions and aspirations towards agriculture. The challenges could be addressed by improving access to the aforementioned assets, thus improving perceptions and aspirations, which will enhance participation in agriculture and related activities. The following section of this study offers recommendations for the youth, policy and government.

5.6 Recommendations

The study makes policy recommendations that may assist in enhancing youth participation in agriculture and related activities in the two study regions (QwaQwa and Thaba 'Nchu) of the Free State, given the findings from this research.

5.6.1 Policy Recommendations

There is a need for agriculture-inclined policies that involve the youth to recognise the heterogenic nature of the youth in terms of their socio-economic statuses and livelihood asset endowments. It is imperative that the youth participate in the initial planning and the development of such a policies to allow for their voices to be heard and affirm their position in the negotiation of strategic policies.

Deliberate agricultural policies are needed to be put in place to support the youth with interest and enthusiasm to participate in agriculture. Achieving that requires easing access to resources and providing institutional support for the youth. The support and access to productive resources will retain the youth in agriculture and positively influence their aspirations and perceptions towards agricultural participation.

Government needs to invest in programmes that are focused on developing and training young aspirant agricultural entrepreneurs. This requires improved policies that will allow the youth to gain access to finance and credit for agricultural business purposes. This will economically empower the youth and evoke interest and enthusiasm for participating in agriculture.

Extension contact and support are very important for fostering youth involvement in agriculture. It can be recommended that the government improve extension services and prioritise youth support through extension contact and support. Better and efficient extension services and support will encourage youth participation and help in retaining the youth who are already participating in agriculture and related activities.

Finally, literature shows that parents and schools have an influence on the perceptions and aspirations of the youth. Therefore, it is important that schools and parents educate the youth on the benefits of agriculture, and on the business and career opportunities available in the sector. This will contribute to shaping their perceptions and aspirations towards agriculture and encourage youth participation.

5.6.2 Recommendations for the youth

The study recommends that the youth should make efforts in seeking information about agriculture, the programmes available in the sector, and the opportunities available within agriculture. Better-informed youths are likely to embrace and exploit opportunities that are available in agriculture and thus improve their livelihoods.

The study recommends the establishment of youth-focused training and development programmes to educate the youth and improve their perceptions about agriculture and farming. These programmes will help the youth to develop positive attitudes about agriculture, as well as encourage the youth to take on agriculture as a livelihood strategy.

Youth should join and form youth organisations, such as agricultural cooperatives and study groups, which might create strong and sustainable social networks of contacts. These organisations could better position the youth to improve their leadership capacity, improve their technical skills, and provide better access to information and market opportunities.

5.6.3 Recommendations for future research

Youth involvement in agriculture may not be limited to primary agricultural activities only, as there are other opportunities that the youth can exploit in agriculture, such as agribusinesses, research, agro-food processing, and the value chain. However, the level of interest and willingness will determine the efforts that the youth make to take up such opportunities. This study did not sufficiently capture the youths' willingness and interest to participate in agricultural value-adding economic activities, as a means of livelihood strategy and self-employment. Therefore, further research could explore the youths' interest and willingness to participate in value-adding economic activities related to agriculture.

Although the study has highlighted the importance of membership of an organisation as part of expanding networks, enhanced agricultural participation, and advantages, such as skills development and information access, future studies could investigate the impact of youth cooperatives and youth club membership on agricultural participation. Youth clubs and cooperatives are cited as being important platforms that can contribute to enhanced youth participation in agriculture. However, not enough studies have been done to evaluate the

effectiveness of youth-focused agricultural youth clubs and cooperatives. Substantial empirical evidence on the impact and effectiveness of these social platforms could encourage the youth to form more of these groups and thus enhance participation.

The study has also cited the importance of a context-specific approach to addressing the challenges of youth participation in agriculture and related activities, because of the fact that the youth are heterogeneous in nature, with varying aspirations, perceptions and backgrounds. Therefore, future studies could further investigate other areas to gain greater insight into the differences that exist among the youth. This could be instrumental in developing youth-specific policies and programmes that could enhance agricultural participation.

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YOUTHS' ASPIRATIONS AND PERCEPTIONS TOWARDS AGRICULTURAL PARTICIPATION: A CASE OF TWO FREE STATE REGIONS

The information to be captured in this questionnaire is strictly confidential and will be used for research purposes by staff and students at the University of KwaZulu-Natal and Free State. It is meant to evaluate natural, physical, financial, human, social and psychological assets within a sustainable livelihoods' framework with a specific attention to smallholder rain-fed farming by youth in rural areas. There are no wrong or right answers to these questions. You are free to be or not part of this survey. UFS ethical clearance number: **UFS-HSD2018/0947**.

Participation is voluntary and that there is no penalty or loss of benefit for non-participation. Being in this study is voluntary and you are under no obligation to consent to participation. You are free to withdraw at any time during the completion of the questionnaire without giving a reason. However, when the questionnaire has been completed and the information has been submitted, it would not be possible to withdraw. Your answers will be given a fictitious code number or a pseudonym and you will be referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings.

There is no financial reward for participation in this study.

Would you like to participate in this survey? 1 = Yes 0 = No

_____ _____

Signature Date

Incomplete	Complete	No:

YOUTHS' ASPIRATIONS AND PERCEPTIONS TOWARDS AGRICULTURAL PARTICIPATION: A CASE OF TWO FREE STATE REGIONS

The information to be captured in this questionnaire is strictly confidential and will be used for research purposes by staff and students at the University of the Free State. It is meant to evaluate the natural, physical, financial, human, social and psychological assets within a sustainable livelihoods' framework as well aspirations and perceptions towards agricultural participation, with a specific attention to smallholder rain-fed farming by youth in rural areas. There are no wrong or right answers to these questions. You are free to be or not to be part of this survey. This research has received ethical clearance number from the University of the Free State committee under clearance number: **UFS-HSD2018/0947.**

Participation is voluntary and that there is no penalty or loss of benefit for non-participation. Being in this study is voluntary and you are under no obligation to consent to participation. You are free to withdraw at any time during the completion of the questionnaire without giving a reason. However, when the questionnaire has been completed and the information has been submitted, it would not be possible to withdraw. Your answers will be given a fictitious code number, or a pseudonym and you will be referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings. In other words, your identity and response will remain anonymous/confidential.

Would you like to participate in this survey? 1 = Yes 0 = No

Date		Respondent No:	
Province		Enumerator name	
District		Ward No.	
Area/Municipality			

_____

Signature

A. HUMAN CAPITAL

HOUSEHOLD DEMOGRAPHICS (ALL YOUTH)

Type of Youth: _____
1=Fulltime into farming/agricultural related economic activities (as an individual)
2=Fulltime into farming/agricultural related economic activities (as part of a cooperative)
3=Partially into farming/agricultural related economic activities (through family business/activities)
4=Not currently engaged in farming/agriculture related economic activities.
5=Other (also specify)

A1. What is the total number of members in your household? _____
(*Please include only those who stay in the household for **3 or more days per week and eat together***)

Please complete table below for household members where applicable.

A2.		A3.	A4.	A5.	A6.	A7.	A8.
Household member (name and surname)		Relationship to **household head**[1]	Age	Gender[2]	Marital status[3]	Main occupation[4]	Education level completed (e.g. Grade 7)
1	**RESPONDENT (youth)**						
REMAINING MEMBERS OF THE HOUSEHOLD							
2		**1= household head**					
3							
4							
5							
6							
7							
8							

Key

Relation to household head[1]	**Gender**[2]	**Marital status**[3]	**Main occupation**[4]
1=Household head 2=Spouse 3=Son 4=Daughter 5=Grand son 6=Grand daughter 7=Other (specify e.g., in-law)	1=Male 0=Female	1=Single 2=Married 3=Divorced 4=Widowed	1=Fulltime farmer 2=Regular salaried job 3=Temporary job 4=Self-employed 5=Student 6=Retired 7=Unemployed 8=Other (specify)

_____
_____
_____
_____

YOUTH DETAILS (ALL YOUTH)

Question		Response
A9	Do you have an agricultural related tertiary qualification? **1=Yes 0= No**	
A10	Current employment status **(see code below)**	
A11	If answer to A10 is 2, 3 or 4, were you employed before? **1=Yes 0= No**	
A12	If yes in which sector? **(see code below)**	
A13	Number of years of experience in farming or agriculture related economic activities?	
A14	Do you have any chronic illness (any condition/s that requires you to be on medication always)? ***1=Yes 0= No***	
A15	Are you taking care of any chronically ill family member(s)? ***1=Yes 0= No***	

Code for A10.
1*= Employed (working for at least five hours in a week; indicate fulltime or part-time)*
2*= Unemployed but actively pursuing job or business opportunities*
3*= Discouraged worker (always wants to work but he/she does not see any opportunity in the area)*
4*= Not actively pursuing job or business opportunities (able and available to work but do not work, not looking for a job or has not started own business)*
6*= Student*
Code for A12.
1*= Agricultural sector****, 2****=Transport sector****, 3****=Manufacturing sector****, 4****=Service sector****, 5****=Others* ***(please specify)***

A16. Have you ever received any farming or agriculture business-related short-term training? _____
1=Yes 0=No

If Yes to A16, please complete the table below for at most 3 important trainings received. If No go to A20

		A17. Training 1	A18. Training 2	A19. Training 3
a.	Type of training received **(Code)**			
b.	Who offered the training? **(Code)**			
For each training received to what extent do you agree with the following statement (Code)				
c.	I attended all the training sessions			
d.	I fully understood the content of the training			
e.	I was able to put into practice all the advice I received from the training			
f.	The training received was relevant			

Code for (a): 1 *= Crop production;* ***2*** *= Livestock;* ***3*** *= Water management/Climate change coping strategies;* ***4*** *= Proposal writing / business planning;* ***5*** *= Financial management/bookkeeping;* ***6*** *= Agricultural commodity marketing (includes pricing);* ***7*** *= Value addition (processing and packaging)* ***8*** *= If other (please specify) _____*
Code for (b): 1 = Extension officer; **2 =** Fellow farmers; **3 =** Private company; **4 =** NGO**; 5 =** Parents/relative knowledge**; 6 =** Self-taught**; 7 =** Other **(please specify) _____**
Code for (c-f) 1 = *Strongly disagree* ***2 =*** *Disagree* ***3 =*** *Neutral* ***4 =*** *Agree* ***5 =*** *Strongly agree*

Ask questions A20-A21 only if fulltime or partially involved in farming or agriculture related economic activities. Otherwise go to A22.

A20. What kind of indigenous knowledge have you acquired (inherited) over the years from your peers/network, other farmers, own experience and from your forefathers?

_____

_____

_____

*Note - **Indigenous knowledge** – Practically relevant Knowledge which is unique to specific (Traditions) or society in; the outcomes of own experience and/or acquired from others, relevant to various farming decisions and practices.*

A21. According to your own observation, to what extent do you agree with the following statements regarding indigenous knowledge?

**** 1 = Strongly disagree 2 = Disagree 3 = Neutral/Not sure 4 = Agree 5 = Strong agree***

Statement		**Response***
a.	Indigenous practices improve soil fertility and soil structures	
b.	Indigenous practices reduce all forms of environmental pollution	
c.	Indigenous practices are more efficient in reducing pests and diseases infestation	
d.	Indigenous practices reduce input costs of production	
e.	Indigenous practices increase value addition for agricultural produce	
f.	Indigenous practices increase farmers' income with low cost	
g.	Indigenous practices are transitionally difficult to sustain	
h.	Indigenous practices increase crop/vegetable production and productivity	
i.	Agricultural professionals lack adequate knowledge on indigenous knowledge	
j.	Agricultural extension workers fail to appreciate the importance of indigenous knowledge	
k.	Agricultural extension workers lack adequate understanding of indigenous knowledge	

A22. Are you a beneficiary of any government (or otherwise) youth/agricultural/rural development support programs (financial assistance/support with inputs/training, etc.)?

_____

1 = Yes 0 = No

If yes, please complete the table below. If No go to B1

A22.		**A23.**	**A24.**	**A25.**	**A26.**
Programme name		Who is providing?	Type/form of assistance	Duration *(indicate unit)*	Satisfaction with support **(Code)**
a					
b					
c					
d					

Code for A24. 1=Financial/funding; 2=inputs (specify); 3=training (specify); 4= other (specify) _____

Code for A26. 1= *Very unsatisfactory; 2=unsatisfactory; 3=Neutral; 4 = satisfactory; 5 = very satisfactory*

A27. If the answer to **A26 (PREVIOUS TABLE)** is 1 or 2, please explain why you were or are not satisfied with the programme?

_____

_____

A28. What can be done to improve such program (s)? _____

_____

_____

A29. Do you think the support has to always continue? _____

1 = Strongly disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly agree

A30. Please explain the reason for your answer in **A29**.

_____

_____

A31. Do you think you have benefited as a result of the support received? _____

1 = Yes 0 = No

A32. **If Yes to A31**, how did you benefit?

_____

A33. If No to A31, why?

_____

A34. If Yes to A31, was the benefit short-term and once off or was it long-term and permanent?

_____

0= Short-term and once-off 1 = Long-term and permanent

B. NATURAL CAPITAL

LAND OWNERSHIP AND TENURE ISSUES

B1. Do you own or have access to land? **1 = Yes 0 = No** _____

(**If YES proceed to B2, otherwise go to B11 on page 7**)

B2. If yes to **B1**, what is the total number of plots you have? _____

B3. How much land in hectares do you own/have access to? _____Ha

Please complete the following table regarding the land that you own/have access to.

Plot		B4. Size of plot (hectares)	B5. Means of ownership	B6. Amount per ha per year if plot is leased/rented	B7. Plot quality (fertility and drainage)
a.	Plot 1				
b.	Plot 2				
c.	Plot 2				
d.	Plot 4				
e.	Plot 5				
f.	Plot 6				

Code for B5:** 1 = Owned (hold the permission to Occupy (PTO) rights); **2** = Owned (hold private property rights); **3** = Leased or rented; **4** = Borrowed; **5** = Received from the chief on a temporary basis; **6** = other ***(specify)_____

Code for B8: 1 = Very bad; **2** = Bad; **3** = neutral; **4** = Good; **5** = Very good

B8. Do you find it difficult to make long-term land use decisions due to the current land ownership system? _____**1= Yes 0= No**

B9. If Yes to **B8**, what have you done to deal with this difficulty?

_____

B11. To what extent do you agree or disagree with the following?

1=Strongly disagree	*2=Disagree*	*3=Neutral*	*4=Agree*	*5=Strongly agree*

Indicator		**Response**
a.	I believe I know my legal rights (i.e., guaranteed power/claims).	
b.	I believe I am able to exercise my rights over land (i.e., the rights to use and exclude others from using or occupying the land).	
c.	I believe I am free to choose what to produce on my plot.	
d.	I trust I can use this land for more than 10 years if I want to.	
e.	I do not see threats of eviction from the land.	
f.	I believe I can transfer the land to family members if I want to.	
g.	I believe I can transfer the land to people not related to me if I want to.	
h.	I always find it easy to approach the police if there is conflict on land.	
i.	I always find it easy to approach the traditional (informal) courts.	
J.	I always find it easy to approach the traditional leaders to resolve disputes	
k.	I believe I will be treated fairly by the police at any given moment.	
l.	I believe I will be treated fairly by the traditional courts in any given case.	
m.	I believe I will be treated fairly by the traditional leaders in any given case	

B12. As a youth, are there any other challenges you are facing in relation to land?

_____

WATER RELATED ISSUES (ALL YOUTH)

B13. How consistent has the rainfall patterns in your area been over the past 5 years (2014-2018)? ____

1	Unreliable	**2**	Somewhat reliable	**3**	Reliable/consistent

B14. How has this affected farming activities in your area?

_____

B15. What has been the trend of the rainfall received per year for the past 5 years? _____

1	Decreasing	**2**	Increasing	**3**	Consistent

Did you experience the following natural hazards in the last 5 years/production seasons?

Natural hazard		**B16.** In the last five years, how many times have you experienced natural hazards	**B17.** If experienced any hazard, what impact did it have on farming (crop/livestock)?
a.	Drought		
b.	Flood		
c.	Hailstorm		
d.	Any other (please specify)		

Ask B18 and B19 only if fulltime or partially involved in farming or agriculture related economic activities. Otherwise go to section C on page 8.

B18. What have you done to try and reduce the effects of drought and inconsistent rainfall patterns?

_____

_____

B19. What other water related challenges (if any) are you encountering?

a._____

b._____

c._____

C. PHYSICAL CAPITAL

COMPLETE THE FOLLOWING TABLE ON OWNERSHIP AND ACCESS TO ASSETS (ALL YOUTH)

Ask C4 and C5 to only involved in farming/ agriculture related business

Assets		C1.	C2.	C3.	C4.
		Number of assets owned or have access to	Current market value per unit (s) (Rand)	Which ones do you own/access as a group?	Are the production assets adequate for your agricultural activities? **1= Yes 0=No**
a.	Cell phone (non-smart)				
b.	Smart phone/iPad (Tablet)				
c.	Radio				
d.	Television				
e.	Computer/Laptop				
f.	Trailer/cart				
g.	Water tank				
h.	Motor vehicle in running order				
i.	Plough				
j.	Planter, harrow or cultivator				
k.	Tractor				
l.	Other (specify)				
m.	Other (specify)				
n.	Other (specify)				

C5. What equipment (that you do not have currently) do you think would improve your production and access to markets?

_____

C6. Do you own (ones they have control over) any livestock? _____ **1= Yes 0 = No**

If YES to C6, complete table below on livestock ownership by the youth. If NO go to Section D

Type of livestock		C7.	C8.	C9.	C10.	C11.
		Number owned	Current value	Number sold in the previous six months	Current value per unit (Rand)	Main market livestock sold
a.	Goats					
b.	Cattle					
c.	Sheep					
d.	Domestic chicken					
g.	Other (specify)					

Code for C11: 1=Local butchery; 2=Supermarket; 3=Neighbours; 4=Hawkers; 5=Other (specify)_____

C12. What is your main purposes of keeping livestock **(*multiple answers possible*)** _____

1 = Sales (income) **2 =** Consumption **3 =** Wealth **4 =** Draught power **5 =** Cultural reasons **6 =** Other **(please specify)** _____

C13. Which of the issues shown below are your main challenges in livestock production? **1 = Yes; 0 No**

FACTORS		
a.	Disease outbreaks	
b.	Unable to vaccinate due to financial constraints	
c.	Limited access grazing area	
d.	No access to support services	
e.	Other (specify below)	
f.		
g.		
h.		

D. FINANCIAL CAPITAL

Complete table below on sources of household income (ALL YOUTH)

Source of household income		**D1.** Source of income **1 = Yes 0 = No**	**D2.** Number of times you received this income in year 2018? **E.g. once, 2 or 3 times/year, monthly, bi-monthly**	**D3.** Average income each time (**Rands**)	**D4.** Total income	**D5**. Rank of source of income **(Code)**
a.	Remittances (meputso)					
b.	Arts and craft					
c.	Permanent employment					
d.	Temporary employment					
e.	Social grants					
f.	Crop income					
g.	Livestock					
k.	Other (please specify)					

Code for D5: 1 = least important 2 = not sure 3 = important 4 = very important

D6. If YES to remittances, Major uses of remittances: _____

1 = Food and groceries 2 = Agricultural inputs 3 = School fees and supplies 4 = Health-related expenses
5 = Transport 6 = Other (specify) _____(*multiple answers possible*)

If you have social grants as a source of income, please complete the table below for members in your household/under your care receiving social grants:

Name of person		**D7.** Number of years receiving grant
Child support grant		
1		
2		
3		
Old persons grant		
1		
2		
3		
Disability grant		
1		
2		
3		
Foster child grant**		
1		
2		
3		
Care dependency grant		
1		
2		
3		

Grant	Name of person	Number of years receiving grants
1.		
2.		
3.		
4.		

If Grants are received complete the following table, otherwise go to Savings and Credit (D18)

D8.	Do you use some of your grant money to buy agricultural inputs? **1 = Yes 0 = No**	
D9.	If Yes, for what input(s)?	
D10.	Do you use some of your grant money to hire casual labour? **1 = Yes 0 = No**	
D11.	Do you use some of your grant money to hire farming equipment? **1 = Yes 0 = No**	
D12.	Do you use some of your grant money to lease or rent land? **1 = Yes 0 = No**	
D13.	If Yes to **D8-D12,** how often do you do that? **1 = Sometimes 2 = Often 3 = Always**	
D14.	Roughly, what proportion of your social grant do you use for **E8-E12** above? **1= None 2= A quarter 3= Half of it 4= Most of it 5= All of it**	
D15.	Do you consider the social grant as a means of survival to meet basic needs? **1 = Yes 2 = Somewhat 3 = No**	
D16.	Do you consider the social grant as your primary source of income? **1 = Yes 2 = Somewhat 3 = No**	
D17.	Do you consider that the social grant has supported personal and family needs? **1 = Yes 2 = Somewhat 3 = No**	

SAVINGS AND ACCESS TO CREDIT

D18. Do you have any form of savings? _____

1 = Yes; 0 = No

D19. If Yes to **E18** above, which type of savings? (See code below): _____

1 = Formal	**2 = informal (i.e. stokvel)**	**3 = both**

D20. If Yes to **E18**, how much (Rand)? R _____

D21. Have you ever taken credit or used any loan facility in the past 12 months? _____

1=Yes 0=No

If YES to D21, complete the table below, if NO go to D28

		a.	**b.**	**c.**
		Credit 1	**Credit 2**	**Credit 3**
D22.	Type of credit **(Code)**			
D23.	Indicate source of credit **(Code)**			
D24.	How much did you receive from each source?			
D25.	Purpose of credit **(Code)**			
D26.	Interest rate (% per month or % per annum)			
D27.	Were you able to pay back the loan/credit in time? **1=Yes 0=No**			

Code for D22: *1 = Consumption (e.g. food); 2 = Agricultural production; 3 = Other investment credit (please specify)* _____

Code for D23: 1 = Relative or friend; 2 = Money lender; 3 = Savings club (e.g. stokvel or internal savings and lending schemes); 4 = Input supplier; 5 = Output buyer; 6 = Banks; 7 = Government; 8 = Microfinance institutions; 9 = Others (please specify) _____

Code for D25: 1 = Family needs-consumption; 2 = Agricultural purposes; 3 = Family emergency-consumption; 4 = Other (specify)_____

D28. If No to **D21,** please specify the reason(s) for not taking and/or using credit: _____ (***multiple answers possible***)

1	The interest rate is high	**2**	I couldn't secure/provide collateral	**3**	I have got my own sufficient money
4	It isn't easily accessible	**5**	I do not want to be indebted	**6**	Other (please specify)

D29. Complete the table below and indicate the extent to which you agree with the following statements? (ALL YOUTH)

****1= Strongly disagree***	***2= Disagree***	***3= Neutral***	***4= Agree***	***5 = Strongly agree***

Perceptions on access to credit		**D29**. Response*
a	Consumption credit is easy to access but expensive (interest rate is too high)	
b.	Production credit (e.g. Lima) is difficult to access (due, for instance, to bureaucracy and collateral requirements)	
c.	Informal credit (e.g. from village money lenders) is easy to access but expensive (interest rate is too high)	
d.	Formal credit (e.g. from banks, credit & saving associations) is difficult to access but affordable	

E. CROP PRODUCTION AND MARKETING

Please note: Only ask this section to YOUTH WHO ARE FULLTIME IN FARMING. Otherwise go to Section F.

Complete table for crops grown in 2018 (Please indicate units of produce for each crop)

Crop 1				
INCOME				
Area of production				
Quantity harvested				
Quantity sold				
Quantity retained/consumed				
Unit of sale				
Average price				
Market outlet (See Code)				
1 = farm gate; 2 = Hawkers; 3 = Local shops; 4 = shops; 5 = van traders; 6 = roadside; 7 = other specify_____(Multiple options possible)				
EXPENDITURES				
Inputs		**Unit (kg, etc.)**	**Quantity/ Number**	**Cost per unit (R)**
a.	Seeds			
b.	Basal fertilizer			
c.	Top fertilizer			
d.	Manure			
e.	Herbicides			
f.	Pesticides			
g.	Tractor / ox			
h.	Transport cost			
i.	Hired labour			
j.	Transaction costs			

Crop 2				
INCOME				
Area of production				
Quantity harvested				
Quantity sold				
Quantity retained/consumed				
Unit of sale				
Average price				
Market outlet (See Code)				
1 = farm gate; 2 = Hawkers; 3 = Local shops; 4 = shops; 5 = van traders; 6 = roadside; 7 = other specify_____(Multiple options possible)				
EXPENDITURES				
Inputs		**Unit (kg, etc.)**	**Quantity/ Number**	**Cost per unit (R)**
a.	Seeds			
b.	Basal fertilizer			
c.	Top fertilizer			
d.	Manure			
e.	Herbicides			
f.	Pesticides			
g.	Tractor / ox			
h.	Transport cost			
i.	Hired labour			
j.	Transaction costs			

Crop 3					Crop 4				
INCOME					**INCOME**				
Area of production					Area of production				
Quantity harvested					Quantity harvested				
Quantity sold					Quantity sold				
Quantity retained/consumed					Quantity retained/consumed				
Unit of sale					Unit of sale				
Average price					Average price				
Market outlet (See Code)					Market outlet (See Code)				
1 = farm gate; 2 = Hawkers; 3 = Local shops; 4 = shops; 5 = van traders; 6 = roadside; 7 = other specify_____(Multiple options possible)					**1 = farm gate; 2 = Hawkers; 3 = Local shops; 4 = shops; 5 = van traders; 6 = roadside; 7 = other specify_____(Multiple options possible)**				
EXPENDITURES					**EXPENDITURES**				
Inputs		**Unit (kg, etc.)**	**Quantity/ Number**	**Cost per unit (R)**	**Inputs**		**Unit (kg, etc.)**	**Quantity/ Number**	**Cost per unit (R)**
a.	Seeds				**a.**	Seeds			
b.	Basal fertilizer				**b.**	Basal fertilizer			
c.	Top fertilizer				**c.**	Top fertilizer			
d.	Manure				**d.**	Manure			
e.	Herbicides				**e.**	Herbicides			
f.	Pesticides				**f.**	Pesticides			
g.	Tractor / ox				**g.**	Tractor / ox			
h.	Transport cost				**h.**	Transport cost			
i.	Hired labour				**i.**	Hired labour			
j.	Transaction costs				**j.**	Transaction costs			

Please note: Marketing costs are those associated with marketing information and search, negotiating and bargaining

E11. Do you sell some of your produce as a group? _____***1=Yes 0=No***

E12. If No to **E11**, despite the several advantages of selling your produce collectively, why not?

_____
___

E13a. What is the distance to the nearest source of major inputs (minutes)?

_____

E13b. What is the distance to the nearest point of sale of your produce (minutes)?_____

E13c. What type of road do you use to access your major input/output markets?

_____

1 = gravel; 2 = paved road

E13d. Please rate the accessibility of your major road to the input/output markets?

_____

1=Not accessible at all; 2= not accessible during rainy season; 3=accessible

E18. To what extent do you agree or disagree with the following?

1= strongly disagree 2= Disagree 3= Neutral 4= Agree 5= strongly agree

Farming constraints		**E17.** Response
a.	For me, lack of access to inputs (seeds, fertilizer and chemicals etc.) is the major constraint in farming.	
b.	For me, large (unaffordable) increase in input prices is the major constraint in farming.	
c.	Limited or lack of farming knowledge and skills is a major constraint.	
d.	Lack of access to adequate land is a major constraint.	
e.	Insecure land ownership is a major constraint.	
f.	Lack of access to financial resources is a major constraint.	
g.	Too high labour cost is a major constraint.	
h.	Poor rainfall distribution is a major constraint.	
i.	Lack of adequate storage facilities for vegetables or fresh produce is a major constraint.	
j.	Poor output price is a frequent challenge.	
k.	Limited access to market information is a major constraint.	
l.	Lack of access to transport services for marketing agricultural produce is a major constraint.	
m.	Access to the agricultural extension service is a major constraint.	
n.	Inadequate and poor quality of agricultural extension service is a major constraint.	
o.	Local or social conflict- in natural resources management/use is a major constraint.	
p.	Stray animals destroy my crops in the field.	
q.	Expensive data bundles limiting access to information is a major constraint.	

F. PSYCHOLOGICAL CAPITAL AND ENTREPRENEURIAL CHARACTERISTICS

ASK F1 - F5 TO YOUTH ENGAGED IN FARMING/AGRICULTURAL RELATED ECONOMIC ACTIVITIES

F1. Complete table below on reasons for engaging in farming/agricultural related economic activities

	Reasons	F1a. Tick all applicable	F1b. Rank importance
a.	I mainly do farming and related activities for family consumption		
b.	I mainly do farming and related activities for income		
c.	I mainly do farming and related activities to create employment for myself		
d	I mainly do farming and related activities to create employment for other people		
e.	Other (specify)		

Code F1b: ***1= Not important; 2 = Rarely important; 3 = Neutral; 4 =Important; 5 = Most important.***

F2. Do you separate your business operations from family operations?

_____

1 = Always 2 = Often 3 = Sometimes 4 = Rarely 5 = Not at all

F3. If your answer to **F2** is **4** or **5,** Why?

_____
___

F4. Do you keep records of your business activities?

_____

1 = Always 2 = Often 3 = Sometimes 4 = Rarely 5 = Not at all

F5. How do you measure the success of your farming business?

_____
___

DIMENSIONS OF PSYCHOLOGICAL CAPITAL (ALL YOUTH)

HOPE

F6. Youth in South Africa face challenges in trying to access land. Let's say you are one such youth who is interested in farming but facing challenges in trying to access the land.

To solve the problem, to what extent are you most likely to do the following:		Respond*
a.	Engage your family so that they parcel out to you a piece of land	
b.	Talk to traditional leaders to check for the possibility of acquiring land	
c.	Do nothing and hope that they will be available land soon	
d.	Any other (please specify)	

**1=Strongly disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly agree*

Please justify your response(s)

_____
_____

F7. Young people/youth often face challenges with unemployment, lack access to capital, lack of access to information and poverty, among others.

Given the possibility of any of these constraints existing, to what extent do you believe that:		**Response***
a.	There is no possibility of resolving these constraints.	
b.	You still have the potential to work through the challenges and turn things around.	
c.	The government can address the issues.	
d.	Any other (please specify)	

**1=Strongly disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly agree*

Please justify your response(s)

_____

_____

RESILIENCE

F8. Suppose your application for financial support from a bank or funding agency has been rejected multiple times?

To what extent are you most likely to:		**Response***
a.	Give up and forget about the business?	
b.	Consult your peers already in business to find out how they managed to obtain funding	
c.	Send your application to a different financial institution?	
d.	Any other (please specify)	

**1=Strongly disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly agree*

Please justify your response(s)

_____

_____

F9. Making profit is one of the reasons why people start businesses. Suppose you're running a business and you have been making losses for the past three years?

To what extent are you most likely to:		**Response***
a.	Give up and forget about the business?	
b.	Continue with the business and consult a business advisor/peer	
c.	Continue with the business and change the way you run your daily business activities?	
d.	Any other (please specify)	

**1=Strongly disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly agree*

Please justify your response(s)

_____

_____

SELF-EFFICACY / SELF-CONFIDENCE

F10. Suppose the government approaches you with a deal of a farm with inputs provided and you're required to form and lead a youth cooperative who will be funded under this support.

To what extent are you most likely to:		**Response***
a.	Accept the deal?	
b.	Ask them to find someone else?	
c.	Ask them to wait because you still want to think about it?	
d.	Any other (please specify)	

**1=Strongly disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly agree*

Please justify your response(s)

_____

_____

F11. Suppose you are a member of a youth cooperative in your area and you attend monthly meeting. In these meetings, you do not always agree with some of the decisions taken by the leadership.

You are in one such meeting and wish to oppose some ideas raised by the leaders, to what extent are you mostly likely to:		**Response***
a.	Oppose the leader's opinions that are not aligned with your beliefs?	
b.	Agree with the leaders to avoid conflict?	
c.	Agree with the leader to show respect for their position?	
d.	Any other (please specify)	

**1=Strongly disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly agree*

Please justify your response(s)

_____

_____

OPTIMISM

F12. Let's say you have been running your business for some time and you are familiar with the daily responsibilities of your business. Lately, however, you have been making no profit.

	To what extent are you most likely to:	**Response***
a.	Continue with the business and see these failures and setbacks as temporary	
b.	Invest less of your time on your business and seek other opportunities	
c.	Quit the business and find something else to do	
d.	Any other (please specify)	

**1=Strongly disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly agree*

Please justify your response(s)

_____

_____

F13. Suppose that you own a farming/agriculture related business that has been struggling and someone approaches you attempting to buy the business for a considerable amount of money.

Given this scenario or situation, what will you most likely do?		**Response***
a.	Sell the business	
b.	Sell a part of the business	
c.	Refuse to sell and continue with the business.	
d.	Any other (please specify)	

**1=Strongly disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly agree*

Please justify your response(s)

_____

_____

Entrepreneurship characteristics

F14. *Risk-taking, tolerance for failure*

Financial constraint is one of the major challenges facing young entrepreneurs. Suppose there is an investment introduced to you with two options.

To what extent are you most likely to:		Response*
a.	choose an investment with 50% chance of losing everything and 50% chance that your money will be doubled?	
b.	choose an investment with 100% guarantee that your money will generate a 15% return on investment?	

**1=Very unlikely 2=Unlikely 3=Neutral 4=Likely 5=Very likely*

Please justify your response(s)

_____

_____

F15. *Seizing an opportunity,*

Suppose you have a stable job with great benefits and realize a business opportunity in your community

To what extent are you most likely to:		Response*
a.	Quit the job and pursue the business opportunity.	
b.	Continue with your job and ignore the opportunity	
c.	Partner with people and utilize the opportunity while working	

**1=Very unlikely 2=Unlikely 3=Neutral 4=Likely 5=Very likely*

Please justify your response(s)

_____

_____

F16. ***Being determined and persistent, problem solving attitude***

Most youth intending to get into business do not meet the commercial banks' credit requirements to access financial resources. If you face this challenge,

To what extent are you most likely to:		Response*
a.	source finance from other formal organisations that offer financial support, e.g. microfinance organizations	
b.	Source finances from informal organisations like community cooperatives, stokvels and loan sharks	
c.	Source out money from family and friends.	
b.	Do nothing – opt out of business	

**1=Very unlikely 2=Unlikely 3=Neutral 4=Likely 5=Very likely*

Please justify your response(s)

_____

_____

F17. ***Proactive, curious, strong drive to achieve***

At some stage in the business, it is possible to receive many contracts from buyers in the same week. Suppose you have more contracts than usual, need to attend a compulsory meeting and have some family commitments at the same time.

To what extent would you:		Response*
a.	Work longer hours than usual including weekends or hire someone to get the job done?	
b.	Cancel some contracts to minimise work load?	
c.	Contract neighbour businesses to make up quantity.	

**1=Very unlikely 2=Unlikely 3=Neutral 4=Likely 5=Very likely*

Please justify your response(s)

_____

_____

F18. ***Independent***

Young people often face financial constraints and challenges in their lives. There are times when one needs money to buy toiletries, data/ airtime or other personal items. Suppose you find yourself in such a situation,

	To what extent are you most likely to:	Response*
a.	Look for piece work/ informal work and earn some money for yourself	
b.	Ask your family to give you money	

**1=Very unlikely 2=Unlikely 3=Neutral 4=Likely 5=Very likely*

Please justify your response(s)

_____

_____

F19. ***Innovation or creativity***

Suppose you are running your own business and you intend to expand it and increase your profits by attracting more customers.

To what extent are you likely to:	Response*
a. Increase production and flood the market with your products	
b. Rebrand your products, give them a fresh and new look?	

1=Very unlikely 2=Unlikely 3=Neutral 4=Likely 5=Very likely
Please justify your response(s)

_____
_____

F20. ***Efficiency, and profitability***

Suppose you are running a labour-intensive business and an opportunity arises for you to make more money through adopting new equipment/technology. However, taking this route means laying-off a significant number of your employees.

To what extent are you likely to:	Response*
a. Adopt the new technology and retrench most of your workers?	
b. Continue being labour intensive and forego the potential profits	

1=Very unlikely 2=Unlikely 3=Neutral 4=Likely 5=Very likely
Please justify your response(s)

_____
_____

F21. ***Embracing change/growth***

Farmers are introduced to new modern methods of operating their businesses that are different from their traditional methods. For example, they are introduced to modern inputs like genetically improved seeds, artificial insemination, new packaging machinery, computers for record keeping, etc. Suppose you are a young farmer who has been using the traditional method,

To what extent are you likely to:	Response*
a. Switch to modern technology?	
b. Continue with the traditional methods?	

**1=Very unlikely 2=Unlikely 3=Neutral 4=Likely 5=Very likely*
Please justify your response(s)

_____
_____

F22. ***Internal locus of control, self-reliance and motivation,***

The success of any young entrepreneurs depends on both internal and external factors. Suppose you are given a start-up capital to start a business,

To what extent are you most likely to:	Response*
a. Successfully initiate and run the business with less assistance/mentorship	
b. Need close assistance and mentorship from government and other stakeholders to successfully run the business	

**1=Very unlikely 2=Unlikely 3=Neutral 4=Likely 5=Very likely*
Please justify your response(s)

_____
_____

F23. ***Visionary and goal oriented, knowing where the farm is destined***

Planning and setting goals helps young entrepreneurs stay productive and focused. The business plan also enables banks and other investors to take you seriously when applying for business funding.

To what extent do you:	Response*
a. do business planning for your farming?	
b. farm without a business plan?	

**1=Very unlikely 2=Unlikely 3=Neutral 4=Likely 5=Very likely*

Please justify your response(s)

_____

_____

G. SOCIAL CAPITAL

PLEASE ANSWER THE FOLLOWING QUESTIONS REGARDING MEMBERSHIP TO DIFFERENT SOCIAL NETWORKS OR GROUPINGS.

G1. Are you a member of an agricultural related **cooperative**? **1= Yes 0= No**

G2. If No to G1, Why Not?

_____

_____

G3. If Yes to G1, are you happy with the governance and management of the cooperative? _____ **1= Yes 0= No**

G4. If you are not happy, what are the issues?

_____

_____

G5. Do you have trust in the cooperative leadership? _____

1= Yes 0= No

G6. If No, what are the reasons for your lack of trust?

_____

_____

G7. Are you a member of a **youth club/group such as YARD or other**? _____**1= Yes 0= No**

Provide name if possible:

_____

G8. How has the membership helped you as a farmer?

_____

_____

G9. Are you a member of any **social media groups** (WhatsApp or Facebook)? _____**1= Yes 0= No**

G10. How do you think the membership to a social media group has helped you as a farmer/young entrepreneur?

_____
_____
_____

G11. How do you think social media platforms can be used to support youth in farming/agricultural related businesses?

_____
_____

Please specify other social networks that you are part of and how they have helped you as a young person.

	G12. Other social network/s	**G13. How have they helped?**
a		
b		
c		

G14. If you are not a member of any social network, why Not?

_____
_____

(ALL YOUTH)
Please indicate the three most common sources of information used in the past starting with the most important.

		a.	**b.**	**c.**
		Source 1	**Source 2**	**Source 3**
G15.	Information source			
G16a.	Any cost involved in acquiring the information? **1=Yes; 0=No**			
G16b.	If Yes, please explain.			
G17a.	How reliable is the information received? **1= not reliable; 2= reliable**			
G17b.	Please explain.			
G18a.	How useful is the information received? **1= not useful; 2= useful**			
G18b.	Please explain.			

Code for G15: 1= Extension officers; 2= Fellow farmers; 3= Irrigation / Scheme committees; 4= Cooperative leaders; 5= Traditional leaders; 6= Non-governmental organizations (NGOs); 7= Media (newspapers, radio, TV); 8= Training workshops; 9= Community meetings; 10= Phone SMS/text; 11= Social media (Facebook, WhatsApp, etc.); 12. Other (Please specify) _____

G19. How often do you get in contact with extension officers or other industry role players? ***(Code)***

____

1 = never;	*2 = rarely;*	*3 = sometimes;*	*4 = often;*	*5 = always*

PLEASE NOTE: ASK QUESTIONS G20 – G25 TO YOUTH WHO INDICATED IN SECTION C THAT THEY OWN/HAVE ACCESS TO A CELLPHONE/COMPUTER.

G20. Do you have access to the social media (Facebook, WhatsApp, Instagram, snapchat, etc.) through your smartphone/computer/laptop? _____**1= Yes; 0= No**

G21. If no to **G20**, Why?

_____

_____

G22a. How many hours do you spend on social media per day?

_____

G22b. How much money do you spend on airtime/data per month?

_____

G23. What **type of information** do you access through the different social media platforms? ***(Multiple answers possible)***_____

_____

___

For G23 see options below.

1	updates on friends/celebrities	**2**	social events	**3**	education/life skills
4	religion	**5**	Entrepreneurial opportunities	**6**	general news
7	farming (techniques and technology)	**8**	output markets and product prices	**9**	Other (specify). _____

G24. Please indicate the extent to which you agree with the following statements regarding use of ICTs.

1= Strongly agree	*2= Agree*	*3= Neutral*	*4= Disagree*	*5= Strongly disagree*

ICT use	**G25.** Response
a. Cell phones are too expensive and unaffordable	
b. The high cost of data bundles affects my access to social media/internet.	
c. Poor network/connectivity is major constraint to use of cell phones	
d. Lack of knowledge affects the use of cellphones for productive purposes	
e. I search for information with a mobile phone	
f. I share photos, status and postings using my mobile phone	
g. I send and receive emails through my mobile phone	
h. I send and receive information on sms through my mobile phone	

i.	I use my mobile phone to access information about markets	
j.	I use my phone to access information on inputs/new technology	
k.	I use my mobile phone to access financial services/credit institutions	
l.	I communicate with my clients/other business colleagues/market brokers through my mobile phone	
m.	I use my mobile phone to increase knowledge on farming/agriculture related economic activities	
n.	I use my mobile phone to enhance decision making	

G25. Please indicate the extent to which you agree with the following statements on youth attitudes towards ICT

1= Strongly agree 2= Agree 3= Neutral 4= Disagree 5= Strongly disagree

ICT attitudes	**G25.** Response
a. I get anxious when I don't have the Internet available to me	
b. I am dependent on my technology	
c. I get anxious when I don't have my cell phone	
d. I feel that I get more accomplished because of technology	
e. With technology anything is possible	
f. Technology will provide solutions to many of our problems	
g. I feel it is important to be able to access the Internet any time I want	
h. I feel it is important to be able to find any information whenever I want online	
i. I think it is important to keep up with the latest trends in technology	
j. New technology makes people waste too much time	
k. New technology makes people more isolated	
l. New technology makes life more complicated	

H. PERCEPTIONS

Please complete the table below in relation to your general and agricultural perceptions towards agriculture.

1 = Strongly Agree 2 = Agree 3 = Neutral 4 = Disagree 5 = Strongly Disagree

Statement	**Response**
General perceptions	**H 1.**
Primary rain-fed agriculture can offer better livelihood support and is the best way to alleviate poverty	

Primary rain-fed agriculture is unattractive, dirty and backbreaking	
Primary rain-fed agriculture is an option for under-achieving Students and adults	
Primary rain-fed agriculture is reserved for old uneducated people	
I find that primary rain-fed agriculture is attractive to me as a young person	
Primary rain-fed agriculture would be the last choice if other non-farm options are available	
I have seen elders improving their life through primary rain-fed smallholder agriculture	
I prefer irrigated smallholder agriculture to rain-fed smallholder farming	
Value adding agricultural activities are physically demanding	
I prefer an office job than an outside / field job	
I can be wealthy / rich through engagement in agricultural value chain economic activities	
The youth can engage in agricultural value chain activities related businesses	
Perception Towards Small-holder agriculture	**H 2.**
Smallholder agriculture is not a profitable venture	
Participation in agricultural economic activities will lead to economic empowerment of young people	
Most people known to me love agriculture and agriculture related businesses	
I believe most people known to me will support me if I choose to initiate agricultural business	
Agriculture creates employment for the majority of the rural poor	
Technology Perception	**H 3.**
The use of technology makes farming easier	
Technology complicates farming	
You cannot rely on technology for farming and related activities	
Morden technology will improve youth participation in agriculture	

H 4. What influenced the way you perceive agriculture?

_____

0	My peers	**1**	My parents	**2**	The community
3	My experience	**4**	School	**5**	Other (Specify)

H 5. At this point, what would you say your perception towards agriculture is?

0	Negative	**1**	Positive	**2**	I don't know

_____

Please read the statement provided in the table below and indicate your response using the provided code in the appropriate cell

Strongly Agree = 1	*2 = Agree*	*3 = Neutral*	*4 = Disagree*	*5 = Strongly Disagree*

Knowledge on Agricultural value adding economic activities		**H6 Response**
a.	Before this interview, I did not know there are other opportunities in agriculture besides primary agriculture	
b.	Before this interview, I did not know I can open a business in the agricultural sector without necessarily engaging in primary agriculture	
c.	I have always known about agricultural value adding economic activities	
Statement		**H7 Response**
a.	Education can improve the way youth view agriculture	
b.	Access to resources can positively change the way youth perceive agriculture	
c.	Agricultural mentorship programs will change the negative perceptions of youth towards agriculture	
d.	Improved financial income from agriculture will improve the way youth perceive agriculture	
e.	Better extension support will positively shape the views of young people in agriculture	

A. ASPIRATIONS

GENERAL, EDUCATIONAL, OCCUPATIONAL AND AGRICULTURAL ASPIRATIONS FORMATION OF ASPIRATIONS

I 1. Do you aspire to participate in agriculture? _____

0	No	**1**	Yes	**2**	Not sure

I 2. At which level in agriculture, do you aspire to participate? _____

0	Primary	**1**	Agricultural value adding economic activities	**2**	Commercial agriculture	**3**	Other ***(Specify)***

I 3. My Aspirations towards agriculture and related activities was influenced by: _____

(Please justify response)

I 4. I aspire to expand my operation (grow the business) in the future _____

1 = Yes 0 = No

ASPIRATIONS TOWARDS AGRICULTURE AND RELATED ACTIVITIES

I 5. Please read the statement provided in the table below and indicate your response using the provided code in the appropriate cell.

Code: I5: Strongly Agree = 1 2 = Agree 3 = Neutral 4 = Disagree 5 = Strongly Disagree

Statement		**I 5. Response***
a.	I aspire to be involved in rain fed farming	
b.	I aspire to be a successful farmer	
c.	I aspire to become a commercial farmer one day	
d.	I aspire to increase my agricultural production at a later stage	
e.	I aspire to acquire agricultural training and education	
f.	I aspire to an occupation beyond farming, especially primary agriculture	

ENTERPRISE ASPIRATION

I 6. Would you aspire to venture into an agricultural value adding economic activities: _____***1 = Yes 0 = No***

I 7. Would you aspire to venture into any primary agricultural enterprise activities below ***(Multiple options possible)***: _____***1 = Yes 0 = No***

1 = Very likely 2 = Likely 3 = Neutral 4 = Unlikely 5 = Very Unlikely

Enterprises		
a.	Crop production	
b.	Vegetable production	
c.	Livestock	
d.	Dairy	

I 8. If **YES** to any of the above, would you opt for any of the agricultural value adding activities below? ***(Multiple options possible)***

1 = Very likely 2 = Likely 3 = Neutral 4 = Unlikely 5 = Very Unlikely

Agricultural business along the food value chain, Specify if any ideas of type of business:		
a.	**Transportation of produce**	
b.	Retailing of produce	
c.	Selling of animal products	
d.	Butchery	
e.	Milling	
f.	Making traditional clothing from animal skin	
Other		
g.		
h.		
i.		

OCCUPATIONAL ASPIRATIONS

I 8. I aspire for a career in:

_____

Following career occupation *(Multiple option possible):*

0	Office work	**1**	Medicine	**2**	Farming	**3**	Entertainment	**4**	Banking
5	Engineering	**6**	Mining	**7**	ICTs	**8**	Beauty	**9**	Other (specify)

(Please justify response)

_____

EDUCATIONAL ASPIRATIONS (ALL YOUTH)

I 9. Do you aspire to further your education? _____

1 = Yes 0 = No

I 10. If yes, up to which level? _____

0	Matric	**1**	Certificate	**2**	Diploma	**3**	Degree	**4**	Postgraduate

I 11. Would you aspire to study an agriculture related qualification? _____

1 = Yes 0 = No

I 12. **If** No, what is the reason? _____

1	No money	**2**	No facilities	**3**	Not Interested	**4**	Other (Specify below)

Please specify here:

_____

B. WILLINGNESS

WILLINGNESS TO PARTICIPATE (YOUTH NOT INVOLVED)

J 1. Are you willing to participate in primary agriculture activities? _____***1 = Yes; 0 = No***

Please justify your response to **J 1**

_____
_____
_____

J 2. Are you willing to participate in agricultural value adding activities (Businesses along the value chain)? _____***1 = Yes; 0 = No***

J 3. At which level are you willing to participate? _____

1	Smallholder primary agriculture level	**2**	Small business agricultural value adding economic activities	**3**	Commercial level
4	Research/Academia	**5**	Other (specify)		

J 4. Would you be willing to participate in agriculture or related economic activities, if all the necessary resources are provided to you? _____ ***1 = Yes; 0 = No***

C. INTEREST

INTEREST IN AGRICULTURE AND RELATED ACTIVITIES (YOUTH NOT INVOLVED)

K 1. Do you have interest in participating in agriculture and related activities? _____

1 = Yes; 0 =No

Activity		**1 = Yes; 0 =No**	**If yes, please rate your level of interest**
a.	Agricultural value adding economic activities		
b.	Primary agriculture only		
c.	Both primary and value chain activities		
d.	Not interested to participating in any value chain or primary agricultural activities		

**1=Strongly not interested; 2=Not interested; 3=Neutral; 4=Interested; 5 = Highly interested*

If **NOT** interested in agricultural value chain activities, (option D) answer the following questions, otherwise go to **K3**

K 2. If not interested in Agricultural value chain activities, Why not?

_____
_____
_____

K 3. If not interested in primary agriculture, Why?

_____
_____
_____

K 4. If interested, how much time are you willing to allocate to an activity of your choice? (8am-5pm)

_____

K 5. If yes, go to K6 and If No go to K7

K 6. What drives your interest in agriculture and related activities?

_____
_____
_____

K 7. What drives your disinterest in agriculture and related economic activities?

_____
_____
_____

K 8. Please indicate any enterprises that you have interest on, within Primary agricultural sector.

_____
_____

K 9. Please indicate any enterprises that you have interest on, within the agricultural value chain (other than primary agriculture.

_____
_____
_____

K 10. Would you be interested to join any youth agricultural programs within your area? _____

1 = Yes; 0 =No

K 11. In your opinion, what could government and organised agriculture do to make agriculture interesting for young people?

D. AGRICULTURAL PARTICIPATION

Please complete the table below on agricultural participation, read the activity on the left column and respond accordingly.

Ask only to the youth who are currently participating in agriculture and related activities

L 1. How are you involved in agriculture and related activities?

_____
_____
_____

L 2. Are you involved in any important decision making related to agricultural or other related activities? _____**1 = Yes; 0 =No**

L 3. What kind of decisions do you take in as far as your involvement is concerned?

_____
_____
_____

L 4. How many hours do you spend on farming activities in a week? _____

L 5. How many hours do you spend on agriculture value adding activities in a week?
_____

L 6. Do you intend to continue with participation in agriculture and related activities in the future? _____
1 = Yes; 0 =No

L 7. Does some of the youth in your area participate in agriculture and related economic activities? _____ **1 = Yes; 0 =No**

L 8. If yes, why do you think some do not participate in agriculture and related economic activities? _____***(Multiple answers possible)***

1	Negative attitude toward farming	**2**	Lack of farming knowledge	**3**	Lack of government support
4	Lack of access to resources	**5**	They are not interested	**6**	**Other *(Please specify below)***

(Please specify here)

L 9. What influenced your participation in Agriculture and related activities? _____
(Multiple options possible)

1	Parents	**2**	Extended family/relative	**3**	Peers	**4**	Extension officers
5	Media	**6**	School	**7**	Mentor	**8**	Other *(specify below)*

(Please specify here)

EXTENSION PARTICIPATION

Please complete the following table regarding extension participation ***(See codes)***
Have you been involved or participated in any of the below extension activities before? *(Respond with either yes or no, in the appropriate cell*) **1 = Yes; 0 =No**

Activity		**L 10.** Participation ***Response**
a.	Farmers days	
b.	Agricultural Exhibitions	
c.	Agriculture study groups	
d.	Trainings	
e.	Conferences	
f.	Work shops	

IF <u>NOT PARTICIPATING</u>, PLEASE ANSWER THE FOLLOWING (L 11 – L 14)

L 11. What are your reasons for not participating in agriculture and related activities**?**

_____
_____
_____

L 12. What can be done to enhance youth participation in your area? **In general (excluding government):**

_____
_____
_____

L 13. What can be done to enhance youth participation in your area? **By the South African government:**

_____
_____
_____

L 14. What kind of support do you think can help youth to start agricultural business? Not only farming businesses, but also businesses along the value chain.

_____
_____
_____

*****End of Questionnaire*****

Thank you / Ke a leboha