

**THE ROLE OF RURAL YOUTH IN THE SMALLHOLDER FARMING
SECTOR: CHALLENGES AND OPPORTUNITIES IN OKHAHLAMBA
LOCAL MUNICIPALITY, SOUTH AFRICA**

by

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Submitted in partial fulfilment of the academic requirements of

Master of Agriculture (Food Security),

In African Centre for Food Security,

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Pietermaritzburg

South Africa

November 2018

ABSTRACT

Smallholder farming is seen as an important vehicle through which the goals of addressing poverty, food insecurity and unemployment can be achieved. However, factors such as adverse climatic conditions, shortage of labour and poor market access have affected agricultural production, threatening food security now and in the future. This calls for improvements in the smallholder farming sector in order to address these challenges. Integration of youth in smallholder farming is, therefore, an important factor towards the improvement and development of the sector. This is because of qualities such as higher levels of energy and education, openness to new technology and ideas associated with the youth. In spite of these qualities, most of the youth are losing interest in and leaving smallholder farming. This has resulted in a loss of the most productive and potentially innovative segment of the agricultural labour force, affecting agricultural production and food security now and in the future. The study, therefore, seeks to identify the roles, challenges and opportunities of youth participating in smallholder farming, and recommends ways to retain and stimulate interest among youths towards farming.

Data were collected from randomly selected youths living in Okhahlamba Local Municipality (OLM), located in northern KwaZulu-Natal. A mixed method approach combined both qualitative and quantitative data and methods to answer the research questions. The data were analysed using a chi-square test, binary logistic analysis, descriptive and content-based thematic analysis. The results from the descriptive analysis reveal that 5.2 % of the youths had reached a primary level of education, while a large proportion (91.1%) had reached a secondary level of education and only 3.7% had reached a tertiary level of education. Planting and harvesting of crops were the main roles of youth taking part in farming. Lack of tools, capital and government support were some of the challenges facing youths in smallholder farming. The results show that the sex of the household head, household size and access to market information by household head influences the decision to participate in smallholder farming among youth in OLM.

The findings of the study serve as a basis for decision making to the government and other actors with the agenda of promoting human, rural and agricultural development. The study recommends that youth should be provided with the necessary agricultural training, farming implements and also the government should focus on mechanising the smallholder farming sector. This can be done by introducing two-wheel tractors in the smallholder farming sector.

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1- PLAGIARISM

I, **Bright Mukwedeya**, declare that:

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2- DRAFT PUBLICATION MANUSCRIPTS

Details of Contribution to Draft Publication Manuscripts that form part and/or include research presented in this dissertation. My role in each paper and presentation is indicated.

The * indicates corresponding author

Chapter 4

Publication Manuscript 1 (under review)

Mukwedeya BT* & Naidoo KD. Factors influencing rural youth participation in the smallholder farming sector: A case of Okhahlamba Local Municipality, South Africa.

Author contributors: Mukwedeya conceived paper with Naidoo. Mukwedeya collected and analysed data, and wrote the paper. Naidoo guided the data collection, analysis and contributed valuable comments to the manuscript.

Chapter 5

Publication Manuscript 2 (work-in-progress)

Mukwedeya BT* & Naidoo KD. Rural youth participation in the smallholder farming sector: Challenges and Opportunities in Okhahlamba Local Municipality, South Africa.

Author contributors: Mukwedeya conceived paper with Naidoo. Mukwedeya collected and analysed data, and wrote the paper. Naidoo guided the data collection, analysis and contributed valuable comments to the manuscript.

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ACKNOWLEDGEMENTS

I thank God for the grace and favour throughout the period of my studies, without him I am nothing.

I also wish to extend my greatest gratitude to the following:

- The African Centre for Food Security for granting me the opportunity to work towards my dream of promoting agricultural and rural development and empowering youths.
- My supervisor, Mr. Denver Naidoo for his continuous support, advice and encouragement.
- I also wish to thank Mr. Kuboni, Mr. Hadebe and Mr. Mazibuko for helping me with the logistics in the field.
- Not forgetting the warm welcome I received from the youths in Okhahlamba local municipality, may you all be blessed.
- Particular thanks are due also to my parents, Dr T Mukwedeya and Dr T Chimatira for their financial support, motivation, guidance and love.
- Last, special thanks to my friends, Tinashe, Runyararo, Hillary, Welile, Lisa, Ntokozo and Thembalani, for their support, May God grant you all that you want and need in life.

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ABBREVIATIONS AND ACRONYMS

AGRA	Alliance for Green Revolution in Africa
DAFF	Department of Agriculture, Forestry and Fisheries
FANRPAN	Food, Agriculture and Natural Resources Policy Analysis Network
FAO	Food and Agriculture Organization
HFIAS	Household Food Insecurity Access Scale
ICTS	Information and Communication Technologies
NEPAD	New Partnership for Africa's Development
NGO	Non-governmental organisations
PACSA	Pietermaritzburg Agency for Community Social Action
OECD	Organization for Economic Cooperation and Development
OLM	Okhahlamba local municipality
SHF	Smallholder farmers
SPSS	Statistical Package for Social Sciences
SSA	Sub-Saharan Africa
Stats-SA	Statistics South Africa
WFP	World Food Programme
WHO	World Hunger Organization
WWF	World Wide Fund for Nature
UN	United Nations

CHAPTER 1: THE PROBLEM SETTING

1.1 INTRODUCTION TO THE RESEARCH PROBLEM

In sub-Saharan Africa (SSA), the prevalence of undernourishment and food insecurity is on the rise. Between the periods 2015 and 2016, the number of undernourished people in SSA rose from 200 million to 224 million and at the same time, inadequate access to food increased in several parts of the region, including Zimbabwe and Tanzania (FAO, 2017). Unlike many other African countries, South Africa is unlikely to be on top of the agenda in any international discussion on food insecurity. The country is producing enough staple food to meet its demand and has the capacity to import food to cover shortages when necessary (Aliber & Hart, 2009). Although South Africa is food secure at the national level, the same cannot be said at household level. According to Statistics South Africa (2016), more than 13.8 million South Africans have inadequate access to food while 7.39 million people are vulnerable to hunger. Thus, a significant number of people at household level are still food insecure and most of these live in rural areas (Cheteni, 2016; De Cock, et al., 2013).

The South African government recognize the need of a multifaceted approach involving increasing food production, employment creation and improving access to food. This recognition underlies the formulation and implementation of the National Policy on Food and Nutrition Security which was established in 2013. The policy focuses on ensuring the availability and accessibility of safe and nutritious food, both at household and national level. The goals of the National Policy on Food and Nutrition Security are in line with some of the Sustainable Development Goals (SDG) such as eradicating poverty (SDG 1), zero hunger (SDG 2) and good health and well-being (SDG 3). Since most of the poor and food insecure people live in rural areas and depend on farming for their livelihoods and well-being (De Cock, et al., 2013), the policy seeks to address food insecurity in rural areas by investing in agriculture and improving market access among the smallholder farmers.

Different researchers and organisations working to fight hunger and food insecurity have concluded that smallholder farming plays a significant role in addressing food insecurity, especially in rural areas. Smallholder farming provides income, employment and food to the majority of people in rural areas (Chitja & Mabaya, 2015; Machethe, 2004). Further, smallholder farming is responsible for producing over 70% of food consumed in Africa and the bulk of agricultural exports in developing countries (Kuruku, 2014; United Nations, 2015). Globally, smallholder farming produces 50% of the world's cereals, 60% of the world's meat

and 70% of the world's dairy (Alexandratos & Bruinsma, 2012). Despite the vital role of smallholder farming to food security, a long list of factors such as adverse climatic conditions, labour shortage, poor access to markets and an ageing farming population have affected agricultural production, threatening food security now and in the future (Tshuma, 2012). At a farm level, these factors have increased the vulnerability of smallholder farmers to food insecurity especially in sub-Saharan Africa (Mango, et al., 2018).

The challenges' facing the smallholder farmers calls for improvements in the sector (Kimaro, et al., 2015). Consistent and compelling evidence show that participation of youth in smallholder farming is an important factor towards the improvement and development of the sector (Afande, et al., 2015; Kimaro, et al., 2015). This is because of qualities such as high energy, enthusiasm, innovative behaviour and fast rate of learning associated with the youths (Alao, et al., 2015; Lyocks, et al., 2013; Naamwintonme & Bayson, 2013). The farm labour from the youths is essential for agricultural and rural development (Ango, et al., 2014; Preethi & Lakshminarayan, 2017).

Africa's age structure tends to be younger. According to the United Nations, Africa is home to over 226 million youths aged between 15 and 24 years, accounting for 19 % of the global youth population. In South Africa, more than 70% of the population is below the age of 34 years, youths accounting for 36.2% of the total population (Statistics South Africa, 2016). The growing youth population in Africa represents a great human asset for socio-economic development and prosperity of the continent (Kimaro, et al., 2015). It is an opportunity for the less developed countries in Africa to build new industries, increase productivity in all sectors and expand their economies (FAO, 2017). Therefore, improving youth participation in smallholder farming has the potential to improve the sector hence, should be a priority.

1.2 PROBLEM STATEMENT

Smallholder farming is seen as an important vehicle through which the goals of ensuring the availability and accessibility of safe and nutritious food at all levels can be achieved (Aliber & Hart, 2009). Due to limited resources, smallholder farming depends almost entirely on family labour, especially on the youth for production (Kuye, et al., 2008; Lowder, et al., 2016). However, most are leaving and losing interest in farming (Auta, et al., 2010; Kimaro, et al., 2015; Mangevere, et al., 2014). This has resulted in a labour deficit in smallholder farming, loss of the most productive and potentially innovative segment of the agricultural labour force, affecting agricultural production and food security now and in the future (Mbah, et al., 2016;

Pam, 2014). In South Africa, the food self-sufficiency status has, in past years, declined significantly leading to a general increase in food prices (DAFF, 2013; De Cock, et al., 2013). Declining yields and increasing food prices demands priority by government to implement interventions to focus on holding and stimulating interest among youths towards smallholder farming. Therefore, the study seeks to determine the roles, challenges and opportunities for the youths in smallholder farming and recommends ways to improve youth participation in smallholder farming.

1.3 GENERAL RESEARCH OBJECTIVE

The main objective of the study is to determine the roles of rural youths taking part in smallholder farming in order to ensure sustained food security. This will be achieved through the following specific objectives:

- To determine the challenges and opportunities for youths in farming.
- To determine the key factors influencing youth participation in smallholder farming.

1.4 RESEARCH QUESTIONS

- What are the factors influencing youth participation in the smallholder farming sector?
- What are the challenges and opportunities for the youth taking part in smallholder farming?

1.5 IMPORTANCE OF STUDY

There is a common trend across Africa of youth losing interest in and leaving smallholder farming. This trend demands policy makers to focus on improving youth participation in smallholder farming. As much as improving youth participation in smallholder farming should be a priority, limited literature on rural youth participation in agriculture has led to inappropriate interventions and the failure of several youth programmes (Nnadi & Akwiwu, 2008). In addition, the limited literature has led to the replicating of interventions and programs of the past which are less likely to succeed (Afande, et al., 2015). This calls for the need to engage with the youth, listen to them and understand their roles, concerns, challenges and aspirations (Nnadi & Akwiwu, 2008). The study therefore identifies the roles, challenges and opportunities for youth taking part in smallholder farming. The findings and recommendations from this study will provide knowledge to agricultural policy makers for the amendments and formulation of agricultural policies and interventions for the direction of improving youth

participation in the smallholder farming sector. This serves as a basis for increasing the chances of success of youth policies or interventions in agriculture.

The study findings will contribute significantly towards the global and national efforts of increasing agricultural production and addressing food insecurity by increasing youth participation in agriculture. By so doing, the goals of National policy in Food and Nutrition Security and some of the Sustainable Development Goals such as eradicating poverty (SDG 1), zero hunger (SDG 2) and good health and well-being (SDG 3) can be attained. Further, the study will contribute to the goal of the National Youth Policy 2020 of reducing youth unemployment. This will be achieved by holding and stimulating interest among youths towards farming. Engaging youths in smallholder farming directly reduce youth unemployment and indirectly eliminate criminal and illegal activities engaged in by the unemployed youths creating a better and safer place for all (Afande, et al., 2015).

1.6 DEFINITION OF TERMS

Youth: Every person falling within the age bracket of 15 to 34 years (National Youth Policy, 2020).

Smallholder farmer: Farmers who grow subsistence crops and limited cash crops on small pieces of land and depend solely on family labour for production (DAFF, 2013).

Food security: A situation that exists when people have access to enough, safe and nutritious food to meet their dietary and food preferences for an active life (World Food Summit, 1996). Food security is a multi-dimensional phenomenon defined differently from region to region with more than 200 definitions and 450 indicators (Napoli, 2011).

Household: A group of people who live and eat at least one meal together and have a common household head and share at least one income generating activity (Beaman & Dillion, 2012).

Youth Participation in farming: Any activity engaged by youths along the agricultural value chain (FAO, 2011).

1.7 STUDY LIMITS

The study was limited to youth taking part in smallholder farming in Okhahlamba Local Municipality, as a result, the sample cannot represent all South African youths in farming.

Therefore, conclusions and recommendations are relevant to the study area and cannot be generalised.

1.8 ORGANISATION OF THE DISSERTATION

This dissertation is a thesis by publication. Chapters 4 & 5 are currently under review. The dissertation consists of six chapters, including the first chapter. The second chapter presents a review of the literature on youth participation in smallholder farming, food security, demographics and the National Youth Policy. This is followed by an explanation of the methodology in chapter three, including details on the study site, research design, data collection tools, methods and analysis. Chapter 4 provides findings on the factors influencing youth participation in smallholder farming. Chapter 5 provides findings on the challenges and opportunities encountered by youth in smallholder farming. Finally, Chapter 6 presents the conclusions and recommendations.

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CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

Food insecurity has emerged as a significant global concern, affecting the livelihood of millions and impacting substantially on loss of life. Due to the multi-dimensional nature of food security, different approaches, mechanisms and interventions have been used to address this situation. The study seeks to determine the roles, challenges and opportunities for youth participating in smallholder farming and to explore how young people could engage effectively in this space to address food insecurity. The chapter discusses relevant literature and covers sub-Saharan Africa demographics, smallholder farming, food security and youth's profile.

2.2 OVERVIEW OF SUB-SAHARAN AFRICA DEMOGRAPHICS (SSA)

The population of sub-Saharan Africa (SSA) has expanded by 96% since 1990, which is 38% more than the world's average (OECD/FAO, 2016). SSA is reported to be home to over 950 million people with most of the population below the age of 35 years. The United Nations report (2015) shows the region is home to nearly 200 million youths, projected to double by 2030. The report further states that two out of three people in the region are below the age of 25 years, while 44% are under the age of 15 years. Globally, of the 10 countries with the largest share of youth population, five of them are in SSA (AGRA, 2015).

The growing youth population represents an abundant human asset for socio-economic development and prosperity of the region if properly harnessed (Kimaro, et al., 2015). It is an opportunity to build new industries, increase productivity in all sectors and expand economies especially in developing countries (FAO, 2017). It is important to remember, most of the youths live in rural areas where farming is the main livelihood for the majority the households (De Cock, et al., 2013). Focusing on improving youth participation in agriculture will address some of the Sustainable Development Goals such as eradicating poverty (SDG 1), zero hunger (SDG 2) and good health and wellbeing (SDG 3) in Africa. Youth have desirable qualities that can promote agricultural production and development and ensure food security at all levels (Afande, et al., 2015; AGRA, 2015).

2.3 FOOD SECURITY

Every human being depends on food for energy and survival. Limited access to food leads to poor health, a decrease in productivity and, limited capacity to take up opportunities for development (Abdu-Raheem & Worth, 2011). Food security concept originated in the mid 1970s during the international discussion on global food crisis and has seen considerable

attention. The World Food Summit (1996) defines food security as a situation that “exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”. Food security is discussed at the global, national, household and individual levels. Food security at global levels cannot be translated to food security at national level; moreover, food security at the national level does not guarantee food security at household or even the individual level (Duffour, 2010).

There are two general types of food insecurity namely chronic food insecurity (long-term and persistent) and transitory food insecurity (short-term and temporary). Food security consists of four pillars-food access, availability, utilisation and stability. These pillars depend on each other. Food might be available but this does not guarantee access; food access may not be a problem but this does not guarantee utilisation (Napoli, et al., 2011). The causes of food and nutrition insecurity are diverse, multi-factorial and interlinked therefore described by Food and Agriculture Organization as a flexible concept.

In Southern and Eastern Africa, inadequate and erratic rainfall patterns have been the major causes of food insecurity. During the 2014/15 agricultural season, sub-Saharan faced its worst drought in 10 years, affecting livelihoods of millions. Droughts and other extreme weather events result in poor harvests, increasing prices of the available food which has implications for food access (AGRA, 2015). In central Africa, food insecurity is caused by national and regional conflicts, especially in Congo, Burundi, Southern and Eastern Libya. Conflicts disrupt food production systems, livelihoods and undermine human, social and economic capital (FAO, 2017). A detailed exploration of the food security pillars will be discussed in relation to the study in the following section.

2.3.1 Food availability

Food availability refers to the adequate supply of food in a country or area through domestic production, imports, food stocks and food aid (World Food Programme, 2009: 170). Food availability focuses on the physical existence of food and its supply. In South Africa, food is available and evenly spread across the country (Aliber & Hart, 2009). However, the same cannot be said at a household level. Many households, especially in rural areas, are food insecure and depend on farming for their wellbeing and livelihoods (De Cock, et al., 2013). Smallholder farming encounters several challenges such as lack of education, skills, shortage

of labour, poor access to markets, climate change and ageing farm population which all affect agricultural production (Tshuma, 2012).

Addressing the challenges facing smallholder farmers is important for ensuring food security at all levels (von Loeper, et al., 2016). Introducing modern production technologies in farming has been proven to be an effective way of addressing some of the challenges facing the smallholder farmers. However, the modern production technologies tend to be too sophisticated and complex for the ageing farm population, who are, therefore, less likely to adopt the technologies (AGRA, 2015). This makes youth participation in smallholder farming important. Youths are open to new ideas and technologies than the older farmers (Alao, et al., 2015; Lyocks, et al., 2013). Engaging the growing youth population in agriculture is critical for improving smallholder farming and ensuring food security now and in the future. This calls for different agricultural stakeholders to focus on holding and stimulating interest among the youths towards farming.

2.3.2 Food access

Food access is the ability of a household to regularly obtain sufficient food through any combination of purchasing, bartering, borrowing, food support or gifts (World Food Programme, 2009: 170). Food access depends largely on the affordability of food and household income (Gross, et al., 2000). There are three elements to food access: physical, socio-cultural and economic. The distribution of food in a country is thought of as physical access to food. A problem of physical access might be when food is not evenly spread across a country because of poor road networks and storage facilities (Gross, et al., 2000). If food is available and evenly spread but the consumer cannot purchase the food, this would be seen as a case of economic food insecurity. This is often the case in South Africa (Aliber & Hart, 2009). In some cases, food is available and accessible but cultural norms prohibit consumption.

Smallholder farming plays an important role in food access through the provision of income from marketed surplus (Chitja & Mabaya, 2015). The challenges which farmers face, discussed in section 2.3.1, result in poor agricultural production, which has implications for farm incomes and food security. Addressing the challenges in smallholder farming has the potential to improve food access (Ripoll, et al., 2017). Integration of youths in smallholder farming is therefore, important since they have desirable qualities that address some of the challenges in smallholder farming and ensure sustainable agricultural production (Kimaro, et al., 2015).

2.3.3 Food utilization

Food utilization is the ability of the human body to take in and metabolise food (Gross, et al., 2000: 5). It focuses on issues around health, sanitation, food preparation, intra-household food distribution, food storage, water and hygiene practices within the household. Consumed food must have enough energy and nutrients intake for a healthy and productive life. This is important when it comes to daily physical activities especially in farming and other physical labour (Napoli, et al., 2011). Youth participation in smallholder farming plays a vital role in food utilization. Engaging youth in smallholder farming improves agricultural production leading to improved farm incomes (Aliber & Hart, 2009). This increases household purchasing power among the farmers leading to the purchase of sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (Aliber & Hart, 2009).

2.3.4 Food Stability

For food security to exist there must be stability in access, availability and utilisation. Lack of stability has a serious negative impact on the other three pillars (Gross, et al., 2000). Natural disasters, climate change, political instability, unemployment and price volatility are some of the factors that affect stability (Napoli, et al., 2011). Climate change is one of the main factors affecting a stable supply of food in many developing countries, disrupting livelihoods and food production systems (Masipa, 2017). Governments have invested in research and development in order to develop technologies and methods to mitigate the impacts of climate change. However, the technologies developed tend to be too sophisticated and complex for the ageing farmers, hindering adoption (AGRA, 2015). Engaging youth in smallholder farming is therefore important. Youth are more likely to be better educated than ageing farmers and more open to new technologies and ideas needed to provide a stable supply of affordable food prices (Alao et al., 2015; Lyocks et al., 2013). Retaining and attracting youth in smallholder farming is necessary if we are to ensure sustainable agricultural and rural development and food security.

2.4 FOOD SECURITY IN SUB-SAHARAN AFRICA

Sub-Saharan Africa is the only region in the world where hunger and food insecurity are projected to worsen over the next two decades; unless if measures to ensure peace, economic growth and sustainable agriculture production are taken (Ripoll, et al., 2017). The food security condition has worsened in several parts of sub-Saharan Africa. During the period 2015 and

2016, the number of people undernourished rose from 200 million to 224 million, accounting for 25% of the 815 million people undernourished in the world in 2016 (FAO, 2017). Factors such as adverse climatic conditions and conflict have driven the recent increase in food insecurity in the region (Rademacher, 2012). The prevalence of undernourishment is about twice as high in conflict-affected countries with a protracted crisis than in countries not affected by conflict (FAO, 2017).

Compiling and consistent literature shows that agriculture has the potential to address poverty, undernourishment and food insecurity in SSA. It can generate incomes for the poor and also provide a stable supply of food at affordable prices (Chitja & Mabaya, 2015). Unfortunately, performance in agriculture has been characterised by ups and downs over the past decade (FAO, 2017). A long list of constraints such as adverse climatic conditions, poor market access, shortage of labour and lack of capital have affected agricultural production and development (Tshuma, 2012). Comfort can be gained from addressing these challenges in agriculture. Engaging youths in farming is one way of addressing the challenges. Youth have desirable characteristics that can address the challenges in farming and ensure sustainability in agricultural production and food security (Afande, et al., 2015; Kimaro, et al., 2015). This makes youth participation in agriculture important in any discussion on food insecurity, poverty and undernourishment in SSA.

2.4.1 Youths and agriculture

Integration of youth in smallholder farming is an important factor towards the improvement and development of the sector (Kimaro, et al., 2015). This is because of the energy, enthusiastic, innovative, dynamism and openness to new ideas and technologies associated with the youths (Alao, et al., 2015; Lyocks, et al., 2013; Naamwintonme & Bayson, 2013). Although youths have desirable characteristics that can address the challenges in farming and ensure sustainability in agriculture production, most of them are leaving and losing interest in farming (Auta, et al., 2010; Mangevere, et al., 2014; Kimaro, et al., 2015). This has resulted in depletion of skills, ideas and labour in farming affecting agricultural production and food security (Mbah, et al., 2016; Pam, 2014). Also, this has led to high unemployment rate and lack of sustainable livelihoods among the youths (Kimaro, et al., 2015). With most of the youths leaving and losing interest in farming, the long term future of the agriculture sector is in question. Umeh & Odom (2011) asserts that a loss of youth in agriculture reduces the chances to modernise the sector and become productive to feed the growing population today and in the future. The international

discussions have concluded the need to re-engage youths in farming. Identifying the challenges, roles and opportunities for the youths in farming will help in devising effective interventions that will hold and attract youths in farming (Nnadi & Akwiwu, 2008).

2.4.2 Factors influencing youth participation in smallholder farming

Factors that influence youth participation in smallholder farming in Africa have been documented in some literature and these factors are often not location specific that is, they vary by region or country. The study conducted in Nigeria by Nnadi & Akwiwu (2008) using a logistic model found out that youth education, household size, parent's occupation and income have a positive influence on youth participation in smallholder farming. Another study conducted by Akpan et al. (2015) using a binary logit model revealed that years of youth in a social organization, access to information and communications technology, nature of land ownership and youth access to state owned agricultural programme positively influence the decision of rural youth to engage in agricultural activities in the southern region of Nigeria. Using descriptive analysis Kimaro et al. (2015) found that marital status, gender, family background and level of education, youth perceptions, availability of rural credit facilities, availability of land for agriculture and agricultural knowledge are important factors associated with rural youth's participation in agricultural activities. Cheteni (2016) on a study on rural youth participation in smallholder farming in South Africa using a binary logistic regression analysis found out that Youth Programmes, resources, and programme availability contribute significantly to the decision to take part in farming among the youths.

2.5 FOOD SECURITY IN SOUTH AFRICA

Food security is becoming a popular topic in South Africa, especially after the establishment of the Sustainable Development Goals (SDGs). The government of South Africa has committed itself to ensure food security at all levels. Every citizen in South Africa has the right to have access to sufficient food, water and social security. This led to the right to access sufficient food to be placed in South Africa's constitutional law of 1996 under section 26 and 27. However, currently the right to access sufficient food is being violated. A significant number of people at household level remain food insecure (De Cock, et al., 2013). Food is available and evenly distributed but economic access to the food remains a challenge for the majority of South Africans (Vogel & Smith, 2002), especially in the rural areas (De Cock, et al., 2013).

The upper-bound poverty line (UBPL) of 992 rands per person a month in 2015 prices reveal that over 30,4 million South Africans live in poverty (Statistics South Africa, 2016). Over 20%

of the households in South Africa are food insecure because of poverty and unemployment (DAFF, 2013). Youths are twice as likely to be unemployed compared with the adults increasing their vulnerability to food insecurity. According to Statistics South Africa, 38.2 % of the youths actively looking for a job cannot find one implying that one in every three youths in labour force did not have a job in the first quarter of 2018.

The rising food insecurity levels and youth unemployment make smallholder farming an important vehicle for ensuring food security in South Africa (Aliber & Hart, 2009). Smallholder farming can stimulate economic development, create employment, improve farm incomes and provide a stable supply of food at affordable prices (Chitja & Mabaya, 2015; FAO, 2017). Currently, there is a growing demand for food and farm products on national, regional and global markets. By 2030 the sub-Saharan Africa food market is projected to reach 1 trillion from 313 billion in 2010 (FAO, 2017). This is an opportunity for the growing youth population to tap into the booming markets and emerge as major producers and suppliers of food. Therefore, identifying ways to hold and stimulate interest among the youths towards farming is important towards achieving the goals of addressing poverty, unemployment and food insecurity.

2.5.1 Factors influencing household food security

The factors that affect household food security have been well documented in literature. Due to the multi-dimensional nature of food security, factors that determine or influence household food security vary with region, context or country. The study conducted by Maziya et al. (2017) in South Africa using a Tobit regression model found out that the gender of household head, household size, social grants, farming experience, household income and farm size influence household food security. Similarly, as studied by Sekhampu (2013), using a binary logistic model found that household income, size, household head marital and employment status significantly affect household food security. Ngema et al. (2018) on a study of food security using a binary logistic analysis found that household income, education status, access to credit and infrastructural support have a significant relationship with food security.

On the other hand Oberholser & Tuttle (2004) using chi-square test found an association between participation in food assistance and food security. This implied that food assistance programmes influence household food security. Household head gender, education and income had no association with food security. The study by Agiden & Singh (2018) on food security using chi-square test found that household head education and age had an association with food

security. This implies that household head education and age play a significant role in household food security.

2.6 AGRICULTURE IN SOUTH AFRICA

Agriculture contributes significantly to the supply of food, employment and is a major generator of foreign currency in the country. The agriculture sector employs an estimated 700 000 workers, making it one of the biggest employers in the economy. Also, the sector contributes to the Gross Domestic Product though the contribution has decreased from 12% in the 1930s to 2% in 2016 (Trading Economics, 2016). South Africa has as a dual agricultural economy, with both well-developed commercial farmers and smallholder farmers (mainly located in the former homeland areas) (Gwebu & Matthews, 2018). These former homelands are characterised by high levels of food insecurity and poverty (Aliber & Hart, 2009). Over 20.7% of South Africa's households take part in agriculture (DAFF, 2013). Kwazulu Natal has the highest number of households that participate in agriculture (25%), followed by Eastern Cape (21%) and Limpopo (16%) (Statistics South Africa, 2016). The majority of farmers (91.2%) grow crops in backyard gardens and only 11.8% cultivate formally designated farmland.

2.6.1 Smallholder farming in South Africa

The general characteristics of smallholder farming include the use of simple technologies, low returns, ageing farm population, farming on small pieces of land and heavy dependency on family labour for production (Kirsten & van Zyl, 1998). Most smallholder farmers in South Africa have an average of 5 years of education and spend only 36 rands on farm inputs (Aliber & Hart, 2009).

Smallholder farming in South Africa is seen as the vehicle through which the goals of addressing food insecurity, poverty and unemployment can be achieved (Aliber & Hart, 2009). Smallholder farming directly contributes to household food security by providing with food, improving farm incomes and creating jobs (Baiphethi & Jacobs, 2009). At a consumer level, smallholder farming contributes to food security by providing with a stable supply of food at affordable prices. Additionally, if a household has access to some home-grown food and no longer needs to buy, income can be redirected to the purchase of energy-dense foods such as meat, fats and oils (Aliber & Hart, 2009). Although rural households derive livelihoods and income from smallholder farming, many farmers diversify their sources of livelihoods and incomes in order to spread and manage risks (Aliber & Hart, 2009). This acts as a buffer against

poverty and food insecurity among the smallholder farmers. However, there has been growing concern worldwide of youths leaving and losing interest in farming. This has resulted in a shortage of labour among smallholder farming threatening food security now and in the future (Mbah, et al., 2016; Pam, 2014). The challenges facing smallholder farmers have implications for rural and agricultural development, food security and youth participation in smallholder farming.

2.6.2 Challenges facing smallholder farmers

Climate change, lack of education, labour shortage, ageing farm population and poor market access are some of the challenges facing smallholder farmers in South Africa (Tshuma, 2012). The impact of these challenges has led to a decrease in agricultural production and the decline of South Africa's food self-sufficiency status. Climate change is one of the main and persistent challenges encountered by most smallholder farmers in South Africa (Masipa, 2017). Periods of long dry spells and erratic rainfalls have been noticeable in many parts of the country, which have affected agricultural production and food security.

Access to lucrative markets is another challenge facing smallholder farmers in South Africa (Chitja & Mabaya 2015; von Loeper, et al., 2016). Smallholder farmers find it difficult to participate in the lucrative markets because of their characteristics which include low volume production, inferior and inconsistent quality, seasonal supply, costly transport, poor market information, limited value addition and lack of business culture (Chitja & Mabaya 2015). Poor access to markets by the farmers has serious implications for food security. At the farm level, it affects farm incomes and production and at the consumer's level, it affects food access through increased food prices.

Most of the farmers in South Africa on average have 5 years of education; the equivalent of grade 5 (Pienaar & Traub, 2015). This has implications for agriculture since it is going through a series of innovations and development demanding a better-educated farmer (Okpachu, et al., 2014). The modern production technologies needed to boost agricultural production tend to be complex for the illiterate farmers, who are, therefore, less likely to adopt them (AGRA, 2015; Tshuma, 2012). This decreases the likelihood of modernising the sector to become more productive and feed the growing population (Umeh & Odom, 2011).

Rural-urban migration, especially among the youths, is one reason why smallholder farming is lagging behind in terms of production and development (Imran, et al., 2016). Rural-urban

migration causes shortages of labour for smallholder farmers and loss of the most productive segment of the agricultural labour force, which has implications for agricultural production and food security (Mbah, et al., 2016; Pam, 2014). Further, youth rural-urban migration adds responsibilities to the ageing farmers and women left behind ultimately affecting agricultural production (Folefack, 2015).

Consistent and compelling evidence shows that youth have desirable characteristics that can address some of the challenges facing the smallholder farming sector (Kimaro, et al., 2015). Youth have a fast rate of learning, higher energy, open to new ideas and able to manoeuvre through modern production technologies needed to address the challenges in farming and boost agricultural production (Alao, et al., 2015; Lyocks, et al., 2013; Naamwintonme & Bayson, 2013). Identifying ways to hold and stimulate interest among the youths towards agriculture, therefore, is important for improving and developing the smallholder farming sector.

2.7 YOUTH IN SOUTH AFRICA

Demographically, South Africa is a young nation. Over 70% of South Africans are below the age of 30 years while youths make up 36.2 % of the total population (Statistics South Africa, 2016). In general, all the nine provinces in South Africa have been experiencing a growth in the youth population in the past decade. The growing youth population imply that more opportunities must be created in order to ensure meaningful participation and contribution of youths in the economy. The development of young people must become a national priority which is mainstreamed.

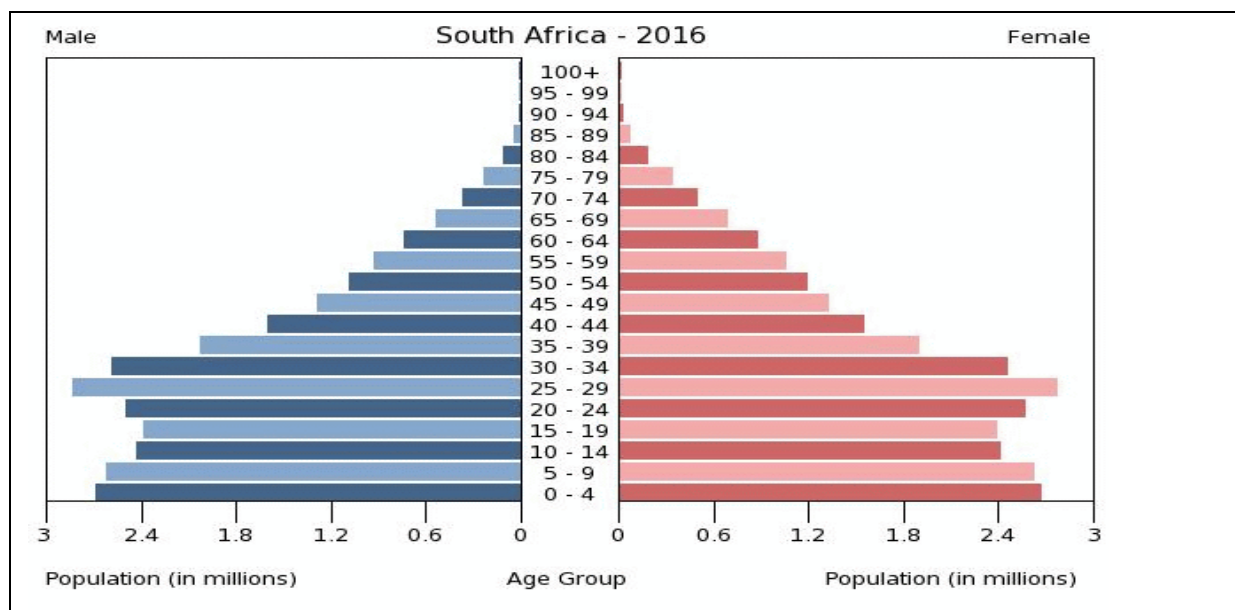


Figure 1: South Africa demographics: Source, Statistics South Africa.

Youths are not a homogeneous group, some live in urban areas while the majority stay in rural areas (Ripoll, et al., 2017). Rural youth are a socially and economically disadvantaged group of people because of their particularities which do not allow them to realize their full potential and aspirations in vertical social strata (Auta, et al., 2010). A long list of factors, limit rural youth from realising their potential. According to South Africa’s National Youth Policy (2020), poor access to land, farm implements, inputs, business skills, information, opportunities and markets are some of the challenges facing rural youths in the country. The recognition of these challenges underlies the formulation and implementation of youth policies such as the National Youth Policy (NYP) 2020. The policy focuses on addressing the needs and challenges of the South African youth.

2.7.1 National Youth Policy (NYP) 2020

A study by Alao, et al. (2015) shows young people are a major human resource for development, social change, economic expansion and innovation. In this regard, youth related issues have been given high priority in any discussion on ensuring sustainable agricultural production and food security in Africa. Against this background, different countries have developed and implemented youth targeted policies. In South Africa, the government implemented the National Youth Policy (NYP) 2020 which was approved by the cabinet in 2015. The policy aims at addressing the challenges and immediate needs of the youths and creates an environment that enables youth to fulfil their potential. It builds on the belief that

youth in South Africa have the potential and capacity to reduce poverty. The NYP 2020 interacts with various pieces of legislation and policies such as The New Development Plan, The Growth Path (2011), The Youth Employment Accord (2013) and The NYDA (2008) to name a few.

The policy gives special attention to rural youths as they struggle to take part in the economy compared to urban youths. The NYP seeks to address the challenges rural youth face by providing with interventions that support and promote participation of youth in the agricultural sector. Through the Department of Agriculture and the Department of Rural Development, the policy seeks to provide rural youth with farming implements, agricultural extension information and market linkages. The NYP 2020 acts as a tool to attract and stimulate interest among youths in farming. Also, the policy is an opportunity for youth in South Africa to become agents of social change, economic expansion and development.

2.7.2 Youth Education

Education is important for survival and shaping of human lives. It is the foundation of social prosperity, sustainable development, economic growth and political stability (Idris, et al., 2012). Education encourages an individual to participate in transforming and developing an economy. It reduces vulnerability to poverty and food insecurity as it relates to employability, productivity and earning ability. Studies by Cheteni, (2016) and Mango, et al. (2014) reveal that education has a positive influence on household food security. It improves income or wages and indirectly helps in attaining the basic needs and wants such as sanitation, shelter, water and shelter (Awan, et al., 2011). Education increases productivity, the value and efficiency of the labour force and the standard of living especially of the poor households (Omoniyi, 2013; Awan, et al., 2011).

According to the Bill of Rights, every South African citizen has the right to basic education and government is obliged to make education “available and accessible through reasonable measures”. This has led to the introduction of free basic education and establishment of Technical and Vocational education and training (TVET) colleges by the government. The government programme has led to a significant increase in access to education in South Africa. The number of people who attained primary education increased by 12.4 million between 1996 and 2016, while the number of people who received secondary education increased by 8.3 million during the same time (Statistics South Africa, 2016). The number of people who attained a bachelor's degree increased by 824 564 people between 1996 and 2016 and during

the same time, the number of people with no schooling decreased by 1.4 million people. Improved access to education by the government has led to an abundant human asset in South Africa, which if channelled to agriculture can lead to socio-economic development and prosperity of the country.

2.7.3 ICT's and Youth

In the last decade, the introduction of modern Information Communication Technologies (ICTs) has led to communication to becoming faster. Modern ICTs have paved way for economic growth and development in the continent and contributed significantly to agricultural and rural development (Barrett, et al., 2017). The modern ICTs transfer agricultural information such as commodity prices, production techniques and weather forecast at a relatively low cost to a wider outreach of farmers (Irungu, et al., 2015). This is essential for improving the viability and efficiency of small and marginal holdings (Singh, et al., 2017).

According to the United Nations, the young population play an important role in innovation and pioneering of many ICT applications. Youths can post, manage and use agricultural information which contributes significantly to agricultural development and growth (Irungu, et al., 2015). Further, a younger generation can help introduce new technologies in farming while also learning from traditional methods (AGRA, 2015). Attracting more young people into agriculture will bring the creativity, energy and tech-savviness to agriculture leading to agriculture and rural development and food security. ICTs applications will take agriculture to the next level creating a generation of technologically advanced young African farmers.

2.7.4 Youth Unemployment

The growing youth population in South Africa is of concern. Some schools of thought view the growing youth population as a ticking time bomb while others see it as a window of opportunity. Bridging the gap between the growing youth population and jobs creation remains a challenge across Africa. According to the African Development Bank, 31% of youth in Africa do not have formal jobs and are discouraged, while 19% are idle and 35% are vulnerable to lose their jobs. In South Africa, 38.6% of youth actively seeking employment are jobless (Statistics South Africa, 2016).

Unemployment is a waste of valuable human resources and affects socio-economic development, productivity and food security (Schaffnit-Chatterjee, 2013). Unemployment has implications on poverty, public violence, community unrest and forces one to engage in illegal

activities, which are all of socio-economic cost to governments (Alabi, 2014; Egunjobi, 2007; Mtembu & Govender, 2015). Retaining and stimulating interest among the youth towards farming has the potential to reduce youth unemployment and increase productivity in the agricultural sector. Currently, there is a growing demand for food and farm products on national, regional and global markets. According to World Bank (2013) the food market in sub-Saharan Africa is projected to grow from 313 billion in 2010 to 1 trillion by 2030. This is an opportunity for the youth to become the main suppliers of food on the markets. Devising ways to improve youth participation in smallholder farming, therefore, should be a priority

2.8 SUMMARY

Youth participation in smallholder farming has the potential to address poverty, food insecurity and ensure sustainability in agricultural and rural development. However, this can only be achieved if measures or mechanisms to hold and stimulate interest among youths are in place. There is a growing trend across Africa of youths leaving and losing interest in farming. Using different statistical methods, factors such household size, household head age, gender and income to name a few influence youth participation in smallholder farming. Considering this factors in the implementation of youth policies and interventions have the potential to improve youth participation in smallholder farming. This will yield improved agricultural production on both a national and global level.

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CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

The preceding chapter (Chapter 2) discussed the relevant literature for the study, providing a basis for developing the research methods. This chapter outlines the data collection procedures, tools and analysis methods. Using a mixed methods approach, qualitative and quantitative data were collected from randomly selected youths using questionnaires. Descriptive analysis, chi-square test, content and theme and a binary regression analysis were used to analyse the data. Results were presented in the form of tables. Ethics were considered throughout the duration of the study.

3.2 DESCRIPTION OF STUDY SITE

Data were collected from youths living in Okhahlamba Local Municipality (OLM), which is located in northern KwaZulu-Natal. OLM is the largest of three municipalities in the uThukela District of KwaZulu-Natal and is located between Lesotho, the Free State, and the Alfred Duma and Inkosi Langalibalele Local Municipalities (Municipalities of South Africa, 2018). The Drakensberg Mountains separate KwaZulu-Natal from Lesotho and are recognised internationally as a world heritage site. Three traditional authorities are found within the municipality: Amangwane, Amazizi and Amazwazi traditional authorities. The municipality houses 15 wards and covers a surface area of roughly 3 343.63 km (Okhahlamba Municipality IDP, 2017).

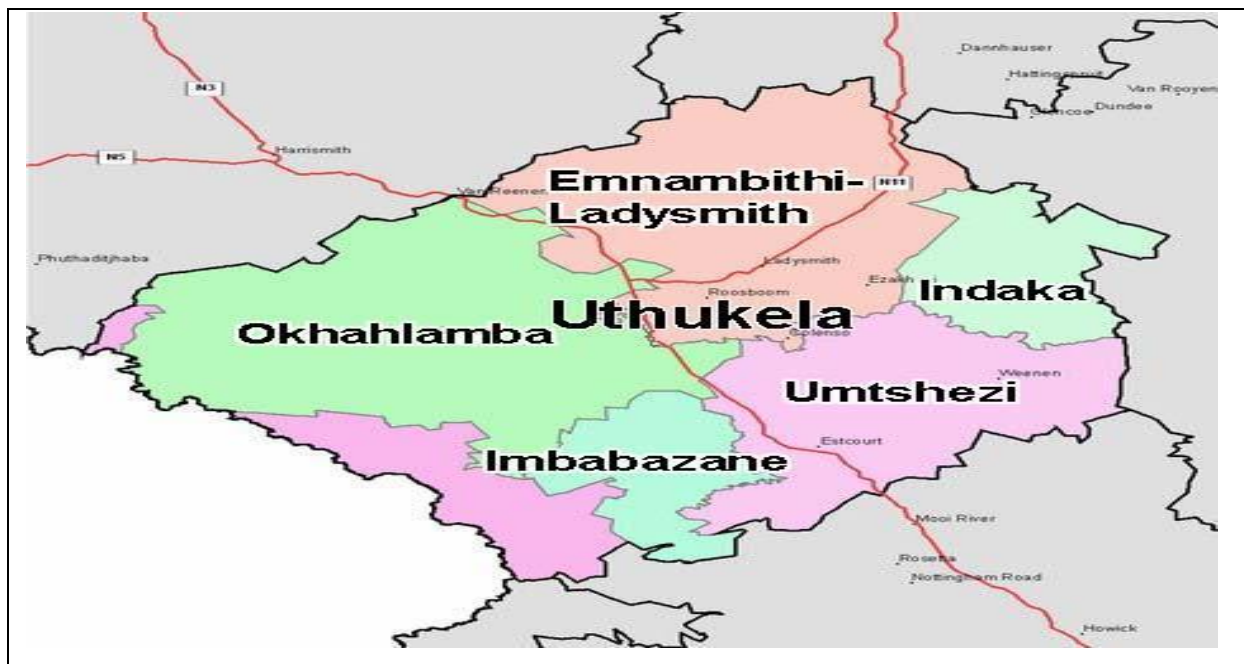


Figure 2: Location of OLM in KwaZulu-Natal Province: Source, Okhahlamba Municipality IDP, 2017

The municipality is home to over 135 132 people with most of the population reported to be below the age of 34 years. OLM was purposively selected for the study because of the high and growing number of youths living in it. According to a Community Survey report (2016), there was a considerable increase of 4038 youths between the period 2011 and 2016. This could be attributed to the major infrastructure development within Okhahlamba and better health facilities (Okhahlamba Municipality IDP, 2017). If properly harnessed, Okhahlamba youth bulge can offer the much-needed human capital that will not only speed up economic growth but will foster sustainability in agriculture. However, unemployment remains the main and persistent challenge facing youths in this area. Over 52.3% of the youths who want to work cannot find a job (Statistics South Africa, 2011).

Agriculture, tourism and wholesale trade are the major contributors to the economy of Okhahlamba Local Municipality (Okhahlamba Municipality IDP, 2017). OLM has a dual agricultural economy, with both well-developed commercial farmers and smallholder farmers. Cattle ranching, maize, dry beans and vegetable production are the main activities practised by the smallholder farmers. Over fifty percent (15 091 households) of the households in the area take part in farming (Okhahlamba Municipality IDP, 2017). Forty-five percent practise animal farming only, while forty percent take part in mixed farming and fourteen percent practise crop production only (Statistics South Africa, 2011). Over 23% of land is available for arable production and has great potential for irrigation development (Okhahlamba Municipality IDP, 2017). Despite this potential, lack of skills, labour, expertise, and knowledge remain an obstacle to agricultural development in the municipality.

Using income as a measure of food security, most of the households in the municipality have poor access to food. Over 43 percent of the people in the municipality have no form of formal income while 28 percent earn between R1 and R400 per month and only 11 percent earn between R 801 and R 1600 per month (Okhahlamba Municipality IDP, 2017). These statistics calls for the need to improve food access among the people in the municipality.

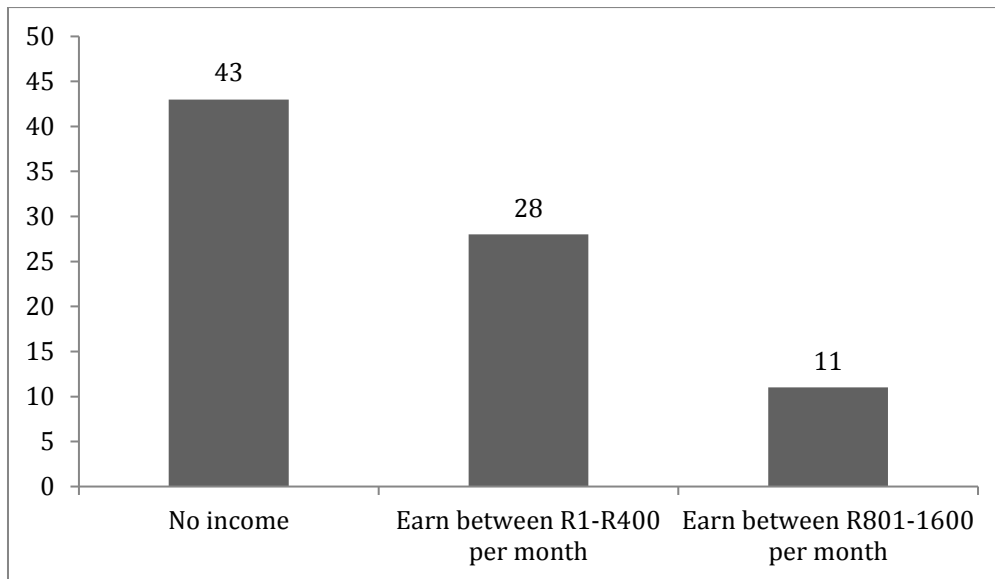


Figure 3: Income categories of households in OLM: Source, Okhahlamba Municipality IDP, 2017.

3.3 RESEARCH DESIGN

The researcher adopted a mixed method approach, combining both qualitative and quantitative approaches and data in the research study. Quantitative and qualitative data offer different perspectives to addressing the research question. Combining these approaches compensates for the limitations of each, while leveraging the strengths of both approaches (Creswell, 2013). McKim (2017) further claims that a mixed method approach reduces the personal biases of the researcher and adds value to interpretations and understandings of a research as compared with a purely qualitative or quantitative study.

McLeod (2008) and Rahman (2017) have described qualitative data as open-ended, interpretive, naturalistic and providing in-depth details on a particular matter. Qualitative data was collected at focus group discussions and during key informant interviews. The qualitative data provided insight into why youths are losing interest in and leaving farming and the activities youth would want to take part in. On the other hand, questionnaires collected quantitative data. The questionnaires were administered verbally ensuring that the questions were understood by the youths. Also this gave room to the enumerators to clarify some of the responses given by the youths.

3.4 SAMPLING METHOD

It is not feasible to collect data from the whole population; therefore, researchers need to select a sample. A sample is a smaller subset of a population, identified for investigation purposes (Alvi, 2016: 11). The technique of selecting a sample is called sampling (Sharma, 2017).

Muti-stage sampling divided the large cluster of the youth population into smaller clusters in different stages in order to improve data collection. The first stage of sampling included the selection of villages where smallholder farming was highly practised. From each of the selected villages, farming households (in which there is at least one youth) were selected randomly after preparing a comprehensive list of such households using a key informant (extension officer). From this list 95 farming households were selected randomly. This led to the final stage of sampling where youths living within the selected households were randomly selected to give a sample size of 277 youths. This allowed the researcher to calculate the youth participation rate of the study area. However, in the current study, the focus was mainly on youth taking part in smallholder farming leading to a final sample size of 135 youths.

The sampling method ensured that youths from the larger population had an equal chance of being included in the sample and each youth was chosen entirely by chance. Drawing on the work of Sharma (2017) the sampling method ensured that the sample was a true representative of the larger population and not biased in a systematic manner and thus, more likely to be representative (Sharma, 2017). Simple random sampling allowed the researcher to make generalisations from the sample to the population. This is an advantage since generalisations are more likely to be considered to have external validity (Alvi, 2016).

3.5 DATA COLLECTION TOOLS

Data collection is a systematic way of gathering data from various sources for a particular purpose (Rimando, et al., 2015). The instruments for data collection depend on the nature of data and time. Questionnaires, focus group discussions and key informant interviews were used to collect both qualitative and quantitative data from the research site. The following section discusses the data collection tools used for the study.

3.5.1 Survey Questionnaire

Questionnaires are usually the main data collection tool used in several studies. They create data on opinions, facts, knowledge and other information (Radhakrishna, 2007). A questionnaire must be easy to understand, interpret and should provide sufficient data to answer the research problem (Kelly, et al., 2003).

The questionnaire (Appendix 2) had three sections, which include, the household socio-economic characteristics followed by youths profile, and finally, the household food security status. Both open-ended and closed-ended questions were included in the questionnaire. The closed-ended questions offered respondents a choice between options such as “Yes” or “No”.

Closed-ended questions are easy to code and interpret, and thus save time (Sincero, 2012). However, they do not allow respondents to offer responses outside of the anticipated options. On the other hand, open-ended questions clarify responses given and provide an understanding of responses that are outside the range of answers (Singer & Couper, 2017). Such questions allowed respondents more freedom in their responses to a given question. In this study, the questionnaires were designed in English and later verbally translated to isiZulu, during interviews since most farmers were monolingual speaking (isiZulu).

Pilot studies are important for a good research design and increase the likelihood of success of the main study (Teijilingen & Hundley, 2002). A pilot of this study was conducted in Emmaus, a village in OLM. In line with Hassan, et al. (2006), the pilot study tested the research design, sampling methods and data collection tools. The questionnaire was examined for errors, consistency, and to establish that the data it provided responded adequately to the research problem. During the process, enumerators had an opportunity to become familiar with the research procedures in preparation for the main study. The pilot study identified some shortfalls. The first being, the questionnaire did not capture much data on the views of youth towards smallholder farming. Second, some questions were repetitive increasing the length of the interview. The pilot study led to the addition of questions on youth views towards smallholder farming and removal of repetitive questions.

3.5.2 Focus Group Discussions

Focus group discussions (FGD) improve the richness of data. In a FGD, a group of purposively selected respondents agree and build on each other's responses and provide data on a topic of interest (Nyumba, et al., 2018). The discussion is prompted by open-ended questions, allowing respondents to interact and agree on a response. One moderator (University Student) and an assistant (Extension Officer) facilitated the focus group discussions. The student asked the questions while the extension officer prescribed the responses. The youths participating in the FGD's were guided in generating responses to a set of questions. Before the discussion, the moderator explained the purpose of the focus group discussion and outlined some ground rules. According to Krueger (1994) ten participants in the focus group discussions are considered to be large enough to gain a variety of perspectives and small enough to avoid disorder. Some authors have recommended a minimum of three or four members for the focus group discussion (Burrows & Kendall, 1997). This led to the researcher to randomly select seven youths (engaged in farming) for each focus group discussion.

After selecting the youths for the focus group discussions the next step was to identify a convenient venue for the discussions. In doing so, the researcher took into consideration of participants comfort, access to venue and levels of destruction. In the focus group discussions, the researcher acknowledged the importance of putting the youths at ease, avoiding bias, keeping pace up and sticking on time and assuring confidentiality.

3.5.3 Key Informants Interviews

Key informant interviews are commonly used in qualitative data collection. The interviews provide detailed information on a particular topic of interest. Key informants are people who have extensive and detailed knowledge about other people and processes (Ali, et al., 2013). In the research, extension officers from the area were the key informants. They provided information on why most youths are not participating in farming and the challenges youth are facing in farming. In addition, the key informants offered recommendations on how to retain and stimulate interest among youths towards smallholder farming. The extension officers are credible key informants as they spend more time with youths in the study area.

3.6 DATA ANALYSIS

Raw data needs to be analysed or processed to become useful information. The process of bringing order and meaning to a mass of collected data is known as data analysis (Lynch, 1990). For the study, the quantitative data was analysed using a chi-square test, and descriptive and a binary logistic analysis, using the Statistical Package for Social Science (SPSS) computer software. The descriptive analysis provided a summary of data in the form of means, median and simple percentage counts. Finally, the factors influencing youth participation in smallholder farming were determined using a binary logistic regression analysis. On the other hand, content analysis was used to analyze the data which gathered from key informant interviews. This type of analysis is whereby data gathered is categorised in themes and sub-themes so as to be able to be comparable. Content analysis allows the results to be measured using quantitative techniques.

3.6.1 Logistic regression

Logistic regression is the suitable regression analysis to conduct when the dependent variable is dichotomous (binary). For this case youth participation in smallholder farming (Yes or No) will be the dependent variable. On a research of youth participation in smallholder farming, Cheteni (2016) and Nnadi & Akwiwu (2008) used the logistic regression analysis to identify factors influencing youth participation in smallholder farming.

The logistic regression model is specified as follows:

$$L_i = \beta_0 + \beta_i X_i + e_i$$

Where $L_i = 1$ if youth is taking part in smallholder farming or 0 if not taking part, e_i is the error term, β_i are parameter estimates (coefficients) and X_i are independent variables.

3.7 ETHICAL CONSIDERATIONS

Ethical considerations are one of the most important parts of a research. They promote integrity, reliability and validity of the research findings (Rahman, 2017; Creswell, 2013). Written permission to conduct the research study was obtained from the University of KwaZulu-Natal ethical committee (Appendix 4). Prior to beginning the study, the researcher was verbally introduced the research team to the participants. During the introduction, the researcher clearly explained the purpose, aims and duration of the study. Also, the researcher explained that participation is voluntary and the participants can withdraw from the study at any time. This was followed by the signing of a consent form which clearly stated the aims, purpose, problem and duration of the study. The participants were guaranteed that information they provided will not be shared with other members of the community.

3.8 SUMMARY

This chapter explained the methodology used in the study. A mixed method approach collected and analysed both the quantitative and qualitative data from the youth in the study area. Questionnaires collected quantitative data from randomly selected youths living in OLM while focus group discussions and key informant interviews gathered the qualitative data. The data was subject for analysis using content and theme and analysis and SPSS. Anonymity and confidentiality were maintained throughout the study. The results from the analysis are presented in chapter four and five. The results led to the conclusions and recommendations which are presented in Chapter six.

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CHAPTER 4:

Factors influencing rural youth participation in the smallholder farming sector: A case of Okhahlamba Local Municipality, South Africa

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Factors influencing rural youth participation in the smallholder farming sector: A case of Okhahlamba Local Municipality, South Africa

ABSTRACT

Purpose: There is a growing concern worldwide of youth losing interest in and leaving smallholder farming. This has implications for agricultural production, unemployment and food security. The study identifies the factors influencing rural youth participation in the smallholder farming sector and discuss critical issues on how to improve youth participation in the sector.

Methodology: Data were collected from randomly selected youths living in Okhahlamba Local Municipality using questionnaires and focus group discussions. Simple percentage counts and a logistic regression analysis analysed the data. The results from the analysis were presented in tables.

Findings: The results demonstrated that access to market information, the gender of the household head and household size influence youth participation in smallholder farming. A large proportion of the youth took part in crop planting and harvesting. Most of the youths lived in a household that were food insecure.

Practical implications: The results from the study provide a new direction for increasing youth participation in smallholder farming and can be helpful for policy-makers in devising interventions to hold and stimulate interest among youths towards farming

Theoretical implications: From a theoretical point of view, the study contributes to the theoretical debate by offering new insights into the role of rural youths in ensuring sustainable agricultural and rural development and food security.

Originality: This study systematically assesses the factors influencing rural youth to take part in the smallholder farming sector and contributes to the scarce literature on youth participation in the sector.

Keywords: Food security, Information Communication Technology (ICT), participation, smallholder farming, unemployment, youth empowerment

4.1 Introduction

Several African countries are going through a youth bulge, described by Kempe (2012) as a period where more than 20% of a country's population is between the ages of 15 and 34 years. In South Africa, over 70% of the population is below the age of 34 years, and youths, between the age of 15 and 34 years, account for 36.2% of the total population (Stats-SA, 2016). In general, all the nine provinces in South Africa are experiencing a growth in the youth population. Between the period 2009 and 2014, South Africa's youth population grew by 5.8% (Stats-SA, 2016).

Bridging the gap between the growing youth population and jobs creation remains a great challenge not only in South Africa but across Africa. Several African countries are struggling to reduce youth unemployment, while also anticipating substantial growth in the number of young people. According to the Food and Agriculture Organization (FAO), over 12 million youths in Africa join the labour force market annually, but only 3 million formal jobs are created yearly. In South Africa, more than 35% of the youths who want to work and actively looking for a job cannot find one (International Labour Organization, 2016). Youths living in rural areas are more likely to be unemployed compared with the urban youths (Cloete, 2015). Unemployment affects productivity, food security, economic growth and development (Alabi, 2014; Schaffnit-Chatterjee, 2013). Further, unemployment is associated with illegal activities and socially unacceptable means of making money (Mtembu & Govender, 2015). Egunjobi (2007) asserts that unemployment leads to social ills like robbery, prostitution, alcoholism, domestic violence and civil unrest, which are all of socio-economic cost to governments.

Smallholder farming has been identified as a vehicle through which the goal of addressing youth unemployment can be achieved especially in the rural areas (Aliber & Hart, 2009). Smallholder farming has the potential to create new job opportunities and absorb the growing youth population (FAO, 2017). Currently, there is a growing demand for food and farm products on national, regional and global markets. By 2030, Africa's food market is projected to reach 1 trillion from 313 billion in 2010 (FAO, 2017). This is an opportunity for the growing youth population to tap into the booming markets and emerge as major producers and suppliers of food. Despite the potential smallholder farming has in addressing youth unemployment, most youth prefer employment in non-farming sectors, resulting in youth migration to urban centres (Auta, et al., 2010; Mangevere, et al., 2014). This has resulted in high youth unemployment rate and lack of sustainable livelihoods among the youths (Kimaro, et al., 2015). With most of

the youths leaving and losing interest in farming, the long term future of the agriculture sector is in question.

There is support in the literature for the argument that engaging the youth in agriculture is both beneficial for them and the nation at large. Engaging youths in farming will ameliorate unemployment, build social competence in the youth, and contribute meaningfully to the economy. This requires interventions to focus on holding and stimulating interest among youths towards farming. As much as retaining and stimulating interest among the youth towards smallholder farming should be a priority, limited literature on rural youth participation in agriculture has led to replication of unsuccessful interventions (Nnadi & Akwiwu, 2008). Very few studies (Kimaro, et al., 2015; Naamwintome & Bagson, 2013; Nnadi & Akwiwu, 2008) have tried to identify the factors influencing youth participation in agriculture. Therefore, this study sets out to determine the factors influencing youth participation in smallholder farming and recommends ways to hold and stimulate interest among the youths towards farming.

4.2 Material and methods

4.2.1 Site Selection and sampling procedures

Okhahlamba Local Municipality (OLM) was purposively selected for the study because of the high and growing number of youths living in it (Okhahlamba Municipality IDP, 2017). OLM is home to over 49 408 youths, which is a one-third of the total population of the municipality (Stats-SA, 2016). Nonetheless, unemployment remains the main and persistent challenge facing the youth. Of those youth actively seeking work, 52% cannot find employment (Okhahlamba Municipality IDP, 2017). This has forced many youths to migrate to urban centres in search of better opportunities (Stats-SA, 2016). Agriculture is one of the main contributors to the economy of OLM. The agriculture sector is described as a dual agricultural economy, with both well-developed commercial farmers and smallholder farmers-mainly found in the former homeland areas (Okhahlamba Municipality IDP, 2017). Most of the households (15 091) in the municipality take part in agriculture. However, lack of agricultural extension service, shortage of labour, animal theft and inadequate supply of water remain the main challenges among the farmers.

4.2.2 *Research design*

A mixed method approach collected, analysed and integrated both qualitative and quantitative data to answer the research questions. A mixed method approach adds value to understandings and interpretations of a study as compared with a purely qualitative or quantitative study (McKim, 2017). The researcher collected the quantitative data using a questionnaire which was followed by key informant interviews and focus group discussions to gain more detailed information on some of the survey responses. Both open and closed-ended questions were included in the questionnaire. Open-ended questions probed sensitive issues while closed-ended questions provided a general understanding of a subject matter (Friborg & Rosenvinge, 2013: 1398). A pilot study examined the questionnaire to check for errors, consistency and to find out whether the questionnaire answers the research problem. Pilot studies are important for a good research design and increase the likelihood of success of the main study (Teijlingen & Hundley, 2002).

Youth have different opinions, perceptions, roles in agriculture and face different challenges, thus they are not a homogenous group. For this reason, randomization was employed to achieve an unbiased sample. The researcher used simple random sampling to select youths for the study. The sample was drawn from a population of youths living in households where agriculture is practised. The first step of sampling was to identify and create a list of households taking part in smallholder with youth at least one youth. This was followed by the second step, which is to randomly select the households. This led to selection of 95 farming households. This was followed by interviewing the youths in the households giving a total sample size of 277 youths. Since the study was focused on youths participating in smallholder farming results in chapter 4 and 5 will be focused on 134 youths

4.2.3 *Data Analysis*

The research used different statistical methods to achieve the research objectives. The qualitative data was subject for analysis using content and theme analysis while Statistical Package for Social Scientist (SPSS) analysed the quantitative data. Appropriate statistical procedures for description such as frequencies and simple percentage counts were used. The results were adequately presented in tables. Last, a binary logistic regression analysis determined the factors influencing youth participation in smallholder farming.

Ethics were considered from the beginning of the study, during data collection and analysis and in reporting, sharing and storing the data. Ethical considerations in any research are important

for the integrity, reliability and validity of the research findings (Creswell, 2014). For the study, an ethical clearance was obtained from the University of KwaZulu-Natal's Ethical Committee. During data collection, the participants signed a consent form before an interview, which clearly posited the purpose, aims and duration of the study. Confidentiality among participants was assured and respondents voluntary and in a clear way took part in the research.

4.3 Results and Discussion

The results are discussed in terms of the socio-economic characteristics of the youth, the youth participation in smallholder farming, reasons for youth disinterest in farming, and determinants of youth participation.

4.3.1 Socio-economic characteristics of the youth

The socio-economic characteristics of the youth are reported in relation to age, education, and gender and employment status.

4.3.1.1 Age

Results in Table 13 (Appendix 1a) indicate that most of the youths (74.8%) participating in smallholder farming was within the age bracket of 15-20 years. Similarly, (Kimaro, et al., 2015) found that younger youths take part more in smallholder farming compared to older youths. Most of the youths in this age group depend on their parents for their socio-economic needs. As parents depend on farming for their livelihoods and wellbeing, youth participation is more likely. A drastic decrease in participation is noted among youths within the age bracket of 21-28 years. Only 9.6% of the youth in the study area were within this age group. This could be attributed to the fact that most of the youths within this age group will have finished their secondary studies. Some opt to further their studies while others look for employment. Since most of the government offices, organisations, tertiary institutions and industries are sited in urban centres, the youths are forced to migrate to the urban centre, which reduces their participation in farming. Attainment of secondary education increases the chances of youths to migrate internally and internationally. Migration of the youths leads to depletion of skills, labour and ideas in smallholder farming which has implications for agricultural production and food security.

In the 29-34 year age group, youth start to re-engage in smallholder farming. The result shows that 15.6% of the youths who were taking part in smallholder farming were within this age group. Responsibilities, self-dependence, maturity and realisation of the importance of

agriculture to their well-being encourage re-engagement of youths in smallholder farming. The age structure clearly shows that youth cannot be treated as a homogeneous group. Interventions or projects focusing on holding and stimulating interest among the youths should be guided by the ages of the youth. This will increase the chances of success of youth interventions in agriculture.

4.3.1.2 Education

The results of the study reveal that 3.7% of the youths had reached a tertiary level while the majority (91.1%) had reached a secondary level and 5.2% had only reached a primary level. None of the youths reported having not received any form of formal education. The implications of the results imply that literacy is a common characteristic among the youths in farming. Similarly to a previous study (Cheteni, 2016) found that most of the rural youth are literate. This makes youth a great human asset for the socio-economic development and prosperity since education is the foundation of social prosperity, sustainable development, economic growth and political stability (Idris, et al., 2012). Because of their literacy level, the youth could also serve as intermediaries in the dissemination and diffusion of agricultural innovations in the study area. Interventions focusing on improving agricultural production and ensuring food security through social capital should focus on the youths.

4.3.1.3 Gender

Similarly to previous studies (Douglas, et al., 2017; Cheteni, 2016), male youths (63.7%) engaged more in smallholder farming compared to female youths (36.3%). Traditionally male youths are expected to provide labour and manpower in the fields while their female counterparts attend to home household chores. Further, male youths take part more in farming because they can inherit land and other assets from their parents, therefore, expected to have good farming skills for sustainability when they inherit the land and assets from the parents while the girl joins another family when married. Interviewing an extension officer it was found that male youths participate more in smallholder farming because they also sell their labour power to other farmers. Summing all this makes male youth to engage more in smallholder farming compared to female youths.

4.3.1.4 Employment status

During the study, 88.9% of the youths participating in smallholder farming were jobless. The research considered such youth to be unemployed. The results are consistent with Douglas, et al. (2017) findings, which reveal that most rural youths are jobless. The high rate of youth

unemployment has led to community unrest and public violence in South Africa (Mtembu & Govender, 2015). Many rural youths find it difficult to enter the labour market because of a lack of networks and resources needed for job searching. Cloete (2015) added that lack of career guidance in schools also contributes to high youth unemployment in South Africa. Re-engaging youths in smallholder farming has the potential to reduce unemployment, poverty and food insecurity among the youths and adults alike, therefore, should be a priority.

4.3.2 *Youth participation in smallholder farming*

Participation of youth in smallholder farming is important for ensuring sustainable agricultural and rural development and food security (Alao, et al., 2015; Lyocks, et al., 2013). Acknowledging the importance of youths in smallholder farming, the study measured the youth participation rate in the study area by calculating the percentage of youth taking part in smallholder farming and of those that are not taking part (Nkonya, et al., 1997). The researcher observe that most of the youths (51.3%) in the study area were not taking part in smallholder farming, while only 48.7% were taking part in farming (refer to Table 1). The extent of youth participation in smallholder farming could be attributed to the challenges facing the youth in farming, youth perceptions, poor image of farming and the labour intensiveness nature of farming. The current youth participation rate in smallholder farming makes it difficult at a practical level to achieve some of the Sustainable Development Goals such as eradicating poverty (SDG 1), zero hunger (SDG 2) and good health and well-being (SDG 3). This calls for different tiers of the government to focus on retaining and stimulating interest among the youths towards farming.

Table 1: Youth classification according to the rate of participation in smallholder farming

Participation	Frequency	Percentage
Yes	135	48.7
No	142	51.3
Total	277	100

4.3.3 *Youth roles in smallholder farming*

Table 2 presents the distribution of youth roles in smallholder farming. It reveals that participation was mostly in crop planting (96.6%) and harvesting (98.5%). Their participation in crop planting and harvesting could be due to the labour intensiveness nature of the two

activities. Youths are more energetic compared to older farmers, and are therefore, expected to carry out the labour intensive activities in farming. The findings support the work of Mgbakor, et al. (2014) which shows that youth are responsible for performing most onerous farm jobs.

Also, 76.3% and 59.3% of the respondents took part in smallholder farming through transporting inputs and providing with knowledge gained in school respectively. It was found that some of the respondents applied what they had learned from their secondary or tertiary studies in smallholder farming. Interviewing with a 56-year-old female farmer “*My son enjoys what he learns at school about agriculture. He advises me from time to time on how I should improve my garden which has helped me a lot*”. This implies that rural youth play an important role in the disseminating agricultural information to other users. Youths can be used as reliable information brokers in the sector. Also, the finding reveals the importance of interpersonal relations in facilitating the flow of agricultural information.

A large number of the youths (73.3%) of the youths took part in animal or poultry rearing (refer to Table 2). This could be attributed to the less labour intensiveness nature of the activities. Through the key informant, it was found that a poultry programme was launched in the area which promoted the rearing of poultry. This led to a high number of the youths to take part in the activity since their parents were part of the poultry programme. The implications of the findings reveal that intervention in farming have the potential to improve youth participation in smallholder farming.

A huge drop in youth participation in smallholder farming was noted among the watering of crops. Of the respondents, only 16.3% reported engaging in the watering of crops. The low youth participation in the activity could be attributed to the water scarcity in the area. Key informants reported that water is scarce in the area, limiting irrigation opportunities, and leading to low levels of watering activities. For the youths participating in the watering of crops, it was found that there was a water source close by, so farmers could use the water for irrigation purposes.

Table 2: Roles of youth in the smallholder farming

Role	%	Rank
Harvesting crops	98.5	1
Planting crops	95.6	2
Transporting inputs (seeds, fertiliser, etc.)	76.3	3
Animal or poultry rearing	73.3	4
Knowledge gained from school	59.3	5
Marketing of farm products	58.5	6
Watering crops or plants	16.3	7

Note: Percentages are based on the number of youth engaging in smallholder farming, n= 135.

4.3.4 *Reasons why youths are leaving and losing interest in smallholder farming*

There were also reasons why youth were losing interest in and leaving smallholder farming (refer to Table 3). The main reason (rank 1) being the challenges youth face in smallholder farming. Lack of capital, agricultural extension information and tools were some of the challenges facing youths in farming. The challenges youth face makes smallholder farming not attractive to the youths forcing them opt for other opportunities outside the sector. This was followed by the labour intensiveness nature of smallholder farming (rank 2). Most activities in farming are labour and energy intensive. Because smallholder farming is characterised by low returns, very few farmers are able to buy equipment such as tractors, which ease hard labour. This makes smallholder farming dependent on using manual or traditional ways of farming which are usually labour intensive.

Poor rural and agricultural development was ranked as the third reason why youths are losing interest in and leaving smallholder farming (refer to Table 3). Governments favour investments in the urban centres compared to rural areas. This results in few opportunities being available in rural areas forcing youths to migrate to the urban centres. Youth perceptions towards smallholder farming were ranked as the fourth reason why youths are losing interest in and leaving smallholder farming. Most youth view agriculture as a profession that will not provide the white collar lifestyles to which they aspire. Youths perceptions towards agriculture play a significant role towards the decision to take part in smallholder farming or not (AGRA, 2015). The poor image of farming was ranked as the 5th reason why youths are losing interest in and leaving smallholder farming. The conditions of service, low incomes, lack of prestige and disparities between rural and urban life compared to white collar jobs make agriculture unattractive to the youth.

Table 3: The reasons why youths are leaving and losing interest in smallholder farming

Reason	Average rank	Rank
Challenge youth face in farming (lack of capital, tools, information etc.)	1	1
The labour intensiveness nature of farming	2.5	2
Low returns	3	3
Youth perceptions	3.5	4
Poor rural and agricultural development	5.5	5
Image of farming	6	6
Better opportunities outside the farming sector	6.5	7

4.3.5 Determinants of youth participation in smallholder farming

Various factors influence rural youth involvement in smallholder farming either positively or negatively. The logistic regression analysis was used to determine the factors influencing youth participation in smallholder farming. The Hosmer-Lemeshow test was not significant (model correctly specified), while the goodness of fit was significant and the model correctly explained 29 % of the variables. Three variables emerged having a statistically significant effect on youth participation in smallholder farming. The variables are the gender of household head p (0.085), access to market information p (0.049) and household size p (0.020). Other factors such as household head education, total income from farming, type of farming activity and household head age had no significant effect on youth participation in smallholder farming in the study area.

Table 4: Factors influencing youth participation in smallholder farming

Predication (Independent variables)	B	S E	Level of significance
Age of household head	.129	.175	.461
Household head gender	.494	.287	.085*
Household size	-.377	.162	.020**
Household head education	.098	.179	.584
Total income from farming	.000	.000	.440
Access to market information	.675	.342	.049**
Type of farming activity	.134	.142	.347

Diagnosis statistics

n =135

Pseudo R2= 0.27

Pearson chi 2 = 0.32

Correctly specified: 29%

*** 1 % significance, ** 5 % significance, * 10% significance, number of observations 277

The variable access to market information positively influenced youth participation in smallholder farming and was statistically significant at a 5% significance level ($p = 0.049$). This indicates the likelihood of youth participating in smallholder farming increases with household access to market information. A plausible explanation is that most agricultural markets are perfectly competitive, implying that farmers are price takers (Sexton, 2012). Through the extension officer it was found that poor access to information regarding prices of products on the lucrative markets forces the farmers to accept the low prices offered by the local traders who have access to the market information. This reduces farm incomes, making farming unattractive to the youths, and reducing their participation in smallholder farming. It can be concluded that the price smallholders receive for their agricultural products has great implications for youth participation in smallholder farming.

Household size and youth participation in SHF have a negative relationship. Every unit increase in the household size was associated with a decrease in the number of youths participating in smallholder farming. Some may expect the larger the household size the higher the number of youths participation in smallholder farming of which it's not always the case. This is because addition of a family member in a household reduces household savings. This lowers the already low investment in smallholder farming affecting (SHF) agricultural production and incomes.

The decrease in farm incomes makes SHF less attractive for the youth, therefore, leave for other opportunities.

Gender of the household head had a positive significant effect on youth participation in SHF. A plausible explanation is that men withdraw their labour in agriculture in search of greener pasture in the urban areas. This results in increase of workload on women that is, continuing in farming as well as taking care of other household tasks. Interviewing an extension officer is was found that because of work overload, these women will have to depend on the young members of the family to provide with labour in order to meet the households needs and wants. This lead to more young people to take part in farming in female-headed household compared to male-headed household.

4.3.6 Youth perceptions towards smallholder farming

Results in Table 5 show that almost all of the youths (87.8%) taking part in smallholder farming reported that they would like to learn more about agriculture. Similar to this study, Luckey (2013) found that most of the youths in farming are keen to learn more about agriculture. This is an opportunity to introduce new topics in farming on value addition, agribusiness and modern production technologies. This will increase the chances to modernise the smallholder farming sector and become more productive and feed the growing population. Most of the youths (80%) viewed agriculture as part of their everyday life. This implies that smallholder farming is important towards meeting youth socio-economic needs. Results in table 5 show that 78.9% of the youths would like to work in agriculture. The predominant willingness to work in agriculture can be attributed to the contribution of smallholder farming towards youth socio-economic needs.

Table 5: Summary of "Yes" responses to agricultural perception statements

Perceptions	n= 135 (%)
Agriculture is part of my everyday life	82.2
I feel that it is important for youth to learn about agriculture	88.9
I would like to learn more about agriculture	87.8
I would like to work in agriculture	78.9
Agriculture is important to my community	93.3
Boring	10.1

Note respondents could select "Yes" or "No." Only "Yes" responses are reported.

Youth views towards smallholder farming play a big role in the decision to engage in smallholder farming or not (AGRA, 2015). Due to limited information on youth participation in agriculture, there is a mistaken perception across Africa that youths have a negative view towards agriculture. It should be noted, youths cannot be treated as a homogeneous group. Some are taking part in farming while some are not. This implies that the views towards smallholder farming between the two groups of youths will be different. Therefore, conclusions should be based on the youth's participation status in agriculture. This will increase the chances of success of youth interventions in agriculture.

4.3.7 Conclusions and recommendations

Young people are the heart of the future of Africa, South Africa inclusive. How they contribute to the economy will be consequences of the interventions and policies made now. The findings of the study illustrates that interventions in agriculture should focus on streamlining and modernizing the profession of farming. The interventions must make the profession of farming economically viable and financially secure for the youths. This will also ensure youth to have a dignified and legitimate purpose of ensuring the availability and accessibility of safe and nutritious food at all levels. Since most of the youths are leaving and losing interest in farming because of the labour intensiveness nature of farming, governments should focus on mechanizing the smallholder farming sector. This will ease hard labour in the sector and improve farm incomes ultimately improving youth participation in smallholder farming.

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CHAPTER 5:

Rural youth participation in the smallholder farming sector: Challenges and Opportunities in Okhahlamba Local Municipality, KwaZulu-Natal province, South Africa

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ABSTRACT

Youths are proving their capacity to be agents in fostering agricultural and rural development that is from countering climate change to strengthening agricultural production and food security. However, presently a large proportion of the youths are leaving and losing interest in smallholder farming. This has implications for living conditions, food security, unemployment, human, community and rural development. The study discusses the challenges and opportunities for the youth in smallholder farming and recommends ways to retain and stimulate interest among the youth towards farming. Both qualitative and quantitative data were collected from randomly selected youths living in Okhahlamba Local Municipality through questionnaires and focus group discussions. Key informant interviews were conducted with extension officers from the area. The data were analyzed using descriptive analysis and the chi-square test. The results reveal that lack of tools, youth groups, and capital are the main challenges facing youth in farming. In spite of these challenges, the respondents have multiple strengths, which include access to the internet and high literacy levels. This study strengthens the position that youth are an important human asset for development, social change and economic expansion. Stakeholders with the agenda of ensuring agricultural and rural development should focus on holding and stimulating youth interest in farming.

Keywords: Challenges, food security, Information Communication Technologies, participation, smallholder farming, youth empowerment.

5.1 Introduction

Sub-Saharan Africa (SSA) is the only region of the world where hunger and food insecurity are projected to worsen over the next two decades unless if measures to ensure peace, economic growth and sustainable agriculture production are taken (Ripoll, et al., 2017). More than 220 million people in SSA are undernourished and inadequate access to sufficient food has increased in several parts of the region (FAO, 2017). South Africa is one of the few countries considered to be food secure in SSA. The country produces enough food to feed its population and has the capacity to import shortages when necessary (Aliber & Hart, 2009). Although South Africa produces sufficient food for its needs, hunger and malnourishment remain significant problems. Official estimates show that over 13.8 million South Africans have inadequate access to food while 7.39 million are vulnerable to hunger. Food is available and evenly spread, but adequate access to the food remains a great challenge to a majority of South Africans especially in rural areas (De Cock, et al., 2013).

Smallholder farming in South Africa is seen as an important vehicle through which the goals of addressing food insecurity, poverty and unemployment can be achieved (Aliber & Hart, 2009). Smallholder farming directly contributes to household food security by providing food, improving farm incomes and creating jobs (Baiphethi & Jacobs, 2009). In addition, smallholder farming frees income to spend on purchasing food-ultimately improving the household's purchasing power. This can lead to the increased purchase of energy-dense foods such as meat, fats and oils (Aliber & Hart, 2009). At a consumer level, smallholder farming contributes to food security by providing a stable supply of food at affordable prices. In Africa, smallholder farming is responsible for producing over 70 % of the food consumed on the continent (Kuruku, 2014). However, a long list of constraints such as lack of capital, poor market access, shortage of labour and adverse climatic conditions have limited agricultural production and development affecting food security now and in the future (Tshuma, 2012). In South Africa, the food self-sufficiency status has declined significantly in past ten years leading to a general increase in food prices, which has implications for food access (DAFF, 2013).

Improving the smallholder farming sectors has the potential to address the challenges in the sector and ensure sustainable agricultural and rural development (Kimaro, et al., 2015). Engaging youths in smallholder farming is, therefore, an important factor towards improving and developing the smallholder farming sector. This is because of qualities such as higher energy levels, greater physical strength and openness to ideas and technology, associated with the youth (Alao, et al., 2015; Lyocks, et al., 2013; Kimaro, et al., 2015). Although youths have

desirable characteristics that can improve smallholder farming, most of them have a strong apathy and are leaving farming (Afande, et al., 2015; Auta, et al., 2010; Kimaro, et al., 2015; Nnadi & Akwiwu, 2008). This has implications for living conditions, food security, unemployment, human, rural and agricultural development (Mbah, et al., 2016; Pam, 2014).

This calls for interventions, focused on stimulating youth interest and retention in smallholder farming, by different agricultural stakeholders. As much as holding and stimulating youth interest in smallholder farming should be a priority, limited literature on rural youth participation in agriculture has led to inappropriate interventions and the failure of several youth programmes (Nnadi & Akwiwu, 2008). In addition, the limited literature has led to the replicating of interventions and programs of the past which are less likely to succeed (Afande, et al., 2015). This calls for the need to engage with the youth, listen and understand their roles, concerns, challenges and aspiration. In this context, the study discusses the challenges and opportunities for youths in smallholder farming and recommends ways to retain and stimulate interest among the youth.

5.2 Material and methods

5.2.1 Research design

After considering the research objectives of the study, the researcher adopted a mixed approach. Combining quantitative and qualitative approaches offers a more nuanced approach to answering the research question by compensating for the limitations of each, while leveraging the strengths of both approaches (Creswell, 2013). Qualitative data was collected through focus group discussions and key informant interviews. The qualitative data provided an in-depth detail on the challenges youth face in smallholder farming. On the other hand, the quantitative data was collected through the verbal administering of questionnaires with the youths. This allowed clarification on misunderstood questions and responses by the interviewer and youths, respectively (Phellas, et al., 2011).

Since youths have different opinions, roles, perceptions and challenges in farming, randomization was employed to achieve an unbiased sample. The researcher used simple random sampling to select youths leaving in farming household. Simple random sampling involves a large sample frame and gets a small sample from a larger population quite easily. This method of sampling allows the researcher to make generalisations from the sample to the

population. This is an advantage since generalisations are more likely to be considered to have external validity (Alvi, 2016).

5.2.2 Description of study site

Data were collected from youths living in Okhahlamba local municipality (OLM), which is located on the northern side of KwaZulu-Natal province. The municipality houses 14 wards and covers an area of nearly 3543, 63 km (Okhahlamba Municipality IDP, 2017). OLM is home to 135 132 people with most of the population reported to be below the age of 35 years. Over 49 000 youths live in OLM and unemployment remains the main and persistent challenge facing the youths (Statistics South Africa, 2016). Most of the active youths (50%) looking for a job cannot find one. The municipality characterises of high poverty and food insecurity levels. Most people (43%) in the municipality do not have any form of formal income, while 28% earn between R1-400 per month and 11% receive R801-R1600 per month (Okhahlamba Municipality IDP, 2017).

The municipality has a dual agricultural economy, with both well-developed commercial farms and smallholder farms mainly located in the former homeland areas. The climate and soil in the area is favourable for the cultivation of maize, dry bean, and a variety of vegetables such as lettuce, spinach and tomatoes. Lack of skills, expertise, labour and knowledge remain an obstacle to agricultural production and development in the smallholder farming sector in OLM (Okhahlamba Municipality IDP, 2017).

5.2.3 Data analysis

Richmond (2006: 29) defines data as “A collection of facts, statistics from which conclusions are produced”. Data on its own has no significant meaning, therefore needs to be analysed or processed to become useful information. The process of bringing order and meaning to a mass of collected data is called data analysis (Lynch, 1990). The quantitative data was represented using descriptive statistics and analysed using the chi-square test. The Chi-square tests is commonly used for testing relationships between categorical variables. Results from the descriptive analysis were in the form of means, median and percentages.

5.2.4 Ethical consideration

Ethics were considered from the beginning of the study, during data collection and analysis and in reporting, sharing and storing the data. Ethical considerations in any research are important for the integrity, reliability and validity of the research findings (Rahman, 2017; Creswell,

2013). For the study, ethical clearance was obtained from the University of KwaZulu-Natal's Ethical Committee. During data collection, the participants signed a consent form before an interview, which clearly stated the purpose, aims and duration of the study. Confidentiality among participants was assured and respondents participated voluntarily in the research.

5.3 Results and discussion

The results of the research are discussed in relation to the socio-economic profile of households in the area, the positive contributions made by the youth to smallholder farming, and the particular challenges faced by the youth in smallholder farming.

5.3.1 Household socio-economic characteristics

Table 14 (Appendix 1b) shows that majority of the youths (57.8%) lived in female-headed households while 42.2% lived in male-headed households. A plausible explanation is that most males migrate to urban areas in search of formal employment leaving behind women to take care of all the household activities. The household head was, 41.5% reported by respondents, as being between the age bracket of 35-50 years, followed by 33.5% who were between 51-64 years, 17.8% above 65 years and only 7.4% were between the ages 15-34 years. A large proportion of the youth (69.6%) lived in a married household, while 14% in a household a widow head and 10.4% and 5.2% of the youths lived in households where the head was single or divorced, respectively. Almost all of the youths (89.6%) lived in a household where farming was practised both as a source of income and food. Only 8.1% reported that farming was practised only for selling while 2.2% reported it was exclusively for consumption.

5.3.2 Youth Strengths

The study went on to identify the strengths associated with youths in farming in the study area. Two strengths were identified, these include high literacy level and access to the Internet through mobile phones. Identifying the strengths serve as a basis for decision making to the government and other actors with the agenda of promoting human, rural and agricultural development.

5.3.2.1 Education

The results of the study in table 6 reveal that 3.7% of the youths had reached a tertiary level of education while the majority (91.1%) had reached a secondary level of education and only 5.2% had reached a primary level of education. In contrast, none of the youths reported having not attained any form of formal education. The implications of the results imply that literacy was a common characteristic among the youths in farming. Similarly to a previous study, Cheteni

(2016) found that most rural youths are literate. This could be attributed to the government efforts to improve access to education. Because of their literacy level, the youth could serve as intermediaries in the dissemination and diffusion of agricultural innovations in the study area. Also youth can lead to socio-economic development of the communities they live in and the nation at large since education is the foundation of sustainable development, social prosperity, political stability and economic growth (Idris, et al., 2012)

Table 6: Youth education level

Education Levels	Frequency	(%)
Primary level	7	5.2
Secondary level	123	91.1
Tertiary level	5	3.7

Note: Percentages base on the number of youth taking part in smallholder farming, n= 135.

One of the challenges limiting agricultural production and development in Africa is the high level of illiteracy among the smallholder farmers. In South Africa, most farmers have only 5 years of education, which equals to grade 5 (Pienaar & Traub, 2015). The low levels of education among the ageing farmers decreases the chances of adopting the modern production technologies required to boost agricultural production and feed the growing population (AGRA, 2015). This calls for different agricultural stakeholders to focus on holding and attracting youths in smallholder farming.

5.3.2.2 Access to modern ICTS

Older smallholder farmers with limited education, and having had more limited exposure to ICTS, are typically slow adopters of ICTS in support of their farming activities. In contrast, the youth are more active users of ICTS. Results in Table 7 reveal that a large proportion of the youths (94.8%) had access to the Internet through mobile phones. The study further identified how many times respondents accessed the Internet in the last four weeks (month). The responses were divided into three parts: rarely (once or twice in the past four weeks), sometimes (three to ten times in the past four weeks), and often (more than ten times in the last four weeks). Most respondents (46.7%) reported having accessed the Internet more than ten times in the last four weeks, while 41.1 % accessed the Internet three to ten times in last four weeks. Only 7.8 % accessed the Internet once or twice in the last four weeks.

Table 7: Youth access to the internet through mobile phone in the last 4 weeks

		Frequency	Percent
Access to Internet	Yes	128	94.8
	No	7	5.2
How often	Rarely	7	7.8
	Sometimes	37	41.1
	Often	42	46.7

Note: Percentages base on the number of youth taking part in smallholder farming, n=135

Because of their relatively more frequent access to the internet, the youths are a great asset for agricultural information transmission to older smallholder farmers. Youths are more likely than older smallholder farmers to be able and willing to post, manage and use agricultural information available on the internet, contributing significantly to agricultural development and food security. Governments can use this platform to pass agricultural information such as market prices, early warning information and agricultural extension information to a wider outreach of farmers. This will improve efficiency in production since the information can help in farm decision making that is what, how, when and where to produce?

5.3.3 Challenges youth encounter in the smallholder farming sector

Lack of information on youth roles and challenges in agriculture has led to many youth interventions in agriculture to fail. Identifying the challenges youth face in farming, therefore, increases the chances of success of youth interventions in agriculture (Ahaibwe, et al., 2013). In this context, the study identified the challenges faced by youths taking part in smallholder farming in the study area. Results in Table 8 shows that lack of tools (93.3%) was the main challenge facing youths in smallholder farming. This finding is not unusual as it is in line with several previous studies (Auta, et al., 2010; Douglas, et al., 2017). This was followed by lack of youth groups in farming (84.4%) and capital (81.1%). Land ownership was the least challenge (58.9%) facing the youths taking part in smallholder farming. Interviewing an extension officer it was found that most of the youth had acquired some pieces of land from land hence it was not a major problem to the youths in the study area.

Table 8: Challenges facing youths in the smallholder farming sector

Challenge	Frequency	(%)	Rank
Lack of machinery/tools	84	93.3	1
Lack of youth groups	76	84.4	2
Lack of capital	73	81.1	3
Lack of training	70	77.8	4
Lack of government support	57	63.3	5
Land ownership	53	58.9	6

Note: Percentages base on the number of youths taking part in smallholder farming, n= 135.

The study noted a gap between the National Youth Policy and the youths in the study area. The policy seeks to address rural youth challenges by providing with extension service, farming implements and markets linkages. During the time of the study, none of the youths reported being receiving any assistance from the government. Also, very few of the youths were aware of the policy and how it can address the challenges they are facing in farming.

5.3.4 Contribution of smallholder farming towards youths socio-economic needs

Results in Table 9 reveal that smallholder farming contributes greatly to youths socio-economic needs in four main ways that is as source of food, income, education expenses and health expenses. This could be one reason why some youths remain in farming. Almost all of the youths (96.3%) revealed that smallholder farming provides directly with food. The results are consistent with Kimaro et al., (2015) findings, which show that farming is the main source of food for the rural youths. Indirectly smallholder farming contributes to youth's food needs by selling surplus produce which that income can be used to purchase other food types that are not produced in the household.

The study also found that smallholder farming provides with income to the rural youth. A large proportion of the youths (80%) revealed that smallholder farming provides with income. Smallholder farming provides with income to the youths in two main ways. Firstly, through selling surplus produce to the markets, secondly, through selling their labour power. Most of the rural youths have no alternative income generating activities; therefore, depend on smallholder farming for income.

Through smallholder farming, youths are provided with educational expenses. Some of the youths 59.3% reported that smallholder farming contribute to their educational expenses such as uniforms, school fees and stationery. The results in Table 9 reveal that smallholder farming

does not contribute much to youth health expenses (17.8%). The implications of the findings show that, investments in smallholder farming have the potential to improve livelihoods and also address poverty and food insecurity among the youths.

Table 9: Contribution of smallholder farming towards youth socio-economic needs

Need	%
Source of food	96.3
Source of income	80
For educational expenses	59.3
Health expenses	17.8

Note: Percentages are based on the number of youth engaging in smallholder farming, n= 135.

5.3.5 Farming Activities youths would want to take part in

Limited information on youth participation in agriculture has led to a flawed assumption across Africa that youths do not want to take part in farming. The problem starts from defining youth participation in agriculture. Many confine participation in agriculture to only working in the fields leaving out other activities such as storage and handling, agro-processing, marketing and distribution. The study therefore provided an understanding on what farming activities youth would want to take part in given an option to choose. A median rank of 1 shows high priority, while a median rank of 8 or 9 shows a lower priority for the activity.

Most of the youths (rank 1) reported that they would like to take part in horticultural production. This is because it is less labour-intensive and generates money quick compared to field crops such as maize, wheat to name few. Also, the youths showed that they would like to take part in poultry production (Rank 2). Poultry keeping is less labour intensive and the market for poultry products is growing in South Africa, therefore, favoured by the youths. Further, through a key informant interview, it was found that there is a program launched by an NGO which is promoting poultry rearing among the youths in the study area. This implies that interventions in smallholder farming play an important role in holding and stimulating interest among youths towards smallholder farming.

Working in the fields and selling labour to other farmers were the least activities youth would like to take part in. These two activities are labour-intensive. Due to the low returns in smallholder farming, very few farmers can afford to purchase the modern farming equipments such as tractors which ease labour. This makes smallholder farming dependent on the manual

or old production methods which tend to be labour intensive. The implication of the study reveals that young people do not want to participate in agriculture the way their parents did it or do it. Young people are interested in modernizing the sector and taking part in production of crops or activities with short production season and quick turnaround for income (Feighery, et al., 2011).

Table 10: Activities youths would like to take part in

Activity	Median	Rank
Horticulture farming	1.5	1
Poultry keeping (broilers, layers)	2	2
Agro-dealership (selling fertilisers, pesticides, seeds, spares)	3	3
Livestock rearing (cattle, pigs, sheep)	4.5	4
Value addition (packaging, packaging, drying)	5	5
Driver (transporting inputs and produce to markets)	5.5	6
Selling farm produce	7.5	7
Selling labour to other farmers	8.5	8
Working in the fields (planting, weeding, harvesting)	9	9

5.3.6 Food Security

At a national level, food is available and evenly distributed in South Africa but this does not translate into adequate economic accessibility for all people. In this context, the study measured food access among the households youths lived in. Food access was measured using the Household Food Insecurity Access Scale (HFIAS). Results in Table 11 show that a large proportion of the youths (68%) lived in households that were food insecure. The finding corroborates an earlier observation that most rural youths live in households that are food insecure (De Cock, et al., 2013). The prevalence of food insecurity can be attributed to the challenges in the smallholder farming sector such as climate change poor market access and also the household socio-economic characteristics.

Table 11: Household food security status

Food Security Status	Frequency	Percent
Food Insecure	92	68
Food Secure	43	32
Total	135	100

5.3.7 The relationship between food security and household socio-economic characteristics

Chi-square test determined the relationship between food security and household socio-economic characteristics. The results show that household food security status varied in terms of the household socio-economic status as reported in Table 12. Results in Table 12 show that most youth-headed households (80%) were food secure and the proportion of food secure households declined to 26.8% for the 35-50 year age category, and then increased to 35.6% for those aged between 51-64 years and decreased again to 16.7% for those above 65 years. This suggests that youth-headed households are more food secure compared to non-youth headed households. Youths are energetic, dynamic, more educated, and open to new ideas and technologies compared to the elders (Afande, et al., 2015). This may have an effect on their output and on the volume, they make available for sale. The results are consistent with Kumba (2015) findings which show that youth-headed households tend to more food secure compared with households with an older household head. This implies that youths living in the youth-headed household are likely to be food secure. The chi-square results show a statistically significant relationship between the age of household head and food security ($p=0.003$). This implies that the age of household head influences household food security.

Results from the study show that food insecurity increased with a decrease in the years of education of the household head. Food insecurity was high (83.3%) among households without any form of formal education and has the level of household education increased to primary level, the proportion of food insecure households decreased to 75.6%, then to 56.5% for those with secondary education and finally to 50% for those households heads with tertiary education. This implies that youths living in households with a literate head are likely to be food secure. The chi-square found a statistically significant relationship between household education and household food security at 5% ($p=0.038$). This implies that household head education plays a significant role in household food security. These findings compare favourably with previous

studies which indicated that years of education of household head influence household food security (Maziya, et al., 2017).

Household marital status plays a significant role in household food security in rural areas. Confirming the significance of household marital status on household food security, Maziya et al. (2017) argues that a married household tends to be more food secure compared to unmarried households. A plausible explanation is that a married household have better access to resources such as land, inputs and information to name a few. A large proportion of households with a divorced or widowed head were food insecure, 73.4% and 90 % respectively. The prevalence of food insecurity decreased among married (67%) and single (42.9%) household heads. The marital status of the household head was found to have a significant role in determining household food security in rural areas at 5% ($p=0.035$). This implies that youths living in a household with a head who is married or single are more likely to be food secure.

Keeping farm records plays an important role in food security as it improves efficiency in production, farm decision making (what, how, where and when to produce) and farm incomes. This, in turn, influences access to food and other resources needed for a healthy and active life. A large proportion of households who kept farm records were food secure (56%) compared to households which did not keep farm records. Keeping farm records was found to have a significant role in determining household food security in rural areas at 1% ($p=0.001$). This implies that youth living in households with head keeping farm records are likely to be food secure.

Participation of youth in smallholder farming plays an important role in ensuring sustainable agricultural production and food security. The results show that households with youth participation in smallholder farming (59%) were food secure than households with no youths participating in smallholder farming (41%). The results from the chi-square show that youth participation in smallholder farming and household food security had a significant relationship at 5% ($p=0.023$). This implies that youth participation in smallholder farming influences household food security. The results are consistent with a previous study which found that youth participation in smallholder farming is important for household food security in rural areas (Kimaro, et al., 2015). The results show that factors such as household size, the gender of youth and youth education have no significant effect on food security.

Table 12: Relationship between household socio-economic status and food security

Household characteristic	Food secure	Food insecure	Chi-square (P value)
Age of household head			
15-34 years	80	20	
35-50 years	26.8	73.2	0.003***
51-64 years	35.6	64.4	
Above 65 years	16.7	83.3	
Marital status of household head			0.035**
Single	57.1	42.9	
Married	33	67	
Divorced	26.6	73.4	
Widow	10	90	
Household head education			0.038**
None	16.7	83.3	
Primary	24.4	75.6	
Secondary	43.5	56.5	
Tertiary	50	50	
Farm Records			0.001***
Yes	56	44	
No	24	75.7	
Household size			NS
Youth participation status			0.023**
Yes	59	41	
No			
Youth age			0.030**
15-20 years	25.7	74.3	
21-28 years	46.2	53.8	
29-34 years	52.4	47.6	
Youth gender			NS
Youth education			NS

Significant at 1% ***, 5% ** and 10% *

5.4 Implications of the Findings for Policy

The findings of this study have several implications for policy.

1. It is worth noting that, despite the challenges youth face in farming, they still have strengths that can advance smallholder farming and ensure food security. Most of the youths are literate and have access to the internet. This is an opportunity to use the youth as agents of agricultural information dissemination such as market and extension information, weather updates and early warning alerts. Modern ICTs in smallholder farming should be encouraged. This will improve the image of agriculture and also transform the sector.
2. The participation of female youth in smallholder farming should be encouraged. They should be given attention and priority. A government program focusing on providing land and other agricultural inputs to the female youth should be established. Traditionally

female youth cannot inherit land from their parents leading to low participation in farming. Female youth are the future farmers, therefore, investing in holding and stimulating interest among the female youth, in the long run, will boost agricultural production.

5.5 Conclusion

Identifying ways to retain and stimulate interest among the youth towards farming is critical to sustainable agricultural and rural development and food security. Based on the findings of this study, youth apathy and disinterest in agriculture is related to challenges in smallholder farming. The study identified lack of tools or machinery, youth groups and capital to be the main challenges facing youths in farming. Despite these challenges, the future success of smallholder farming lies in the fact that most of the youths were literate and technologically advanced. Channelling the strengths of the youths in farming will address food insecurity, poverty and unemployment.

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CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

Food insecurity is a global challenge which affects the livelihoods of many, even causing loss of life in some cases. Rural households, which depend on farming for their livelihoods and wellbeing, are the most vulnerable and affected by food insecurity. This is because of a long list of factors such as adverse climatic conditions, poor market access and shortage of labour which all affect agricultural production. This calls for more improvements in the smallholder farming sector. One way is through engaging youths in smallholder farming. Youth have high energy, fast rate of learning and are open to new technologies in farming. Although youth have qualities that can address the challenges in farming and ensure sustained production and food security, most of the youth are leaving and losing interest in farming. This has resulted in few youths remaining in farming threatening food security now and in the future. This calls for interventions to focus on improving youth participation in smallholder farming. As much as holding and stimulating interest among youths towards farming should be a priority, limited literature on youth participation in smallholder farming has led to several youth interventions in agriculture to fail. In this context, the study identified the roles, challenges and opportunities for the youth in farming and recommended on ways to hold and stimulate interest towards farming. This was achieved through the following specific objectives:

- To determine the challenges and opportunities for youths in farming.
- To determine the factors influencing youth participation in smallholder farming.

A mixed method approach collected both qualitative and quantitative data to give a better understanding of the research problem. The study obtained qualitative and quantitative data from randomly selected youths living in Okhahlamba local municipality. The data was subject to analysis using chi-square test, descriptive, content theme and a binary logistic analysis. The descriptive analysis provided a summary of data in the form of means, median and percentages. The results from the analysis were presented in simple tables. Ethics were considered throughout the study.

6.2 CONCLUSIONS

Sub-problem 1: What are the factors influencing youth participation in smallholder farming?

The objectives under investigation in Sub-problem 1 were to determine the youth participation rate, the factors influencing youth participation in smallholder farming and the type of farming activities engaged by the youths. The argument was that involvement of youth in smallholder farming has the potential to address poverty and food insecurity in rural areas. The study identified the factors influencing youth participation in smallholder farming. The results from the binary logistic analysis show that access to market information by the household head, the gender of the household head and household size influenced youth participation in smallholder farming. The results from the study revealed that almost all of the youths in smallholder farming had a positive view towards farming and would like to work and learn more about agriculture. These findings led to the conclusion that youths should not be treated as a homogeneous group. Youth perceptions towards farming should be based on the youth participation status in farming.

The study settles that interventions in agriculture should focus on streamlining and modernizing the profession of farming. This will help in improving the image of farming among the youths. The interventions must make the profession of farming economically viable and financially secure for the youths. Currently, a larger number of rural youths want legitimate and dignified jobs. Improving the image of agriculture will ensure the youths will have a successful future in farming. This will also ensure youth to have a dignified and legitimate purpose of ensuring the availability and accessibility of safe and nutritious food at all levels. Therefore, focusing on reducing the pull and push factors youth face has the potential to hold and stimulate interest among youths towards farming.

Sub-problem 2: What are the challenges and opportunities for the youths taking part in the smallholder farming sector?

The objectives of this sub-problem 2 were to identify the strengths, challenges and opportunities for the youth in smallholder farming and to determine household food security. The results of the study identified two main strengths for the youths which are access to the internet and high literacy level. None of the youths reported having not received any form of formal education. Despite these strengths, the youths face several challenges such as lack of tools or machinery, youth groups and capital. These challenges force youths to leave and lose

interest in smallholder farming affecting agricultural production and food security. Addressing the challenges youth face in smallholder farming has the potential to hold and stimulate interest among youths in farming.

The focus group discussions showed that horticulture production, poultry keeping and agro-dealership were the main activities youths would like to take part in. Working in the fields (planting, weeding and harvesting) was the least favoured activity by the youths. This is because of the labour intensive nature of the activities. The results led to an understanding of a common mistaken perception across Africa that youths do not want to participate in farming. The study revealed that youths do not want to take part in certain farming activities not farming as a whole. Most of the youths were actually eager to work and learn more about agriculture. These led to the conclusion that defining youth participation in farming should not only confine to working in the fields only but should include all activities along the agricultural chain such as research and development, food production, storage and handling, setting agricultural policies, agro-processing, marketing and distribution in local, regional and international markets.

6.3 POLICY RECOMMENDATIONS

Young people are at the heart of the future of Africa and how they contribute to the development and prosperity of the continent will be consequence of the policies and interventions made now. The findings of the study led to the following policy recommendations which include:

Firstly, lack of agricultural information among the youths has led to many to confine agriculture to production operations only such as planting, weeding and harvesting not realising other activities like agro-processing, storage and handling, marketing and distribution in local and international markets. This calls for agriculture awareness campaigns by different agricultural stakeholders. The campaigns will inform youths about the importance, different aspects, job opportunities, new and emerging trends in the agricultural sector. The campaigns will allow sharing of success stories in farming by other youths. As part of the campaigns, career guidance should be offered to the youths. Since agriculture has an image problem, the agricultural campaigns will help improve the image of agriculture, therefore, hold and stimulate interest among youths towards farming.

The willingness among youths to learn more about agriculture calls for the need to provide with an agricultural training program to the youths. The training will increase the chances of success of the youths in farming and also the chances to modernize the sector and become more

productive and feed the growing population. Also, this is an opportunity to introduce topics on, record keeping, marketing, value addition and ICTs in agriculture.

Thirdly, agriculture policymakers should utilise the modern ICTs (internet) as a way of transmitting agricultural information among the smallholder farmers. Nowadays most young people, urban or rural spend most of their time on the internet, particularly on the social media. This can be a route to transmit agricultural information to farmers. Youth can be used as reliable brokers of information in the smallholder farming sector. Utilising this platform will promote agricultural development which in the long-run will see a new group of young people joining the sector.

Fourthly, there is need to mechanize the smallholder farming sector. Mechanization eases and reduces hard labour, enhances market access, improves productivity and promotes efficient use of resources. The simplest and cheapest way of mechanizing the sector, is by introducing the two-wheel tractors in smallholder farming. The two wheel-tractors can be used for ploughing, fertilizer and herbicide application, watering and transportation. Also, the two wheel-tractors can create new jobs for the youths such as ploughing and transport service, mechanics and spare parts providers.

Finally, the primary and secondary school curricula should constantly be updated to fit with the ongoing developments in agriculture. Further, the school curricula should include topics on traditional and modern production farming methods, value-added activities such as food processing and packaging, and information and communication technologies in agriculture. This could help change the image of agriculture and youths can see it has a potential career.

6.4 AREAS OF FURTHER STUDY

There is the need to look further into the push and pull factors leading to youth to migrate to urban areas. The current study focused on the responses from youth engaging in smallholder farming, future studies should focus on the responses of youths not taking part in farming. In addition, there is a critical need for a body of research that is cross-disciplinary and cross-functional to fill the knowledge gap. Policymakers must encourage broad studies into why and how youths can engage fully and sustainably in agriculture.

**Appendix 1a
Tables**

Table 13: Youth socio-economic characteristics

Characteristic	Frequency	%
Age		
15-20	101	74.8
21-28	13	9.6
29-34	21	15.6
Gender		
Male	86	63.7
Female	49	36.3
Education		
Primary	7	5.2
Secondary	123	91.1
Tertiary	5	3.7
Employment Status		
Employed	15	11.1
Unemployed	120	88.9
Household Size		
1-3	13	14.4
4-6	54	60.0
7-9	17	18.9
>10	6	6.7

Note: Percentages base on the number of youth taking part in smallholder farming (N=135)

Appendix 1b

Table 14: Household socio-economic characteristics

Characteristic	% (n=135)
Gender of household head	
Male	42.2
Female	57.8
Age of household head	
15-34 years	7.4
35-50 years	41.5
51-64 years	33.5
Above 65 years	17.8
Household size	
1-3	9.6
4-6	51.9
7-9	28.9
More than 10	9.6
Marital Status	
Single	10.4
Married	69.6
Divorced	5.2
Widow	14.8

Appendix 2: Questionnaire

Responded Name Village name..... Date.....
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Section A: Socio-Economic Characteristics of Respondent

1. What is the gender of the household head?

1. Male	2. Female
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2. What is the age of household head?

1. 15-34 yrs.	2. 35-50yrs.	3. 51-64yrs.	4. >65yrs.
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3. What is the marital status of the household head?

1. Single	2. Married	3. Divorced	4. Widowed
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4. What is the highest level of education attained by the household head?

1. None	2. Primary Level	3. Secondary Level	4. Tertiary Level	5. Others (specify)
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5. What is the household size?

1. 1-3	2. 4-6	3. 7-9	4. >10
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6. What is the main source of monthly income?

1. Remittance	2. Farming	3. Wages	4. Pensions	5. Government grants	6. Others (Specify)
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7. What is the estimated household expenditure per month? (Rands)

R

8. What are or the type of farming activities practised by the household?

1. Crop production	2. Livestock/ poultry	3. Both	4. Other (specify).
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9. What are the main crops grown/animals kept?	b) What are the main products sold?
--	-------------------------------------

1.	
2.	
3.	
4.	

10. What is the purpose of smallholder farming to your family?

1. Consumption	2. Selling purpose	3. Both	4. Other (Specify)
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11. Total income received from selling your agricultural products? (Monthly)

R

12. Do your parents keep farm records?

Yes

No

13. Do your parents have access to market information? (Newspapers, internet, radio, television etc).

Yes

No

13b IF **YES** how often do you access the market information per month?

1 = rarely (**once or twice in the past four weeks**) 2 = sometimes (**three to ten times in the past four weeks**) 3 = often (**more than ten times in the past four weeks**)

14. What is the main market for the agricultural products?

1. Locally (community)	2. Informal traders (Bukkie buyers)	3. Formal markets (supermarkets)	4. Other markets (Specify)
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15. What challenges do you face in Agriculture?	TICK
Poor markets	
Poor water availability	
Pest and diseases	
Shortage of labour	
High inputs cost (fertilizers, seeds etc)	
Land ownership	
Poor transport infrastructure	
Crop or livestock theft	

Section B: Youth in agriculture Profile

NB: YOUTH SOMEONE AGED BETWEEN 15- 34 YEARS

16. What is the number of youth in the household?

17. Number of youth in agricultural activities?

18.

a) Age of youth in Agriculture	b) Gender of Youth		c) Highest Education Attained				d) Marital status	e) Employment status	
1.	1. M	2. F	None	Pri	Sec	Tert		Employed	Unemployed
2.	1. M	2. F	None	Pri	Sec	Tert		Employed	Unemployed
3.	1. M	2. F	None	Pri	Sec	Tert		Employed	Unemployed
4.	1. M	2. F	None	Pri	Sec	Tert		Employed	Unemployed

19. What is the contribution of agriculture to your socio-economic needs?

1. Food	2. Income	3. Education	4. Social network	5. Health
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20. Do you have access to the internet (phone)?

Yes

No

20b. If Yes how often

1 = rarely (**once or twice in the past four weeks**) 2 = sometimes (**three to ten times in the past four weeks**) 3 = often (**more than ten times in the past four weeks**)

21.

N	What are the activities of youth in agriculture?	TICK	Yes	No
1	Do you take part in marketing your farm produce?			
2	Do you help in transporting your inputs			
3	Do your parents receive money from youths who have migrated to urban areas?			
4	Do you take part in watering the crops			
5	Do you take part in planting crops			
6	Do you help in rearing livestock			
7	Do you apply what they learn in school in your farming activities			
8	Do you help in harvesting			

22. What are your perceptions on agriculture?

1. Boring	2. Labour intensive	3. For the old People	4. Source of income	5. Enjoy it	6. Others (specify)
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23.

Youth perceptions on Agriculture	Yes	No	I don't know
a) Agriculture is part of my everyday life			
b) I feel that it is important for youth to learn about agriculture			
c) I would like to learn more about agriculture			
d) I would like to work in agriculture			
e) Agriculture is important to my community			

24. What can be done to attract more youth in agricultural activities?

- 1.....
- 2.....
- 3.....
- 4.....

Section C: Household food security Status (HFIAS)

25.

	Question	Response Question	Code
1	In the past four weeks, did you worry that your household would not have enough food?	0 = No (skip to Q2) 1=Yes	
1 a	How often did this happen?	1 = Rarely (once or twice in the past Four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
2	In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of lack of resources? (money, food)	0 = No (skip to Q3) 1=Yes	
2 a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times	

		in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
3	In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources? (money, food)	0 = No (skip to Q4) 1 = Yes	
3 a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
4	In the past four weeks, did you or any household member go to sleep at night Hungry because there was not enough food	0 = No (skip to Q9) 1 = Yes	
4 a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
5	In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?	0 = No 1 = Yes	
5 a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	

Appendix 3: Focus group discussion questionnaire

Focus Group Discussion

Group ground rules

- Team members have the right to challenge, criticize and /or disagree during the discussion or decision
- Team members will respectfully disagree openly with each other-not passively or to others
- Only those participating in the focus group will be allowed to contribute
- There are no right or wrong answers

QUESTIONS

1. What farming activities would youth want to take part in?

Activities youths would like to take part in

Activity	Average Rank	Rank
Working in the fields (planting, weeding, harvesting)		
Horticulture farming		
Livestock rearing (cattle, pigs, sheep)		
Poultry keeping (broilers, layers)		
Value addition (packaging, packaging, drying)		
Agro-dealership (selling fertilisers, pesticides, seeds, spares)		
Driver (transporting inputs and produce to markets)		
Selling farm produce		
Selling labour to other farmers		

2. What are the reasons why youth are leaving and losing interest in smallholder farming?

The reasons why youths are leaving and losing interest in smallholder farming

Reason	Average rank	Rank
Challenge youth face in farming (lack of capital, tools, information etc.)		
Youth perceptions		
Poor rural and agricultural development		
The labour intensiveness nature of farming		
Image of farming		
Low returns		
Better opportunities outside the farming sector		

Thank You

Appendix 4: Ethical clearance



20 November 2017

Mr BT Mukwedeya 217076146
School of Engineering
Howard College Campus

Dear Mr Mukwedeya

Protocol reference number: HSS/1611/017M

Project title: Exploring the roles of rural youth in subsistence and smallholder farming: Challenges and opportunities in Okhahlamba municipalities.

Full Approval – Expedited Application

In response to your application received 7 September 2017, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

.....
Dr Shamila Naidoo (Deputy Chair)
Humanities & Social Sciences Research Ethics Committee

/pm

cc Supervisor: KN Naidoo
cc. Academic Leader Research: Professor Christina Trois
cc. School Administrator: Ms Nombuso Dlamini

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