

ENTREPRENEURIAL DEVELOPMENT FOR ESTABLISHING SMALL FARMING BUSINESSES AND EMPLOYMENT BY YOUTH IN RAIN-FED CROP FARMING

Report to the
WATER RESEARCH COMMISSION

by

EDILEGNAW WALE ZEGEYE

with contributions from

**Unity Chipfupa, Raesetse Johanna Baloyi, Humbulani Rambuda and
Banele Masango**

University of KwaZulu-Natal

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Water Research Commission
Bloukrans Building, Lynnwood Bridge Office Park
4 Daventry Street
Lynnwood Manor
Pretoria

orders@wrc.org.za or download from www.wrc.org.za

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EXECUTIVE SUMMARY

We cannot always build the future of our youth, but we can build our youth for the future.

Franklin D. Roosevelt

Background and motivation

This report is the culmination of five years of research on “*Entrepreneurial development for establishing small farming businesses and employment by youth in rain-fed crop farming*” in KwaZulu-Natal Province.

Youth unemployment is one of the most pressing socio-economic challenges in South Africa. In most countries, youth unemployment is higher than that of adults. Unemployment has been proven to lead to long-term psychological damage among the youth. Globally, unemployed and discouraged youth have higher chances of becoming involved in drug abuse and violence, and persistent unemployment can lead to poverty or intergenerational poverty and social exclusion. Agriculture has been identified as the most effective pathway for reducing the escalating rate of rural poverty. Agricultural development is at the centre of enabling sustainable growth in developing countries, including South Africa. To this end, rural youth entrepreneurship development, with agriculture being the vehicle, is one of the pathways to reduce youth unemployment and rural poverty.

In response to the rural youth unemployment challenge, the South African government has undertaken various initiatives to bring about awareness of opportunities in the agriculture sector in rural areas through state programmes like the Expanded Public Works Programme (EPWP). The South African New Growth Path also stresses developing / commercialising / transforming smallholder agriculture and encourages the involvement of young people in agriculture. However, the escalating rate of unemployment in South Africa, particularly in rural areas, is evidence that the development pathways and other initiatives have been unable to bring about anticipated results. Not much progress has been achieved in Sub-Saharan Africa in creating job opportunities for the youth in the agricultural sector.

Youth unemployment in South Africa is ten times higher than in its neighbouring countries such as Mozambique (Geest, 2010). StatsSA (2019) estimates that youth accounted for 68.4% of the total unemployed in the country. The same report shows that the rate of youth unemployment was 39.6% in the first quarter of 2019. According to the ILO 2020 estimates, there had been an increase in youth unemployment in South Africa over the preceding twelve

years. The South African National Youth Policy (2020) acknowledges structural youth unemployment (DWYPD, 2020).

The inability of the economy to absorb the growing number of people entering the labour market has created a huge challenge for the South African economy. This has, among others, resulted in an exodus of young people to urban areas in search of better employment opportunities. Young people are forced from the rural to urban areas because of a lack of incentives and profitable opportunities, as well as an unattractive rural environment (Khué *et al.*, 2016). This rural to urban migration has created pressure on basic service delivery in the urban areas, resulting in youth delinquency and drug abuse.

Although the rate at which young people are graduating with a university education has doubled since 1994 (StatsSA, 2016), this has not been matched by adequate increases in job creation in the economy. There is a general lack of employment opportunities for the increasingly educated youth in the country. This means that lack of education and lack of skills are no longer adequate explanations for the high level of unemployment in South Africa. Education is not a guarantee for employment in South Africa.

The South African government strategic and policy documents introduced since the new democratic dispensation in 1994 have given much attention to youth employment and entrepreneurship development in rural areas and agricultural value chains. The National Development Plan, for instance, emphasises the need to provide young people with broader opportunities, to adopt of programmes that target the rural youth, and to implement community development initiatives, inclusive of rural economy and agricultural transformation.

Growth in agriculture is, on average, more poverty reducing than an equivalent amount of growth outside agriculture (Christiansen and Martin, 2018). Paradoxically, public expenditure on agriculture remains low in many African countries, including South Africa. With rising incomes and growing populations, food demand is expected to increase in townships and semi-urban areas. These developments create market opportunities for small-scale, rain-fed farming businesses. However, integrating small farmers into profitable markets remains an inherent challenge (Muchopa, 2013) and the current trends show that smallholder producers receive the lowest share of income (Muchopa, 2013). The emergence of large supermarkets has resulted in the increasing exclusion of small producers in South Africa (Vink *et al.*, 2006). In such markets, the need to meet consumer demands and issue of standards and quality take precedence (Emongor and Kirsten, 2009; Ortmann and King, 2010). Smallholder access to

formal agricultural produce markets (e.g. the national fresh produce markets) in South Africa is very limited. They also struggle to meet the standards required by these markets (Muchopa, 2013). In sum, the fragmented nature of the smallholder sector, the small size of each transaction, the heterogeneous nature of their products, failure to meet standards and contractual obligations, and high transaction costs are inherent challenges to gaining access to markets, services, and inputs.

Previous studies have measured entrepreneurial spirit and psychological capital through using hypothetical questions that were subjective in nature. The questions described an individual's preferences based on what they say, and not based on what they do or on what they would do under certain situations. This study used several scenarios relating to entrepreneurship characteristics and psychological capital dimensions to find the youth's response to different situations. Most scenarios were set to be business-related to determine if the youth were business-minded. The measures of entrepreneurial spirit and psychological capital employed in this study address the bias problem, which is common in stated preference studies.

However, there are insufficient studies in South Africa that have empirically examined the effects of behavioural attributes and mindsets, such as perceptions/attitudes and psychological capital, on rural youth entrepreneurial spirit and participation in rain-fed smallholder farming. The role of information & communication technologies (ICTs) in smallholder farming has also received limited attention. Hence, this study aimed to examine factors that determine the propensity of rural youth to take rain-fed smallholder farming as their livelihood strategy, focusing on their participation, entrepreneurship spirit, and the role of psychological capital, ICTs, and perceptions.

Despite fragmented and piecemeal efforts, government initiatives (such as the institutional and infrastructural investments by the state) have not achieved the anticipated engagement of young people in the agricultural sector. Although studies have been conducted on factors affecting youth participation and the conceptualisation of entrepreneurship in smallholder agriculture, little is known about the entrepreneurial qualities of rural youth and the role of development agencies in agripreneurship in the context of South Africa.

Research objectives

Given this background, motivation and knowledge gap, this study has aimed to examine the challenges and opportunities in pursuing entrepreneurial development pathways in rain-fed

agriculture, linking the youth to profitable food value chains and exploring avenues for establishing small farming businesses. Its purpose is to review and evaluate appropriate entrepreneurial development paths for establishing small-scale rain-fed crop farming businesses in the food value chain by the youth for attaining improved rural livelihoods in the selected study areas. It is intended to inform policy on the priority intervention areas in this sector. In terms of outcomes, the study will contribute to (1) sustainable rural development, (2) empowerment of the rural youth, (3) youth-driven employment creation in the rural areas, (4) reducing poverty and food insecurity, (5) ensuring succession planning within the sector, and (6) addressing rural-urban migration. It will give directions to formulate development paths to enable rain-fed crop farming businesses to thrive. In this project, rural youth entrepreneurship development is taken as a pathway to achieve these objectives through improving the contribution of agriculture.

Research methodology

Guided by the ‘Amended’ ‘Sustainable Livelihood Framework’ approach, the ‘Theory of Planned Behaviour’, and the ‘Theory of Reasoned Behaviour’, this project has empirically examined issues of rural youth unemployment, rain-fed farming, youth entrepreneurship, and food value chains. The study was conducted from June 2018 to October 2022 in the following Districts and local municipalities of KwaZulu-Natal:

- Umzinyathi and Amajuba Districts (sample size 224-152 being youth not engaged in agriculture, while 72 were already engaged in agriculture),
- Dannhauser and Nquthu local municipalities (sample size 224 – those actively participating (71), and those assisting at home (53), as well as those not currently participating (100) in rain-fed smallholder farming), and
- Okhahlamba, Inkosi Langalibalele and Alfred Duma local municipalities (sample size 250 – those currently participating in agriculture (67), and those assisting at home (64), as well as those not partaking in any agriculture-related activity (119) in smallholder rain-fed farming).

The study has interviewed a total of 698 rural youth. Purposive, stratified, snowballing, and random samplings were employed to collect the required data. Structured questionnaires¹

¹ Questionnaires employed in the different empirical chapters of this Report are available upon request.

(coded in kobo toolbox, a data collection software) were employed to collect data. Questionnaires were tailored and scenarios were developed about psychological capital, entrepreneurial competencies, and perceptions of agriculture to capture the responses of young people in different contexts. The survey data has been complemented with focus group discussions, key informant interviews, and workshops.

The data items were analysed using Analysis of variance (ANOVA) and Pearson correlations, Principal Component Analysis (PCA), Multinomial Logistic (MNL) model, Multivariate Analysis of Covariance (MANCOVA), Fractional Logit Model, Multivariate General Linear Model (MGLM), and generalised ordered logistic regression model. SPSS 25 and STATA IC15 were employed for the data analyses.

Research findings

Youth participation in smallholder farming is generally very low. This can be attributed to challenges including lack of access to land, poverty of financial services, lack of access to relevant information (on crop varieties, inputs, new technologies, markets, prices and climate), lack of access to profitable markets, limited access to agricultural training and advisory services, and lack of knowledge and skills. These factors have constrained the profitability of small-scale farming which, in turn, negatively affects youth perception.

Access to credit and formal education were found to decrease the interest of rural youth to engage in all agricultural activities along the value chain, while having at least one household member already engaged in agriculture (demonstration effect) increases this likelihood. Furthermore, rural youth interest in engaging only in primary agriculture increased as the youth progress in age, and decreased with greater access to social media (Twitter, Facebook, Instagram, etc.). Similarly, youth interest to engage only in AVAEAs decreased with access to social media, and increased if the youth received some agriculture-related training, are endowed with positive psychological capital, and had access to primary ICT facilities. Youth interest to engage in the “whole value chain”, that is, to incorporate both primary agriculture and AVAEAs, increased if the youth received agriculture-related training, had access to agricultural land, and are endowed with positive psychological capital. The interest, however, decreased with an increase in the dependency ratio, and household wealth.

Youth participation in rain-fed smallholder farming is constrained by numerous challenges. These include lack of funding/credit, limited exposure to relevant opportunities in rural areas,

lack of knowledge and skills in farming, lack of access to relevant and adequate information, and poor access to markets. The continuous exposure to these challenges would eventually drive away even those youths who are currently farming. The importance of psychological capital in rural youth entrepreneurial behaviour and participation in rain-fed smallholder farming was quite evident from the findings. The heterogeneity in psychological capital endowment among youth has been observed. Those endowed with psychological capital, i.e. those who are self-confident, are more likely to participate in rain-fed smallholder farming activities, despite prevailing constraints and challenges. This demonstrates the importance of positive psychological capital in youth participation in rain-fed smallholder farming.

The lack of access to production credit among rural youth was evidenced in this study. The loans provided by the credit associations (and informal credit sources – stokvels and Mashonisas) are consumptive and quite expensive. On the other hand, the production credit available from the formal banks is hardly accessible due to stringent requirements. Although the accessible options for smallholders and the rural youth are available from informal credit sources, their functioning is not in line with entrepreneurial behaviour. The importance of setting good examples in the rural areas for rural youth to follow in farming is evident from the findings of the study. The demonstration effect will permeate through young people and create enthusiasm as well as interest to engage in the sector.

The results also revealed that access to social media negatively affects youth participation in farming. However, the role/importance of social media in building youth entrepreneurial spirit has been confirmed. Therefore, agriculture has to revolve to take advantage of opportunities offered by information communication technologies to attract youth to the sector. The empirical findings also confirm that youth perceptions towards farming affect their participation in rain-fed farming. Those who consider farming as laborious (negative perception) were less likely to participate in rain-fed smallholder farming, *ceteris paribus*. Therefore, this implies that there is a need to change the way in which smallholder farming is practised through the introduction of technologies to make farming less labour intensive. The findings also confirm the importance of access to land for youth participation in farming. However, the lack of land tenure security among youth is a critical issue. Most youth access land through their parents and traditional leaders, and this affects their decision-making over the land.

Women are more likely to be engaged in farming, owing to their relative immobility and their family responsibilities. In contrast, men are more likely to be more entrepreneurial, with a better propensity to get out of farming and look for non-agricultural employment or non-farm

businesses. The findings confirm gender imbalances in that males are more likely to be entrepreneurial, as compared with females. Most females are constrained by their reproductive roles of being wives and mothers, and being restricted to their homestead duties, and hence cannot engage in economic activities other than farming. Married youth and those with greater numbers of dependents in their households have a higher propensity for participating in rain-fed smallholder farming. Their weary situation limits their options such that smallholder farming becomes a key livelihood strategy for them.

The findings provide evidence of the potential of entrepreneurship and smallholder rain-fed farming for reducing the higher rate of youth unemployment, especially in rural areas of South Africa. Most of the rural youth are unemployed. Youth lack awareness about government development agencies that are tailored to assist them to venture into agriculture or other businesses. This is one of the other factors hindering their self-employment. The rural youth who were currently participating in rain-fed smallholder farming are more entrepreneurial compared with their counterparts, *ceteris paribus*. Moreover, having a family member partaking in agriculture influences youth participation in the sector. Given that the majority of the youth are using social media, these platforms could be used to change youth attitudes about agriculture. This could be achieved by disseminating agricultural-related opportunities/information/success stories (especially for young farmers) to demonstrate the potential of the sector in improving the standard of living of actors along the food value chain. Similarly, the empirical findings show the significance of having access to arable land for youth participation in farming. The majority of the youth access land through their parents or traditional leaders. However, unmarried youth have reported lack of access to land because of the current practice by traditional leaders in rural areas. Thus, there is a call to reform such practices, in terms of the designing and implementation of policies that create a favourable ecosystem for the youth to engage in farming.

In South Africa, land in remote areas belongs to the chiefs and the right to use the land is restricted to adults. The promotion of financial packages that specifically cater for the youth, mentoring, and training programmes, together with start-up funding opportunities, could help to reduce the magnitude of the challenge. Only 64.2% of the youth have access to productive land for farming. The challenge is worse among young people who are not currently engaged in farming, confirming why many of the youth do not participate in farming. Lack of access to productive land negatively affects their involvement in farming, regardless of their interests to do so. Those currently farming have access to larger land holdings than the youth do who are

farming partially or not at all. Some of the youth received the land on a temporary basis from the chief, which means that the land can be reclaimed at any time. Most of the youth who reported having no access to land were also among those not currently engaged in farming or any agricultural-related economic activity.

Generally, there is very limited entrepreneurial culture among the rural youth in South Africa. Much of small-scale farming in South Africa is not run as a business, but is taken up as a way of life. There is failure to keep records, and a tradition of mixing family and farming operations. Their behaviour is, by and large, satisficing (aiming to meet the bare minimum income to sustain the family), and not maximising behaviour. The Global Entrepreneurship Monitor (GEM) reports have repeatedly shown that the “Total Early-stage Entrepreneurial Activity” in South Africa is below the average compared with other African countries. The poverty of entrepreneurial qualities of the youth complicates their entrepreneurial development pathways and makes it difficult to attract youth to rain-fed farming. At the end of the day, entrepreneurship in smallholder farming is a question of ability to take calculated risks, internal locus of control/self-reliance, motivation, ability to develop competitive business ideas in response to identified gaps in the market, proactive character/attitude, capacity to embrace change, problem solving attitude, efficiency and profitability, and capacity to identify and seize opportunities when they arise. The gaps identified in the market could emanate from ongoing changes, such as drought, climate change, 4IR, technological change and population growth.

The youth – as a ‘techno-savvy generation’ – spend about three hours a day on their phones and social media platforms. However, the content of the information they often access happens to provide very little information on agriculture. It rather is mainly on luxurious life styles of famous/rich people, celebrities, politicians, musicians, artists, models, and sports personalities. These people are the role models whom most of the youth wish to emulate, and not farmers. Compounded by peer pressure, this is one of the push factors that drive them away from agriculture and the rural areas. ICTs expose young people to the rural-urban divide. Despite high levels of youth unemployment, young people are not attracted to smallholder farming, partly because the youth are aspiring to be in a sector for which they have not acquired the necessary skill set and political capital.

Youth exposure to ICTs (particularly the internet) is a double-edged sword. While it informs the youth and enriches their capacity if it is used the right way, their exposure to ICTs, particularly social media, often puts them under constant peer pressure, forcing them to do what is considered “cool” by their peers. It also exposes them to rural-urban inequalities. They aspire

a luxurious life style and working environment with high remuneration. This results in them preferring “white collar” employment, which partly explains their lack of interest in primary agriculture. The living standard gaps (between the rich and the poor) they observe through social media, and the fact that many of the rich are not from agriculture, are affecting their attitudes towards agriculture and their mindsets. This, in turn, negatively affect their likelihood of participating in farming activities.

It is then somewhat unexpected to ascertain that access to primary ICT assets like radio and television significantly increases youth interest to partake in AVAEAs by 4%, relative to not participating in any given agricultural activity. This can be attributed to the fact that the content displayed in social media is dictated and controlled by the preference of the user him/herself, while that displayed on TV and radio is not. Youth with access to TV and radio have access to a variety of information, including agricultural information through shows like “Living Land” on SABC 2, and this might be the reason for their interest to partake in primary agriculture.

Endowment in business management skills, gender, and positive psychological capital positively affect the potential participation of rural youth in AVAEAs. However, entrepreneurial spirit and household wealth negatively affect this potential participation. Agriculture is considered by young people as a part-time job, and not a full-time profession. It is often associated with poverty and low returns/profitability. This perception is the result of their observation, i.e. having seen no change in the poverty of the lives of their parents and grandparents, who have been smallholder farmers for decades, and the youth have consequently developed a negative attitude.

Smallholder farming is not a sector that generates ‘fast money’, which is what young people wish to achieve. It requires patience. Young people are relatively impatient, have low tolerance for risk, are not self-reliant, have external locus of control, and their capacity to identify and convert themselves to opportunities is questionable. For them, non-agricultural jobs are more stable, providing relatively more income, and require less physical labour. These challenges threaten the succession planning in the sector, especially given the ageing smallholder farming population, which is common across the African continent. In South Africa, the other challenges related to smallholder agriculture are lack of self-reliance and a dependency mindset, limited ownership of or access to agricultural-related assets, limited capacity to hire needed services, lack of knowledge and skills in value addition, high transaction costs of accessing input and product markets, and lack of adequate understanding (by the relevant stakeholders) of the heterogeneity of the sector.

While access to agricultural training promotes participation, educated youth are not keen in doing farming. They are migrating to nearby townships and cities. This can partly be attributed to the curriculum of the education they received in schools and at Higher Education Institutions. It is preparing them mainly to look for a job, and not to be entrepreneurial.

On the other hand, factors that enhance youth interest in farming include dependency ratio, self-confidence, engagement of other household member(s) in farming, and agricultural cooperative membership. Married youth and those with more numbers of dependents in their households have better interest in rain-fed smallholder farming than single youth do because marriage and the responsibility that comes with it constrain their mobility. For youth, this is because traditional leaders favour married young couples in terms of making land more accessible. Experience in the early years has positive effect on interest in farming, while further experience in later years has negative effect, i.e. the impact of experience is not linear.

Moreover, self-confidence increases the likelihood of youth to actively engage in rain-fed smallholder farming activities, relative to assisting with farming activities at home, *ceteris paribus*. This means that youth who are confident are more likely to actively engage in rain-fed smallholder farming activities. The results show that psychological capital is an important resource that youth should have in order to participate in the smallholder sector. Smallholder farming is a sector facing several challenges; therefore, it needs youth with a mindset that says 'I can do it' and 'I am prepared to face the challenges therein'.

Psychological capital in terms of endowment with self-confidence, optimism and resilience is much better than hope, which most youth have lost. Those little endowed with psychological capital tend to externalise the problem and the solution, thus exhibiting an external locus of control. They have received numerous promises, but with no action. Their frustrations emanate from a feeling that they are excluded. The violent demonstrations we frequently observe in South Africa at higher education institutions provide testimony to that.

The largest challenge to youth participation in rain-fed crop farming comprises drought and inconsistent rainfall. Hence, most youth showed preference for irrigation farming, as compared with rain-fed farming. This, however, does not mean that youth are totally not interested in rain-fed farming, but it shows the need for farming techniques that promote the conservation and efficient use of water. The challenge of unreliable rainfall can be addressed through the application of rain-water harvesting techniques, which would ensure the availability of water for crops during the periods of dry-spells. Only a few youths are engaged in livestock farming,

yet such enterprises present tremendous opportunities for attaining better livelihoods. Lack of grazing areas, limited access to support services, and stock theft are the major threats to livestock farming. The youth have limited access to training on livestock production and value-adding economic activities along the agricultural value chains. Livestock production, especially goat rearing, is a critical component of rain-fed farming common among rural youth in KwaZulu-Natal. It is a lucrative enterprise with a market, and hence, it has the potential to contribute to rural youth livelihoods.

For the youth currently engaged in agriculture, record keeping is poor or non-existent for many, and separation of family and business operations is still a challenge. In addition, it was clear that some let their emotional sentiments cloud their focus on efficiency and profitability, which are critical elements in running a successful enterprise or business. These findings reveal several limitations in the entrepreneurial characteristics of the youth that negatively affect their entrepreneurial spirit.

Young people have better preferences for agricultural value-adding economic activities (AVAEAs) because these activities are relatively not deemed ‘dirty work’. The rural youth endowed with better entrepreneurial capacity have a lower propensity to participate in primary agriculture and AVAEAs; they perceive other opportunities in other sectors as more rewarding. The major challenges that the rural youth identified in their pursuit to engage in agricultural value-adding economic activities include insufficient initial finance, lack of skills, and lack of equipment.

Youth were found to have an interest to engage in activities along the agricultural value chain. Most of them prefer to engage in activities higher up the chain, or in a combination of primary agriculture and economic activities along the chain. This suggests that a blanket conclusion that youth are not interested in agriculture is not a true reflection of the reality. A transformed agricultural sector can open up and present opportunities for employing young people. The rising global population and the urbanisation trend, coupled with increasing real incomes, show that the demand for food in the future will increase. This presents opportunities for youth along the agricultural value chain.

In addition, the mentality of “*I can’t because I am poor, or I have no money*” and “lack of entrepreneurship culture” are additional compounding factors (Atkinson, 2014). Moreover, many young people in South Africa believe that being a successful young entrepreneur depends on your background or race. For black African and coloured youth, there is lack of

entrepreneurial role models. They lack mentors in agripreneurship and role models in their communities, contributing to the disincentive to engage in smallholder farming businesses. This is very important because personally knowing an entrepreneur has been shown to have a positive impact on the view of entrepreneurship as a career choice (Herrington *et al.*, 2010). Having entrepreneurs in the communities who give mentorship to young people aspiring to become potential entrepreneurs could be an appropriate way to achieve this end.

Policy recommendations and implications

Policymakers should focus on designing policies and strategies that improve the resource endowment of the rural youth. That is, the development of initiatives that improve the youths' social capital and access to production credit; the development of transformative approaches for providing agriculture-related training; and the fostering of cultural changes that will improve the youths' access to agricultural land. Furthermore, there is a need for a shift in mindset on the part of the youth themselves regarding their perceptions of the agricultural sector. This study calls for strategies and interventions to be made for empowering rural young females for their entrepreneurship development in the smallholder agricultural sector.

The policies introduced by the government and other stakeholders should take into account the heterogeneity that exists in psychological capital. This will help to inform resource requirements among different youth. Most importantly, the policies and incentives introduced should be directed to building positive psychological capital. Other priority areas should include access to and control over resources (land tenure security), access to credit, and training. In addition, addressing the farming constraints among rural youth (such as limited access to land, limited access to credit, poor access to markets, and lack of knowledge and skills) will enhance their participation in rain-fed smallholder farming and their entrepreneurial spirit.

In terms of youth entrepreneurial competencies, development agencies and other related stakeholders ought to conduct both agricultural and entrepreneurial training to empower and encourage youth participation in farming and entrepreneurship. This study also recommends that government initiatives aimed at assisting youth ought to consider the heterogeneous nature of rural youth, contextualising interventions according to the needs of the targeted group. Government development agencies/initiatives should be established in rural areas where the majority of the vulnerable (unemployed) youth reside.

Development agencies often evaluate their performance based on the number of youths reached out to or the amount of money spent. However, their performance, monitoring and evaluation criteria should be based on the impact on the outcome variables (rural youth livelihoods, employment, poverty, and food (in) security. The target has to be improving and scaling up their impact at a community level. Finally, policies and programmes targeted to improve youth participation in agriculture have to build on past experiences, including learning from successful policies and programmes. It will require action research-based implementation and a “learning by doing” strategy to validate the findings contextually, to scrutinise the acceptability of the changes proposed, to adapt the proposed changes, and to scale up the implementation to wider communities.

Future research directions

This study did not analyse the impacts of ICTs on smallholder farming performances. Therefore, future research could concentrate on ICTs and their role in the performance of smallholder farming, and determine how this might influence the participation of youth in rain-fed farming and the creation of small businesses in the sector. Future studies could seek to be product-specific. Furthermore, future research could investigate the extent to which the expectations of rural youth to get jobs from other sectors affects their participation in agricultural activities. There will also be a need to understand the factors that influence the dynamics involved in youth willingness to stay in primary agriculture, switch to AVAEAs or incorporate AVAEAs to already existing primary agricultural enterprises.

Furthermore, future research could adopt a revealed-preference approach for capturing the attitude of youth towards agricultural activities. This is particularly relevant for variables/questions that seek to capture the psychological capital, perceptions and entrepreneurial spirit of the youth. Future studies could compare and contrast youth perceptions of primary agriculture and AVAEAs for a specific product(s). Within primary agriculture/AVAEAs, one can distinguish crop/livestock, cash/food crops, fruits and vegetables/cereals, etc. In addition to this, there is also a need to explore the impact of pull factors on their potential participation in agriculture. Furthermore, for the youth already engaged in agriculture, future studies should seek to investigate factors that affect their willingness to incorporate AVAEAs into their current primary agricultural activities.

To examine youth entrepreneurial competencies outside agriculture and better understand the broader entrepreneurial endowment of rural youth, future research could focus on youth

entrepreneurship in other businesses. Understanding their entrepreneurial qualities (both present and lacking) would inform policymakers and all related stakeholders on the state of youth entrepreneurial qualities in South Africa. Since this study used the *ex-ante* approach to investigate interest, future studies can use the *ex-post* approach and examine factors affecting the participation of rural youth in AVAEAs from the perspective of those who are actually practising farming.

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Project team members:

Edilegnaw Wale Zegeye	Project leader
Unity Chipfupa	Post-doctoral researcher
Raetsetse Baloyi	MSc graduate
Humbulani Rambuda	MSc graduate
Banele Masango	MSc graduate
Amkelwa Malgas	MSc candidate

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LIST OF ACRONYMS

4IR	Fourth Industrial Revolution
AASR	African Agriculture Status Report
ADA	Agricultural Development Agency
ADM	Amajuba District Municipality
AGRA	Alliance for a Green Revolution in Africa
AgriSETA	Agriculture Sector Education Training Authority
ANOVA	Analysis of variance
APP	Annual Performance Plan
ARC	Agricultural Research Commission
ASGISA	Accelerated Shared Growth Initiative for South Africa
AU	African Union
AUC	African Union Commission
AVAEA	Agricultural Value Adding Economic Activity
CAADP	Comprehensive Africa Agriculture Development Program
CASP	Comprehensive Agricultural Support Programme
DAFF	Department of Agriculture, Forestry and Fisheries (National)
DARD	Department of Agriculture and Rural Development (Provincial)
DED	Department of Economic Development
DFID	Department for International Development
DLM	Dannhauser Local Municipality
DRDLR	Department of Rural Development and Land Reform
DREAD	Department of Rural, Environment and Agricultural Development, North West Province
DSBD	Department of Small Business Development, South Africa
DTI	Department of Trade and Industry, South Africa
EC	European Commission
EPWP	Expanded Public Works Programme
ERP	Extension Recovery Plan
FAO	Food and Agriculture Organization of the United Nations
FLM	Fractional Logit Model
FPM	Fractional Probit Model
GCIS	Department of Government Communication and Information System

GDP	Gross Domestic Product
GEAR	Growth, Employment and Redistribution
GEM	Global Entrepreneurship Monitoring
GPS	Global Positioning Systems
ICTs	Information and Communication Technologies
IDC	Industrial Development Corporation
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
ILO	International Labour Organization
INR	Institute of Natural Resource
IWMI	International Water Management Institute
IYF	International Youth Foundation
KMO	Kaiser – Maier – Olkin
KZN	KwaZulu-Natal
LAL	Learning About Livelihoods
LDA	Limpopo Department of Agriculture
LFS	Labour Force Survey
LVI	Livelihood Vulnerability Index
MANCOVA	Multivariate Analysis of Covariance
META	Measure of Entrepreneurial Tendencies and Abilities
MGLM	Multivariate General Linear Model
MNL	Multinomial Logistic Model
MTSF	Medium Term Strategic Framework
NARYSEC	National Rural Youth Service Corps
NDP	National Development Plan
NEF	National Empowerment Fund
NGO	Non-Governmental Organisations
NGP	New Growth Path
NYC	National Youth Commission
NYDA	National Youth Development Agency
NYEESIF	National Youth Economic Empowerment Strategy and Implementation Framework
NYP	National Youth Policy

OECD	Organisation for Economic Co-operation and Development
OLM	Okhahlamba Local Municipality
OLS	Ordinary Least Squares Regression
PAYE	Pay as You Earn
PC	Principal Component
PCA	Principal Component Analysis
PDA	Provincial Departments of Agriculture
PsyCap	Positive Psychological Capital
PTO	Permission to Occupy
QLFS	Quarterly Labour Force Survey
RDP	Reconstruction and Development Programme
RP	Revealed Preference
SAB	South African Breweries
SACNASP	South African Council for Natural Science Profession
SALDRU	Southern African Labour and Development Research Unit
SASAE	South African Society for Agricultural Extension
SASSA	South African Social Security Agency
SAYCC	South African Youth Chamber of Commerce
SD	Standard Deviation
SE	Standard Errors
SEDA	Small Enterprise Development Agency
SEFA	Small Enterprise Finance Agency
SLA	Sustainable Livelihoods Approach
SLF	Sustainable Livelihoods Framework
SMMEs	Small, Medium and Micro Enterprises
SMS	Short Message Services
SP	Stated Preference
SPSS	Statistical Package for the Social Sciences
SSA	Sub-Saharan Africa
StatsSA	Statistics South Africa
TPB	Theory of Planned Behaviour
UFS	University of the Free State
UKZN	University of KwaZulu-Natal

UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UYF	Umsobomvu Youth Fund
VIF	Variance Inflation Factor
WRC	Water Research Commission, South Africa
YARD	Youth in Agriculture and Rural Development
YEN	Youth Employment Network

1 INTRODUCTION

This chapter sets the scene by motivating the study, and providing context and identifying the knowledge gaps. It also describes the project aim and objectives, expected outcomes/impacts, and the knowledge dissemination strategies.

1.1 Motivation

South Africa's 33.9% unemployment rate (StatsSA, 2022) reflects spatial inequalities linked to historical policies of 'separate development', as the unemployment rate among the youth (25-34 years), currently estimated at 41.2%, is more pronounced in the rural areas than in formal urban areas (NYDA, 2012; SALDRU, 2013; StatsSA, 2016). Given these statistics, it would seem that the agricultural sector is better placed to create job opportunities, particularly in the rural areas where entrepreneurship education has the potential to enable the youth to gain skills and create their own jobs (Premand *et al.*, 2016). Most entrepreneurship programmes in South Africa are targeting the youth in both rural and urban areas (see for example FANRPAN, 2012; DTI, 2013). This project contributes to this target through generating knowledge and identifying intervention areas to integrate the rural youth into profitable food value chains.

Given that most entrepreneurship programmes in South Africa are targeting the youth in both rural and urban areas, there is a need to provide evidence on the extent to which rural development initiatives in rain-fed agriculture have influenced the participation by rural youth in farming. For young people, agriculture is often seen as outdated, unprofitable and hard work (Montpellier Panel, 2014). Empirical evidence on how the youth can be attracted to farming remains scant, despite their importance in shaping the country's future policies that are aimed at creating a sustainable rural economy and, at the same time, addressing South Africa's socio-economic challenges linked to rural-urban migration. Such evidence could inform policy on the long-term destination of smallholder agriculture and shed light on what needs to be done to ensure succession planning.

Although the available statistics indicate that unemployment is highest among the rural youth in South Africa, individuals in this age category have little interest in farming or in starting their own agribusinesses, as they generally perceive the agricultural sector as a 'back-breaking and non-status' occupation (Swarts and Aliber, 2013). This is despite the fact that there is under-utilised potential for the productive use of rain-fed land for food production and beneficiation in the food value chain. There is a limited involvement of young people in

farming. Farming, an economic activity perceived to be ‘not sexy’ by the youth, is taken to be a grown-up’s occupation that does not bring in ‘quick money’. If young people hold this perception, it is not good news for the future of agriculture. How can we reverse this perception? Why do such attitudes prevail? What are the reasons for lack of interest and enthusiasm by the youth to take up farming as a livelihood strategy in rural areas? This situation can change only if small farms are made profitable as a means of securing livelihoods, where rural households can earn a decent quality of life. What also serves as a hurdle is the culture of youth aspiration to move away from the farms, and not being inspired to become enterprising farmers (Jayne *et al.*, 2010; Maepa *et al.*, 2014). Specific programmes need to be targeted to the youth to enable them see business opportunity in smallholder farming in a favourable light. Is there any role, for instance, for new technologies (such as ICTs) to make farming more appealing for the rural youth? There is a need to evaluate the opportunities created by such trending technological innovations and the prevailing resource and mindset challenges/constraints, not to mention institutional hurdles.

The attitudes of young people towards farming needs to change, and government and other partners should deliberately create conditions that encourage young people to become involved in farming, not only as workers but also as owners of farming businesses. Although such claims are increasingly being questioned (Sumberg and Hunt, 2019), young people are often characterised as being dynamic, innovative, and willing to learn and test new ideas. There is a need to further examine this to either tap into this potential or to understand the reasons if otherwise. The long-term focus should be on identifying ways and means of developing agribusiness entrepreneurial spirit from young ages so that the youth can participate in profitable farm enterprises and agricultural value chains. To this end, there is a need to evaluate the prevailing incentive schemes and their effectiveness. There is a need to evaluate the quality of rural advisory and support services for enabling the youth to become part of the rural economy.

Traditionally, entrepreneurship research has primarily been concerned with the start-up of new firms or existing firm levels (Schendel, 1990; Sexton and Landstrom, 2000). Empirical research has focused mainly on the innovative activity contributed by relatively large firms. The smallest firms have received relatively less attention and quantification. Most of the suggestions that have been made about the sources of innovative activity (or lack thereof) have been based on observing the behaviour of larger firms (Zoltan and Audretsch, 1988). Within the field of agriculture, little is known about on-farm entrepreneurship in smallholder

agriculture from a business perspective. Most of the empirical findings are relevant, if at all, to commercial agriculture. Smallholder and subsistence agriculture remain on the sidelines as far as R&D on entrepreneurship is concerned. Entrepreneurship is poorly contextualised in agriculture, especially for smallholder agriculture. There is very little knowledge that is relevant and applicable for smallholder agriculture. To contribute to this knowledge gap, there is a need to evaluate the entrepreneurial spirit and farm and other business management requirements of the rural youth in the context of rain-fed agriculture.

In South Africa, research on the impact of entrepreneurial development among smallholder farmers is limited, while huge investments are continually being made to improve the livelihoods of these farmers. Most of the empirical research on entrepreneurship (e.g. Mirzaei *et al.*, 2016) is more relevant to commercial, large non-farm sector and agribusinesses working in more competitive markets (with large capital investments), but less so or irrelevant for the small-scale farming sector, which is marred by lack of access to capital, poor markets, complexity of the farming system, and heterogeneity. Although there are many studies globally on rural farm entrepreneurship (e.g. McElwee, 2006; Vesala *et al.*, 2007; McElwee, 2008; McElwee and Bosworth, 2010), there is very little within the context of small-scale, rain-fed agriculture, and the literature in South Africa is even thinner. This is why this project aimed to generate knowledge on the aspirations and goals of the youth for participating in rain-fed crop farming businesses and related food value chains.

There is an estimated 4.6 million hectares of underutilised land that is suitable for rain-fed farming in South Africa (Chamberlin *et al.*, 2014). As indicated above, youth unemployment is high in South Africa (both urban and rural). As noted by the General Entrepreneurship Monitor, individuals in this age category have little interest in farming or in starting their own businesses. At the same time, there is underutilised potential for the productive use of rain-fed land for food production and beneficiation in the food value chain.

Research has to be conducted on rain-fed water use and entrepreneurial development opportunities for establishing small farming businesses and employment or job creation, by and for, the youth within the food value chain, in order to reduce poverty and inequality in rural areas. More empirical research is required to be done to identify the success factors for small crop-farming businesses. For instance, what are the opportunities and challenges in intensive vegetable and fruit production and/or extensive maize, sunflower and bean production?

To integrate the rural youth into profitable value chains, ways must be found to enable rain-fed farming practices that are more productive to be utilised to improve the economic performance of the sector. This, in turn, requires that an assessment be made of the goals and aspirations of rural youth (both currently in farming and those who have the potential to farm and/or be in other businesses). In order to inform the way forward, empirical research should be carried out, engaging the youth (farming rain-fed or unemployed or engaged in other rural-based economic activities) and all the relevant stakeholders. Testing and validating the proposed solutions coming out of this research through a participatory multi-stakeholder evaluation process has proven to be a useful strategy for making the interventions appealing, not only to the researchers, but also to policymakers, beneficiaries and other relevant stakeholders. This research study, therefore, aimed to review and evaluate appropriate entrepreneurial development paths for establishing small-scale, rain-fed crop farming businesses in the food value chain by the youth.

1.2 Contextualisation

The key challenges of the smallholder sector in Africa include limited knowledge of farmers on farming as a business, poor record-keeping culture, and mixing farm and family operations (Audretsch, 2009; Morgan *et al.*, 2010). In South Africa, these challenges include a lack of self-reliance and a dependency mindset, limited ownership or access to agricultural-related assets, limited capacity to hire needed services, lack of knowledge and skills in value addition, high transaction costs of accessing input and product markets, and lack of adequate understanding (by the relevant stakeholders) of the heterogeneity and complexity of the sector (Wale and Chipfupa, 2018). All these challenges complicate on-farm entrepreneurship interventions in the sector.

In the programme of action of the Presidency, announced in 2010, Outcome 7 envisages vibrant, equitable and sustainable rural communities, with food security for all. This will become a reality, among other things, by interventions informed by research on the challenges and opportunities of linking the youth to profitable food value chains, transforming small rain-fed farms into profitable enterprises, and identifying appropriate entrepreneurial development paths. This project will develop those inputs. One of the agenda items for the Millennium Development Goals is the eradication of extreme poverty, to which this project aims to contribute.

South African government strategic and policy documents introduced since the new democratic dispensation in 1994 have given much attention to youth employment, entrepreneurship development in rural areas, and agricultural value chains. The National Development Plan, for instance, stresses the need for the country to find ways to reduce youth unemployment and to provide young people with broader opportunities, through the adoption of programmes that target the rural youth, implementing community development initiatives, inclusive rural economy, and agricultural transformation. The DAFF strategic plan (2013/14-2017/18) aimed to implement policies and strategies that support agricultural development in rural communities. The New Growth Path Framework (2011) identifies agriculture value chains as one of the key avenues for the creation of jobs with a potential for growth and development (Department of Economic Development, 2010). To this end, this framework stipulates supporting a multi-prolonged strategy. Similarly, the Medium-Term Strategic Framework (MTSF) 2014-2019 takes economic growth and transformation in the economy, creating decent work and sustainable livelihoods, increasing access to economic opportunities in all sectors of the economy to historically excluded and more vulnerable groups such as youth, growth of small businesses, and strengthening of support services to enable small-scale producers to venture into formal value chains. The Water Research Commission (WRC) also acknowledges the importance of reducing poverty and unemployment, and has, therefore, directed research into the strategic area of water utilisation in agriculture regarding the mentioned aspects since 2002 (Backeberg and Sanewe, 2013). All of these programmes and strategies are meant to be implemented in the rural areas through empowering young people on entrepreneurship in agriculture, with a focus on small-scale farming, and with the ultimate aim of reducing poverty, unemployment, and food insecurity. However, despite all these projects, programmes and policy documents, the problem of youth unemployment in South Africa is still at a high level.

About 93% of agriculture in Sub-Saharan Africa is rain-fed, i.e. only 9 million of about 183 million hectares of agricultural land in the region is under some form of water management, with the least-developed water storage infrastructure (Brown and Hansen, 2008; You *et al.*, 2011). Although the rainfall is unreliable, variable and insufficient in many areas, agricultural production in Sub-Saharan Africa is largely rain-fed (You *et al.*, 2011). Rain-fed farming systems form an important part of South Africa's agricultural sector (Hardy *et al.*, 2011).

With rising incomes and growing populations, food demand is expected to increase in townships and semi-urban areas. These developments and the 4IR create market opportunities for small rain-fed farming businesses. Integrating small-scale farmers into profitable value chains remains an inherent challenge (Muchopa, 2013; Chikazunga, 2013) and smallholder producers receive the lowest share of income from food value chains (Muchopa, 2013). The emergence of large supermarkets (such as Shoprite) in the food value markets has resulted in the increasing exclusion of small-scale producers in South Africa (Vink *et al.*, 2006). Food value chains are driven by the need to meet consumer demands, and issues of standards and quality take precedence (Ortmann and King, 2010; Emongor and Kirsten, 2009; Muchopa, 2013). Despite the existence of several food value chains, the national fresh produce markets are still dominant in South Africa (Chikazunga, 2013). However, smallholder access to these markets is very limited (if any).

The livelihood assets that people possess define the activities that they can carry out and the opportunities they are able to take advantage of (Ellis, 2000; Barrett *et al.*, 2001). Traditionally, sustainable livelihoods assessments have focused on the five traditional capital assets. The inclusion of a sixth form of capital in the Sustainable Livelihoods Framework (SLF), ‘psychological capital’, reinforces the need to understand the individual mindsets as a key driver of entrepreneurial development among the rural youth.

It is common knowledge that two farmers or youth community members working in the same village, having a similar resource endowment (according to the five forms of capital from the SLF) and faced with similar institutional and infrastructural constraints, often adopt different strategies, which follow different interventions and achieve different livelihood outcomes. While some take advantage of opportunities when they arise, others do not. While some wait and expect government to do everything for them, others make their own effort and decide themselves on their destiny, take action, and mobilise the resources available. While some are confident in farming as a means of supporting household livelihoods, others are not. While some give up easily when faced with challenges, others do not. One often encounters such differences among small farm producers in the rural areas with similar resource endowments. The concept of psychological capital can be used to explain such differences. The concept, seldom applied in agricultural economics research, can shed light on farmers’ behaviours and generate valuable insights for effective agricultural policy and development strategies.

A research study that examines the challenges and opportunities in pursuing entrepreneurial development pathways in rain-fed agriculture in South Africa, linking the youth to profitable

food value chains and exploring avenues for establishing small farming businesses, will contribute to sustainable rural development, empowerment of the rural youth, youth employment creation in the rural areas, and the informing of policy on the relevant and priority intervention areas in this sector. Knowledge-based actions in these areas create opportunities for the unemployed rural youth to venture into entrepreneurship programmes, creating opportunities (for themselves and others) and raising incomes.

1.3 Problem statement

Agriculture, especially smallholder agriculture, is dominated by elderly people, with the youth migrating to urban areas in search of employment opportunities in other sectors. This is despite the various opportunities available within the agricultural sector. With saturated formal labour markets, this ongoing rural-urban migration of the youth exposes them to greater unemployment and a possibility of suffering social ills, such as drug abuse, crime, and depression. Examining the opportunities and challenges to engage the rural youth in primary rain-fed agriculture and agricultural value chains paves the way to address rural unemployment and poverty.

At present, unemployment statistics continue to increase, regardless of the interventions offered by the government and different stakeholders. Post-apartheid, government has introduced various policies including the Reconstruction and Development Programme (RDP), Growth, Employment and Redistribution Policy (GEAR), Accelerated and Shared Growth Initiative for South Africa (ASGISA), the New Growth Plan (NGP), National Development Plan 2030 (NDP), the Employment Tax Incentives Bill (also known as the Youth Wage Subsidy), and the Expanded Public Works Programme (EPWP) (Mayer *et al.*, 2011). All these strategies target economic growth with the intention to alleviate poverty, inequality and unemployment. Lieuw-Kie-Song (2009) assessed the effectiveness of some of the implemented programmes, like the EPWP. In his assessment, he reported that the programme had a temporary impact on alleviating youth unemployment, as it offered employment opportunities for a limited duration, but it did not give youth concrete experience and skills. Furthermore, beneficiaries of the programme in the rural areas gained the least from the programme because of a lack of technical support and capacity building (Altman and Hemson, 2008; Lieuw-Kie-Song, 2009). Although international experience has shown that programmes like the EPWP have proven to be effective in reducing severe youth unemployment, unemployment among South African youth has continued to increase (Altman and Hemson, 2008; Nzimakwe, 2008).

In addition, the South African government has prioritised small businesses and entrepreneurial development as a way of addressing the unemployment problem (Herrington *et al.*, 2010). To this end, the initiatives introduced include the National Youth Commission (NYC), the Umsobomvu Youth Fund (UYF), and the National Youth Development Agency (NYDA) (Herrington *et al.*, 2010; NYDA, 2011). Other state initiatives such as ‘South Africa Micro Apex Fund’, the ‘National Empowerment Fund’, ‘Khula Enterprise Finance’ and ‘Small Enterprise Development Agency (SEDA)’ are available to provide financial support to youth entrepreneurs. In rural areas, specifically, several initiatives have been introduced to encourage the youth to venture into agribusinesses. The programmes include Youth in Agriculture and Rural Development (YARD), and the Land Care and National Rural Youth Service Corps (NARYSEC). Despite the implementation of these policies and initiatives, youth unemployment is still high in South Africa. Moreover, there is evidence (Herrington *et al.*, 2010; Bowmaker-Falconer and Herrington, 2019) that they are not easily accessible to the targeted youth.

Agriculture is regarded as part of the solution to the problem of rural youth unemployment (Mathivha, 2012). In South Africa, smallholder agriculture has been identified as a strategy through which poverty reduction and rural development goals can be achieved (Pienaar and Traub, 2015). According to NPC (2012), as a principal economic activity in rural areas, the agriculture sector has the potential to create close to one million additional jobs by 2030, with a target also in the smallholder farming sector. Although much focus has been given to irrigation farming, rain-fed farming still holds the most significant potential (De Fraiture and Wichelns, 2010). Although rain-fed farming areas are threatened by drought and soil degradation, they cannot be ignored. In most developing countries, millions of poor people depend on rain-fed farming as their livelihood strategy. On the African continent in general, and in the Sub-Saharan African region in particular, most rural poor depend on rain-fed farming for their staple food supplies (such as rice, maize and sorghum) (Cooper *et al.*, 2008). The continent has about 68.9% of rain-fed farming land that is unutilised (IWMI, 2000; Abrams, 2018) and which can be used to meet future food demands by smallholder farmers.

Many researchers in the past (Kritzinger, 2002; Mathivha, 2012; Swarts and Aliber, 2013) have highlighted the point that most rural youth in South Africa are not interested in agriculture, especially smallholder farming. According to Leavy and Hossain (2014), the youth have witnessed their parents struggling to earn a living through farming. Hence, they view farming as unattractive, old-fashioned, unprofitable, and as hard work (Montpelier Panel, 2014). This

exacerbates the problem of rural youth unemployment. In addition, there is currently a low level of agricultural activities in rural areas, which are more likely to drop further. This jeopardises any hope for rural development in the future (Swarts and Aliber, 2013).

With the formal labour markets being saturated, and given the economic growth rate of the country, job creation that would be able to absorb all active employment seekers is very unlikely in the short run. For this reason, policymakers, scholars, and government officials have identified entrepreneurship as a potential strategy for dealing with the persistent unemployment, especially among the youth (National Planning Commission, 2012; Kew, 2016; Herington *et al.*, 2017). Worldwide, entrepreneurship is acknowledged as a relevant mechanism for addressing unemployment and advancing the socio-economic indicators. South African policies and strategies like the National Development Plan also acknowledge and promote entrepreneurship engagement among youth as a potential strategy to alleviate the persistent youth unemployment (National Planning Commission, 2012).

Involvement in entrepreneurial activities will not only lighten the burden of government dependence but will also help to alleviate poverty, while sustaining food security, especially in rural areas. This involvement will also bring growth to the economy at large through job creation and improvement in the standard of living. Given that youth unemployment is relatively greater in the remote areas, and keeping in mind the common labels of rural youth that include relatively low levels of formal education with limited work experience (Lewis, 2001), agriculture seems to be the most relevant sector for the youth to partake in and initiate entrepreneurial engagements. Furthermore, the majority of the rural youth have some sort of experience in agricultural practices, whether in the form of practical skills or knowledge, because they grew up with parents who practise agriculture (Adekunle *et al.*, 2009; Abdullah *et al.*, 2012). The potential livelihood strategy that can be derived from the sector, given their exposure, is worth the attention.

Although primary agriculture might not be of interest to youth, there are various other opportunities within the agricultural value chain that the rural youth could engage in. While engagements in most activities within the value chain (such as processing) require specific advanced skills, there are other less-advanced activities that youth in remote areas could easily engage in within the chain with less hindrance. Such activities include the retailing of farm inputs and outputs, serving as a farm agent, buying and reselling livestock and livestock products, and transportation of both inputs and outputs to different locations (O'Planick, 2016). These activities can serve as stepping-stones for rural youth to engage in agriculture and give

them the opportunity to initiate and run their own businesses. The farther away the activity is from primary agriculture along the food value chain, the more interested the youth would be.

It is surprising that there is no empirical research on the benefits to the rural youth of engaging in agricultural value-adding activities. There is no study on youth attitudes and engagements in agricultural value chains in South Africa. O'Planick (2016) reported possible opportunities and constraints for agricultural value chains in remote areas. Senyolo *et al.* (2018) conducted a study analysing value chains for African leafy vegetables. The study found that transaction costs among the value chain actors were high, prohibiting profitable businesses along the value chain. Furthermore, smallholder farmers are constrained by a lack of technical advice on production, a lack of packaging and processing facilities, poor infrastructure, and a lack of finances to actively participate in African leafy vegetable value-adding activities. Baloyi (2010) analysed constraints faced by smallholder farmers in agricultural value chains. All these studies found that a lack of access to land for expansion, limited water for irrigation, and the lack of modern irrigation systems, mechanisation, transport logistics and market information were the key constraints hindering smallholder farmers from participation in high-value and profitable markets along the value chain.

There are several studies that have been done in Africa, including South Africa, on factors that affect youth participation in agriculture (Nnadi and Akwiwu, 2008; Gichimu and Njeru, 2014; Cheteni, 2016). These studies also focused on factors such as access to land, training, and credits, as well as socio-economic characteristics (education level, age, marital status, and income). Given the high rate of youth unemployment and the prioritisation of the smallholder sector as part of the broader job creation strategy, the lack of interest by youth in farming is a serious rural development challenge.

Very few studies in South Africa have included behavioural factors, mainly perceptions, mindsets and psychological capital, when examining the propensity of the rural youth to participate in smallholder farming. Capturing behavioural variables such perceptions, attitudes and mindsets will enhance our understanding of the behaviour of youth and how these affect their participation in smallholder farming.

What are the factors contributing to low entrepreneurship development in agriculture among the rural youth? Are rural youth in South Africa not entrepreneurial enough? This study seeks to answer these questions by examining factors affecting youth entrepreneurial spirit in rural rain-fed farming areas. Although there is literature on entrepreneurship among young people

(Zaidatol and Abdullah, 2008; Qosja and Druga, 2015; Lekhanya, 2016; Youssef *et al.*, 2018), these studies fail to account for differences that might exist owing to heterogeneity in psychological capital and mindsets. It is their behaviour as well as the individuals themselves that lead to entrepreneurship (Lopez, 2011).

1.4 Aim and objectives

General Aim:

- To review and evaluate appropriate entrepreneurial development paths for establishing small-scale rain-fed crop farming businesses in the food value chain by the youth for improved rural livelihoods in at least two selected provinces of South Africa with rural unemployment.

Specific Objectives:

1. To evaluate natural, physical and financial assets (including market access) within an SLF for Southern Africa, giving specific attention to smallholder rain-fed farming potential in rural areas.
2. To evaluate human, social and psychological assets in relation to entrepreneurial spirit and management requirements, with particular attention to the youth in the selected rain-fed farming areas.
3. To evaluate currently available incentive schemes, and the access and effectiveness of the operation of these schemes for the youth.
4. To evaluate access to information such as market information and available advisory and support services such as extension and training.
5. To determine:
 - (a) reasons for interest/disinterest of youth in small-scale businesses in the rain-fed crop-farming food value chains;
 - (b) motivations for encouraging participation of youth in small-scale businesses in the rain-fed crop-farming food value chains; and
 - (c) opportunities for small-scale businesses in the rain-fed crop-farming food value chains.

6. To determine aspirations and goals of youth to participate in rain-fed crop-farming businesses and related food value chains.
7. To formulate and test appropriate development paths and farming models for establishing sustainable small-scale rain-fed crop-farming businesses by the youth to increase food security, profitability, employment opportunities, and livelihoods in rural areas.

1.5 Outcomes and expected impacts

This project is expected to positively affect rural development through the following impact pathways:

Rural youth employment creation: If this project succeeds, not only in packaging the knowledge and required interventions but also in convincing the relevant stakeholders to act, it will contribute to converting the rural youth from being liabilities to the nation to being productive assets, contributing meaningfully to the rural economy. If the diverse aspirations, goals and endowments of the rural youth are well understood and reconfigured, this will enable the relevant actors/partners to develop targeted packages that address rural youth unemployment in South Africa. Identifying appropriate entrepreneurial development paths for the rural youth to establish small-scale rain-fed crop farming is expected to create a significant impact on job creation, poverty and food insecurity. While entrepreneurs are known to create jobs for themselves, they often need more than just their skills and personal initiative to transform their ideas into a consumer product/service. This project is, therefore, expected to make a significant contribution towards identifying the challenges/opportunities and producing a reliable list of viable rural-based businesses in rain-fed farming.

Changing mindsets / enhancing entrepreneurial spirit and boosting self-confidence: If the rural youth are made active participants in the rural economy, this would address impoverishment and deprivation, which are key factors in making the rural youth feel hopeless and dependent. If this research is able to generate policy-relevant knowledge on the social and psychological factors that induce (or otherwise) the rural youth to conduct rain-fed farming and/or engage in value-adding economic activities in the sector, this will pave the way for action to be formulated to change the mindset, develop self-reliance and enhance entrepreneurial spirit. If the enabling or inhibiting factors behind the motivations and incentives for the youth to take

part in small-scale rain-fed farm enterprises are identified and acted upon, this will provide a demonstration effect for unemployed rural youth to take notice of.

Rural poverty, food/nutrition security and health: If sustainable rural livelihoods and small business opportunities can be created by mobilising the resources available, this will ultimately improve incomes and standards of living in the rural areas, resulting in better food, nutrition and health outcomes. Water, energy and food are intimately linked, forming the ‘water-energy-food nexus’, as energy is required to produce and distribute water and food. Examining and understanding this nexus broadens and deepens our understanding of the complicated and dynamic synergies and trade-offs among water, energy and food, presenting opportunities for greater resource coordination and policy convergence among actors, stakeholders and sectors (Albrecht et al., 2018). This nexus also has to encompass health through the impact of food on nutrition and health. Recognising and embracing this nexus is critically important so that future rural development policy strategies can take these issues holistically. This nexus has proven to be an important instrument for addressing poverty, unemployment and inequality; it reinforces the need to move towards policy convergence, as opposed to the current ‘silo’ approach (WRC 2017). Given the diversity of stakeholders and partners in rural youth development, this holistic approach becomes valid for facilitating impactful strategies and programmes.

Inclusive and profitable food value chains: Generating knowledge as to how the rural youth could be integrated into profitable value chains will be a stepping-stone towards achieving inclusive and profitable food value chains. This, in turn, means that the food value chain will benefit all actors along the chain, resulting in inclusive growth whereby the benefits of economic growth in the rural areas trickle down to the under-privileged rural youth.

Bridging the knowledge-action gap: Oftentimes, research knowledge is shelved owing to, among other factors, lack of engagement of the relevant actors in the problem definition and knowledge-generation processes. It is expected that the consultation, the participatory engagement, validation and testing of the proposed development pathways will create partnerships that create incentives for all stakeholders to own the knowledge and develop action plans based on the knowledge.

Economy-wide socio-economic and environmental impacts: If appropriate development pathways are identified, tested and proven to be successful, such development pathways are expected to have the potential to be scaled up, countrywide. If the success factors, institutional gaps and inherent challenges are identified and acted upon for small crop-farming businesses

to thrive, this would have both immediate (short-term) and long-run economy-wide impacts through multiplier, spill-over and forward/backward linkage effects. Better public investment in rural areas/agriculture and the improved quality of life experienced by the rural youth would make rural areas more attractive to the youth and reduce rural-urban migration. This might even make them less dependent on the environment and natural resources-based economic activities (e.g. non-timber forest products), thus positively contributing to the restoration of natural capital. The empirically tested entrepreneurial development paths are likely to raise awareness among beneficiaries, policymakers and stakeholders of the need to improve water management in water-constrained rain-fed areas. With increasing climate change-related challenges and food price increases, this will prove to be a timely contribution. Better opportunities and livelihoods for rural people reduce the dependence on social grants, which has already strained public finance.

1.6 Knowledge dissemination strategies and research uptake

Knowledge generated from the project has been and will continue to be disseminated through a number of avenues. The choice of appropriate communication and project output dissemination channels is informed by the regular consultation with the WRC and the Research Project Reference Group appointed by the WRC. Building on the R&D experiences of the project team, the knowledge generation, dissemination and conversion of the knowledge into action has been and will remain to be nothing but participatory. During the first six months of the project, the team engaged with the relevant stakeholders in the two provinces to create a standing knowledge-sharing platform. The purpose of this engagement has been to create a common understanding and interest so that the relevant stakeholders remain engaged throughout the project period and embrace the R&D objectives of the project. During this period, the project activities were elaborated upon to all stakeholders and the conceptual framework was further articulated.

The researchers capitalised on the feedback received at different stages to refine the approaches and respond timely to the concerns of stakeholders. The interim reports and contributed papers have been presented at various conferences (see Appendix 1). In addition, the post-graduate students attached to the project have produced MSc dissertations and a PhD thesis (see Appendix 1) as part of their academic requirements. Popular articles have also been published (see Appendix 1). Last but not least, many scientific articles have been published in accredited journals.

All these knowledge-dissemination strategies have been used to enrich the final report. The team firmly believe that this report will provide a vehicle to reach a wider public, as it will be distributed using the WRC, UKZN and UFS networks. The audiences that the research knowledge targets, and the relevant stakeholders for converting the produced knowledge into action, include the Department of Agriculture, Land Reform and Rural Development, the Department of Water Affairs, the Department of Trade and Industry, the Department of Cooperative Governance and Traditional Affairs, the LIMA Rural Development Foundation, the National Youth Development Agency, the Small Enterprise Development Agency, funding agencies, private entities and the general public.

1.7 Outline of the report

Chapter 1 has provided the background. Chapter 2 sets out a literature review. Its main purpose is to provide an overview of the context of rural youth unemployment and trends in youth unemployment in South Africa. It starts by giving definitions of key concepts and then highlights the trends and imperatives in youth employment at the global level and in Sub-Saharan Africa and in South Africa. It then discusses the factors affecting the participation of the youth in the rural economy, the key drivers of youth unemployment, and the relationship between entrepreneurship, agriculture, and youth. It also identifies the policy responses to addressing youth unemployment in South Africa.

Chapter 3 is dedicated to the research methodology. It justifies the choice of the study areas, presents the conceptual framework adopted, describes the study areas, and narrates the data collection process. Finally, it presents the empirical methods of data analysis employed.

Chapter 4 evaluates the natural, physical and financial assets (including market access) available to rural youth in the context of smallholder rain-fed farming potential in rural areas in the province. The evaluation is conducted within a sustainable livelihoods framework that explores the integration and linkages of the various facets of a rural livelihood.

Chapter 5 evaluates youth endowment with human, social and psychological assets in relation to entrepreneurial spirit and management requirements in the context of smallholder rain-fed farming potential in rural areas in the province.

Chapter 6 deals with incentive schemes, and their accessibility and effectiveness to the rural youth in the context of rain-fed farming within available food value chains. It profiles the existing national- and provincial-level incentive programmes that target youth in agriculture,

as well as those that support youth in business development. In addition, it provides empirical evidence on youth access and participation in any youth-related agriculture and rural development initiatives in rain-fed farming communities in KwaZulu-Natal. The report further captures empirical evidence on livelihood strategies and rain-fed farming opportunities/challenges for the rural youth along the value-chain.

Chapter 7 discusses access to information, and advisory and support services. It provides findings that highlight the extent to which youth in rural areas in KwaZulu-Natal have access to information, agricultural training and advisory services.

Chapter 8 deals with youth interest (or lack thereof) in small-scale rain-fed crop farming and related businesses. It encapsulates the current level of youth participation in small-scale rain-fed crop farming and related businesses. This is followed by the factors that affect their participation in, perception of, and propensity to participate in agricultural value-adding activities. Finally, it provides empirical evidence on youth interest in rain-fed farming and related businesses.

Chapter 9 reports empirical results on rural youth aspirations and goals to participate in rain-fed crop farming and related businesses, taking into account their behavioural attributes, resource endowments and constraints.

Chapter 10 deals with the development pathways for establishing small-scale rain-fed crop farming businesses by and for the rural youth. This is done by reviewing the responses of government and other agencies to youth unemployment in South Africa. Drawing from the empirical evidence, it shows the role of positive psychological capital, mentorship, training, and ICTs. It then presents the options, opportunities and constraints to engage the rural youth in rain-fed small-scale farming and agricultural value-adding economic activities.

Chapter 11 deals with the conclusions, guidelines, policy recommendations, and future research directions. It identifies interventions that could be planned in the short to medium term, and the long term.

2 LITERATURE REVIEW

This chapter reviews the relevant literature and sets the scene for the subsequent empirical chapters. It focuses on the participation of youth in smallholder farming and related economic activities. After setting out the general background, the chapter defines key concepts and presents salient imperatives that are important in contextualising and understanding the key issues in the study. These include entrepreneurship, the factors affecting youth unemployment, the role of agriculture in addressing rural youth unemployment, the importance and source of agricultural information to the rural youth, ICTs, and mentorship programmes. The chapter also reviews the quality of agricultural extension services, the specific national, sectoral, and provincial policies and strategies developed and implemented since 1994, the NDP 2030, and the challenges therein.

2.1 Background

The definition of youth differs from country to country, depending on the cultural, institutional and political context (O'Higgins, 2001b). According to Desurmont *et al.* (2009), European countries have defined the age of the youth as covering 'the passage from a dependant childhood to independent adulthood', when young people are in transition between 'a world of rather secure development to a world of choice and risk.' The United Nations (UN) definition of youth considers the age group 15 to 24. The African Union (AU) in the African Youth Charter defined youth as every individual between the ages of 15 and 35 years (African Union, 2006). According to the South African National Youth Policy for 2009-2014, the definition of 'youth' includes individuals between the ages of 14 and 35 years (National Youth Commission, 2015), which also represents the lower age group of the working-age population. Their definition is supported by the fact that, in that age range, people go through various challenges when transiting from childhood to adulthood. They further pointed out that the category of the 'youth' has represented an important element of the political struggle, considering what the youth of 1976 has done for the country (National Youth Commission, 1997).

In South Africa, the youth constitute about 36% of the population (AgriSETA, 2016). They are, however, struggling to find employment opportunities and are experiencing very high levels of unemployment (AgriSETA, 2016). Unemployment among the youth (15-34 years) is estimated at 36.9% (Statistics SA, 2016). However, the high levels of youth unemployment in the country are characterised by spatial inequalities that are linked to historical policies of

‘separate development’ under the apartheid regime. The problem is more pronounced in the rural areas than in formal urban areas (SALDRU, 2013; StatsSA, 2016).

One sector that has been identified by the South African government in its National Development Plan (NDP) for creating employment opportunities, especially in the rural areas, is the agricultural sector. In the rural areas, entrepreneurship education has the potential to enable the youth to gain skills and create their own jobs (Premand *et al.*, 2016). The NDP specifies that the sector can contribute almost one million job opportunities by the year 2030 (National Planning Commission 2012). Most entrepreneurship programmes in South Africa target the youth in both rural and urban areas (see, for example, FANRPAN 2012 and DTI, 2013). This project contributes to this target through generating knowledge and identifying intervention areas to integrate the rural youth into profitable food value chains.

Although the rainfall is unreliable, variable and insufficient in many areas, agricultural production in Sub-Saharan Africa is largely rain-fed (You *et al.*, 2011). The rain-fed crop production potential in Southern Africa (Zambia, Zimbabwe and Malawi) includes a wide range of summer field crops, such as maize, soybean, dry beans, groundnuts and sorghum, which are adapted to parts of all four of the target countries, and winter rain-fed field crops such as wheat, barley and dry pea, which can be grown extensively (Rutherford, 2010). Rain-fed farming systems form an important part of South Africa’s agricultural sector (Hardy *et al.*, 2011). In South Africa, smallholder farming (both crop and livestock production) has been identified as a potential strategic area, through which poverty reduction and rural development goals can be achieved (Pienaar & Traub, 2015).

The livelihood assets that people possess define the activities that they can perform and the opportunities they are able to take advantage of (Ellis, 2000; Barrett *et al.*, 2001). Traditionally, the sustainable livelihoods assessments focus on the five capitals to define a household’s livelihood assets and capabilities. The inclusion of a sixth form of capital to the sustainable livelihoods framework (SLF), referred to as psychological capital, reinforces the need to understand the individual mindsets as forming a key driver of entrepreneurial development among the rural youth.

The focus on sustainable livelihoods is critical for rural transformation. Over the years, several frameworks have been utilised in various programmes to understand livelihoods and develop strategies for resilience and transformation (Carney *et al.*, 1999). Two such frameworks have been developed specifically for Southern Africa and these are the ‘Policy Guidelines for

Integrating Environmental Planning into Land Reform’ (PGIEP) and the ‘Learning About Livelihoods’ (LAL) framework (De Satgé *et al.*, 2002). The LAL framework, which was developed from the PGIEP, has been promoted extensively by Oxfam and its partners in the region to support rural and urban livelihood programming. The approach resonates with the context of smallholders in sub-Saharan Africa because of the following:

- It is people-centred and participatory – based on the understanding of how people make their living.
- It assumes differentiation. In other words, it recognises heterogeneity – the important differences among households and/or individuals in a household.
- It is holistic, i.e. it considers the system as it is; and
- It recognises that households and livelihoods are constantly changing in response to shocks and seasonality. This highlights the need for on-going learning and continuous reflection or introspection on practice (De Satgé *et al.*, 2002).

In South Africa, the key challenges related to smallholder agriculture are lack of self-reliance and a dependency mindset, limited ownership or access to agricultural-related assets, limited capacity to hire needed services, lack of knowledge and skills in value addition, high transaction costs of accessing input and product markets, and lack of adequate understanding (by the relevant stakeholders) of the heterogeneity and complexity of the sector. The key challenges of the smallholder sector in Africa include a limited knowledge of farmers on farming as a business, a poor record-keeping culture, and mixing farm and family operations (Audretsch, 2009; Morgan *et al.*, 2010). All these challenges complicate on-farm entrepreneurship interventions in the sector.

It is common knowledge that two farmers or youth community members working in the same village, having a similar resource endowment (according to the five forms of capital described in the SLF) and faced with similar institutional and infrastructural constraints might adopt different strategies, calling for different interventions, and would achieve different livelihood outcomes. While some take advantage of opportunities when they arise, others do not. While some wait and expect government to do everything for them, others make their own effort and decide themselves on their destiny, take action and mobilise resources available. While some are confident in farming as a means of supporting household livelihoods, others are not. While some give up easily when faced with challenges, others do not. One often encounters such differences among the youth with similar resource endowments. The concept of psychological

capital can be used to explain such differences. The concept, seldom applied in agricultural economics research, can provide many insights to understand the behaviour of the youth and generate valuable insights for effective agricultural policy and development strategies.

A study that examines the challenges and opportunities in pursuing entrepreneurial development pathways in rain-fed agriculture in South Africa, linking the youth to profitable food value chains and exploring avenues for establishing small farming businesses, will contribute to sustainable rural development, empowerment of the rural youth, youth employment creation in the rural areas, and informing policy on the relevant and priority intervention areas in this sector. Knowledge-based actions in these areas create opportunities for the unemployed rural youth to venture into entrepreneurship programmes, creating job opportunities (for themselves and others) and raising incomes. In terms of poverty reduction, or involving the youth in the rural sector, the establishment of new long-term businesses could reduce poverty levels of not only the entrepreneur, but also of the surrounding rural environment.

2.2 Definitions and imperatives

2.2.1 Defining entrepreneurship and entrepreneurs

Entrepreneurship is a multi-dimensional concept that is difficult to define (Rusu *et al.*, 2012; Khazaeli *et al.*, 2018). Consequently, it is a concept with a variety of definitions (Kumar, 2015), but none has prevailed (Venkataraman, 1997). The word entrepreneur originates from a thirteenth-century French verb ‘entreprendre’ (Kumar, 2015), meaning “to do something” or “to undertake”. According to McElwee (2006), the existence of entrepreneurship in different sectors of the economy makes it a complex term to define. There are various definitions in the literature (Lans *et al.*, 2014; Phelan, 2014; Hadebe, 2016). Despite the diversity of definitions and debates, there is a consensus among economists, business owners, academics, and governments, as well as analysts, that entrepreneurship is essential for stimulating economic growth and employment opportunities (Maluleke, 2016).

Business-Dictionary (2018) defines entrepreneurship as “The capacity and willingness to develop, organize and manage a business venture along with any of its risks to make a profit.” Rusu *et al.* (2012) refer to the term ‘entrepreneurship’ as a process that involves creating a new organisation or reforming an organisation that already exists. On the other hand, Panda (2000) had defined entrepreneurship as a normal development and reformation process in every field

of the social and economic venture. Schumpeter (1934) refers to entrepreneurship as being associated with innovation, where he referred to it as a process involving carrying out something new and destroying the old mechanisms, also known as creative destruction. It could be a product, process, method of production, market, or it could be a new organisation or a new business. In his explanation, the entrepreneur is an innovator who is confident that his idea will generate a profit. According to Venkataraman (1997) and Shane and Venkataraman, (2000), entrepreneurs are the individuals who discover, evaluate, and exploit profitable opportunities.

Kao (1993) defined entrepreneurship as a way of doing something new and something different, with the aim of wealth creation for people and value addition to the society. Similarly, Schumpeter (1934) defined it as carrying out new combinations and involving doing things already done in a different way. Kirzner (2015) combines the views when he mentions that the entrepreneur explores previously unexplored opportunities by adjusting current products or introducing a new product.

In the modern sense of a market economy, an entrepreneur has been conceptualised as an economic agent with an innovative and active behaviour, who intentionally takes financial risks to develop new ventures (Maluleke, 2016). From an economic perspective, an entrepreneur is someone who integrates livelihood assets (such as labour), natural resources (such as land and water), and financial capital to make a profit (Maluleke, 2016). According to Alsos *et al.* (2011), entrepreneurship is a two-stage process, where the first stage involves identifying and creating opportunities, and the second stage involves exploiting the opportunity. The second stage depends on the ability of an individual to access the required resources to bring the idea to implementation. The most critical point that has evolved from these definitions is that entrepreneurial opportunities are the prerequisites for the entrepreneurial process to exist (Shane and Venkataraman, 2000).

Generally, entrepreneurship is discussed under the topics of entrepreneurial initiative and entrepreneurial behaviour, and is also referred to as the entrepreneurial spirit (Álvaro *et al.*, 2007). The entrepreneurial spirit is a part of entrepreneurship that cannot be taught (Kahan, 2012). The other part of entrepreneurship comprises managerial skills (financial, time, and other resource management) that can be taught (Kahan, 2012). It also entails decision-making, control, risk, and security management (Olaoye, 2015).

Recently, entrepreneurship has been broadened to include the concept of a specific mindset (also referred to as entrepreneurial mindset) (Kumar, 2015). The EC (2003) defined

entrepreneurship as the mindset and process to create and develop economic activity by linking both taking the risk, creativity and innovation with sound management that goes beyond regular business management. On the other hand, Commarmond (2017) relates an entrepreneurial mindset to how individuals think, and their state of mind through which they see the world and which influences their propensity for entrepreneurial activities and outcomes. Their state of mind is influenced by many factors related to knowledge, experience, level of competency, and self-belief.

The other most important characteristic of an entrepreneur, which is related to personality, is endowment with positive psychological capital (Luthans and Youssef, 2004; Shane and Venkataraman, 2000; Hmieleski and Carr, 2008). Personality refers to repetitive behaviour that differentiates individuals from one another (Corr and Matthews, 2009). These are traits such as capacity and willingness to take calculated risks, efficiency, profitability, recognising, seizing and exploiting an opportunity, and innovation (Frederick *et al.*, 2010; Maluleke, 2016). Personality traits (such as innovativeness, determination, perseverance, drive to achieve, opportunity orientation, persistent problem solving, internal locus of control, tolerance for ambiguity, calculated risk-taking, competitiveness, creativity, and vision, as well as independence) are the key drivers. However, Gartner (1988) highlighted the point that personality traits are not sufficient to explain the concept of entrepreneurship, and that the use of the trait approach is one of the reasons for the diversity of definitions of entrepreneurship. Therefore, both behavioural and trait approaches play a role in defining entrepreneurship (Carland *et al.*, 1988).

Entrepreneurship depends on the ability of an individual to access the required resources to bring the idea to execution (Alsos *et al.*, 2011). It also depends on the personality traits, i.e. consistent entrepreneurship theory cannot be developed without taking into account the personality traits (Baum *et al.*, 2014). Therefore, the differences existing among different farmers in terms of being entrepreneurial can be explained by PsyCap endowment. Those with high, positive PsyCap are more willing to try, even if they are facing challenges similar to those with low positive PsyCap do.

Although there is no universally agreed definition of entrepreneurship (Maluleke, 2016), some salient features of the concept can be derived from the literature. According to Chipfupa and Wale (2017), the traits of an entrepreneur are:

- Risk-taking, tolerance for failure, being determined and persistent,

- Seizing an opportunity,
- Proactive, curious, hardworking, strong drive to achieve, independent, self-confident, positive attitude (Singh, 2013)
- Problem solving,
- Innovation or creativity – working on new, not already existing goods or services,
- Value addition, efficiency and profitability – to be at a competitive edge,
- Embracing change/growth – entrepreneurs are not necessarily sources of change but are managers of change in terms of exploiting the opportunities that change creates (Singh, 2013). An entrepreneur must grow his/her business,
- Internal locus of control, self-reliance and motivation, and
- Visionary and goal oriented – an entrepreneur must visualise where the business is destined to.

Carton *et al.* (1998) state that two approaches exist that can be used to define entrepreneurship. The first is to consider what an entrepreneur is and then to consider the entrepreneur's behaviour and define the term accordingly. The second is to provide a definition of entrepreneurship and the expected behaviour. This is to define the entrepreneur within the entrepreneurial process. Leutner, Ahmetoglu, Akhtar and Chamorro-Premuzic (2014) state that an individual's behaviour is related to personality and consequently it may be expected that differences in entrepreneurship may at least in part be a function of personality. Hébert and Link (1989) identified twelve roles or themes linked to entrepreneurs, which are somewhat similar to those listed by Chipfupa and Wale (2017). These themes include the features that the entrepreneur is:

- someone who assumes the risk and uncertainty; ability to take calculated risks;
- someone who provides the capital support;
- innovator; creative;
- decision maker;
- industrial leader;
- manager or supervisor;
- organiser of the economic resources;
- owner;
- employs factors of production;
- contractor;

- arbitrageur;
- efficient and profitable;
- able to seize opportunity;
- allocator of resources between different uses.

The different aspects mentioned are also reflected in the definition provided by Bygrave and Hofer (1991) cited by Phelan (2014), where the authors note that an entrepreneur is someone who has identified the opportunity and then creates the new business to exploit the shortcoming in the market. This is substantiated by Almeida *et al.* (2014;104), who note that several aspects of entrepreneurial behaviour/activity are found in the literature and the only popular themes remain “recognition and exploitation of opportunities, innovation/change and value creation”. A measure has been developed by Ahmetoglu *et al.* (2011) that assesses the differences between individuals’ abilities to identify and take advantage of opportunities, be innovative, and bring about change. The measure named ‘Measure of Entrepreneurial Tendencies and Abilities’ (META) is used to predict entrepreneurial outcomes, and measures four aspects of entrepreneurial personality, namely entrepreneurial awareness, entrepreneurial creativity, opportunism and vision (Almeida *et al.*, 2014).

In sum, entrepreneurship is the process of meeting a gap/taking advantage of a business opportunity through the usage of all factors of production to make profit.

2.2.2 Youth behavioural and psychological characteristics

Eddy *et al.* (2010b) have stated that the millennial generation portrays a significant difference in character, compared with previous generations. This is because they are characterised as being self-interested, entitled, unfocused, lazy, and impatient individuals. These characteristics are the result of globalisation, technology, and “unique” parenting style, which characterise this period.

Eddy *et al.* (2010b) and Bahaman *et al.* (2010) highlighted the point that the youth of today “want everything” and “want it now”. This impatience arises because of their exposure to technology that offers them everything instantly. Furthermore, their exposure to ICTs, particularly social media, often puts them under constant pressure to “fit-in” with the majority. According to Bahaman *et al.* (2010), the youth want to do what is considered “cool” by their peers, and this often means luxurious lifestyles (Eddy *et al.*, 2010b). This explains why

Bahaman *et al.* (2010) refer to them as seekers of instant gratification, which often leads to their unrealistic expectations in life, including in the workplace (Eddy *et al.*, 2010b). They aspire to a luxurious working environment with high remuneration. This results in them preferring “white collar” jobs, which partly explains their lack of interest in primary agriculture. The current psychological state of the millennials regarding agriculture does not give any hope that the lack of a succession plan in agriculture will be resolved soon. This is despite the claim by the National Development Plan that states that agriculture alone has the potential to create a million jobs by 2030 (National Planning Commission, 2012). Without a change in their current perception and attitude towards the sector, this potential is less likely to be realised.

Regardless of the location (urban or rural) and other factors highlighted above, youth constitute an essential asset to the economy of every nation (Brown, 2012). However, youth are also a liability when the economy cannot absorb them. Nevertheless, literature has highlighted the point that most of the youth are active, ambitious, and are more responsive to new economic opportunities (Panel Montpelier, 2014). In developing countries, the rural youth constitute a large proportion of the population. The majority of them lack economic independence; they are typically minor members of usually large, extended families, mostly dependent on their parents, facing the challenges of unemployment and poverty (Bennell, 2007).

Psychological capital endowment: The concept of psychological capital (PsyCap) has been widely applied in the field of psychology, as well as in organisational behaviour, to study the psychological well-being of individuals in their workplace, and their performance outcomes (Youssef and Luthans, 2007; Avey *et al.*, 2010; Luthans and Youssef-Morgan, 2017). However, as noted in Section 1.3, PsyCap has recently received attention in the literature as being the most critical resource for capturing heterogeneity among smallholder farmers (Cele and Wale, 2018; Chipfupa and Wale, 2018b; Phakathi and Wale, 2018). There have been arguments for the adaptation of the SLF to include PsyCap as an additional livelihood asset to the traditional assets (Chipfupa and Wale, 2018b). The arguments are that the deployment/use of the traditional assets depends on the individual’s psychological capital endowment, more particularly in a situation where resources are scarce. PsyCap involves having the assurance to take on and put in the necessary efforts to succeed at challenging tasks, making positive attributions about succeeding now and in the future, and persevering towards goals, when necessary. In addition, it involves redirecting paths to goals (hope) to succeed; and when faced by problems and difficulty, bouncing back and even beyond to attain success (Luthans *et al.*,

2015). Endowment with positive PsyCap can be measured, developed, and managed for performance improvement (Luthans and Youssef, 2004). PsyCap is made up of four positive psychological resources/dimensions, comprising hope, efficacy/self-confidence, resilience, and optimism (Luthans and Youssef, 2004; Luthans *et al.*, 2007; Luthans *et al.*, 2015).

Efficacy/self-confidence: Efficacy/self-confidence refers to an individual's beliefs about their capabilities to mobilise the motivation, cognitive resources, and courses of action required to accomplish a particular task within a given situation (Stajkovic and Luthans, 1998). The most important attribute in this context is the level of efficacy that motivates an individual to choose and welcome challenges, and to use their strengths as well as skills to meet those challenges. Efficacy also encourages and energises individuals to reach their goals and invest their time and work hard. Confident individuals persist when faced with obstacles that might otherwise lead them to giving up. Confidence also relates to an individual's hope, optimism, and resilience (Luthans *et al.*, 2007). For example, individuals who have high self-efficacy usually choose challenging tasks, do not give up easily, and make efforts, and so they accomplish their goals even when faced with a difficult situation (Luthans and Youssef, 2004; Hmieleski and Carr, 2008). These attributes equip individuals with the capacity to develop independently and perform effectively, even with little external input, for extended periods (Luthans *et al.*, 2007).

Optimism: Optimism is an explanatory style that interprets situations in such a way that good events have personal, permanent, and universal causes, while adverse events are explained in terms of external, temporary, and situation-specific factors (Seligman *et al.*, 1998). Individuals who are optimistic view their chances of success as being high (Luthans and Youssef-Morgan, 2017). They expect positive and desirable events in the future. However, optimism is not only about forecasting that good things will happen in the future, but also depends on the reasons and attributions used to explain why (Seligman *et al.*, 1998; Luthans *et al.*, 2007).

Hope: Hope is defined by Snyder (2000) as the motivation to attach yourself to positive outcomes or goals. Hope is also defined as the sum of capabilities to produce routes to favourable goals, with the motivation to take those paths. On the other hand, Luthans *et al.* (2007, p23) describe hope as "having pathways as well as alternative ways to achieve goals and bounce back from obstacles faced." Individuals with high hope can establish ways to achieve their desired goals and have the capability to generate alternative pathways towards achieving their goals, if the original paths become blocked (Luthans and Youssef, 2004).

Resilience: Resilience is defined as the ability to bounce back from difficulty, uncertainty, conflict and failure, or even positive change (Luthans, 2002; Luthans and Youssef, 2004). The resilience dimension allows individual and environmental protective mechanisms to operate through enhancing the assets or reduce the risk factors within individuals or their environment. In addition, resilient individuals can succeed and grow through hindrances and difficulties. These individuals can bounce back, not only to their original level of performance, but to even higher levels (Luthans and Youssef, 2004).

2.2.3 Entrepreneurship in the context of South African youth

Generally, there is a lack of an entrepreneurship culture among rural youth in South Africa (Atkinson, 2014). This has also been repeatedly shown by the Global Entrepreneurship Monitor (GEM) reports. The youth have little interest in starting their own businesses. Atkinson (2014) also noted that most youth are bitter about historical socio-economic exclusions. Moreover, young people believe that being a young successful entrepreneur depends on your background or race. The mentality of “I can’t because I am poor”, or “I have no money,” and the lack of entrepreneurship culture adds to low entrepreneurship among South African youth (Atkinson, 2014). Other entrepreneurship challenges identified by youth documented in a 2010 GEM report include crime as an additional cost to enterprises, and a lack of business information, business-related networks, appropriate education, and business support structures (Herrington *et al.*, 2010).

Relevant education or training is critically important for turning the entrepreneurship spirit into a business (Panel Montpelier, 2014). Although the importance of education for promoting entrepreneurial mindsets is recognised (Solesvik *et al.*, 2013), entrepreneurship education in rural schools is still lacking. The lack of appropriate education limits the attainment of entrepreneurship knowledge and skills development (Von Broembsen *et al.*, 2005; Herrington *et al.*, 2010; Herrington and Kew, 2016; Herrington *et al.*, 2017). The problem in South Africa lies more in the primary and secondary education systems. Von Broembsen *et al.* (2005) found that the South African tertiary education system better equips young adults with the knowledge and skills necessary for starting a business, as compared with primary and secondary schooling. The empirical findings of Gwija *et al.* (2014) in the Western Cape, South Africa, found that the lack of government support, strict business regulations, poor management practices, high costs of resources for business, and limited access to markets are some of the challenges in the development of entrepreneurship among youth. It is essential for the rural youth to be endowed

with these desirable features in order to engage them in agricultural value chains and thereby benefit them and society.

There are various challenges associated with a low level of entrepreneurship in South Africa. It has been found that there is a relatively low level of engagement in entrepreneurial activities among South Africans (Kew, 2016; Herrington *et al.*, 2017). Only about 11 percent of the South African adult population (18-64 years), i.e. only 11 in every 100 adults, were found to have entrepreneurial intentions in 2015. In 2016, the South African youth participation in Total Early Stage Entrepreneurial Activity (TEA) was at 6.7% and 6.3% for ages 18-24 years and 25-34 years, respectively (Herrington *et al.*, 2017). Although there are no statistics available that indicate the common sectors in which the youth initiate businesses, the Small Enterprise Development Agency (2017) has reported that the leading industries where small businesses are initiated are in trade and accommodation, community services, construction, finance, and business services, but with no mention of the agricultural sector. One of the common factors identified as negatively affecting the entrepreneurial development of the youth is a lack of endowment with the necessary assets.

GEM findings have also shown that the majority of youth in the country prefer formal employment as the best career option, rather than business ownership. The findings further highlighted the point that, for black African and coloured youth, there is a lack of entrepreneurial role models in both the family and in the community. Having a business-related role model is important because personally knowing an entrepreneur has been shown to have a positive impact on the view of entrepreneurship as a valid career choice (Herrington *et al.*, 2010). Having entrepreneurs in the communities who provide mentorship for the youth could be an appropriate route to take for showing that entrepreneurship is a good career choice.

2.2.4 Entrepreneurship in the context of smallholder farming

The importance of entrepreneurial culture in agriculture has been acknowledged by researchers, governments, and other rural development actors (McElwee, 2006). However, agriculture has been largely excluded from entrepreneurship research in the past, while the focus was placed on the manufacturing, technology and service industries. The exclusion was attributed to challenges in the sector such as a decline in jobs, obstacles to start-ups, and difficult market requirements (Alsos *et al.*, 2011). As a result, farming was not properly perceived as being a business or entrepreneurial activity. However, changing conditions in the agriculture sector, such as an increase in consumer demands and stricter agricultural policies,

are leading to on-farm entrepreneurship (De Lauwere, 2005). Moreover, smallholder farmers and extension organisations acknowledge that farm profitability depends on smallholders becoming more entrepreneurial in running their farms. The question that still remains – is smallholder farming operated as a business and do these farmers make decisions with a business mindset?

The most important question to be raised is whether the definitions of entrepreneurship highlighted in Section 2.2.3 can also be applied to smallholder farming. Generally, defining farm entrepreneurs requires the recognition of the multifaceted nature of their farming activity, as they do not function in similar business activities (McElwee, 2008). Recently, several studies (Sinyolo *et al.*, 2017a; Chipfupa and Wale, 2018b; Phakathi and Wale, 2018) have been conducted on entrepreneurship in the context of smallholder farming. Most of these studies have introduced positive psychological capital endowment in defining the concept of entrepreneurship in smallholder farming, intending to capture heterogeneity among farmers. Chipfupa and Wale (2018b) have argued that positive PsyCap should be at the core of defining and characterising entrepreneurship in smallholder agriculture, and that any study of on-farm entrepreneurship should account for the heterogeneity existing among smallholder farmers.

As noted above, psychological capital is an important characteristic of an entrepreneur (Shane and Venkataraman, 2000). The willingness and ability to take advantage of entrepreneurship opportunities, notwithstanding the prevailing constraints, depends on an individual's positive psychological capital endowment (Chipfupa, 2017). Smallholder farmers with high positive PsyCap endowment put efforts into addressing challenges related to production, productivity, and marketing (Phakathi and Wale, 2018). This is important in the South Africa context, given that the government's priority is addressing youth unemployment through smallholder agriculture. The smallholder farming sector is faced with several challenges (e.g. limited access to assets, rain-fed variability, and climate change), which makes entrepreneurship development in the sector a challenge. Therefore, the sector requires youth who are endowed with positive psychological capital, especially confidence, because of the stereotype attached to agriculture.

Risk-taking is one of the most vital characteristics of an entrepreneur highlighted in most definitions of entrepreneurship above (Schumpeter, 1934; EC, 2003; Mathivha, 2012). However, much of the literature on agricultural development economics has consistently shown that smallholder farmers are risk-averse, i.e. taking risks and trying new technologies/practices for smallholder farmers is like gambling with their livelihoods. Most of

the sampled farmers were producing traditional crops such as maize, cabbages, green beans, tomatoes, and spinach. Very few of them are engaged in high-value crops and markets.

The reality for these farmers is that their attention is still on preserving their traditional way of life (Kumar, 2015). Therefore, for farmers to be entrepreneurial, they need to change the way in which they run their farming, moving away from traditional practices to trying new technologies. Potential entrepreneurs must learn to embrace change because opportunity rarely exists in an environment where change is not acknowledged (Allen, 2009). If young farmers are willing and able to embrace change, this would have a potential to attract the majority of youth into farming. There is a multitude of factors affecting entrepreneurship development in agriculture (Alsos *et al.*, 2003). The external factors that affect entrepreneurship development among smallholder farmers include weather, soil, and the location of the farm (De Lauwere, 2005). In addition, sustainable livelihood assets and psychological capital play an important role in entrepreneurial development. According to McElwee (2008), the barriers for farmers becoming entrepreneurial are greater than those encountered in other sectors are. Farming is not a homogeneous sector; farmers operate in a constrained, regulated and complex environment, which acts as a barrier to entrepreneurial activity (McElwee, 2006). The institutional environment that farmers operate in does not provide an incentive for them to realise their entrepreneurial capability. It imposes limitations in their problem-solving ability (Alsos *et al.*, 2003). According to Juma and Spielman (2014), entrepreneurs need to be in an enabling policy environment. Owing to their heterogeneity, there is a need for contextually differentiated policy initiatives to be developed that are directed towards increasing on-farm entrepreneurial activities (Alsos *et al.*, 2003; Chipfupa and Wale, 2018b).

The study conducted by Chipfupa and Wale (2018b) identifies the two requirements for entrepreneurship development in smallholders. The first is a greater understanding of the farmers. The second is an understanding of the connections between farming practices and the level of entrepreneurial activity relative to the challenges faced by each farmer. As highlighted above, the entrepreneurship process involves the identification, creation and exploitation of opportunities (Alsos *et al.*, 2011). This is also influenced by individual attitude and optimism (Shane and Venkataraman, 2000), as well as self-efficacy (Chen *et al.*, 1998), which are facets of psychological endowment.

2.2.5 Sources of livelihood strategies for the rural youth

A livelihood is comprised of the capabilities, assets, and activities required for deriving a means of living (DFID, 1999). In Sub-Saharan Africa, smallholder farming is the most important livelihood strategy in the rural areas of the region. In addition, migration is also a common livelihood strategy for the majority of rural households (Deotti and Estruch, 2016). Rural youth are more likely to migrate because they consider agriculture to be unattractive, unprofitable, and hard work. As a result, they are less inclined to take up farming as an employment option, and they are more interested in informal sector employment and modern urban lifestyles (Leavy and Hossain, 2014).

In South Africa, the majority of the rural youth depend on their parents for a living because they have limited opportunities to earn a livelihood (Mokgohloa, 2006). The majority of youth depend on the social grant; 4% of them receive social grants directly, whereas 45% depend on grants received by their parents, grandparents and other beneficiaries in their respective households (SALDRU, 2014).

Rural livelihoods in South Africa have long been characterised by multiple activities that are interlinked with on-farm and off-farm livelihood sources (Neves and Du Toit, 2013). Smallholder farming mainly takes place in gardens, demarcated fields, or on open rangelands. It is mainly for the production of staple foods for the household's own consumption (Lahiff and Cousins, 2005). Another source of livelihoods among rural poor in South Africa is derived from income generated from the sale of livestock and other natural resources on a seasonal basis (Andrew *et al.*, 2003). Other sources include off-farm sources, such as wages from part/permanent employment, remittances from migrants (which is mainly associated with urban opportunities), and income received from informal economic activities (Andrew *et al.*, 2003).

2.2.6 Trends in youth unemployment

Youth unemployment is a critical issue, especially in rural areas of developing countries where the majority of people depend on rain-fed agriculture as a source of income, food and employment. It is very difficult for the majority of rural youth to obtain decent work in many countries of the developing and emerging economies, particularly in Africa and South-Central Asia (Filmer and Fox, 2014). Nearly 88% of the world's youth live in developing countries, with 2.5 billion of rain-fed land, and 80% of this land is in Sub-Saharan Africa and Latin

America (Alexandratos, 1995). Globally, young people account for approximately 24% of the working poor, and this is more prevalent in Africa, where over 70% of youth manage to survive on US\$2 per day or less (FAO, 2017).

However, the issue of rural youth unemployment is rising and there are few policies and investments that focus on rural youth employment opportunities in the agriculture and agribusiness sectors. In Sub-Saharan Africa, youth unemployment is one of the most pressing issues and it is high priority for policy makers (Filmer and Fox, 2014; Betcherman and Khan, 2015). The focus is to create youth employment in the agricultural sector, which is seen to present opportunities for young Africans (Filmer and Fox, 2014).

2.2.7 The global perspective

Youth unemployment is not a situation unique to South Africa, but is a global and regional challenge. In both developed and developing countries, there is a pattern of unemployment, with the youth having lower access to the labour market, relative to adults. The reduction of youth unemployment is a major concern for most international organisations, such as the Food and Agriculture Organization of the United Nations (FAO), the World Bank, and the International Labour Organization (ILO). The United Nations 2030 agenda for sustainable development has highlighted youth unemployment as being a major concern. It planned to develop a global strategy for youth employment creation and implement a global pact for ILO, which had the aim of reducing unemployment by 2020 (United Nations 2015b).

There are certain initiatives that are being taken by the aforementioned agencies and institutions to promote youth employment in the world. The Youth Employment Network (YEN), a partnership between the UN, the World Bank and the ILO, is a global initiative responsible for producing policies for youth employment, entrepreneurship and other opportunities (International Labour Organisation, 2011b). The FAO has also placed the youth as key area of focus in its strategic plans. One of the FAO's objective is to improve the lives of rural populations, as well as youth and agricultural producers, through expanding young people's capabilities, knowledge, and skills (through education and training), together with rural employment creation (International Fund for Agricultural Development, 2014).

The youth unemployment challenge became more visible following the global economic crisis (Lam *et al.*, 2007; Bezu and Holden, 2014). According to the International Labour Organisation (2011a), 'youth unemployment rate rose from 11.8% to 12.7% between 2008 and 2009,

marking the largest annual increase over the 20 years of available global estimates and reversing the pre-crisis trend of declining youth unemployment rates since 2002'. As a result, in 2010 there were about 75.1 million unemployed young people, 4.6 million than in 2007 before the crisis, who were struggling to find work. Young people are more sensitive to changes in economic conditions than adults are, and their unemployment rates increase during recessions and recover during booms (O'higgins, 1997; Breen, 2005). During a recession, there is a decrease in economic activities and it is cheaper for firms to fire youth employees. Another important reason, given by De Lange *et al.* (2014), is that the youth are considered as outsiders in the labour market.

In 2013, the global youth unemployment rate was estimated at 12.7%, with 73 million youth projected to have been unemployed (International Labour Organisation, 2013). Regardless of the development status in most countries, the youth have lower access to employment than adults do (Mlatsheni and Rospabé, 2002). In addition, the youth face greater challenges in the labour market, such as long working hours in informal sectors, and working in low-paid, low-skilled and part time jobs without any career development (International Labour Organisation, 2011b). The global youth unemployment rate was expected to reach 13.1% in 2016, which represents an increase of 0.2% as compared with 12.9% in 2015 (International Labour Organisation, 2016). The reason behind the increase was the rise in the unemployment rates for Latin America and the Caribbean, Central and Western Asia and South-Eastern Asia and the Pacific.

2.2.8 The Sub-Saharan Africa context

Youth unemployment in Sub-Saharan Africa is increasing rapidly. This is a result of increasing youth population in the region, which is continuing to rise and adding pressure to youth labour market (World Bank, 2007). In 2008, the Sub-Saharan region comprised youth numbering more than 36% of the total working age population (aged 15 years and above), making this the most numerous youth population in the world (International Labour Organisation, 2009). In addition, the youth in the region are the most disadvantaged population, experiencing difficulty in entering the world of work (De Lange *et al.*, 2014), with the majority of young people still living in rural areas and small towns (World Bank, 2007; Filmer and Fox, 2014).

The problems experienced in the Sub-Saharan African labour market are the poor quality of employment available and high population growth, especially for youth entering the labour force, as well as lack of opportunities for youth (International Labour Organisation 2017b).

The low levels of education attained and skill gaps have been found to be limiting employment opportunities for young people (Betcherman and Khan, 2015). In addition, Filmer and Fox (2014) have pointed out that only about 60% of the youth between the ages of 15 and 24 years have gone above primary schooling and only about 10% have completed secondary schooling.

Agriculture presents itself as a sector of opportunity for the youth and it is the main source of income for the rural population (Moyo *et al.*, 2015). However, youth have few opportunities in agriculture, as they often do not have access to land (Geest, 2010). The Comprehensive Africa Agriculture Development Programme (CAADP) is in place and it is expected to transform the agriculture sector (New Partnership for Africa's Development, 2003). The CAADP offers an opportunity for young people in Africa to participate and play a central role in improving market access by offering agricultural market information to smallholders to enable them to easily access information about export market opportunities (Rutta, 2012).

2.2.9 Rural youth unemployment in South Africa

South Africa is one of the countries with a problem of high youth unemployment rate in the Sub-Saharan African region, with more than half of the youth being unemployed in 2016 (International Labour Organisation, 2016). Furthermore, youth unemployment in the country is ten times higher than in its neighbouring countries such as Mozambique (Geest, 2010). In South Africa, youth unemployment increased from 32.7% to 36% between 2008 and 2014, and since then, youth unemployment has been higher than adult unemployment by more than 20% (StatsSA, 2014). StatsSA reported that South Africa's unemployment rate in 2007 was 25.5%, and 10 years later, it was at 36.6%, with 67.4% of people under 25 years of age being unemployed (Statistics South Africa, 2017). This rate has increased over the years, regardless of the interventions by government made through different policies and programmes. According to Moleke (2003b), the pattern shown by research in Organisation for Economic Co-operation and Development (OECD) countries, to the effect that unemployment falls when the level of education improves, is not happening in South Africa. The problem of unemployment is also severe among graduates (Altman, 2007). According to StatsSA (2018c), in the first quarter of 2018, the unemployment rates among graduates aged 15-24 and 25-34 were at 33.5% and 10%, respectively. This means that a lack of education and a lack of skills as an explanation for the prominent level of unemployment are not relevant in the South African context, as more and more graduates remain unemployed. A lack of opportunities and

a lack of exposure to relevant information might be among the reasons for unemployment, especially among the rural graduates.

In South Africa, youth unemployment as a national challenge is not evenly spread. There are population behaviours and demographic traits that seem to render some groups more vulnerable than others are (Rees, 1986; O'Higgins, 2001a; Ryan 2001; Du Toit, 2003a). Those traits include gender, education, location and ethnic determinants. South Africa seems to be a practical example of the latter. Because of various pre-democracy laws, the majority ethnic groups seem to be more vulnerable than the minority groups are. Africans in rural areas suffer the most from unemployment, as compared with whites, at rates 70% and 12%, respectively, with the reason being that whites have access to quality education, greater opportunities, and they come from rich family backgrounds (Mlatsheni and Rospabé, 2002). Furthermore, more numbers of young females are unemployed, relative to young males. Youth in rural areas are more vulnerable to unemployment because they lack labour market information; some of them are inexperienced with the processes involved in job applications and they lack access to information networks. The majority of the youth in the country have given up looking for work, particularly in the rural areas.

There has been a debate in South Africa on whether unemployment is structural or not (Standing *et al.*, 1996). According to Simkins and Clarke (1978) and Chadha (1995), unemployment in the South African market is cyclical and structural, although the approximations suggested that it is mostly structural and not cyclical. Structural unemployment exists when the economy is unable to absorb the potential labour force, even at its peak. Furthermore, Fields (2000) and Cloete (2015) have pointed out that the unemployment in South African is structural, with a reason that employers demand certain types of high-level skills, which the majority do not have.

To address this rural development problem in South Africa, Fields (2000) suggested that the most important strategy is finding new markets in which producers can become competitive in the world market. Moreover, government intervention in the private sector should be prioritised. For example, in East Asia, producers supply goods that are demanded throughout the whole world, and for this reason, they were able to maintain unemployment rates of 2-4% throughout the decade of the 1970s.

The main priority for South Africa is to create employment for rural youth, and this is being endeavoured through several programmes. One such comprehensive programme is the

National Rural Youth Service Corps (Department of Rural Development and Land Reform, 2017). The programme is supported by the Department of Rural Development and Land Reform with the aim of providing jobs for rural youth, especially in the agriculture sector. The then Department of Agriculture, Forestry and Fisheries played an important role in addressing youth unemployment through the Land Care programme, which has two dimensions: “In-school Junior Care” and “Out-of-school Junior Care” (Carter, 2017). The focus of “In-school Junior Care” is placed on supporting schools through implementing gardens and nurseries, whereas “Out-of-school Junior Care” focuses primarily on unemployed matriculated and agricultural graduates (DAFF, 2015).

2.3 Factors affecting youth unemployment

Certain characteristics of the labour market affect the rate at which labour can be absorbed into the labour market (Ryan, 2001; Du Toit, 2003a). These characteristics include the aggregate demand, which is the total number of labourers demanded by potential employers in the labour market, relative to the aggregate labour supply. Labour wages, the size of the labour force, and lack of skills are the other labour market characteristics that affect unemployment. O'Higgins (2001a) has pointed out that labour demand has higher consequences on unemployment, globally. In the context of South Africa, it is not so much about lack of skills, but rather the mismatch between the skills sets of university graduates and what is demanded by the potential employers. As a result, skilled and educated young people remain unemployed. There is low absorption of youth in the labour market, as compared with adults (StatsSA, 2017), which is mostly attributable to inappropriate educational qualifications among graduates (Burns *et al.*, 2010; National Treasury, 2011).

It is also attributable to the shifting of the South African economy from low-skilled to high-skilled labour (Banerjee *et al.*, 2008; Burns *et al.*, 2010). Consequently, it becomes difficult for the majority of the youth without the necessary skills to enter the labour market (Wilkinson *et al.*, 2017). Other factors associated with youth unemployment include a lack of work experience, limited labour market information (Du Toit, 2003) and geographical isolation (Mlatsheni and Ranchhod, 2017).

Generally, unemployment can be structural, cyclical or frictional. According to Cloete (2015), “structural unemployment implies the overall inability of an economy to provide employment for the total (or potential) labour force, even at the peak of its economic cycle”. According to the International Labour Organisation (2011b), this is caused by technological change. It

represents a mismatch between the geographical, occupational and industrial composition of jobs looking for people on the one hand, and people looking for jobs on the other (Turvey, 1977).

Cyclical unemployment arises during recessionary periods, when there is a decline in labour demand. The International Labour Organisation (2011b) defined cyclical unemployment as the frequent unemployment that occurs at particular phases of the business cycle. This unemployment is caused by a reduction of aggregate demand for goods and services, and is also connected with a fall in the number of vacancies (Barker, 2007).

Closely related is the concept of disguised unemployment, which is also important in the context of agriculture. Lewis (1954) and Berry and Soligo (1968) defined disguised unemployment as the situation in which the wage rate is above the marginal productivity of labour. Many studies have shown the occurrence of disguised unemployment in agriculture because of surplus labour, with a zero or low marginal productivity in the sector (Lewis, 1954; Takagi, 1978; Ike, 1982). The following section discusses some common factors affecting youth unemployment.

2.3.1 Aggregate Demand

Aggregate demand is referred to as the total value of goods and services demanded or purchased in a particular economy (International Labour Organisation, 2011b). It affects youth unemployment the same way as it affects the overall level of unemployment; i.e. a reduction in total demand in a given economy will lead to a reduction in labour demand in the market (O'Higgins, 1997).

However, youth unemployment responds more to changes in aggregate demand than adult unemployment does. Furthermore, O'Higgins (1997) has pointed out that young people are less likely to be subject to employment protection policies. Mostly, such policies require a qualifying period. Typically, compensation for dismissal increases with the length of the term of employment. Thus, more recently employed people will be cheaper to fire, especially during a recession when there is a decrease in economic activities (Passarides, 1986; O'Higgins, 1997).

2.3.2 Minimum Wage

The higher the set wages of the youth are, as compared with adults, the greater will be the numbers of adults employed, as opposed to youth (O'Higgins, 1997). This argument relies on the assumption that adults are substitutes for youth, which is not always the case (O'Higgins, 1997). Neumark and Wascher (1992) found that a 10% increase in the minimum wage leads to 1% to 2% decrease in teenager employment, and a 1.5% to 2% decrease in adult employment. The results of a study from OECD countries (1975-1997) were generally consistent with the view that minimum wages cause employment losses among the youth (Neumark and Wascher, 1999). Accordingly, countries with higher levels of minimum wages generally have lower employment rates. A 10% increase in a minimum wage leads to 3.2% to 25% decrease in youth employment, depending on the model employed (Kalenkoski and Lacombe, 2008).

2.3.3 Education

Weak education systems, which do not teach specific skills that ensure a link between employer and job seeker, contribute to high levels of youth unemployment. Using data from OECD countries, Breen (2005) measured the degree to which educational systems influence the hiring of job seekers by employers. The study found that a country that has zero enrolment in education has an estimated youth unemployment that is three times greater than that of adults.

According to Standing *et al.* (1996), education has an effect on employment through increasing wages and creating higher chances of entry and staying in the labour force. Furthermore, changes in educational participation influence the size of the youth labour market, and also youth unemployment rates (Bell and Blanchflower, 2011). This also corresponds with findings of Freeman and Wise (1982) who found that academic performance in high school is positively related to both employment after graduation and entry into labour force. Young people who drop out of high school are less likely to be employed, as compared with those who completed their high school education (Freeman and Wise, 1982). Education attainment, whether primary, secondary or tertiary, has a strong influence in the chances of youth finding employment in Kenya (Escudero and Mourelo, 2014).

2.3.4 Failure of the rural economy to absorb the growing youth

The size of the younger population is found to be a major contributor to youth unemployment (O'Higgins, 1997; Du Toit, 2013). Since 1960, the global population has been changing, and

while some developed countries face the problem of an elderly population, most developing countries experience working populations that are increasing (Ahmad and Azim, 2010). The United Nations (2015a) indicated that, in 2015, there were 1.2 billion youth and that the greatest challenge facing the globe was high unemployment. Moreover, it was also projected that the number of youth would increase by 7% to nearly 1.3 billion by 2030 (United Nations, 2015a). According to O'Higgins (1997), an increase in population leads to a labour force participation rate that results in an increase in unemployment. According to Korenman and Neumark (1997), large youth cohorts lead to increases in the youth unemployment rate. This is by and large a failure of the economy (rural and urban) to keep pace with the growth in the population of the youth. On the other hand, Shimer (2001) found that a 1% increase in the youth share of a population decreases unemployment rates of youth by more than 1%. While the issues could be related to both the supply and demand sides of the labour market, the bottom line is that the economy has not been able to absorb the youth.

The capacity of a country's ability to absorb people into the labour force, together with its economic growth, are the main contributors to unemployment (Du Toit, 2003b). When a country's economic activities slow down, the number of people without jobs increases and the youth suffer the consequences. This is because, during a recession, employers usually discontinue recruitment and this has a greater impact on the youth. When companies downsize, they usually lay-off the youth, rather than adults, because they are believed to be less experienced than the adults are (Mlatsheni and Rospabe, 2002).

2.4 The rural youth and agriculture

Not only is the agriculture sector responsible for producing sufficient food for the country, it also has a significant role to play in providing employment opportunities throughout the value chains, creating primary and secondary employment opportunities. Young people are forced from the rural to urban areas because of a lack of incentives and profitable opportunities, and an unattractive rural environment (Khué *et al.*, 2016). Ranchhod (2017) has also noted that there was a decrease in agricultural employment after the implementation of South Africa's minimum wage policy in 2003. The proportion of the youth actively participating in the agricultural sector is low, compared with adults, but in terms of actual or absolute numbers, there are more young people participating in the agricultural sector, when compared with the older people (Swarts and Aliber, 2013). The youth of today are not interested in the rural agricultural sector as a means of employment, even though very high unemployment exists

among the youth. This is the case not only in South Africa, but also in the rest of the world. What acts as a hurdle is the culture of youthful aspiration to move away from the farms (Jayne *et al.*, 2010; Maepa *et al.*, 2014).

The agricultural sector is one of the priority areas that the South African government has been targeting for employing youth to address the problem of youth unemployment in rural areas. Smallholder agriculture, in particular, is widely recognised as being one of the most promising sectors for rural youth employment (Bennell, 2010). The creation of new businesses in the agriculture sector could present an important and feasible opportunity for rural youth to make a living (IYF, 2014), resulting in sustainable livelihoods.

Youth involvement in agricultural entrepreneurial activities would not only lighten the burden of government dependence, but would also help to alleviate poverty, while sustaining food security, especially in rural areas. This would also bring growth to the economy at large through job creation and improvement in the standard of living. Given that youth unemployment is relatively greater in remote areas, and keeping in mind the common characterisations of rural youth that include relatively low levels of formal education, with limited work experience (Lewis, 2001), agriculture seems to be a relevant sector for them to partake in and initiate their entrepreneurial engagements in. Furthermore, the majority of the rural youth have some sort of experience in agricultural practices, either in the form of practical skills or knowledge, because they grew up under parents who practise agriculture (Adekunle *et al.*, 2009; Abdullah *et al.*, 2012). The potential livelihood strategy for youth that could be derived from the sector, given their exposure, is worth giving attention to.

To integrate the rural youth into profitable value chains, ways must be found to enable rain-fed farming practices that are more productive in order to improve the economic performance of the sector. This, in turn, requires that an assessment be made of the goals and aspirations of rural youth (both those currently in farming and those who have potential to farm and/or be in other businesses). To this end, the rest of this section will present a partial literature review of youth interest in agriculture, entrepreneurship in the agricultural sector, agriculture, migration, youth participation in rain-fed primary agriculture, and attracting youth to small businesses in the agricultural value chain.

2.4.1 Youth interest (or lack thereof) in agriculture

Many studies in the past (Kritzinger, 2002; Mathivha, 2012; Swarts and Aliber, 2013) have highlighted the point that most rural youth in South Africa are not interested in agriculture, especially smallholder farming. Many studies from elsewhere (Aphunu and Atoma, 2010; Bahaman *et al.*, 2010; Abdullah *et al.*, 2012; Bezu and Holden, 2014; Adesina and Favour, 2016) that were conducted on youth participation in primary agriculture confirm such a very limited interest. Aphunu and Atoma (2010) highlighted the point that resolving the well-known constraints hindering engagement in primary agriculture (such as financial access) will not guarantee youth involvement in the sector, as some of the youth have expressed an attitude of dislike towards agriculture. There is unarguable evidence in the literature that highlights the point that youth do not have a preference for engaging in agricultural activities, especially in rain-fed primary agriculture.

What also serves as a hurdle is the culture of youthful aspiration to move away from the farms (Jayne *et al.*, 2010; Maepa *et al.*, 2014). Youth perceive agriculture as being a low status, dirty and unattractive job (Adekunle *et al.*, 2009; Ahaibwe *et al.*, 2013). To them, agriculture is a part-time job and not a profession or a livelihood strategy (Abdullah *et al.*, 2012). The youth prefer non-agricultural careers because they perceive them as being more stable, providing relatively more income, and requiring less physical labour (White, 2012; Swarts and Aliber, 2013). South Africa is not an exception (Mathivha, 2012). The youth who shun the agriculture sector exacerbate the problem of rural youth unemployment in South Africa. In addition, there are currently low levels of agricultural activity in rural areas, which are more likely to drop further. Furthermore, the perception that engaging in the agricultural sector is only achievable through primary agriculture is a limiting factor to youth engagement in the sector. This perception might be one of the reasons why there are high rates of migration of youth from rural areas to urban areas in search of “better” job opportunities (pull factors).

Several studies in Africa, including South Africa, have been conducted on the factors affecting youth participation in agriculture (Nnadi and Akwiwu, 2008; Gichimu and Njeru, 2014; Cheteni, 2016). In most of these studies, greater attention has been placed on factors such as access to land, training, and credits, as well as socio-economic characteristics (education level, age, marital status, and income). These and other studies have not accounted for behavioural and mindset factors, mainly perceptions and psychological capital. Capturing behavioural

variables (such perceptions and mindsets) will enhance the understanding of the behaviour of youth.

As noted earlier, the youth have a negative perception of farming. This perception, together with their need for social validation, drives them away from primary agriculture, thus forgoing the potential economic benefits that could be derived from their involvement in agriculture (Nwaogwugwu and Obele, 2017). It is, however, worth noting that the youth are not homogenous in terms of their perceptions, attitudes and mindsets.

Although the available statistics indicate that unemployment is highest among the rural youth in South Africa, they have little interest in farming or in starting their own agribusinesses, as they generally perceive the sector as a ‘back-breaking and non-status’ occupation (Swarts and Aliber, 2013). Farming, an economic activity perceived to be ‘not sexy’ by the youth, is taken to be an older person’s occupation that does not bring quick returns. This is despite the fact that there is under-utilised potential for the productive use of rain-fed land for food production and beneficiation in the food value chain.

According to Leavy and Hossain (2014), youth have typically witnessed their parents struggling to earn a living through farming. Having seen no change in the lives of their parents and grandparents, who have been smallholder farmers for decades, the youth might have developed a negative attitude towards agriculture in general, and smallholder farming in particular. In addition, there is currently a low level of agricultural activities in rural areas, which is more likely to drop further. Smallholder farming is often associated with low returns. Furthermore, the perception that engaging in the agricultural sector is only achievable through primary agriculture is a limiting factor. Low profitability, poor security of land tenure, and high risks are just some of the reasons why Africa’s youth are leaving rural areas (Wordpress, 2014).

In South Africa, youth involvement in agriculture has been the main focus area of policy and strategic documents such as the National Development Plan (Sinyolo and Mudhara, 2018). However, young people are not responding positively to the call to participate in smallholder farming (Kritzinger, 2002; Mathivha, 2012; and Swarts & Aliber, 2013).

Qwabe (2018) has stated that the lack of media publicity regarding successful, wealthy farmers has led the youth to believe that agriculture does not have the ability to give them the luxurious lifestyles they wish for. Elders engaged in smallholder farming are not transparent about the profitability of their farms (Qwabe, 2018).

According to Leavy and Hossain (2014), the ambitions and perceptions of young people about small-scale farming are shaped by their observations of people engaged in the formal sector and of the lifestyles of people in the urban areas. Age, marital status, education level, dependency ratio, parents' occupation, and farm income influence youth participation in agriculture (Nnadi and Akwiwu, 2008). On the other hand, Cheteni (2016) also found that access to resources and youth programmes had a significant and positive impact on the participation of South African youth in farming. Adigun *et al.* (2017) also found that age, knowledge in agriculture, and credit are significant determinants of youth participation in farming. This shows the multidimensionality of the challenges to engaging the youth in agriculture.

According to Leavy and Smith (2010), another possible explanation for the youth moving away from agriculture is found in the fast-evolving information and communication technologies that expose young people to the rural-urban divide. Young people aspire to achieving a standard of living not typically associated with agricultural livelihoods.

Discussions held with agricultural extension officers have also confirmed that most of the youth are not interested in farming because they are not patient and want quick returns. The experiences with past youth-led programmes have shown such perceptions. Far fewer black South Africans wish to farm than is commonly assumed (Centre for Development and Enterprise, 2005). In South Africa, it has been reported that only 2% of the youth are engaged in new job opportunities in the agricultural sector, against a target of 30% set for all African countries (AGRA, 2018). This shows that much still needs to be done to enhance the role played by the sector in creating jobs and enhancing the livelihoods of young people. The low participation of rural youth in farming is a major rural development paradox (National Development Plan Vision 2030).

Persistent droughts and inconsistent and unreliable rainfall are inherent challenges to rain-fed farming, making it unreliable and non-profitable. The other challenges include land access, lack of access to markets and information, financial constraints and low returns on investment (Dorward *et al.*, 1998; Chikazunga *et al.*, 2007; Barrett *et al.*, 2010; Salami *et al.*, 2010). The challenges threaten the succession planning in the sector, especially given the aging smallholder farming population common across the African continent (Leavy and Smith, 2010; IFAD and FAO, 2014; LDA, 2005).

2.4.2 The agricultural sector and entrepreneurship

The entrepreneurial function of farmers was identified early in the 19th century by Wilcox (1932). Although the entrepreneurial function of a farmer was identified long ago, it is only in recent years that the topic of ‘entrepreneurship in agriculture’ or the ‘farmer as an entrepreneur’ has received explicit attention. This was confirmed by Knudson *et al.* (2004) who stated that entrepreneurship had received very little attention in the field of agricultural economics at the time of their study. The topic of entrepreneurship has become a topic of investigation in the agricultural sector in recent years (see Vesala *et al.*, 2007; McElwee, 2008). In South Africa, the WRC has recognised the importance of the problems and has focused research in the strategic area of water utilisation in agriculture for reducing poverty and unemployment, and increasing the profitability of farming systems (Backeberg and Sanewe, 2013). It has initiated and funded various research and development projects on the advancement of entrepreneurial development in the agricultural sector. The research focuses on, among others, the empowerment of woman and entrepreneurial development of youth to participate in agricultural value chains (see for example Jordaan and Grove, 2012; Muchara *et al.* 2015; Denison *et al.*, 2016; Wale and Chipfupa, 2018).

Traditionally, entrepreneurship research has been primarily concerned with the start-up of new firms or existing firm levels (Schendel, 1990; Cooper *et al.*, 2000). Empirical research has focused mainly on the innovative activity contributed by relatively large firms. The smaller firms have received relatively less attention. Most of the suggestions that have been made about the sources (or lack of thereof) regarding innovative activity have been based on observations of the behaviour of larger firms (Acs and Audretsch, 1988). Within the field of agriculture, little is known about on-farm entrepreneurship in smallholder agriculture from a business perspective. Most of the empirical findings are relevant, if at all, to commercial agriculture. Smallholder and subsistence agriculture remains on the sidelines as far as research and development on entrepreneurship is concerned. Entrepreneurship is poorly contextualised in agriculture, especially for smallholder agriculture. There is very little knowledge that is relevant and applicable to smallholder agriculture. To contribute to clearing this knowledge gap, there is a need to evaluate rural youth entrepreneurial spirit and farm and other business management requirements in the context of rain-fed agriculture. This project will empirically examine this issue, employing data from two provinces: KwaZulu-Natal and Free State.

Nevertheless, research conducted mostly in western countries offers some insightful discussions around entrepreneurship and farming. Given the confusion and inconsistencies found in the literature on general entrepreneurship theory, one could expect that the same situation would be applicable to farm entrepreneurship. The concept of entrepreneurship in farming, however, is very much complex, as is evident from the literature where there are opposing views of farmers as entrepreneurs. According to Vesala *et al.* (2007), some researchers connect entrepreneurship with profit maximisation through the enlargement of scale in primary production, while others connect entrepreneurship solely to value-adding activities and on-farm business diversification.

McElwee (2008) asserts that a complex relationship exists between the farm and the farming business, and that one needs to split the identities of the farm as the business and the farmer. McElwee (2008) discusses four farmer typologies, which include the ‘farmer as entrepreneur’. In this typology, McElwee (2008) explains that family farms and tenant farmers can be expected to be entrepreneurial, as ‘they are able to use the farm’s resources and features and characteristics in flexible and innovative ways’. Furthermore, as previously mentioned, the farmers identify non-farming opportunities or high-value agriculture and food production. Baggen (2017) mentions that the identification of opportunities is the initial phase of entrepreneurship. Accordingly, opportunity identification “refers to the generation and evaluation of business ideas that can be further explored and turned into potential opportunities”. Entrepreneurial individuals are able to take advantage of these opportunities because of their access to specific resources and by using their skills and expertise.

Changes in international and national policies call for an increase in the entrepreneurial orientation of farmers (Alsos *et al.*, 2003). The changing environment for agri-food systems, in response to the global forces of globalisation and liberalisation (Louw *et al.*, 2005), means that ‘all members of the food supply chain must make more strategic choices to realign their businesses and better serve consumer needs’ (Boehlje (1999), as cited by Louw *et al.* (2005). Smallholder farmers who wish to participate in commercial agri-food chains not only have to manage production, but also marketing, finances, and human resources. Farmers also have a social responsibility inasmuch as they should plan for the succession of their farming enterprises and they have to decide on the optimal business structure that would allow them to reach their goals (Ontario Soil and Crop Improvement Association, 2009). Smallholder farmers thus require a wide variety of management skills to successfully operate in commercial agri-food chains.

Entrepreneurial skills have already been proven to have a positive impact on the level of technical efficiency of smallholder irrigation farmers within South Africa (Jordaan, 2012), while entrepreneurial competencies have a positive influence on the operating efficiency, as found in the study by Nieuwoudt *et al.* (2017). Entrepreneurial skills of the farmers are thus expected to influence farmers' abilities to enhance the performance of their farming businesses and consequently increase food security. The entrepreneurial and management abilities of the youth that would enable them to prosper in their businesses need to be considered in development paths of small-scale farmers. The performance of a business is not only influenced by the competence of the individual, but by other factors directly associated with the individual's goals, self-efficacy, passion and vision (Lans *et al.*, 2014).

Given that most entrepreneurship programmes in South Africa target the youth in both rural and urban areas, there is a need to provide evidence of the extent to which rural development initiatives in rain-fed agriculture have influenced the participation by rural youth in farming. Empirical evidence on how the youth could be attracted to farming remains scant, despite the importance of farming in shaping the country's future policies that are to be aimed at creating a sustainable rural economy and, at the same time, addressing South Africa's socio-economic challenges linked to rural-urban migration.

2.4.3 Agriculture and rural youth employment

Agriculture plays a significant role in the employment of individuals in rural areas, whether directly or indirectly, and the South African agricultural sector has been identified to develop almost one million new employment opportunities by 2030, according to the South African NDP (National Planning Commission, 2012). The sector is one of those with the capacity to employ more numbers of people with little or no skills, and even no experience. Globally, it is one of the main employers of less-skilled people (FAO, 2014). With the introduction of recent policies and laws in South Africa, such as the minimum wage policy, the agricultural sector's employment rate has relatively decreased, as commercial farmers are adopting labour-saving technology. Farmers are opting to become more technology intensive than labour intensive in order to decrease the costs of production, which are rising through the increasing of minimum wages. Nevertheless, the youth can still explore entrepreneurial opportunities and create employment within the sector.

The sustainability of livelihoods and incomes could be ensured through participating in agriculture, and independently as an entrepreneur within the agricultural sector. Youth in rural

areas, especially those with relatively low education levels and with no work experience, could develop themselves and sustain their livelihoods through involvement in agriculture (FAO, 2014). Although studies suggest that some of the youth find agricultural opportunities and programmes unattractive, there are various opportunities within the sector that could help to decrease youth unemployment and dependence on the government.

A study conducted by the FAO (2014) identifies challenges faced by young people in agriculture, including lack of information, limited access to land, inadequate access to financial services, difficulties in accessing green jobs, limited access to markets, and limited involvement in policy dialogue. These challenges were identified by youth already involved in agriculture.

Insufficient access to knowledge, information and education is identified as the first and main challenge faced by youth. Insufficient education (formal or informal) limits the productivity of these young people within the sector. Informal education is gained through experience and/or by asking older and more experienced farmers. The lack of access to knowledge and information is a challenge, mostly for youth in rural areas. Such constraints hinder the youth from developing and exploring entrepreneurial ventures and ways of acquiring new skills (FAO, 2014).

Limited access to land is reported as one of the challenges faced by the youth in the case studies conducted by FAO. Similarly, access to land in South Africa is limited, as most of the land in remote areas belongs to the chiefs, and rights to use land are claimable by adults. De Janvry *et al.* (2001) state that the uncertainty of the tenure or the duration to use the land by the people in rural areas affects their investment in the land. Furthermore, the lack of title deeds for the rural residents and youth makes it hard to obtain loans from banks. According to FAO (2014), there is a need for loans to be made available to youth so that they would be able to purchase land.

The inability of the youth to access financial services is identified to be the third challenge that youth face in agriculture. Most banks are reluctant to provide financial assistance in the form of loans and / or insurance to rural youth because of their lack of collateral security and financial literacy, among other things. The promotion of financial packages specifically catering for the youth, together with mentoring and training programmes and start-up funding opportunities could help to reduce the magnitude of the challenge.

Limited market access is also identified as a challenge faced by the youth. Most smallholder farmers in remote areas of South Africa face this challenge routinely. This will deter the youth from engaging in viable and sustainable agricultural ventures (Zeller *et al.*, 1998). Moreover, profit from agricultural practice might not be realised. The international influence of supermarkets and the high standards prescribed for their value chains are also making market access for young rural farmers more difficult (FAO, 2014). The provision of training and market information to young farmers in remote areas could address the challenge and assist young farmers in identifying niche markets. When measures are taken and strategies are implemented to assist youth in overcoming these identified challenges, youth involvement in agriculture has the potential to improve (FAO, 2014).

A research study is needed to examine the challenges and opportunities in pursuing entrepreneurial development pathways in rain-fed agriculture in South Africa, linking the youth to profitable food value chains and exploring avenues for establishing small farming businesses. Such study will contribute to sustainable rural development, the empowerment of the rural youth, youth employment creation in the rural areas, and informing policy on the relevant and priority intervention areas in this sector. Knowledge-based actions in these areas would create opportunities for the unemployed rural youth to venture into entrepreneurship programmes, creating job opportunities (for themselves and others) and raising incomes.

2.4.4 Youth unemployment and migration

To analyse the influence of migration on the labour market, the concepts of international and domestic migration should be discussed. However, our interest is on domestic migration, involving the movement of individuals mostly from rural to urban areas in South Africa. The reasons behind this movement may constitute pull factors, such as employment and education and, as well as push factors, such as population pressure, land scarcity, lack of alternative livelihoods, poverty of infrastructure, and weather shocks. The pull factors might provide major incentives for youth to migrate to urban areas. Among all factors, education is found to be a strong driver of youth migration. This is because education introduces information about opportunities outside the locality where youth are situated, and raises opportunities for a better life, and therefore encourages the youth to explore new things (Bezu and Holden, 2014). Moreover, the above factors might result in not only temporary migration, but also permanent migration, which involves moving from one area to another permanently (Fauvelle-Aymar,

2014). Hall *et al.* (2015) have defined migration as a temporary or permanent movement of individuals from one place to another, in the same or another province.

In Africa, urban population growth rates are among the highest in the world, averaging about 7% yearly, with some cities having growth rates of more than 10% (Byerlee, 1974). What is often observed in South Africa is temporary labour migration (Posel, 2004). A study was conducted by Collinson *et al.* (2007) to gain an understanding of the then current urban change in South Africa after apartheid. The findings show that there was then an increase in the level of temporary migration among African men and women, unlike in the past where they used to remain at their homes. This kind of migration was found to be driven by employment opportunities available in the metropolitan areas of South Africa (Collinson *et al.*, 2007).

In examining how migration related to youth employment in the rural north-eastern area of South Africa, Collinson *et al.* (2016) found that temporary migration by the youth is a way of getting employment. In studying the migrations of rural youth, Dupuy *et al.* (2000) found that rural areas in the Atlantic Provinces in Canada were losing their youth population through migration. The reason behind this was likely to have been the difference in unemployment rates between the various areas. In the Atlantic Provinces, individuals between the ages of 15 and 29 who were not students experienced high unemployment rates, averaging 27%, as compared with 17%, 14%, 11% and 16% in Quebec, Ontario, Alberta and British Columbia, respectively. In Canada, the rate of unemployment is almost the same in rural and urban areas (22-23%); however, at national level, rural unemployment is higher than urban unemployment. Looker and Dwyer (1998) conducted a study in Victoria, Australia, and in urban and rural Canada to examine the education decisions made among youth, and found that fewer rural youth were able to access part-time jobs to help to pay for their post-secondary education.

2.4.5 Factors affecting youth participation in primary agriculture

The participation of rural youth in agriculture has received increasingly important attention in the literature, particularly in developing countries (Nnadi and Akwiwu, 2008; Gichimu and Njeru, 2014; Cheteni, 2016; Bezu and Holden, 2014). However, the current participation in agriculture among youth in the Sub-Saharan African region remains low. In South Africa, ensuring participation in agriculture has recently received policy attention for addressing unemployment in rural areas. Therefore, it is vital to gain an understanding of the factors influencing youth participation in agriculture.

According to Swarts and Aliber (2013), the “dualistic nature” of the agricultural sector and the wealth gap that exists between commercial and smallholder farmers makes smallholder agriculture less attractive. The limited participation of youth in agriculture is a global challenge, particularly in SSA (Abdullah *et al.*, 2012). This is also confirmed by Bezu and Holden (2014) for Ethiopia and Naamwintome and Bagson (2013) for Ghana. Many other studies have reached similar conclusions (Adekunle *et al.*, 2009; Aphunu and Atoma, 2010; Bahaman *et al.*, 2010; Ahaibwe *et al.*, 2013; Gichimu and Njeru, 2014; Adesina and Favour, 2016).

The future of agriculture generally relies on young people remaining in rural areas and participating in agriculture, more particularly in the dry land areas. It also depends on the adoption of agricultural entrepreneurship as a strategy to transform the sector. The creation of new businesses in the agriculture sector could present an important and feasible opportunity for rural youth to make a living from agriculture (IYF, 2014). The aspects discussed below are the key factors considered by the literature to be hindering youth involvement in primary agriculture.

Access to financial capital

This is a key constraint that has been widely acknowledged in the literature (FAO, 2014; Anyiro and Oriaku, 2011; and Gichimu and Njeru, 2014). Access to financial capital also appears to be a challenge for youth in both developed and developing countries (Chigunta, 2002). The provision of financial capital/credit to the agriculture sector is difficult, as it is often considered a high-risk sector (IFAD and FAO, 2014). Micro-finance institutions (MFIs) often require loan security options, such as land title deeds, proof of income, good credit record, and security, which most youth are unable to produce (Dalla Valle, 2012). Moreover, these institutions prefer owners of youth businesses to be mentored by experienced adults because they often think that they lack experience, discipline, and collateral/security. Furthermore, youth are regarded as riskier clients than older people are (Vargas-Lundius and Suttie, 2013).

Land access

Access to land and land rights are among the major challenges hindering youth involvement in primary agriculture (Bezu and Holden, 2014; Gichimu and Njeru, 2014). According to the FAO (2014), inheritance is still the most common form of land transfer used in most remote areas of developing countries. This system leaves other siblings, especially the females, without access to land (Gichimu and Njeru, 2014). In most rural areas of South Africa, the land is under the authority of tribal authorities and it is only given out to elders and married people, leaving the

youth with minimal access to land. The control of land is vested with parents and the elderly. Generally, the elders/parents are not interested in transferring the ownership/control of the land to youth because they consider that land belongs to adults. In cases where the youth do have access to land, they often experience challenges relating to land rights, the security of tenure, and ownership (Salami *et al.*, 2010). The youth or any other members of the community in rural areas do not legally own the land they have access to. They are given permission to occupy, without title deeds, making it difficult to use the land as collateral security when in need of finances (Nwaogwugwu and Obele, 2017). Although the system cannot be changed easily, there is a need for strategies to be formulated that will promote better land transfers and land rights to the youth, especially those who are often sidelined by traditional practices.

In the rural areas of Africa, youth frequently access land through inheritance, gift, or rental (Kosec *et al.*, 2017). In most countries, government policies do not place the youth at the centre of their priority in terms of land allocation (Dalla Valle, 2012). In South Africa, the land reform policies implemented since 1994 have not done much in terms of ensuring access to land by the youth (Arko-Achemfuor, 2016).

Market access

Access to markets is a challenge, not only among the rural youth, but also for smallholder farmers in general. In developing countries, young people face challenges in trying to access markets (IFAD and FAO, 2014) because of their lack of experience of how markets function and their impact on their participation along the agricultural value chain. Other challenges include lack of organisation and representation, which restricts their ability to negotiate prices (Vargas-Lundius and Suttie, 2013; IFAD and FAO, 2014). The increased role played by supermarkets, demand for quality products, and processed products result in the introduction of new quality and safety standards (IFAD and FAO, 2014), which the rural youth are unable to meet.

Education system

The education systems in Africa have generally neglected agricultural training, reflecting a common belief that farming is an occupation for uneducated people (Byamugisha and Ansu, 2017). Most developing countries lack primary education systems that introduce young people to agriculture (IFAD and FAO, 2014) and entrepreneurship. The current syllabus offered mostly at secondary levels contributes to downgrading farming as an occupation for rural youth (White, 2012). In addition, the agricultural subjects in most schools are more theoretical, and

not practical. This results in the majority of the youth following other careers (Panel Montpellier, 2014). The more the youth are educated, the less likely they are to engage in agriculture, as they look for attractive opportunities elsewhere, leading to rural-urban migration (Akpan *et al.*, 2015).

Poor agricultural support (agricultural extension)

The poverty of agricultural extension services in South Africa has been well documented (Wale and Chipfupa, 2018). Farmers often receive training of poor quality or training sessions that are not relevant (Kising'u, 2016). Other related factors that have a negative impact on rural youth participation in agriculture include a lack of institutional support and poor infrastructure (Baloyi, 2010).

Perception, attitude, and mindset

The negative perception of agriculture held by the rural youth, together with their need for social validation, drives them away from primary agriculture, thus forgoing the potential economic benefits that could be derived from their involvement (Nwaogwugwu and Obele, 2017). However, this perception is not shared among all youth.

Young people might be currently engaged in agriculture not necessarily because they are interested in it, but because they have access to resources and/or they are forced by their parents and/or out of necessity (having nothing else to do) (Ahaibwe *et al.*, 2013). On the contrary, youth who are currently not engaged in agriculture might be interested, but lack the resources. This is especially the case for rural youth with parents who are currently not engaged in agriculture and/or those who do not have access to agricultural land.

ICTs and rural youth participation in smallholder farming

Generally, the youth appreciate transformation as well as technology and efficiency (Irungu *et al.*, 2015). They are the main users of ICT technologies such as the internet, mobile phones, and social media platforms (McKenzie, 2007). Most of the youth spend most of their time on the internet, as well as social media (Twitter, Facebook, YouTube, and WhatsApp). ICTs offer them opportunities to enrol in distance learning and facilitate better communication among the youth, friends, family and community members.

Youth enticement to utilise ICTs might be of advantage in attracting them to the agricultural sector. Several studies have shown that applying and integrating ICTs into agriculture is a potential strategy for attracting youth into the sector (Irungu *et al.*, 2015; AGRA, 2017). In

Kenya, Irungu *et al.* (2015) have shown that young farmers are using ICTs as their source of information on the internet. They access information on niche markets and farming trends, as well as livestock and crop production. The internet is also used to access production brochures, magazines, and newspapers. In addition, most have access to WhatsApp, Twitter, Facebook accounts and websites, and spend most of their time in responding to queries from customers or fellow farmers. Therefore, learning from other countries like Kenya, there is a potential to attract youth into rain-fed smallholder farming in South Africa through the use of ICTs.

There are several constraints, in terms of supply and usage, that limit the use of ICT services in South Africa's and Kenya's agricultural development, as highlighted by Maumbe and Okello (2013). These constraints on the supply side include dilapidated rural infrastructure, the sparse development of locally and culturally relevant e-agricultural content, and insufficient policy and institutional development to support the widespread use of ICTs in rural communities. On the other hand, some of the issues relate to the usage side of ICTs, including a lack of awareness, low literacy, lack of supplementary infrastructure to use ICT services (e.g. electricity), language, and cultural barriers (Maumbe and Okello, 2013).

A wide gap still exists in gaining access to ICT services, when the rural areas are compared with urban areas (Nakasone *et al.*, 2014). According to Smallbone *et al.* (2002), rural firms are lagging behind in taking up and using ICT services, when compared with urban firms. Zaremohzzabieh *et al.* (2016) found that ICT services have allowed the rural youth of Malaysia to become more like their urbanised counterparts, without actually moving to cities. Therefore, this technology has a potential to address the issue of rural-urban migration.

2.4.6 Opportunities and challenges to engage youth in rain-fed farming

The African continent has about 68.9% of rain-fed farm land that is un-utilised (Abrams, 2018; IWMI, 2000) and which can be used by smallholders to meet future food demands. The situation in South Africa is not different. Access to water will continue to be the key constraint in the foreseeable future. Owing to climate change, the past decade has been characterised by drought and unreliable rainfall. Despite this constraint, rain-fed farming remains an important part of the South African farming system, especially in the rural areas (Hardy *et al.*, 2011). The sector presents opportunities for youth to be gainfully engaged in productive income-

generating activities. However, there are several challenges that hinder young people in taking advantage of these opportunities.

Rain-fed farming is the most common type of farming practised in rural communities in South Africa (Muchara *et al.* 2015). These are communities in South Africa where some 58% of the poor people live (Statistics South Africa, 2014). Dryland crop production is the dominant type of rain-fed farming, and it uses approximately 12% of received rainfall in the country (Beenie *et al.*, 1998). However, rain-fed farming includes other forms of farming, such as livestock production and forestry (Muchara *et al.* 2015). Livestock production is an important enterprise for smallholder farmers in the rural areas. Most smallholder farmers in South Africa's rural communities practise mixed farming, dominated by both crop and livestock production.

Less focus and attention have been given to improving the potential of dryland production because of the notion that very little can come out of such investment (White *et al.*, 2002). Rain-fed farming is generally overlooked by development practitioners, researchers, and policymakers (Wani *et al.*, 2009). In South Africa, research and development conducted by the government and its partner institutions (such as the Water Research Commission) has focused on the potential of irrigated agriculture. However, Koohafkan and Stewart (2008) have indicated that the development of additional irrigation is becoming difficult, while in semi-arid regions, irrigation alone will not be sufficient to feed the rising population. They reiterate that, on poverty and environmental grounds, much attention should now also be focused on rain-fed farming. Since most poor people and a significant proportion of unemployed youth live in rural communities, investment in rain-fed farming would result in the reduction of poverty levels. Similarly, the literature (e.g. IFPRI, 1998; Koohafkan and Stewart, 2008) shows worsening challenges of land degradation caused through the desertification of dryland areas and soil erosion, among other things. Thus, investment in rain-fed agriculture would also have positive impacts on the environment.

Given their numbers, young people are key to agricultural growth in Africa. However, smallholder agriculture, especially rain-fed farming, offers few opportunities for the youth (FANRPAN, 2012). Despite the negative perceptions of young people about farming (Wale and Chipfupa, 2018), and given the lack of skills needed for gainful employment in towns and cities, their involvement in agriculture along the value chain offers better options for employment for them. Young people can play a significant role along the value chains in areas such as input provision, engineering, production, marketing, research, transport, and processing. Young people are technology 'savvy' and are more likely to understand and use

new technologies than the older farmers are (FANRPAN, 2012). New technologies will be critical in the future, given the promotion of climate-smart agriculture.

Several other opportunities for engaging youth in rain-fed farming exist, and these include the growing of feedstocks for biofuels and the promotion of crop and livestock integration systems. Among these, the growing of feedstocks provides the greatest opportunities for youth involvement in productive rain-fed farming in the future. Koohafkan and Stewart (2008) indicate that ethanol can be produced from sugarcane and cereals. Maize and sugarcane are already popular dryland crops in most parts of South Africa's rural areas.

Globally, rain-fed farming is dominated by smallholder farmers and is an important livelihood strategy in most rural areas, mostly in developing countries (Rockstrom *et al.*, 2007; Wani *et al.*, 2009; De Fraiture and Wichelns, 2010). Rain-fed farming covers 80% of the world's arable land and produces 60% of the world's cereal grains (Rockström *et al.*, 2003; Rockstrom *et al.*, 2007). In Africa, mostly in Sub-Saharan Africa, most of the agricultural land (about 96%) is rain-fed (de Fraiture *et al.*, 2009), and it produces most of the staple foods (such as maize, millet and sorghum) for the rural majority. In South Africa, in particular, maize is the essential staple food grown in rain-fed areas, in rotation with other summer crops such as sunflower, sorghum and soybeans. In addition, cereals, mostly wheat, are grown in rotation with canola and lupins in rain-fed farming areas during summer rainfall. Moreover, livestock, namely cattle and sheep, are also kept in rain-fed farming areas; cattle are mostly kept in summer rainfall areas, whereas sheep are kept in the winter and all-year rainfall areas (Hardy *et al.*, 2011).

The importance of rain-fed farming in SSA has been recognised by farmers, food security agencies, agricultural researchers, and development agencies (Cooper *et al.*, 2008). However, according to Wani *et al.* (2009), there is a significant gap between the actual and attainable yields in rain-fed areas. One of the challenges is water scarcity, associated with rainfall variability, lack of adequate rainfall, and water loss through evaporation (Rosegrant *et al.*, 2002; Rockstrom *et al.*, 2007; Wani *et al.*, 2009). Other challenges include soil degradation, loss of organic matter and soil erosion, leading to soil infertility (Reddy, 2002; Wani *et al.*, 2009; Mundial, 2011). These challenges impact negatively on the quantity and quality of the produce of smallholder farmers. This makes it difficult for resource-poor smallholders to commercialise their operations and respond effectively to opportunities from emerging markets, trade, and globalisation (Wani *et al.*, 2009).

Despite these challenges, rain-fed farming holds the most significant untapped potential (Rockstrom *et al.*, 2007; Wani *et al.*, 2009; De Fraiture and Wichelns, 2010), particularly in SSA (De Fraiture and Wichelns, 2010). What can be done to tap the potential/explore opportunities in rain-fed farming areas? Enhanced investment is required for tapping the potential of rain-fed smallholder farming (increasing yields) to meet future food demand in Africa (Cooper *et al.*, 2008). This includes investment in agricultural (crop) research (Rosegrant *et al.*, 2002; Haddad *et al.*, 2011) with private sector participation (Haddad *et al.*, 2011). De Fraiture and Wichelns (2010) noted that, through research for development relating to agronomy, water management, economics, and human welfare, effective strategies can be identified for tapping the potential of rain-fed farming. This has to be accompanied by investment in infrastructure and policies (Rosegrant *et al.*, 2002). Governments must also develop policies to enable technology adoption, market participation and sustainable use of natural resources by resource-poor smallholder farmers (Haddad *et al.*, 2011).

There is also an urgent need to focus on water investments in rain-fed farming (Falkenmark and Rockström, 2006; Rockstrom *et al.*, 2007). Such investments could be in water harvesting techniques (Rosegrant *et al.*, 2002; Rockström *et al.*, 2003; Rockstrom *et al.*, 2011). According to Biazin *et al.* (2012), the implementation of rainwater harvesting methods might allow cereal-based smallholder farmers to shift to diversified crops, thereby improving their household food security, dietary status and economic returns. However, because of the limited profitability in rain-fed farming, the lack of markets, high labour costs and high risks, the rates of adopting water harvesting techniques have been low.

Conservation agriculture is another strategy for enhancing rain-fed farming (Johansen *et al.*, 2012). It involves abandoning conventional ploughing systems (such as tractors and animal draught power) in favour of ripping, sub-soiling, and non-tillage systems, with the use of direct planting methods combined with mulching and buds organic matter (Wani *et al.*, 2009; Haddad *et al.*, 2011). This helps to enhance soil productivity and moisture conservation (Rosegrant *et al.*, 2002; Rockström *et al.*, 2003; Rockstrom *et al.*, 2011). The practice of conservation agriculture saves on the costs of using traction power and expensive fertilisers (Wani *et al.*, 2009). This is an advantage to the rural youth, as they can easily engage in this kind of rain-fed agriculture.

Moreover, the use of high-yielding varieties (such as bread wheat, barley, lentil, chickpeas, and other forage varieties) and supplemental irrigation could help to increase the productivity of rain-fed farming. Most of these varieties have stable grain and straw yields that are resistant to

drought (Haddad *et al.*, 2011). All of this empirical evidence demonstrates the untapped opportunities that exist in rain-fed farming (crop and livestock) for the rural youth. However, there is a need for proper mechanisms to be introduced to tap into opportunities such as youth entrepreneurial mindset and ICTs.

2.4.7 Opportunities and challenges to attract youth to small businesses in the agricultural value chain

The perception that agriculture is a non-profitable sector drives youth away from engaging in agriculture-related practices. It is essential to highlight the point that youth involvement in agriculture does not necessarily mean that youth should engage in only traditional practices, like their parents and grandparents might have done. Although it is encouraged and desired for youth to be engaged in primary agricultural production, there are other opportunities within the agricultural value chain that have great potential to generate sustainable livelihoods for them and which require less “hard-labour”.

Agricultural value chains can be defined as the inter-linkages of economic activities that take place in livestock and crop production, from the initial stage of production up to the final stage of consumption (Baloyi, 2010; Haggblade et al. 2012; Kising'u, 2016). These comprise vertical chains of activities, initiating from input supply to production, through to processing and distribution, up to retailing products to relevant consumers. Value chains also comprise horizontal co-ordination and linkages of actors/stakeholders at the same level within the chain. The inter-linkages of both vertical and horizontal stakeholders can be complex, and this complexity varies according to the product in question.

Youth involvement in both agriculture and entrepreneurial activities is very limited. Apart from the common challenges that have been identified for the youth when entering into smallholder agriculture (poor extension services, lack of access to agricultural land, lack of access to financial capital, etc.), the negative perceptions that they have regarding agriculture are among the vital factors that account for the lack of succession planning in the sector, particularly in primary agriculture. These perceptions are partly influenced by their exposure to ICTs, particularly social media that exposes them to wealthy and luxurious lifestyles, resulting in them aspiring to attain such careers, unnecessarily comparing them with agricultural activities, and finally rejecting farming.

Agricultural value chains have the potential to attract youth into the sector, as these chains are generally perceived to not entail “dirty” groundwork, like primary agriculture does. At present, there is very limited involvement, if any, in value-adding economic activities in remote areas. The majority of the value-addition is performed by the big agribusinesses. Despite the challenges constraining engagement in AVAEAs by rural people in remote areas, the potential economic impact (employment creation, sustainable livelihoods, etc.) that their engagement can provide cannot be overlooked.

When aiming to attract the youth into agricultural activities, especially those along value-adding economic activities, there is a need for them to be entrepreneurial. Endowment in entrepreneurial spirit and business skills is essential when seeking to attract youth into sustainable and profitable economic opportunities along the value chain. However, studies in the past have shown very limited youth engagement in entrepreneurial activities, particularly among rural youth in households that do not have entrepreneurial parents. There is a potential to engage rural youth to participate in entrepreneurial agricultural value-adding economic activities. However, this engagement will need a long-term investment, and will require much of transformation to take place.

The complexity of an agricultural value chain depends on the nature of the product involved, the actors involved, and the institutions governing the rules of the particular sector. However, in general, agricultural value chains consist of two constructs, namely, horizontal and vertical chains. The horizontal chain includes the relationships between actors of the same level. These might be producers, processors, or even retailers. The vertical dimension refers to the chain itself, which initiates from the input supplier and then proceeds through to the end consumer. Figure 2.1 below shows a typical agricultural value chain.

The stages that a product passes through depend mostly on the end product desired. When fresh produce is sold as fresh produce, it can be sold directly from the farm without going through all the other actors in the chain. It is imperative to formulate effective strategies to involve rural people, especially rural youth, in value-adding economic activities. Although there are no existing South African studies that show the current level of rural youth participation and the types of activities they practise within the agricultural value chain, O'Planick (2016) has highlighted the following avenues as providing possible opportunities within the agricultural value chain that rural youth could explore.

Farm service agent:

According to van Tilburg and van Schalkwyk (2012), smallholder farmers experience challenges in penetrating competitive markets as a result of their inability to meet market standards. Smallholder farmers produce products in small quantities, with poor quality, that are then neglected in the output markets, regardless of the support they receive from extension officers. Rural youth thus have the opportunity to fill in the knowledge gap (e.g. market information, market standards, etc.) for farmers, while creating employment for themselves.

The dissemination of information regarding land preparations, correct application of herbicides and pesticides, effective ways of weeding and pruning crops, tips on better ways to harvest, and post-harvest handling is still highly needed in remote areas.

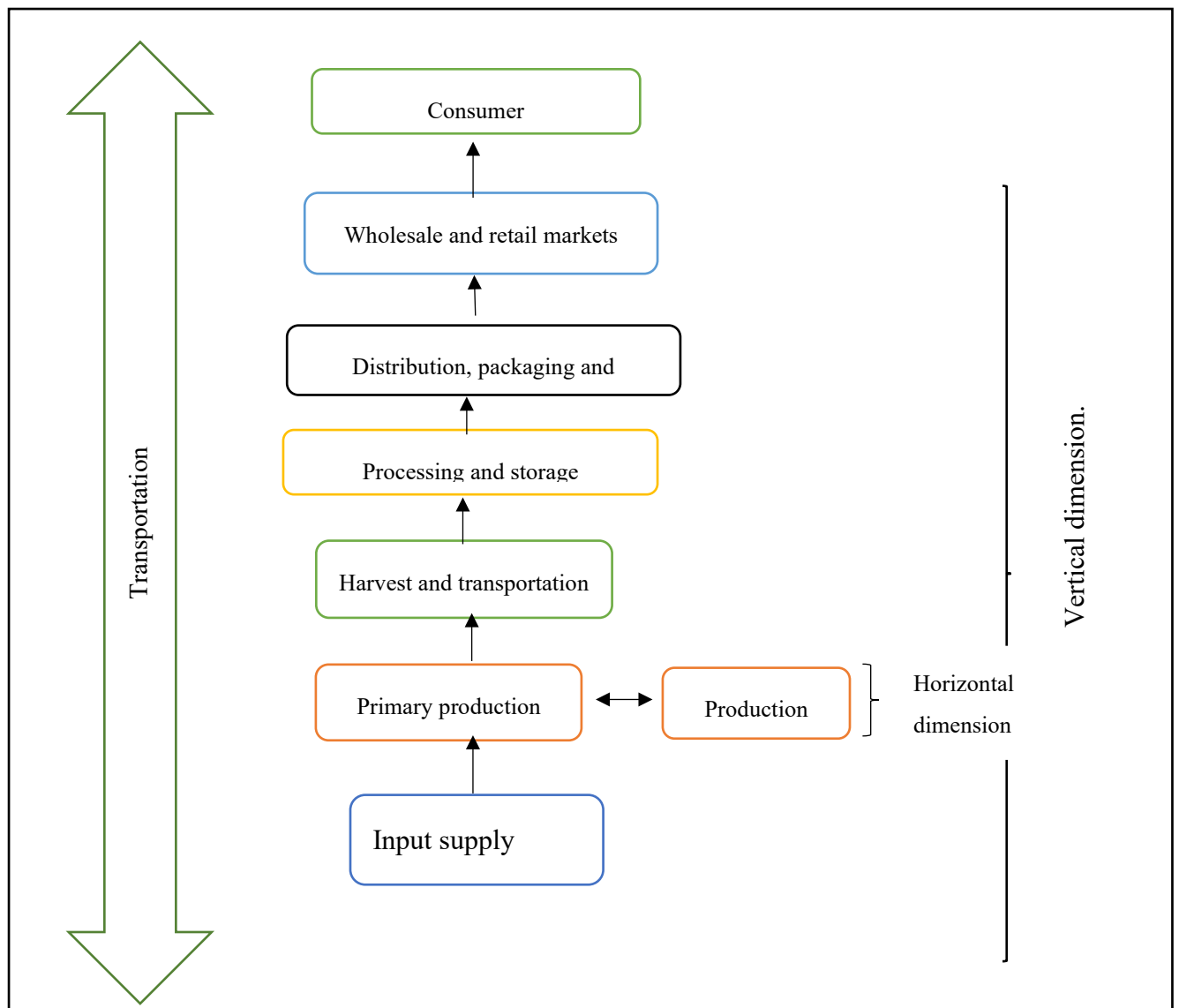


Figure 2.1: Typical agricultural value chain

Source: Adapted from Gereffi and Fernandez-Stark (2011), Nang'ole *et al.* (2011) and Trienekens (2011)

Transportation services:

Deficiencies in the transportation services available could provide youth with an opportunity to transport produce from the farm gate to relevant markets, and thereby generate income for themselves. Access to vehicles and the profitability of the transportation of agricultural goods are the reported challenges to taking up this opportunity.

Retailing:

Youth also have an opportunity of buying agricultural inputs in towns and retailing them to smallholder farmers, at a markup price. This would decrease the transportation costs and transaction costs of the smallholder farmers, while saving time for the farmers, as they would be able to easily access farm inputs. Furthermore, youth could purchase a farmer's output at the farm gate and sell the produce to relevant consumers at markup prices. The challenge in exploring this opportunity by the youth is that it requires high investments in capital (storage facilities for the fresh produce and/or vehicles for providing mobility), which youth have less access to (O'Planick, 2016). The perishability of the produce could also compound this challenge.

Farm business service facilitator:

According to Barrett (2008), one of the reasons why smallholder farmers lack access to financial capital in the form of loans from formal institutions is that they do not keep financial records of their farming activities. Furthermore, since the majority of smallholder farmers are characterised by relatively low levels of numeracy, it might be a challenge to facilitate the recording of such information and to expect the farmers to grasp the content effectively. Accordingly, the youth with tertiary education might not be attracted to undertaking such an opportunity, as the remuneration would be only temporary, compared with the salaried white-collar positions in the corporate world.

Agro-processing:

The National Growth Path and other policies recognise agro-processing as a sector bearing a critical role in promoting manufacturing-based value addition, employment, and increased industrialisation. Furthermore, it has the potential to assist South Africa to break from the commodity dependency trap. Agro-processing can be clustered into two components, namely, primary and secondary processing. Primary processing includes the most straightforward processes, such as the milling of grains and the processing of sugarcane, and the washing, peeling, chopping, and aging of fresh produce. Secondary agro-processing entails transforming primary processed products into complex products and adding value through complex procedures, such as mixing, depositing, layering, extruding, drying, fortifying, fermentation, pasteurisation, clarification, and heating. Considering the structure of the South Africa rural areas, the value-adding activities that the youth could engage in include buying and reselling of livestock, milling of grains, operating an abattoir or butchery, and the transformation of

animal skins into traditional clothes. However, introducing and maintaining the engagement of rural youth in agricultural value chains will be a long-term process (Trienekens, 2011), requiring changes in the mindsets of the youth, policies, skills development, rural infrastructure, access to markets, and finance.

2.5 Importance and sources of agricultural information for the rural youth

2.5.1 Importance of access to information to smallholder farming

The role of information in a market economy has been acknowledged since the contribution of Friedrich Hayek (1945). The role of information in agriculture generally, and in smallholder agriculture specifically, has received much attention in the literature on agricultural development economics. Access to information is a critical element of agricultural development (Kalusopa, 2005; Munyua, 2008; Nakasone *et al.*, 2014) and it has proved to be important in improving smallholder farmers' production planning, leading to improved rural livelihoods and food security (Asaba *et al.*, 2006; Masuki *et al.*, 2010; Surabhi and Mamta, 2013). It is a requirement to make informed decisions at every stage of the production cycle, from crop variety/input/agronomic practice choice to marketing (McNamara, 2009; Haile *et al.*, 2015). McNamara (2009) has pointed out that the access to information along the food value chain by farmers also determines the quality and yield of their crops. Furthermore, with prior access to market information, farmers can negotiate prices with traders, and this empowers them to choose the best possible market (McNamara, 2009; Mittal and Mehar, 2012). Moreover, access to agricultural information can enable farmers to identify the cheapest possible sources for agricultural inputs, achieve the highest possible market prices for their produce, meet the quality standards for high-value products, and finally improve the profitability of their produce (Kalusopa, 2005; Ali and Kumar, 2011). This also enables farmers to compete properly with their competitors (Surabhi and Mamta, 2013; Drafor, 2016).

Smallholder farmers also need information about marketing strategies and prices. Market information will enable farmers to select and improve the quality of the products they supply to the market, and select better marketing and delivery networks (Markelova *et al.*, 2009; Mittal and Mehar, 2012).² Price (input and product) information also plays a significant role in

² However, the remaining challenge relates to how to reconcile what the market demands (the agricultural products and their features) versus which product(s) smallholders can profitably produce, and which technology/practice packages they can afford to adopt.

farming and it helps to improve the bargaining ability of farmers regarding trades and prices, and to reduce arbitrage, wastage and spoilage (Mittal and Mehar, 2012).

Farmers also need to have access to prior climatic information (e.g. rainfall forecasts) to reduce the impact of its variability. This information helps in making decisions on when to apply inputs such as fertilisers, improved seeds, pesticides and herbicides. It also helps in organising better storage facilities (Mittal and Mehar, 2012). Related to this, farmers also need to have information on improved crop varieties, fertiliser application rates, production techniques, agronomic practices, new technologies, and water harvesting techniques (Ullah *et al.*, 2016). According to Ullah *et al.* (2016), access to this information can play an essential role in helping farmers to forecast, assess, and improve their future farm performances, and to reduce uncertainty.

Information about improved crop varieties enables smallholder farmers to make efforts to get access to seeds that perform well under the changing weather conditions in their areas.³ Farmers obtain crop varieties that are tolerant to drought, and resistant to the pests and diseases with shorter cycles (Vizcayno *et al.*, 2014). On the other hand, accurate, timely and appropriate information about climate (weather) forecasts enables farmers to implement suitable interventions in advance to reduce the adverse effects of climate change. Having this information increases their capacity to adapt to climate change and helps in effective decision-making in the face of increased weather uncertainty (Lo and Emmanuel, 2013). Furthermore, having information about new technologies allows farmers to access modern technologies (such as those relating to water harvesting, information and communication) which they can adapt to improve their farm productivity. Information and communication technologies (ICTs) are very significant for climate forecasting (Mundial, 2011, Parmar *et al.*, 2019). Through communication satellites and Global Positioning Systems (GPS), farmers can obtain updates on climate and weather (Parmar *et al.*, 2019). All of this empirical evidence demonstrates the importance of gaining access to appropriate agricultural information to the productivity and profitability of farmers.

³ Having access to information about a given package of technology/practice does not always translate to gaining access to it.

2.5.2 Information and Communication Technologies

The term ‘ICTs’ refers to all types of technology for transferring, sharing and exchanging information (Swanson and Rajalahti, 2010). According to Marcelle (2000), ICTs comprise a complex and different set of goods, services and applications that are used to produce, distribute, process and transform information. ICTs might be modern or traditional, such as radio, television, print and video, which are still relevant for African agriculture. On the other hand, modern ICTs include broadcasting, computer hardware and software, tablets, mobile phones, social media (Twitter, Facebook, YouTube and WhatsApp), and electronic media (such as the internet and email), which are all being used increasingly in agriculture (Dick *et al.*, 2013; Nakasone *et al.*, 2014; AGRA, 2015; Irungu *et al.*, 2015).

ICTs play a significant role in disseminating information in the agricultural sector (Lio and Liu, 2006; Mittal *et al.*, 2010; Shalendra, 2011). In Sub-Saharan Africa, the traditional sources of agricultural information are radio, television and newspapers (Allahyari and Chizari, 2010). However, the modern ICTs common among the youth (such as the internet, iPads, computers and smart phones) are increasingly being used in agriculture and have proven to be effective (AGRA, 2015). Through these technologies, young people have access to the internet as well as social media platforms, which could make farming linked to such technologies more attractive to them. Several studies have shown that applying and integrating ICTs to agriculture is a potential strategy to take for attracting youth into the sector (AGRA, 2015; Irungu *et al.*, 2015). According to Syem and Raj (2015), mobile phones have facilitated better communication between farmers and have assisted them in accessing agriculture-related information, particularly that related to markets. As a result of access to ICTs, livestock farmers in India reported having experienced a significant transformation in the way in which they operate and manage their farming practices (Jabir, 2011). Access to information through ICTs helped them to make better quality decisions. Furthermore, Adhiguru and Devi (2012) indicated that crop farmers who use ICTs incur relatively fewer transaction costs, compared with their counterparts. Moreover, mobile phones have improved the facilitation of transactions in both input and product markets.

The use of ICTs for the provision of information in smallholder agriculture has received research attention in the past decade. In South Africa, there has been a growing field of research on the use of ICTs in agriculture (Mabe and Oladele, 2012; Musiyarira, 2013; Sikundla *et al.*, 2018). A study conducted by Mabe and Oladele (2012) found that extension agents in South

Africa use ICT tools (such as mobile phones, computers, the internet, overhead projectors, telefax machines, organisation e-mail, fixed telephones, personal email and organisation websites) for the provision of information. In another study, Sikundla *et al.* (2018) found that most smallholder farmers use mobile phones for marketing their products. However, the empirical study of the use of ICTs for accessing agricultural information specifically for youth in South Africa is almost non-existent.

In Kenya, as highlighted by Irungu *et al.* (2015), young farmers use ICTs as their source of information. The majority of them spend a considerable amount of their time on the internet, accessing information, exploring niche markets, following farming trends, and obtaining information on livestock and crop production. The internet is also used to access production brochures, magazines and newspapers. Furthermore, most have access to WhatsApp, Twitter, active Facebook accounts and websites, and spend time in the mornings responding to queries from customers or fellow digital farmers. Moreover, they often have a Facebook group page, on which they ask questions, discuss issues related to farming, and share information using post links, photographs and videos (AGRA, 2015, Irungu *et al.*, 2015).

Although the benefits and need for ICT integration into agriculture have been well established, some constraints limit the realisation of the full potential of this integration. The adoption of ICTs in most rural areas of Sub-Saharan Africa is low (Dalla Valle, 2012). Low connectivity and inadequate telecommunication facilities in rural areas are identified to be the main constraints that limit rural residents from deriving the full benefits of ICTs (Syem and Raj, 2015). Challenges with internet connections, particularly in developing countries, act as a disadvantage for young people desiring to start businesses in rural areas (Dalla Valle, 2012). Furthermore, the high costs attached to purchasing and maintaining ICT infrastructure hinder the expansion of the adoption of ICTs in remote areas, especially among poor communities. Modern ICTs (such as internet, smartphones, iPads, and computers) are too inaccessible and unaffordable.

On top of that, gaining access to information through using most ICTs requires data bundles and airtime, which are costly (Dalla Valle, 2012). According to Oyeyinka and Bello (2013), a lack of skills and confidence in operating ICTs also hinders farmers from adopting them. In their study, Syem and Raj (2015) have reported that most of the participants (65%) in their study noted that they lacked confidence in using ICTs, while 58% lacked the skills to operate ICT facilities. Although this is not a dominant characteristic among the youth, there is still a

need for the training of young emerging smallholders on how to effectively use ICT to realise the full benefits of its integration into agriculture.

The use of ICTs has also emerged as a strategy with the potential to attract the youth into the agricultural sector (Irungu *et al.*, 2015). Mobile phones are a widely used form of ICT, and about 60% of the Sub-Saharan Africa population has access to mobile phones (Aker and Mbiti, 2010). There are new opportunities that could be found on the continent through the use of mobile phones. The uses of mobile phones/telephones bridges the gap between the rich and the poor, as well as between urban and rural areas, connecting individuals to other individuals, communities and organisations, thereby providing them with information on markets and services (Aker and Mbiti, 2010). This chapter presents the literature applicable to this study, which also includes youth participation in agriculture, entrepreneurship in smallholder farming, and the role of ICTs.

ICTs constitute sophisticated technologies that typically contain multiple applications (UNCTAD, 2003). ICTs also incorporate various technical tools and facilities that are used for converting, processing, saving and transferring several kinds of information to an easily accessible form, referred to as digital form (Rodriguez and Wilson, 2000; Dick *et al.*, 2013). ICTs refer to all types of technologies for transferring, sharing, and exchanging information (Swanson and Rajalahti, 2010).

In the modern context, ICTs bridge the knowledge gap, as they ensure easier access to knowledge and information (Lio and Liu, 2006; Obayelu and Ogunlade, 2006). The positive improvements resulting from the use of these technologies include facilitating productivity, accelerating economic growth, increasing the efficiency of public administration, and encouraging greater public participation and democracy. ICTs enable developing countries to advance with relatively fewer efforts needing to be made (Matambalya, 2002).

2.5.3 Agricultural training

Over the recent years, the South African government has invested many resources in learnership, internship/graduate, and training programmes that are aimed to provide knowledge, skills, and information for the youth who participate, as well as for those who do not participate, in agriculture (AgriSETA, 2016). Most of these programmes are provided through collaborative programmes, such as the Agriculture Sector Education Training Authority (AgriSETA), a programme of the former Department of Agriculture, Forestry and

Fisheries (DAFF), the Department of Agricultural and Rural Development (DARD), the Department of Rural Development and Land Reform (DRDLR), the Agricultural Research Commission (ARC), and the Agricultural Development Agency (ADA). Other such programmes include the Comprehensive Agricultural Support Programme (CASP) and Youth in Agriculture and Rural Development (YARD).

Agricultural colleges in South Africa also offer training in agriculture. Through these colleges, learners are exposed to both theoretical and experiential training (in-service training). The experiential training is mostly offered by the Department of Agriculture, as well as by the private sector (commercial farmers and commodity organisations) (AgriSETA, 2019). This training provides more information to graduates who are interested in participating in agriculture.

2.5.4 Mentorship and its potential role to the rural youth in farming

In South Africa, the emphasis on improved mentorship, agricultural extension and other support services emanates from the introduction of various rural development policy initiatives, particularly the land reform programme. The South African land reform programme lacks support and training for emerging farmers. The majority of these farmers have no relevant expertise or experience, which has led to the failure of many land reform projects (Kressirer and Ngomane, 2006). Such reform initiatives have, in some cases, led to the emergence of a large pool of new and inexperienced black farmers. The youth who are in agriculture or those who are intending to join agriculture are in the same situation.

What can be done to address the skills, knowledge and experience gap? Agricultural extension and mentorship are the two possible solutions. The challenges of agricultural extension in South Africa (e.g. officers lacking professionalism and hands-on farming experience; their lack of indigenous and contextual knowledge; their lack of engagement, and having too many farmers to serve) are well documented (Koch and Terblanche, 2013; Terblanche, 2007b). Thus, mentorship, which is a complement to agricultural extension and not a substitute, can help to narrow the skills and experience gap and integrate the new farmers into support and service networks in the farming communities. That is why the South African government instituted the programme as one of the ways of addressing the inherent skill gaps and integrating new entrant farmers into commercial agriculture.

Broadly speaking, the South African agricultural sector is dualistic and consists of two groups of farmers: large-scale, commercial (and capital-intensive) farmers, and small-scale (and poorly resourced) farmers. Mentorship in South Africa has the potential to equip black emerging farmers with the necessary skills required to farm successfully. South Africa's strategic policy documents, such as "The Strategic Plan for South African Agriculture" (Department of Agriculture, 2001) and "Broad-Based Black Economic Empowerment Framework for Agriculture" (AgriBEE, 2004), identify the development and implementation of mentorship programmes as one of the key enablers for land reform programmes to succeed. According to the KZN Department of Agriculture and Environmental Affairs (KZNDAEA, 2009), a mentorship relationship is between an experienced farmer/s (mentor/s) and an inexperienced farmer/s (mentee/s). Thus, mentorship is meant to enhance the success and sustainability of the land reform programme by equipping emerging farmers with the vital skills, knowledge and experience required to engage and succeed in profitable farming. Anderson and Shannon (1988) defined mentoring as "A nurturing process in which a more skilled or more experienced person, serving as a role model, teaches, encourages, counsels, and befriends a less experienced person for the purpose of promoting the latter's professional and/or personal development." It is a process whereby a more experienced and successful person with wisdom helps a less experienced person to learn something the learner would otherwise have learnt less well, more slowly, or not at all (De Beer, 2005). It is an integrated approach to advising, coaching and nurturing, focused on creating a viable relationship to enhance individual growth and development avenues of success (Adams, 1998). Mentorship is about helping empower less-experienced farmers (PAETA, 2004), and that is why it should have a special role in establishing small farming businesses by the rural youth in South Africa.

In today's business world, coaching and mentorship are the buzzwords, and increasing numbers of organisations are developing and structuring mentorship programmes (Terblanché, 2010). Mentorship and agricultural advisory services are back on the international development agenda and attracting renewed interest in South Africa. Mentorship in South Africa has the potential to equip young farmers with the necessary skills required to farm successfully. It can also play a vital role in transferring knowledge, experience, information, and skills in agriculture. It aims to provide long-term (three years or more) direct support to a new farmer, using input from experienced and successful farmers as well as commodity organisations (DALA, 2001). The programme was introduced by the South African government after the realisation that it is not possible to transfer all the information, knowledge and skills through

using short-term programmes such as learnerships and training programmes for new farmers. Therefore, the programme was introduced to fill this gap. Although the mentorship programme is not specifically tailored for youth, they could nevertheless benefit from the programme.

However, for mentorship to be successful, mentors and mentees should have attributes that enhance and nurture their relationship, among other things. Hall and Kahn (2002, cited by Clutterbuck, 2005), caution that, in order for individuals to engage in successful mentorship relationships, they should have both the desire and competencies to do so. Terblanché (2007b and 2010) has identified some of those characteristics. Mentors⁴ and mentees need to develop specific competencies for their interactions to be effective (Lewis, 1996). To this end, Terblanché (2010) recommends that a training programme for prospective mentors should be completed before the mentors engage in any mentorship programme with mentees. The development of mentoring relationships means putting respect, trust, communication, monitoring, and building self-esteem of the mentee at the centre of the efforts of the relationship. Both parties must see the benefits and be convinced of, and not forced into, a mentoring relationship (Terblanché, 2010). The relationship must aim to evolve and make the mentee more independent, going forward. This is even more important for mentoring the youth. For effective mentorship of the youth, there is a need to identify and understand the skills, knowledge and attitudes of a mentor, and qualities/characteristics of the young/inexperienced or new farmer. It will be important to design and implement selection criteria for mentors and mentees (Terblanché, 2010). The success of mentorship depends solely on the willingness to participate by both the mentor and the new farmer (SACGA, 2005).

In the future, establishing mentorship relationships between the youth and experienced farmers will have to be informed by participants' competencies, expectations and plans. This provides an opportunity to further investigate the specific skills and traits required for each mentorship stage. Going forward, this study will conduct a systematic literature review to understand the relationship between mentee (youth aspirant farmers) and mentor (experienced farmers) traits and the attainment of mentorship functions.

⁴ A mentor is a person who guides another person (the mentee) towards avenues of success because he or she is knowledgeable and respected in a certain field (Terblanché, 2007).

2.5.5 Informal networks

Informal networks are comprised of face-to-face interaction with friends, relatives, and other farmers, as well as with extension agents (Surabhi and Mamta, 2013). Despite the growing use of modern communication technologies, informal networks remain the most important source of agricultural information in the rural areas (Aidoo and Freeman, 2016), particularly among smallholder farmers (including the youth) (Muange et al., 2014). Informal networks are regularly available and easily accessible for acquiring required agriculture information. The challenges associated with limited access to agricultural extension agents and use of ICTs, especially in rural areas, make it necessary to consider the potential of informal networks for improving the provision of agricultural information (Aidoo and Freeman, 2016). In regard to gaining access to agricultural information, since support services are a serious challenge among rural youth in Sub-Saharan Africa (South Africa not being an exception), informal networks remain an essential source of information for rural youth (Vargas-Lundius and Suttie, 2013; IFAD, 2014).

The most important informal source of information among rural youth comprises the older farmers who are successful in farming and receive training as well as information from external sources (Aidoo and Freeman, 2016). Other important sources of agricultural information frequently used by rural youth include friends/neighbours, family and extension agents (Olaniyi, Adebayo *et al.*, 2011). Dalla Valle (2012) highlighted the point that the rural youth rely on their family and friends to gain access to information on financial services. Several studies (Akullo *et al.*, 2007; Singh and Sureja, 2008) have highlighted the fact that informal networks are an important source of indigenous knowledge. This includes indigenous knowledge on maintaining soil fertility, water conservation, methods of controlling pests, methods of controlling weeds, seed preservation, and indigenous methods of post-harvest preservation and storage (Mugwisi, 2017).

2.5.6 The state of agricultural extension in South Africa

The practice of agricultural extension in South Africa has emerged as a powerful strategy with a potential to address socio-economic challenges, such as food insecurity and rural poverty (Raidimi and Kabiti, 2017). Following the end of the apartheid government in 1994, fundamental changes in the South African agricultural policies have mostly been directed at addressing the socio-economic challenges confronting the country. Policies such as the

‘Broadening Access to Agriculture Thrust’ were intended to plan and create mechanisms that broaden access to agriculture for previously disadvantaged farmers in terms of meeting their financial, human, technological, and marketing needs (Nduli, 1995; Düvel, 2004; DAFF, 2005).

Such shifts have led to changes in the South African agricultural extension system from a dualistic system (which previously offered separate services for commercial and small-scale farmers) to a single, combined service, which currently concentrates almost entirely on previously disadvantaged smallholder farmers (Nduli, 1995; Düvel, 2004; DAFF, 2005). The agricultural extension and advisory services were also introduced in all nine provinces of South Africa to facilitate access to agricultural information and technology, and to provide advice on sustainable agricultural production (including conservation of natural resources), as well as skills development in agriculture (DAFF, 2005; Koch and Terblanche, 2013).

Since the introduction of the service, the main focus of agricultural extension has remained on technology transfer. However, in recent years, further extension approaches have emerged that recognise farmers as dynamic role players (Duvel, 2000; Rivera and Qamar, 2003; Swanson, 2005). These approaches include the participatory approach, the advisory approach, and the project approach. All these approaches are relevant in their own right and under certain specific contextual realities, but the choice and combination of their applications in extension is based on the farmers’ context (Duvel, 2000; DAFF, 2005). According to the participatory approach, farmers take the lead, identifying their problems and solutions, with extension agents acting as facilitators in the development process. The advisory approach is most applicable in the commercial farming sector. These farmers have a high level of competence; they know their business and they are assumed to be innovators, and therefore, they only need advice in most instances (DAFF, 2005).

There are several role players in agricultural extension in South Africa, which include both state and non-state actors. The government is a major player through the DAFF, Provincial Departments of Agriculture (PDAs), Agricultural Development Centres, and Local Extension Offices. The non-state actors include farmer and producer organisations (also referred to as the commodity organisations), agricultural co-operatives, and the private (commercial) sector (DAFF, 2005; Koch and Terblanche, 2013; Qamar, 2013; Zwane, 2014). The existing public-private partnerships include, for instance, the partnership between the South African Sugar Association and DAFF, which provides extension and advisory services to smallholder sugarcane farmers (Rivera and Alex, 2004; Ngaka and Zwane, 2018). Each stakeholder has its

key responsibilities with regard to the extension and advisory services provided to farmers. For example, the DAFF is responsible for developing, monitoring and evaluating norms and standards for extension and advisory services, with assistance from the PDAs. On the other hand, the ARC is responsible for conducting research and interacting with farmers and extension agents/advisors in transferring knowledge and technologies (DAFF, 2005).

Despite all these fragmented efforts, extension had not yet achieved its intended impact on farmers. Extension agents in the country are not providing effective services, mostly to emerging farmers (Nkosi, 2017). Several challenges are facing South African agricultural extension services, especially in the public sector. One of the challenges that have invited much debate in recent years is the shortage of trained and knowledgeable extension agents (Williams, Mayson et al., 2008; Terblanché, Koch et al., 2012). Several studies conducted on the effectiveness of agricultural extension have found that extension agents lack adequate marketing, management and entrepreneurial skills (Mmbengwa *et al.*, 2009). Other additional challenges with regard to extension include inadequate resources and complex work requirements (Raidimi and Kabiti, 2017).

Moreover, South African extension and advisory services lack a national framework to guide the provision of extension and advisory services. This has led to uncertainty with regard to the roles and responsibilities of different stakeholders on service delivery (DAFF, 2005). This extension situation affects mostly smallholder farmers, compared with commercial farmers, because they cannot afford private extension services (Koch and Terblanche, 2013; Khwidzhili and Worth, 2019). Given the challenges highlighted above, several authors (Raidimi and Kabiti, 2017; Ngaka and Zwane, 2018) have emphasised the need for more public-private partnerships in the provision of agricultural extension and services in South Africa.

The South African government has introduced several initiatives in an attempt to revitalise agricultural extension. One such effort is the joint national project with the Kingdom of the Netherlands, which is intended to implement/pilot a viable extension model for the country's agricultural extension and advisory services. The findings of the project led to the development and launch of norms and standards for agricultural extension and advisory services by the DAFF in 2005 (DAFF, 2011). The norms and standards provide a guide to the provision of extension and advisory services, based on government policies and goals, as well as on the needs of the different stakeholders (DAFF, 2005). The Extension Recovery Plan (ERP) was also introduced as the government's response to a shortage of extension agents and was intended to establish a system that delivers integrated services to farmers. Most importantly,

the ERP also aimed at improving the integration of farmers into value chains. This was done through the introduction of strategies that aimed to improve the policy context for extension service provision, advance the skills and competencies of extension officers, and make ICTs a vital part of service delivery (DAFF, 2011). However, notwithstanding the efforts made by the South African government to revitalise the agricultural extension services, the agricultural extension services are still in a dire state.

Moreover, several programmes have been implemented for supporting agricultural development, of both smallholder and commercial farmers, through extension. These include the Land Redistribution for Agricultural Development, Integrated Food Security Nutrition Programme, CASP, Marketing and Entrepreneurship Development, and the National Land Care Programme. Agricultural extension focuses on these programmes for responding to urgent and inter-related priority issues, such as food insecurity, unemployment, poverty alleviation, food safety, economic growth and environmental conservation, through increased farmer productivity and income (DAFF, 2015). According to Musiyarira (2013), these programmes have been quite effective, but have only reached a minority of the small-scale farmers (Musiyarira, 2013).

Currently, the South African government is in the process of developing the National Extension Policy for the country (DAFF, 2014). The policy is intended to guide and regulate the provision of extension and advisory services, with the aim of addressing challenges encountered in the provision of extension services. It also seeks to transform and align the core competencies of extension agents towards the comprehensive development agenda, as well as to promote and implement the integrated and holistic support services approach (DAFF, 2015). Stakeholders believe that the introduction of the National Extension Policy will revitalise agricultural extension in the country.

One area that the government is focusing on in the revitalisation programme is the need for professionalism in agricultural extension services. From its introduction in South Africa, agricultural extension was not recognised as a profession, until recently. Agricultural extension is now recognised as a profession by the South African Council for Natural Science Profession (SACNASP). Agricultural extension agents now have to register as scientists and are guided by the SACNASP code of conduct (Khwidzhili and Worth, 2019). The need for the professionalisation of agricultural extension was acknowledged by researchers, extension officers, the South African Society for Agricultural Extension (SASAE), and policymakers (Terblanche, 2007a). Several studies have also presented empirical evidence and support for

the need for agricultural extension to be recognised as a profession (Terblanche, 2007a; Terblanché, Koch *et al.*, 2012; Zwane, 2014; Davis and Terblanche, 2016). In 2005, the DAFF also acknowledged this need for agricultural extension professionalism in its norms and standards document for agricultural extension (DAFF, 2005). In addition, they requested the SASAE to undertake a study on establishing a professional South African agricultural extension services corps (Terblanché *et al.*, 2012). The SASAE had long been playing a significant role in enhancing the professionalism of the agricultural extension services in the country, since its introduction in 1966. The establishment of the South African Journal of Agricultural Extension in 1973 was one of the steps taken by the SASAE towards ensuring professionalism in agricultural extension. This journal is globally known as a professional journal promoting the science of agricultural extension in South Africa, and beyond (Terblanche, 2007a).

2.6 Policy responses to youth unemployment in South Africa

The South African government has introduced a number of policies and strategies to tackle overall unemployment, as well as youth unemployment, since the transition to democracy in 1994 (Fourie, 2015). These policies include the implementation of broader strategies, such as the Reconstruction and Development Programme (RDP), the Growth, Employment and Redistribution Policy (GEAR), the New Growth Path, National Development Plan (NDP) 2030, as well as more specific policies and programmes that target the different sectors, such as the Department of Agriculture, Forestry and Fisheries (DAFF) Strategic Plans, the National Youth Policy, the Revised National Curriculum Policy, and the Employment Tax Incentives Bill (also known as the Youth Wage Subsidy) (Hendriks, 2016). From 1994 to 2014 when these various policies were implemented, an increase in employment was realised, from 9.5 million in 1995 to 15.2 million people in 2014. However, unemployment also increased from 2.0 million to 5.2 million over the same period (Hendriks, 2016). The question remains unanswered as to whether unemployment is caused by the higher rate of job seekers entering the market or by the slow absorption of labour by the labour market. The policies that contribute to solving youth unemployment, and unemployment in general, in the country are discussed below.

2.6.1 The Reconstruction and Development Programme

The Reconstruction and Development Programme (RDP) policy is a broad, integrated socio-economic policy that was introduced in 1994 (African National Congress, 1994). This was one

of the first broad development economic policies that government adopted, with the aim of addressing social and economic problems such as poverty, unemployment and inequality (African National Congress, 1994; Moyo and Mamobolo, 2014). It was a policy for reconstruction following the “damage” that was caused by the apartheid government (Corder, 1997). The five programs that were within the policy include meeting the basic needs of people as aforementioned, developing human resources through extensive education and training, building the economy, and democratising the state and the society.

Considering the problem of youth unemployment, the RDP fund was established, providing billions of Rands per annum to help to finance several high-profile projects, including projects for unemployed youth. The first programme within the policy (meeting the basic needs of people) included the creation of jobs through public works, the provision of houses, free electricity, land reform, infrastructure, health care and social welfare (Corder, 1997; Hendriks, 2016). Through the provision of these services, government focused on job creation for all through public works and the promotion of Small, Medium and Micro Enterprise (SMMEs), with special attention being given to previously disadvantaged people, i.e. Africans, women, youth, and people with disabilities. Although some of the jobs would be in short-term employment, adequate income and labour standards were assured. Programmes within the policy had special focus placed on the youth and the challenges that the youth faced. These include the elevated level of unemployment and lack of skills. The RDP suggested that youth development should be achieved through reversing youth marginalisation, job creation, and empowering and promoting education and training. The rural youth were supposed to be employed by implementing agencies to work on the different construction projects as a way of developing them through skills training (Moleke, 2003a).

Moleke (2003a) highlighted the point that, although the RDP was viewed as the cornerstone of the government development plan and despite some achievements in the areas of social security (Visser, 2004; Besada, 2007), it did not meet its targets, particularly in terms of economic growth. Its targets on land reform were not met (Moyo and Mamobolo, 2014). As regards youth employment, the policy did not achieve the intended targets. Implementing agencies utilised their own employees (mostly foreigners) to work in the construction companies, leaving the local people in those remote areas unemployed and without skills. After some time, the RDP policy was faced with implementation challenges related to a lack of properly skilled staff, failure to provide basic services in time, and limited employment creation (Visser, 2004; Ferreira and Rossouw, 2016). Furthermore, the quality of the services provided by the SMMEs,

which the government was promoting and supporting as a way of creating jobs, was questionable. Built houses, for example, were collapsing. Inexperience and lack of training from the implementing agencies constitute one of the reasons for the failure of the programmes within the policy (Hendriks, 2016).

As a result of implementation challenges, government introduced a new macro-economic policy framework in 1996, called the Growth, Employment and Redistribution (GEAR) Strategy (Visser, 2004; Gelb, 2007). The aim of the policy was to reduce poverty and inequality through economic growth. The above-mentioned aims (poverty reduction and inequality alleviation) were to be achieved by creating employment opportunities and wage growth. Specifically, the policy was meant to achieve at least 4.2% growth and create 400,000 jobs per year by 2000 (Department of Finance, 1996; Besada, 2007). However, GEAR did not achieve its targeted growth and employment rates (Visser, 2004; Streak, 2004). Economic growth was lower than anticipated throughout the years (2.7% on growth and 2.5% per year in terms of job creation during the period from 1993 to 2003), leading to less job creation and more poverty.

The Accelerated and Shared Growth Initiative for South Africa (ASGISA) was introduced, after government was not satisfied with 2.7% growth achieved by GEAR, to address the problems of unemployment and poverty (ASGISA, 2006). The policy had no new targets or objectives. The policy aimed to increase growth and reduce unemployment and poverty, as well as increasing investment (ASGISA, 2006; Chagunda, 2006). One of the policy's targets was to help unemployed youth to secure jobs and learnerships, and become involved in business. The following were the suggested interventions for addressing youth unemployment: building new Youth Advisory Centres, intensifying the youth cooperative programme, monitoring programmes implemented by previous policy on skills training, and business empowerment.

Youth Advisory Centres provided services that included career information, job opportunities, business development opportunities and economic development services. These centres facilitated soft skills training for youth and also referred qualifying candidates to employment agencies such as the HURAMBE Employment Agency. These centres also provided mentorship and training for aspiring entrepreneurs. This was a good initiative, as its focus was not only on assisting youth in finding employment, but also on providing guidance for youth who wished to become entrepreneurs. According to Brynard (2011), these centres were mostly located in townships and urban areas, and not in rural areas, and a few of them were not fully functional.

The policy also targeted helping unemployed graduates by providing them with jobs and learnerships. This was done in partnership with the Umsobomvu Youth Fund Initiative, which created a database of registered unemployed graduates. There were no reports about the fate of the policy, as it was replaced by the New Growth Path in 2010, which was implemented at the exit of President Thabo Mbeki (Brynard, 2011).

2.6.2 The New Growth Path

The New Growth Path (NGP) was introduced in 2010 by the Ministry of Economic Development (Meyer, 2013). The main priority of the growth plan was to create employment through addressing structural unemployment that had remained extremely high. The policy, at the time, was the country's long-term development vision, with a target of creating 5 million additional jobs by 2020, and thus reduce the unemployment rate from 25% to 15% (Department of Economic Development, 2010). The policy aims to achieve this through creating more jobs in economic sectors, such as the agriculture, mining, manufacturing, tourism and public sectors. The agriculture sector was targeted to create jobs for 300,000 smallholder farmers in the smallholder schemes by 2020 (Department of Economic Development, 2010).

In creating employment, this policy had five job drivers, namely: infrastructure; main economic sectors; seizing the potential of new economies; investing in social capital and public services; and spatial development. The focus on youth in the policy was to expose them to various work experiences in the form of providing internship for them, both in the public and private sectors, and also to provide opportunities and training for aspiring entrepreneurs. Infrastructure development as one of the job drivers was meant to create jobs and skills acquisition for youth, both in urban and rural areas, through programmes such as the Expanded Public Works Programme (EPWP). This development was not only going to offer jobs but also address the underdevelopment in remote areas. Services that were hindered by lack / poor infrastructure in remote areas such as telecommunication would then be resolved. Accessing information for the rural youth would then be relatively easier.

The policy also focused on creating jobs through the expansion of other sectors such as manufacturing. The policy emphasised creating jobs for the youth through direct employment schemes by the state. It further highlighted the subsidies and expansionary macro-economic packages that are labour intensive (such as agriculture and mining), and ways to encourage the private sector to invest in and extend their existing operations in an attempt to create employment. The policy was also introduced as a remedy to the damage caused by global

economic recession (Koma, 2013). However, according to Meyer (2013), after the introduction of the policy, there had been debate on what the policy aimed to achieve and how it could be implemented. The main criticism of the NGP noted by Mayer *et al.* (2011) is that it failed to provide procedures and interventions as to how its aims could be achieved. The policy was then replaced by the NDP 2030 in 2012.

2.6.3 National Development Plan 2030

The NDP 2030 was approved by the South African Cabinet in 2012. The Plan was released following the National Commission's *Diagnostic Report*, released in June 2011, which set out South Africa's achievements and shortcomings since 1994. The report pointed out that failure to implement policies is one of main reasons for slow progress, and set out nine primary challenges faced by the country. Among the challenges identified were the facts that few people were at work, the quality of school education for black people was poor, and South Africa remained a divided society (National Planning Commission, 2011). Thus, the NDP 2030 was developed as an intervention strategy to many of the alarming issues in South Africa.

The NDP 2030 aims to address the problem of poverty and inequality by 2030, as well as the problems identified in the diagnostic report (National Planning Commission, 2013). Rural development is the most important strategy for poverty reduction and employment creation in rural areas (Johnston and Clark, 1982). The Plan underlines the present challenges experienced in rural areas, such as poverty, unemployment among the youth and women, and poor infrastructure in schools. As far as rural challenges are concerned, the NDP provided solutions for the challenges, such as improving the poor infrastructure in schools, expanding agriculture for small-scale farmers, and introducing new technologies to commercial farmers, with the aim of creating jobs while improving standards of living. Agriculture is identified as the most important form of employment in rural areas, with a potential of creating 1 million jobs through the expansion of smallholder irrigation farming.

Reducing the unemployment rate would provide a solution for eliminating poverty and inequality in South Africa (Zarenda, 2013). Thus, finding ways to reduce the alarming levels of youth unemployment is one of the aims of the policy. The NDP 2030 has interventional strategies that target unemployment, with greater focus on education and training. The National Planning Commission (2012) highlights the following interventions specifically intended for the youth, both in rural and urban areas:

- Improving the existing youth programmes like the EPWP and introducing new community-based programmes that will provide life-skills training, entrepreneurship training and opportunities to participate in community development and outreach programmes,
- Increase the number of Further Education and Training (FET) colleges,
- Provide full financial assistance to learners from poor families,
- Build community safety centres to prevent crime and include youth in initiatives within their communities,
- Provision of tax incentives to employers to decrease the costs of hiring young people,
- A subsidy to identify, train and place matric graduates into work,
- Increase the number of learnerships provided,
- Formalisation of the graduate recruitment scheme to attract highly skilled young people,
- Expand the role of government-owned enterprises in training artisans and technical professionals, and
- Improving the school system by training teachers and increasing the mathematics and language literacy achievement rates of learners to at least 50 percent.

2.6.4 The Department of Agriculture, Forestry and Fisheries strategic plans

The DAFF Strategic Plans of 2013/14 to 2017/18 and 2015/16 to 2019/20 are guided by long-term government policies, namely the NGP and NDP 2030. The plans place much focus on poverty, unemployment, food security, rural development, and skills development. In the NGP and NDP 2030, agriculture is identified as a sector with a potential to create more jobs, and thus this sector's specific plans provide solutions and interventions on how this can be achieved. Most importantly, the plan places special attention on solving unemployment problems in rural areas, especially among the youth. The plans provide interventions for addressing rural unemployment by encouraging the use of unutilised land through utilising conservation agriculture, strengthening smallholder farmers, and linking them to commercial farmers (DAFF, 2013; DAFF, 2015).

The plans emphasise the need to involve the youth in agriculture career opportunities that could change the state of agriculture, leading to youth job creation. The Land Care Programme and the EPWP are parts of these strategic plans, with an objective of creating jobs, targeting 55% women, 40% youth and 2% people with disabilities (DAFF, 2013; DAFF, 2015; Carter, 2017).

As far as the strategic plans are concerned, more has been achieved in terms of increasing hectares planted with the aim of increasing food security in the country. In terms of jobs creation, in the second quarter of 2016, unemployment was reduced by 5% as compared with the previous quarter, showing that more jobs are being created in the sector (DAFF, 2014).

2.6.5 Revised national curriculum policy

Policy debates in developed countries about youth unemployment range between observations that the high rates of youth unemployment are a pure outcome of the effectiveness of free market forces and other observations that the youth are faced with a long-term challenge of unemployment because of a lack of both experience and improved skills. Lack of information is said to be one of the causes that result in people being unemployed (O'Higgins, 2001). Following this, the South African Department of Basic Education formulated a policy that provided career guidance for learners in Grade 9 to Grade 12 in high schools. This policy was implemented as an essential subject, called "Life Orientation", to all learners and is documented in the Revised National Curriculum Statement Policy of 2002. It endeavoured to alleviate unemployment by providing the youth at a high school level with information about career options that they could follow.

According to Du Toit (2003), the Revised National Curriculum Statement Policy of 2002 has a shortcoming. The career guidance that is provided at high school level does not provide adequate formal information about the labour market, occupation and training opportunities. Accurate and updated information about the skills and careers in demand in the labour market is crucial. This kind of information is provided by private career information institutes and networks, which are expensive to access and thus not available to disadvantaged learners, who are mostly located in rural areas. After 15 years of implementing the policy, the youth in rural areas still lack information about careers and even on options about further education. Adjustments need to be made to the policy in order for rural youth to access the intended benefits of the policy. Adjustment to the implementation plan, including as to how the authorities can provide updated information to rural youth, is essential.

2.6.6 The National Youth Policy and the Youth Employment Accord

The National Youth Policy (NYP) 2015-2020 was introduced in 2015 with the main aim of addressing issues that the youth face. Youth unemployment is a global challenge and this policy was specifically formulated to formulate interventions and strategies to overcome the

challenge, referring to the National Development Plan 2030. The National Youth Commission (2015) states that the policies implemented before the NYP 2015-2020 have made an impact on the socio-economic status of the youth. These include the improvement of skills acquisition and access to education. However, more can still be done, considering the increasing levels of unemployment. The goal of the NYP 2015-2020 is to consolidate youth initiatives that improve their capabilities to participate in and transform the economy.

The objectives outlined in the policy document, as noted in the NYP 2015-2020, are as follows:

- Consolidate and integrate youth development into the mainstream of government policies, programmes and the national budget;
- Strengthen the capacity of key youth development institutions and ensure integration and coordination in the delivery of youth services;
- Build the capacity of young people to enable them to take charge of their own well-being by building their assets and realising their potential;
- Strengthen a culture of patriotic citizenship among young people and help them to become responsible adults who care for their families and communities; and
- Foster a sense of national cohesion, while acknowledging the country's diversity, and inculcate a spirit of patriotism by encouraging visible and active participation in different youth initiatives, projects, and nation-building activities.

The National Youth Commission (2015) identifies the gaps that still need to be improved on to help to reduce youth unemployment. These gaps include the limited involvement of the private sector in intervening with job-creation opportunities, the lack of economic participation of the youth, and the “avoided” social and health challenges that the youth face. These challenges include the high rates of HIV infections, substance abuse, violence and risky behaviour, as well as the need to improve nutrition, especially of youth in rural areas. Nevertheless, institutions for the improvement and maintenance of youth development have been initiated by both the state and the civil society (National Youth Commission, 2015). Examples of these institutions include the South Africa Youth Council and the National Youth Development Agency.

Generally, the youth development institutes might be perceived to be ineffective because of the rising unemployment, lack of information, and lower skills training among the youth. The reasons for these perceptions are that there is a lack of clear mandates and a fragmentation between main stakeholders, resulting in duplicated responsibilities and time wasting, with

fewer results (National Youth Commission, 2015; Hendriks, 2016). Furthermore, there is lack of monitoring and evaluation of the existing programmes implemented by the institutions. Little effort is made to gather and act upon the challenges and lessons experienced within the institutions. The institutions were created to tackle the challenges that youth face, and yet they do not have the capacity to deliver on this mandate. Hendriks (2016) highlights the fact that some of the institutions do not even have computers and some are not even functional. Tackling youth unemployment is more than just creating temporary jobs and the acquisition of moderate skills. According to the National Youth Commission (2015), interventions to create jobs are necessary strategies for addressing the root causes of this challenge. Education should remain a priority for both policymakers and government, as well as for the youth themselves.

Related to the NYP 2015-2020 is the establishment of an organisation known as the Youth Employment Accord, which aimed to achieve the New Growth Path goal of creating five million new jobs by 2020 (National Youth Commission, 2015). The organisation established ways for creating youth employment and skills development. An agreement was reached to implement the Youth Employment Strategy from 2013, with the aim of providing large number of youths with employment. The aim was to achieve this by incorporating measures and incentives to ensure youth engagement in the economy, through training, internships and apprenticeships. The Youth Employment Strategy has six target areas, namely education and training, work exposure, public sector measures (public work programmes), youth target set-asides, youth entrepreneurship, and youth cooperatives and private sector measures (Department of Economic Development, 2013). Since the introduction of the Youth Employment Accord, employment of youth in agriculture has increased dramatically (Department of Planning, Monitoring and Evaluation 2016).

2.6.7 Employment tax incentives bill

The Employment Tax Incentive Bill, also known as the Youth Wage Subsidy, was implemented in 2014. The aim was to help to create incentives for firms and/or companies to hire youth. Unlike the EPWP that focuses on youth with the highest qualification of matric, this policy is inclusive to all youth with diverse skills and education (Hendriks, 2016). According to Yu (2012), the Treasury announced that 209,000 young workers had been employed in 23,500 firms, at the time of reporting. It is, however, not known if the jobs were created because of the subsidy. Furthermore, it is unclear if the jobs were created at the cost of old jobs.

Yu (2012) explains how the Youth Wage Subsidy works. Only companies registered under the Pay as You Earn (PAYE) provisions qualify to receive the subsidy upon employing a young person, provided that certain requirements are met. A young person employed must be a full-time employee who works at least 35 hours per week. The subsidy applies both to newly employed and already employed youth aged between 18 and 29 years. The already employed youth must be earning less than R60,000 per year. The value of the subsidy is R24,000 per worker per year. The new young workers and the already working youth only have a maximum of two years and one year, respectively, for qualifying for the subsidy. The subsidy is redirected to SARS, and employers have options of how they can collect the subsidy. First, they can pay the difference between the PAYE tax and the subsidy every six months, or they can pay the difference between the PAYE tax and the subsidy every month and reconcile every six months. The last option is that the employer can pay the PAYE tax as usual, and then collect the tax credit of the subsidy.

Just like any other policy, the Youth Wage Subsidy is associated with various advantages and disadvantages. According to the National Treasury (2011), the advantages of implementing the policy include the reduced financial costs incurred by the employers, as the relatively lower training costs of the newly employed youth would make it easier for small-scale employers to afford hiring them. Another advantage is the hope the policy brings to the work-seeking youth, even those who might otherwise be discouraged.

Arguments against the subsidy refer to the money given to the employers as a deadweight loss (National Treasury, 2011). This statement is supported by the assumption that employers are given money for employing the youth whom they were going to employ anyway. Furthermore, firms could replace unsubsidised adult workers with the subsidised young workers. This will not reduce the rate of unemployment, but will only redistribute it. Hendriks (2016) states that the policy results in various effects in the labour market. For example, a replacement effect where firms with subsidised employers will outgrow firms without subsidised workers. This study also noted the “destructive chumming” and the “stigmatisation effect”. The latter arises when the people who are employed because of the subsidy will be stigmatised by the employees who were left employed without the subsidy.

2.7 Summary

This chapter has reviewed the relevant literature to set the scene for the subsequent empirical analysis. The review has focused on entrepreneurial development in rain-fed farming, with a

particular focus on the participation of youth in smallholder farming and related economic activities.

After the general background, the chapter defined key concepts and presented salient imperatives that are important in contextualising and understanding the key issues in the study. Entrepreneurship has been defined as a process of identifying, seizing, and exploiting opportunities, efficiency and innovation, while taking calculated risks, to generate profit. The review has singled out agriculture as a key sector for addressing the unemployment of rural youth, and has placed much emphasis on interventions that focus on youth entrepreneurial development in smallholder rain-fed farming. Although limited attention has been given to entrepreneurship in the field of agricultural economics, the entrepreneurial orientation of the farmers would further enhance the establishment of farming businesses by young people.

Trends in youth unemployment have been discussed globally, in the context of SSA and South Africa. The literature also reveals several factors that affect youth unemployment. These include the aggregate demand, minimum wages, quality of education, and absorptive capacity of the economy in view of the growing youth population.

The importance and sources of agricultural information have been discussed. This part of the literature review has shown the extent to which information relevant to smallholder farming forms part of ICTs, training provisions by different departments, mentorship programmes, and agricultural extension.

A review of the policy responses to youth unemployment shows that, since 1994, South Africa has developed several national and sector-specific policies intended to create opportunities for the young people in the country. However, the results are thus far have been poor because of the poverty of the implementation of policies/strategies and programme design aspects, lack of strong monitoring frameworks, and lack of skills to manage the programmes. Going forward, the NDP 2030 gives a broad framework, through which sector-specific programmes and interventions can be developed.

3 RESEARCH METHODOLOGY

This chapter describes the process followed in the choice of the study areas and the reasons for that choice, the specific study areas chosen, the data collection methods, sampling procedures, data collection process (the questionnaire development, pre-test, interviews conducted, focus group discussions and key informant interview), and the empirical methods of data analysis. It also summarises the conceptual models adopted, namely, the sustainable livelihoods framework, the theory of reasoned behaviour, and the theory of planned behaviour.

3.1 The choice of the study areas

The specific study areas were selected during the inception phase of the project, in consultation with the provincial Department of Agriculture, Land Reform and Rural Development and other stakeholders in the two provinces.

The ideal areas for this study would be districts within KwaZulu-Natal (KZN) that are dominated by rural youth unemployment and those that have the potential for rain-fed agriculture. The province is the second most populated in South Africa (after Gauteng Province) and has more than 60 percent of its population living in poverty.

The selection of the two districts of uMzinyathi and Amajuba was based on the following criteria:

- Districts already engaged in rain-fed agriculture;
- Districts that have a high potential for rain-fed agriculture, taking into account the biophysical conditions, mainly temperature and rainfall patterns;
- Districts with high agricultural land potential;
- Given the aims of the project to improve rural livelihoods, districts that have high rates of youth unemployment; and
- Limited/absence of research fatigue.

The selected study areas are also included in the government's strategic plan to reduce poverty and unemployment in the rural areas of KwaZulu-Natal. The significant factor that was also used to select the two municipalities from the respective districts is their smallholder farming sector and the potential of agricultural value chains to create jobs for rural youth.

3.2 The conceptual framework

3.2.1 The sustainable livelihoods framework

The livelihoods approach is aimed to reduce poverty among people by considering how their asset endowment is converted into improved living conditions (DFID, 1999). The sustainable livelihoods approach considers livelihood assets as key components in the building of a sustainable livelihood (DFID, 1999). A thorough understanding of the livelihood assets is important in the formulation of appropriate development paths. Kuipers (2014), in determining the different livelihood assets that are present in the southwest region of Cameroon and the importance of each, discusses each of the different types of capital, including human, natural, financial, physical, and finally, social capital. Emphasis in this report is placed on the natural, physical and financial assets that are available to the rural youth. These factors have a role to play in enabling successful participation in agri-food chains as a means to enhance food security in the rural areas, while reducing unemployment among the youth.

When one considers that individuals are not atomised decision makers and make use of their networks and social connections (Aldrich and Cliff, 2003), it is important to consider the livelihood assets of the youth which do have an influence on their decision-making. Kuipers (2014) mentions that livelihoods research is conducted at household and community levels. The household or family plays an important role in the creation of new ventures, or entrepreneurship, with the mobilisation of financial, human and physical resources (Aldrich and Cliff, 2003).

The Sustainable Livelihoods Approach (SLA) provides a solid conceptual tool for enhancing the understanding of the livelihoods of the poor. The SLA uses multiple indicators to assess exposure to natural disasters and climate variability, social and economic characteristics of households that affect their adaptive capacity, and current health, food and water resource characteristics that determine their sensitivity to climate change impacts (Chambers and Conway, 1992). The SLA has been used in the past, for example by Hahn *et al.* (2009) (using household-level data), to inform strategic community-level planning in two Mozambican communities, after incorporating climate exposures and household adaptive practices, where it proved insightful in capturing differentials in community-level climate vulnerability.

The ability of the Livelihood Vulnerability Index (LVI) to draw out subtle yet critical differences in specific vulnerabilities (e.g. related to water shocks) is valuable in tailoring

policies that can meet the needs of resource-dependent communities in the developing world. An analysis of the natural, physical and financial resources by extending the SLA, which takes into consideration external shocks, provides information on whether agricultural-related business ventures owned by the rural youth could be a reality, given the prevailing socio-economic and political environment in rural South Africa. The analysis accounts for the complexity and heterogeneity of smallholder rain-fed farming by disaggregating findings by area (development domains) and the type of youth.

To evaluate household asset endowment, the SLF provides a solid conceptual basis to enhance our understanding of livelihoods of the poor. The SLF considers five types of household assets, namely (i) natural, (ii) social, (iii) financial, (iv) physical and (v) human capital, using multiple indicators to assess the exposure to natural disasters and climate variability, the social and economic characteristics of households that affect their adaptive capacity, and the current health, food and water resource characteristics that determine their sensitivity to climate change impacts (Chambers and Conway, 1992). The SLF has been used in the past, for example, by Hahn *et al.* (2009), to inform strategic community-level planning in two Mozambican communities, after incorporating climate exposures and household adaptive practices, where it proved insightful in capturing differentials in community-level climate vulnerability.

An important aspect in the study of asset or resource endowment within the livelihoods framework relates to the issue of property rights and missing or incomplete markets for some factors. For instance, in the absence of financial markets, individuals or households tend to diversify their sources of income to self-insure themselves and provide working capital (Barrett *et al.*, 2001). Rural dwellers who do not own agricultural land, for various reasons, find themselves pushed out of agriculture to other economic sectors (Bezu and Holden, 2014). However, farmers who have access to agricultural land, but are frequently exposed to natural shocks (e.g. drought), may be compelled to diversify into the non-farm sector as ex ante risk management or an ex post risk-coping mechanism (Reardon *et al.*, 1998).

Given that human and social assets are part of conventional livelihood assets, as postulated in the Sustainable Livelihoods Framework (DFID, 1999), the evaluation of these assets has been conducted, adapting this framework. Human assets refer to the skills, knowledge, ability and good health that enable people to achieve their desired livelihoods. Social capital, on the other hand, refers to the network of contacts that individuals can turn to for assistance or advice as they strive to achieve their desired livelihoods. One novel aspect of this project is the integration of psychological capital (Luthans and Youssef, 2004; Luthans *et al.*, 2004) into the

sustainable livelihoods framework, which has traditionally included the above five forms of assets. The traditional framework is deficient and cannot explain differences among rain-fed farmers in terms of taking self-motivated initiatives, as similar asset endowments will predict similar types and levels of strategies and outcomes. Hence, the integration of the psychological capital concept is meant to explain individual mindsets that enhance self-reliance/self-belief beyond only human and social capital. Psychological capital (an asset) is a relatively new concept that asserts the importance of ‘who you are’, rather than ‘what you have’ (financial, physical and natural capital), ‘what you know’ (human capital), or ‘who you know’ (social capital) (Luthans *et al.*, 2004). Therefore, psychological capital could be defined as an individual’s positive psychological state of development, which is characterised by self-efficacy or confidence, optimism, hope and resilience (Luthans *et al.*, 2007). This form of capital is what separates opportunity entrepreneurs from necessity entrepreneurs (Maluleke, 2016). People endowed with positive psychological capital have the entrepreneurial drive to create a new business venture in the face of risk and uncertainty (Scarborough *et al.*, 2009) and resilience – the capacity to ‘bounce back’ from adversity, uncertainty, conflict and/or failure (Luthans *et al.*, 2007). In the context of the present study, self-efficacy would relate to the confidence that is expected to be shown by the youth about their abilities to mobilise resources and/or courses of action required to successfully engage in rain-fed farming, given the prevailing socioeconomic and political constraints in South Africa. This study has empirically examined psychological capital endowment, and the factors therein. The focus has been on the enabling and inhibiting behavioural factors required for youth to participate in profitable food value chains.

3.2.2 The theory of reasoned behaviour

According to the theory of reasoned behaviour, perceptions and social validation – how people around someone perceive the given activity/choice – affect how they will react towards that choice/action (Fishbein and Ajzen, 2011; Montano and Kasprzyk, 2015). An individual who perceives a particular activity negatively/positively is less/more likely to be interested to engage in it. The perceptions that the youth have regarding agriculture will play an important role in their interest to engage in such activities.

Figure 3.1 below shows the importance of youth engagement in agricultural value chain activities. The current state of livelihoods for most rural youth is characterised by poverty, unemployment, and numerous social ills. Their inability to find employment often results in

psychological problems, such as depression, social degradation, loss of morale, and discouragement (O'Higgins, 2001). This is even worse for the youth who have graduated with university degrees. These social ills, in turn, expose them to multiple social issues, such as teenage pregnancy, drug abuse, and violence.

It then becomes essential for the rural youth to participate in economic activities (employment or entrepreneurship) that will assist them in generating income and earn a living, improving their livelihoods, and minimising the psychological and social impacts of unemployment. However, the emphasis should not only be placed on what the youth can do to alleviate poverty and generate income. Attention should also be given to the various factors that might affect the opportunities, capabilities, and prevailing institutions for the youth in earning their living. This is better understood within the context of the Sustainable Livelihood Framework (SLF), which has been applied in various rural development contexts. The SLF considers all the possible opportunities and/or constraints that could hinder people's ability to adapt and sustain a livelihood strategy in an economical, ecological, and social manner (Krantz, 2001). This approach considers not only opportunities and constraints, but also the vulnerability of the individual at hand and their social exclusion that might result from choosing a particular livelihood strategy. It goes beyond the conservative approaches of poverty alleviation.

Similarly, when investigating the interest / potential engagement of youth in agricultural value-chain activities, attention should be paid to the possible opportunities, constraints, and vulnerability that the youth might encounter. There are internal and external factors that have the potential to affect the decision to participate in agricultural value-chain activities. Internal factors are factors that are within the control of the youth, such as the resources they own/have access to. These include natural, physical, human, financial, psychological, and social assets. Ownership/access to particular resources increases the propensity to take up available opportunities, while the lack of resources could be a constraint to engaging in certain activities (Barrett, 2006). Thus, for rural youth to be able to achieve the potential livelihood outcomes shown in Figure 3.1, they need to be endowed with various livelihood assets.

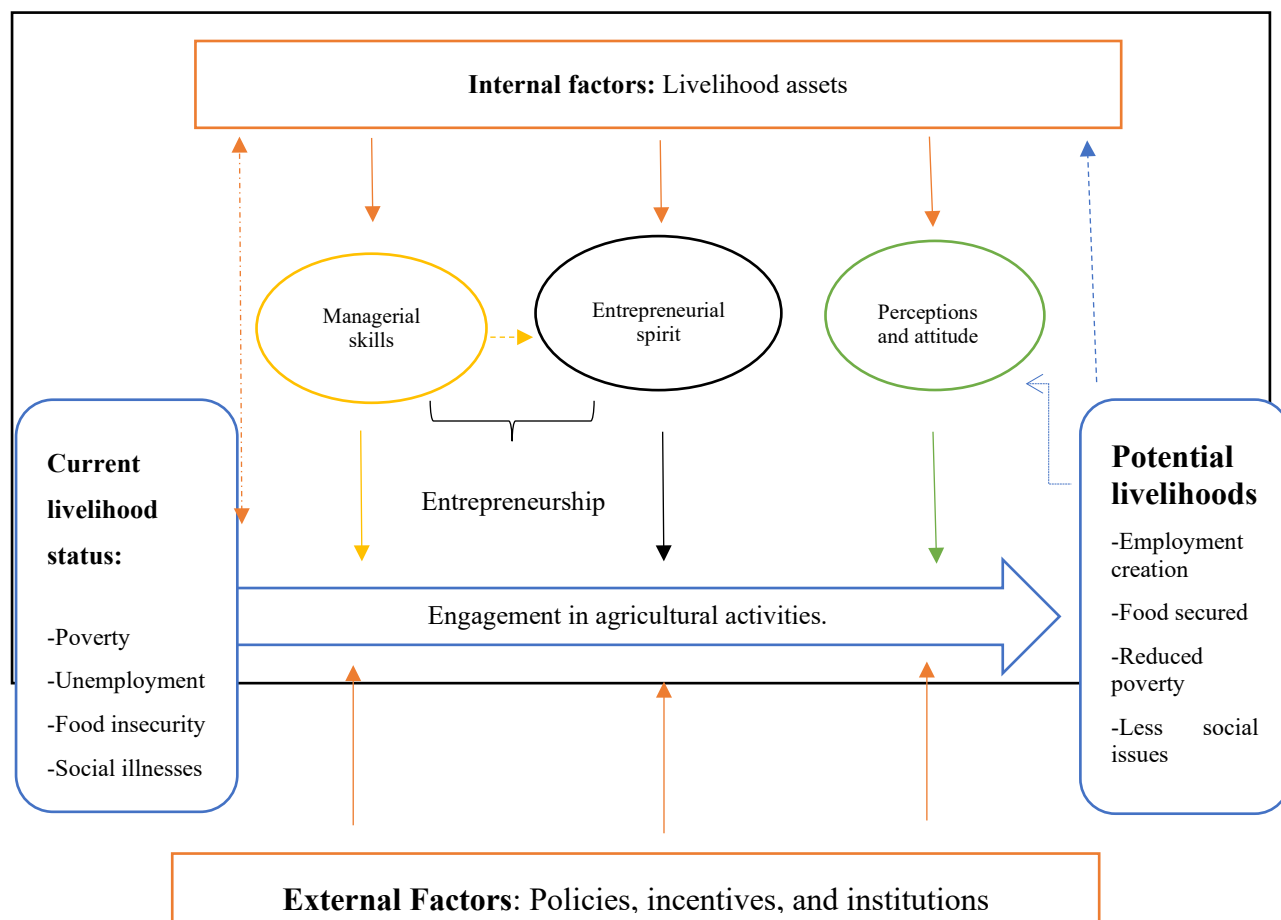


Figure 3.1: Factors affecting the interest of the youth to engage in agricultural value chain activities

Source: Adapted from Luthans *et al.* (2015); Maluleke (2016) and O'Planick (2016)

Access to markets and market information will require the youth to have access to/own physical assets, such as a motor vehicle or mobile phones. Furthermore, according to Maluleke (2016), people normally prefer to buy or acquire a service from people they know. This means that endowment in social capital is also essential. Taking into account the fact that the youth are deemed to be individuals who derive their motivation and aspirations from the achievements of people around them (demonstration effect), the kind of people they know and spend time with are important in affecting the decisions they make (including the type of livelihood strategy they choose) (Morrow *et al.*, 2005; Bernard *et al.*, 2014).

Another asset that is essential in affecting the decision to engage in any activity within the agricultural value chains is psychological capital, which focuses on one's mindset. This asset is often overlooked in the sustainable livelihoods framework literature (Chipfupa and Wale, 2018). The mindset of an individual affects his or her willingness and ability to identify and

take advantage of available opportunities (such as engagement in agricultural activities). Furthermore, psychological capital affects how an individual views and reacts to shocks and challenges. This asset represents who you are and how you see the world. Endowment in positive psychological capital enhances the ability of an individual to take up opportunities when they present themselves, and also to be resilient to constraints and setbacks that might emerge along the journey. It should be noted that endowment in one livelihood asset, but lacking in another, is likely to result in an unsustainable livelihood. It is necessary for the endowment in the livelihood assets to be realised and recognised as a package when engaging in a livelihood strategy.

According to O'Planick (2016), the majority of agricultural opportunities available in remote areas require youth to be more entrepreneurial relative to being employable. Retailing, for example, will require the rural youth to initiate and manage a retail enterprise for fresh produce and/or inputs. Thus, it is essential for them to engage in agricultural activities to be entrepreneurial. According to Kahan (2012), entrepreneurship is comprised of two dimensions: the managerial skills needed to initiate and successfully manage an enterprise; and an internal drive/motivation to initiate and manage an enterprise successfully. The first dimension, closely related to human capital which can be learned and improved on, includes relevant experience, educational background, and bookkeeping and leadership skills (Maluleke, 2016). The second dimension is the internal ability to take calculated risks, have confidence, and seize available opportunities (Maluleke, 2016).

Furthermore, since this study investigates the interest and potential participation in agriculture, and not actual participation, it has adopted the theory of reasoned behaviour. According to this theory, perceptions and social validation – how people around someone perceive a given activity/choice – affect how he or she will react towards that choice/action (Fishbein and Ajzen, 2011; Montano and Kasprzyk, 2015). Accordingly, an individual who perceives a particular activity negatively is less likely to be interested in engaging in it. Thus, following this theory, the perceptions that the youth have regarding agriculture will play an important role in their interest for engaging in such activities.

External factors that have the ability to affect the engagement of the youth in agricultural activities include policies, incentives, and institutions. These factors are out of the control of the youth, but have an impact on the type of decisions that they make. For instance, cultural norms practised in rural South Africa, such as land being made available only to elders and married individuals, also have an impact on the ability of the youth to engage in agriculture.

3.2.3 The theory of planned behaviour

According to the Theory of Planned Behaviour, the propensity/intention to behave in a certain way is influenced by three independent variables, namely attitudes/perceptions towards the behaviour, subjective norms, and perceived behavioural control (Ajzen, 1991). Behaviour, in this case, represents participation in rain-fed smallholder farming activities or any other economic activity. Subjective norms refer to the perceived social pressures to perform or not to perform the behaviour (Ajzen, 1991). Perceived behavioural control is understood to reflect past experience as well as predicted impediments and obstacles, i.e. how difficult or easy it would be to perform the behaviour (Ajzen, 1985; Ajzen and Madden, 1986).

Figure 3.2 below shows the conceptual framework, which integrates the Theory of Planned Behaviour (TPB) and the Sustainable Livelihood Framework (SLF). It depicts the factors determining the propensity of the rural youth to participate in smallholder farming. The TPB has been one of the most dominant and popular conceptual frameworks for the study of human behaviour (Ajzen, 2002). Accordingly, the propensity/intentions to behave in a certain way are influenced by three independent variables, namely attitudes/perceptions towards the behaviour, subjective norms, and perceived behavioural control (Ajzen, 1991). In terms of the theory, behaviour refers to a particular activity to be performed. In the context of this study, it is taken to represent participation in rain-fed smallholder farming activities. Attitude refers to the individual's positive and negative evaluations of the behaviour. In contrast, subjective norms (social influences) refer to the perceived social pressure to perform or not to perform the behaviour (Ajzen, 1991). Perceived behavioural control, which is understood to reflect past experience as well as predicted impediments and obstacles, refers to the individual's perception of how difficult or easy it would be to perform the behaviour (Ajzen, 1985; Ajzen and Madden, 1986; Ajzen 1988; Ajzen, 1991; Ajzen, 2002).

Given the perceptions and negative attitudes of the youth, their decision to take up agriculture as their livelihood strategy is also influenced by their family, as well as social and cultural norms (social influence) (Leavy and Smith, 2010). According to Hardin-Fanning and Ricks (2017), performing a particular behaviour (participating in rain-fed farming activities) is also influenced by the availability of adequate resources, which are captured in the SLF. The framework centres on the connections between individual assets, the activities in which they can engage given the assets they own, and the mediating processes (institutions, regulations, etc.) that govern access to the assets (Allison and Ellis, 2001). The use of SLF gives an

understanding of whether access to different assets, social norms, and other policies influence the propensity of rural youth to participate in rain-fed smallholder farming, and how these processes influence rural youth entrepreneurial spirit.

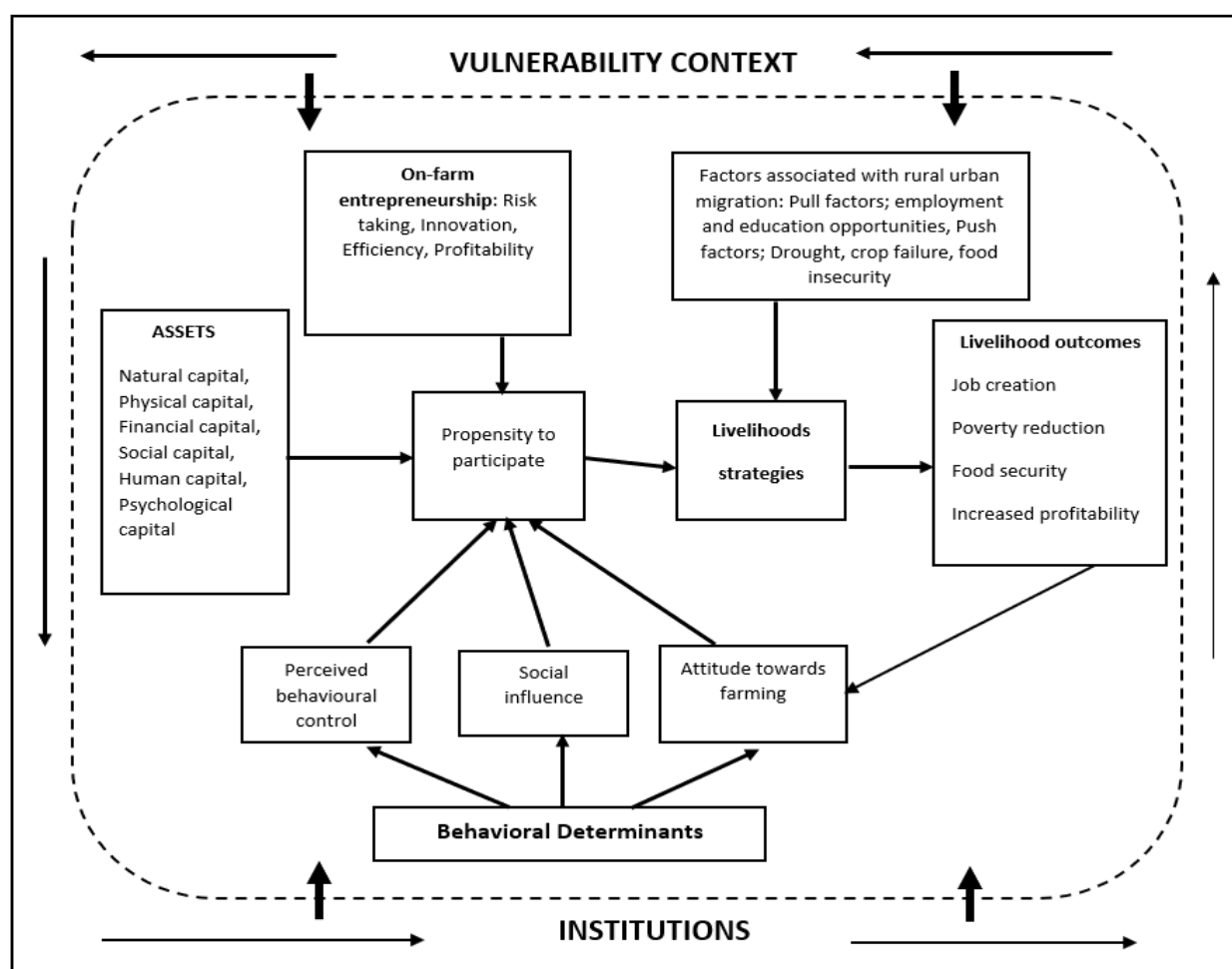


Figure 3.2: Factors determining rural youth to participate in rain-fed smallholder farming

Source: Adopted from Ajzen (1991); DFID (1999)

The SLF places people at the centre of development efforts and views them as deploying assets to reach their goals within the context of vulnerability (Kemp-Benedict *et al.*, 2009). The interest of youth in taking up farming as their livelihood strategy will likely be positively associated with their ability to put together and gain access to these resources (Leavy and Smith, 2010). The concept of PsyCap as adopted in this study will capture the mindset differences that exist among the youth concerning their participation in rain-fed smallholder farming. For an individual to perform an activity, irrespective of the resource endowment, they must have a positive PsyCap.

The vulnerability context and applicable institutions both influence the livelihood strategies that relate to how residents in rural areas use their assets to reach their goals (Massoud *et al.*, 2016). However, most of the rural youth lack access to assets, particularly land (Dalla Valle, 2012; White, 2012; Bezu and Holden, 2014), which turns them away from farming. Therefore, to support youth interest in the sector, there is a need to provide secure access to resources. Other factors related to the tendency of youth to not take up farming as a source of livelihoods include a lack of knowledge, information and adequate education, and a lack of access to finance (Filmer and Fox, 2014). The rural youth are also moving away from agriculture because of rural-urban migration (FAO, 2018b). This is attributable to both pull factors (e.g. better employment and education opportunities) (Ango *et al.*, 2014) and push factors (e.g. drought, crop failure and food insecurity) (Ango *et al.*, 2014; Deotti and Estruch, 2016).

Given the affiliation of the youth with ICTs, modern tools such as ICTs have been recognised as providing a useful tool for encouraging behavioural change towards agricultural entrepreneurship (Muktar *et al.*, 2015). The use of social media presents an innovative platform that has the potential for providing information in agriculture for entrepreneurship development among the youth. Through the use of social media platforms, the youth would be able to access information on best practices in agriculture, market prices, market links, entrepreneurial opportunities, sources of funding, and success stories among other entrepreneurs engaged in agriculture (Muktar *et al.*, 2015). This would increase youth participation in agriculture. According to Irungu *et al.* (2015), modern ICTs improve the profitability of agriculture, leading to job creation, increased food security, and poverty reduction.

3.3 Study areas and data collection process

This study was conducted from June 2018 to October 2022 in the following District and Local Municipality areas in western KwaZulu-Natal:

- uMzinyathi and Amajuba District Municipalities (sample size 224),
- Dannhauser (Amajuba District) and Nquthu (uMzinyathi District) Local Municipalities (sample size 224), and
- Alfred Duma, Inkosi Langalibalele and Okhahlamba Local Municipalities (sample size 250).

The study has interviewed a total of 698 members of the rural youth. The survey data was complemented with focus group discussions, key informant interviews and workshops.

3.3.1 Description of the study areas

The project was conducted in three districts in KwaZulu-Natal province, namely uThukela, Amajuba and uMzinyathi.

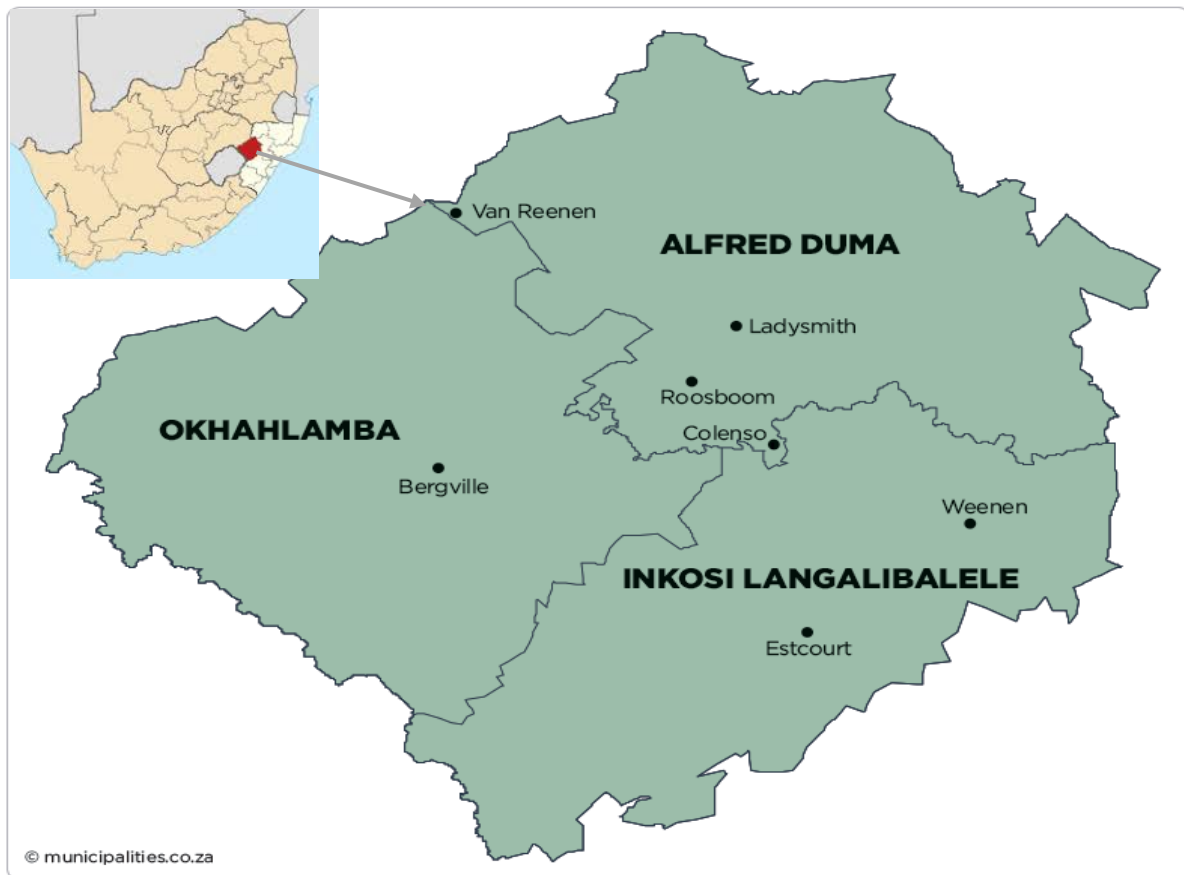


Figure 3.3: Map showing uThukela District

Source: <https://municipalities.co.za/map/123/uThukela-district-municipality>, accessed 30 October 2018

There is very little to no agricultural-related, youth-specific programming in the uThukela district. The government supports a youth structure known as the Youth in Agriculture and Rural Development (YARD) through the Department of Agriculture and Rural Development (DARD). Regarding the potential for rain-fed farming, the uThukela district is categorised as comprising a marginal to moderate agricultural potential area, with an annual rainfall of 1000 mm. The bio-physical conditions in the district are suitable for both crop and livestock production. However, droughts and, in some areas, flooding occasionally negatively affect rain-fed farming. Farming in the district is dominated by both commercial and subsistence rain-

fed farming. Irrigation is preferred in some areas where the effects of drought are more prevalent.

The three municipalities in selected in uThukela District are the Alfred Duma, Inkosi Langalibalele and Okhahlamba municipalities. The district is predominately rural and it is characterised by poor socioeconomic indicators. It has a high youth unemployment rate of 49.3% (larger than the provincial average) (Statistics South Africa, 2011) and it was reported that there are no specific government agricultural-related projects/programmes in the area that target the youth. The Youth in Agriculture and Rural Development (YARD) structure, whose mandate is to coordinate the activities of youth interested in farming, is defunct and non-operational. However, the past 5 years have been characterised by some periods of drought, which have negatively affected farming. About 13% of the land area is under agriculture (8% commercial and 5% subsistence) (Urban-Econ Development Economists, 2013). The bio-physical conditions in the district are suitable for both crop and livestock production. Major crops include wheat, maize, soya beans and potatoes, and the main livestock enterprises are for cattle, small ruminants and poultry.

Data collection was conducted in two further districts: Amajuba and uMzinyathi. It covered two local municipalities, Dannhauser (Amajuba district) and Nquthu (uMzinyathi district).

Figure 3.4 below shows the location of the two selected study areas in KwaZulu-Natal province.

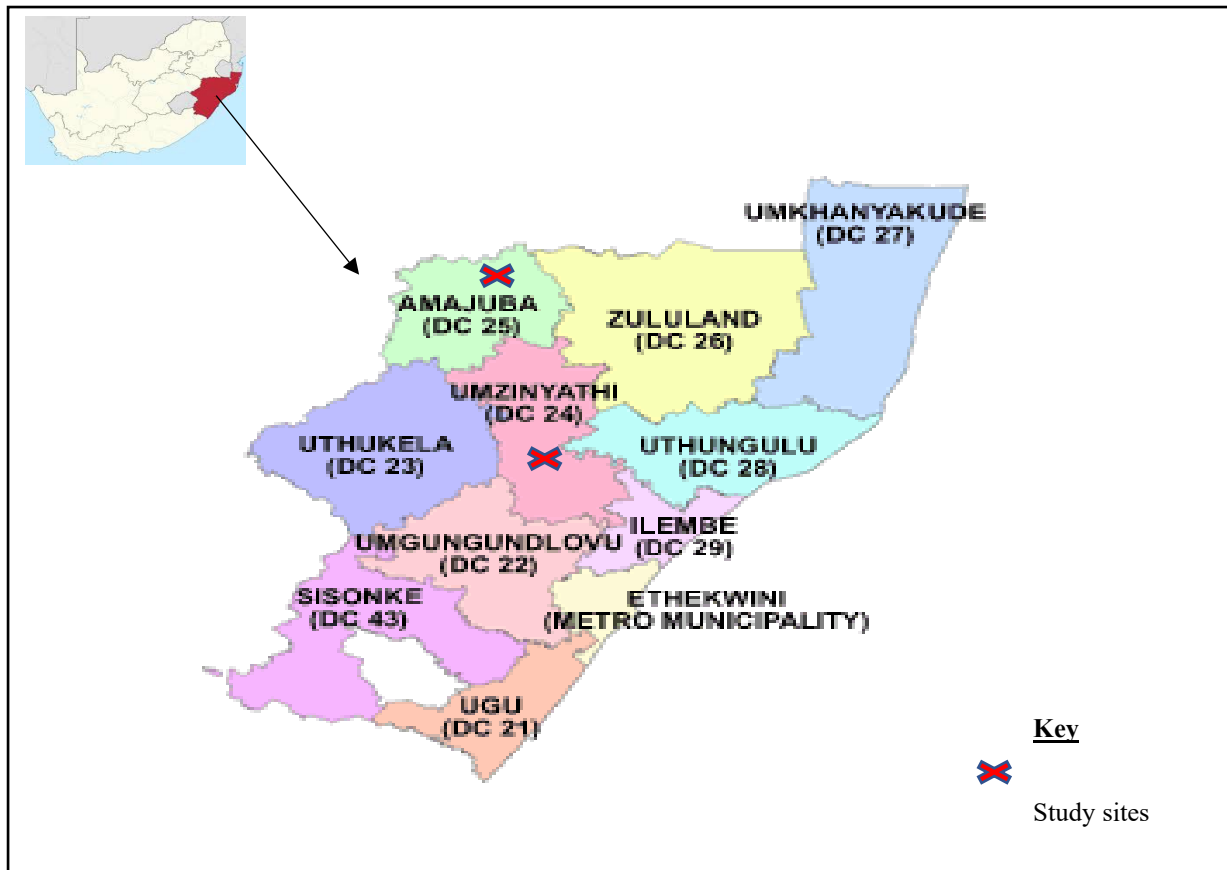


Figure 3.4: KwaZulu-Natal Province map

uMzinyathi district

uMzinyathi is located in the central north region of KwaZulu-Natal province, with an estimated population of 510 337, and an area 8,589 km² (Brigid *et al.*, 2013). This population accounts for about five percent of the total population of the province. The district is classified as one of the poorest and under-developed rural areas in the province. According to a report by uMzinyathi District Municipality (2018), about 84 percent of the district's population reside in rural areas, with more than 60 percent living in poverty and food insecurity. The district comprises four local municipalities, namely, Msinga, Umvoti, Nquthu and Endumeni.

The population structure of the district is dominated by youth and young adults (14 to 34 years of age), accounting for 33 percent of the total population (uMzinyathi District Municipality, 2018). About 37 percent of the youth are unemployed, with an overall district unemployment rate of 29.5 percent (uMzinyathi District Municipality, 2018). Furthermore, the district is characterised by a lack of skills endowment, with very low levels of literacy, which worsens the socio-economic profiles of the residents, and limits their potential for development.

Furthermore, the backlog on infrastructure development in the district does not improve the situation.

The dominant economic activities in the district include community services, manufacturing, transport, and agriculture. According to uMzinyathi District Municipality (2018), the latter is the second highest employer, after community services, accounting for 21.7 percent of the employment of the districts' total labour force. This indicates that agriculture plays a vital role in the economic status of the district and in the lives of people who reside in it. It is then not surprising that agriculture is one of the sectors earmarked for development in the district.

According to uMzinyathi District Municipality (2015), 24.4 percent of the land in the district is used for agriculture and forestry. The district practises both commercial and subsistence agriculture. However, subsistence agriculture is the most dominant, occupying 8.9 percent of the land, followed by plantations and annual dryland crops, occupying 7.7 and 4.1 percent of the land, respectively. The agricultural enterprises in the district include sugar cane, timber, maize, sweet potato, potato, dry beans, pumpkins, soya and sugar bean, groundnut, and livestock (uMzinyathi District Municipality, 2016). Other crops grown mainly during the rainy seasons include tomatoes, cabbages, brinjal, green pepper, and butternut. Livestock production in the study areas involves keeping livestock, such as goats, cattle, sheep, broilers, domestic chicken and layers, as well as running piggeries. The district is very cold in winter and mild in summer, with a mean annual temperature of 15-20 degrees Celsius, which is generally good for agriculture (uMzinyathi District Municipality, 2016). The average annual rainfall ranges from 600 mm to 1200 mm, indicating good potential for rain-fed agriculture.

Nquthu local municipality, uMzinyathi District

Nquthu Local Municipality is predominantly rural and is one of the four local municipalities in the uMzinyathi District. It is situated along the north-eastern boundary of the district, with a population of 165 307 (NLM, 2013). Unemployment is the most serious challenge in the municipality. The total unemployment rate has been estimated at 44.4%, with the highest particularly among youth (StatsSA, 2011; StatsSA, 2012). According to StatsSA (2012), unemployment among youth was 53.3% at the time of reporting, which was higher than the overall unemployment in the province. The agricultural sector is one of the economic drivers in the Nquthu municipality. Generally, the larger part of the uMzinyathi district, particularly the Nquthu area, is classified as high potential agricultural land (Figure 3.4).

The Ingonyama Trust owns approximately 93% of the land within the Nquthu municipality. The land is managed on a day-to-day basis by the respective traditional councils, depending on existing governance structures (NLM, 2013). The residents who are in need of land must approach the Induna or Chief who allocates land to them. This is authorised by the Tribal Authority and the Department of Land Affairs in the form of a Permission to Occupy (PTO) Certificate. The PTO is the current form of tenure in the areas (NLM, 2006).

Dry-land subsistence farming is the dominant type of agriculture practised, which includes both livestock and crop production. Crop production involves crops such as sugar cane, maize, soya, dairy, sugar beans, and groundnuts. Livestock production includes cattle, goats, pigs, and poultry production (NLM, 2013). The temperature in the municipality varies, depending on the season. However, the temperatures are considered suitable for agriculture. It is very cold in winter and mild in summer, with a mean annual temperature of 15-20°C, and such temperatures are good for agriculture. The average annual rainfall ranges from 600 mm to 1200 mm (UDM, 2016), and is the same across the district. YARD is a programme that provides support to youth who are participating in farming, in partnership with the Department of Agriculture and Rural Development (DARD).

Amajuba district

Amajuba district is located in the north of KwaZulu-Natal, near the uMzinyathi district (Figure 3.4). The district has an estimated population of 499 839, in an area of 6 911 km². It is predominantly rural and dominated by extensive commercial farmlands. However, some of the farms and lands have been allocated to local residents through the land distribution programmes and are now being utilised for smallholder farming. The district comprises three local municipalities, namely Dannhauser, Newcastle, and Emadlangeni.

Amajuba is categorised by relatively high levels of unemployment, youth-headed families, and poverty. According to Statistics SA (2011), more than 40 percent of the total working-age population in the district were then unemployed, compared with the provincial average of 33 percent. Furthermore, 50.3 percent of youth in the district were unemployed in 2011 (StatsSA, 2012). This situation needs urgent attention, given the large proportion of children and youth relative to adults.

According to Amajuba District Municipality (2014), the district is endowed with an abundance of water, developing infrastructure, and many destinations for tourist attraction. Thus, there are diverse entrepreneurial opportunities available, especially in manufacturing. According to this

report, the district is the largest producer of chrome chemicals in Africa. Unlike in uMzinyathi district, agriculture is not a major employer or major contributor to the economy of Amajuba district. However, the district is well endowed with very fertile land and suitable climatic conditions that allow for rain-fed agriculture.

Estimates are that there is land with good to high agricultural potential in the district (see the green colours in Figure 3.4 above), which comprises 105 847 hectares or 15.3 percent of the total area in the district (Lazarus Developments, 2014). This indicates that Amajuba district has a relatively high agricultural land potential, as compared with other districts like Zululand and Ugu. Of the 15.3 percent, approximately 10 percent of the area is cultivated, with 6 percent being under commercial dryland (rain-fed) production, 1 percent under irrigated commercial production, and 3 percent under subsistence dryland (rain-fed) production. The district practises both livestock and crop production. The dominant crops produced are maize, wheat, and lucerne (Shabalala, 2007). The average annual temperature is 17°C, with a minimum and a maximum of 0 and 30, respectively. The average rainfall ranges from 650 mm to 1000 mm. This condition favours most of the agricultural field crops in rain-fed agriculture.

Dannhauser local municipality, Amajuba District

The Dannhauser local municipality is one of the three local municipalities in the Amajuba district. Amajuba district is located in the north-western corner of KwaZulu-Natal province, with a population of 499 839. The district is predominately rural, characterised by relatively high levels of unemployment, particularly among the youth. According to StatsSA (2011), more than 40% of the total working-age population in the district at the time of reporting was unemployed, compared with the provincial average of 33%. In the same period, youth unemployment was at 50.3%, which is far too high when compared with the provincial youth unemployment rate of 42.5% (StatsSA, 2011).

Agriculture is an important sector that has the potential to create more jobs for youth in the municipality. The municipality is endowed with the most fertile land in the Amajuba District. About 19%, 16%, and 6% of the land constitutes high potential agricultural land, good agricultural potential land, low agricultural potential land, respectively (Figure 3.4). In terms of agricultural practices, subsistence farming is dominant. The agricultural activities include both livestock and crop production. The dominant crops in the municipality are field crops such as maize, wheat, and lucerne.

There is diversity in the municipality in terms of land ownership patterns. The largest portion of the land is owned by the Ingonyama Trust (controlled by the traditional authorities) and private individuals, whereas a small portion of the land is owned by the municipality, as well as other state organisations (DLM, 2015; DLM, 2019). The average rainfall ranges from 650 mm to 1000 mm per annum. The temperatures differ in terms of the season. In winter, it is colder with temperatures usually dropping below 0 degrees. On the other hand, summer is warmer, with temperatures exceeding 30 degrees. The average annual temperature is 17 degrees Celsius (INR, 2019).

3.3.2 Sampling procedures and the data collection process

Both primary and secondary data were collected. The secondary data consisted of a desk review of literature on the three livelihoods assets of focus, market access, and information communication technology as it relates to on-farm entrepreneurship development among rural youth.

For the primary data, a combination of purposive, stratified, snowball, and simple random sampling techniques were employed to sample the respondents. The study purposefully selected youth (aged between 18 and 35) only. The youth were then divided into two strata, namely, youth already engaged in agriculture and youth not currently engaged in agriculture. The sample was stratified to compare the two youth typologies in terms of their resource endowment. The study then employed snowball and random sampling procedures. For the youth engaged in agriculture, difficulties were encountered with the random sampling because of their limited number. Accordingly, the team then employed snowball sampling.

Before the actual data collection, pre-testing was done. The pre-testing was done primarily to check the completeness of the questionnaire, validate the consistency and clarity of the questions, improve the translation of the questions into isiZulu, estimate the time taken to complete the interviews, and ensure the appropriateness of the questions. It was also useful to check for repeated or missed variables, as well as to ensure that the translation of the questionnaire did not lead to changing or misinterpretation of the intended question. After the pre-testing, the questionnaire was revised accordingly. These amendments included eliminating all questions that were not relevant to youth, especially those on value-adding economic activities and value chains, after realising that the youth in the selected districts were only engaged in primary agriculture.

The process started with the recruitment of enumerators (five from each municipality). All the enumerators had college and/or university qualifications. Initial training was conducted, which was also targeted for pretesting of the questionnaire. The training focused on how to interview effectively, translate and record the data. Mock interviews were undertaken as part of the training. Following the questionnaire pre-test and the revision of the original questionnaire, the primary data was collected. With on-site supervision by the principal investigator and postgraduate students, the questionnaires were completed by enumerators who speak IsiZulu. The enumerators all had a minimum of a national diploma. The questionnaire was written in English, and the questionnaire was translated into the native language during the interviews. Each completed questionnaire was checked by the research team at the end of each day to ensure that each response was captured correctly and completely. Meetings were held at the end of each day to discuss and attend to queries that the enumerators might have had.

The target sample respondents for the study comprised employed and unemployed youth who were either fully, partially or not involved in farming/agricultural-related activities. No prior list of youth was available for sampling. The Provincial Department of Agriculture and Rural Development (DARD), through their Youth Coordinators, assisted in the mobilisation and identification of youth in the targeted municipalities. In this process, youth were stratified into four categories according to their levels of participation in farming/agricultural-related economic activities, and then randomly selected.

The categories are as follows:

- a) Only farming/agricultural-related economic activities (as an individual)
- b) Only farming/agricultural-related economic activities (as part of a cooperative)
- c) Partly engaged in farming/agricultural-related economic activities (through family business/activities, employed by another farmer, etc.), and partly engaged in another economic activity
- d) Not currently participating in farming/agriculture-related economic activities.

Primary data was collected from 689 youth through using a detailed structured questionnaire in the respective municipalities (Table 3.1).

Table 3.1: Numbers of sampled youth in the respective study areas (n = 698)

Youth	Municipality		
	Amajuba District Municipality	uMzinyathi District Municipality	
Participating in smallholder farming	41	31	
Not participating in smallholder farming	63	89	
	Dannhauser local municipality (Amajuba District)	Nquthu local municipality (uMzinyathi District)	
Not participating in smallholder farming	50	50	
Assisting in smallholder farming	13	40	
Participating in smallholder farming	41	30	
	Alfred Duma local municipality (uThukela District)	Inkosi Langalibalele local municipality (uThukela District)	Okhahlamba local municipality (uThukela District)
Participating in smallholder farming	26	11	30
Assisting in smallholder farming	20	9	35
Not participating in smallholder farming	41	59	19

None of the youth in the rural areas is engaged in agricultural value-adding economic activities (AVAEAs). Most of the youth are involved in primary agriculture either actively (fully) or partially through the farming activities of their households.

The interest was to look at the rural youth who are participating in farming. However, during the pre-testing, it was discovered that rural youth can actually be categorised into three groups, based on their participation in farming. Hence, during the actual data collection, stratified random sampling was used to select the youth to participate in the study. The youth were categorised into three groups, (i) those participating in rain-fed farming, (ii) those assisting at home with rain-fed farming activities, and (iii) those who are not participating in rain-fed

farming (see Table 3.1 above). Therefore, from these groups, simple random sampling was used to obtain a sample of 689 youth. In this study, the youth who are actively participating in rain-fed smallholder farming are defined as those who have taken a deliberate decision to participate in rain-fed farming, whether as individuals or as part of a group/cooperative, taking up farming as a livelihood strategy. On the other hand, the youth assisting at home with rain-fed farming activities are defined as those who help at home with rain-fed smallholder farming activities, but who have not taken a deliberate decision to participate in farming in their own capacity. They participate in farming as part of farming chores. The youth who are not participating in rain-fed smallholder farming are those youth who are not currently engaging in any rain-fed smallholder farming activities.

Most of the information required to understand the incentive schemes was sourced through key informant interviews that were conducted with knowledgeable resource persons from stakeholders, such as the provincial Departments of Trade and Industry, Agriculture, Rural Development, and Land Reform, Water Affairs, and Cooperative Governance and Traditional Affairs. Moreover, the National Youth Development Agency (NYDA), the Small Enterprise Development Agency (SEDA), the Lima Rural Development Foundation, and the Incubation Support Programme (ISP) were important stakeholders. These interviews and discussions provided information on the rationale for establishing the incentive schemes, the short and long-term objectives of the incentive schemes, the target clientele, types of products/services offered, section(s) of the value chain targeted for support, application requirements, the internal monitoring and evaluation tools used to measure periodic performance of the incentive schemes, performance history since inception, and on success stories, challenges and opportunities. In all these questions, particular reference was made as to how the rural youth is catered for and what plans the organisations have for assisting the youth in the future. This was supplemented by focus group discussions with selected individuals affected by the schemes and other relevant community members.

In addition, rural household surveys were conducted in the targeted areas, not only to gather information on whether the youth in these areas are aware of the available incentive schemes, but also to study their perceptions of these facilities and the products/services they offer. Impact studies were also conducted to ascertain whether the products/services offered by the various incentive schemes are indeed making a significant welfare contribution to the beneficiaries.

Information was gathered on the resource needs of the rural youth to assess whether the current programmes or services/products are in line with what the rural youth require so as to enable

them to take advantage of available entrepreneurial opportunities and participate competitively within the value chain. This is important, given the dynamic nature of the external environment that largely determines the types of business ventures that entrepreneurs can embark upon (Scarborough *et al.*, 2009). Such information would be beneficial for providing feedback to the various agencies and policymakers, particularly on areas that may require modifications with regard to service delivery.

Respondents were asked to indicate what type of information they would need and what forms of dissemination they would prefer if they were to consider participating in more remunerative markets, venture into other products that are relatively more profitable, or decide to use improved production technology. The structured questionnaire developed for interviewing representatives of the incentive schemes also probed respondents to indicate what type of information they disseminate to their clientele, the sources of the information, how the information is disseminated, and the frequency of updating the information. They were also asked to indicate what other organisations (public or private) they collaborate with as they perform their daily activities. The organisations identified were then also interviewed, using the same questionnaire, until the whole network of information sources had been covered.

The current livelihood activities that the youth were involved in were captured through questions that include:

- What is the attitude of the rural youth towards farming as a livelihood strategy? If negative, why? If positive, how?
- To what extent are they engaged in farming or any business activities? What forms of businesses are they engaged in, and in what capacity?
- Are they willing to take over farming as a livelihood strategy from their parents? Why or why not? What livelihood/occupation choices would the rural youth prefer?
- What occupation (on-farm self-employment, rural non-farm self-employment, off-farm wage employment, and urban salaried employment) the youth would like to pursue and the reasons thereof?

Most questions were business-related, aiming to ascertain the extent to which the youth are business-minded. The questions were constructed in such a way that they would capture and measure entrepreneurship attributes and psychological capital endowments. For many of the questions, the youth were given multiple answers to rank, using a Likert scale of 1-5.

Previous studies have measured entrepreneurial spirit (Sinyolo *et al.*, 2017a; Cele and Wale, 2018; Chipfupa and Wale, 2018b) and psychological capital (Chipfupa and Wale, 2018a; b; Grobler and Joubert, 2018; Phakathi and Wale, 2018) through using hypothetical questions that were subjective. The questions were formulated based on individual preferences. They were stated preference questions, based on what individuals say, not based on what they do or what they would do under certain situations or conditions or scenarios or circumstances. The resulting estimates will, therefore, result in hypothetical bias. To address this, scenarios were developed to measure entrepreneurship characteristics and psychological capital dimensions to endeavour to ascertain how the youth would respond to different situations described in the questions. Scenarios were developed similar to the conditions the rural youth find themselves in and described the ways in which they might cope/react. These scenarios were developed to measure entrepreneurship characteristics and psychological capital dimensions. The scenarios are the outcomes of field visits and focus group discussions to ensure their relevance and timeliness. Following this process, the proxy variables for entrepreneurship and psychological capital were estimated by employing principal components analysis. That is how the study attempted to capture the various components of these variables:

- entrepreneurship attributes (risk-taking, seizing an opportunity, innovative behaviour, efficiency, and profitability), and
- psychological capital (including hope, confidence, optimism, and resilience).

However, it should be noted that the stated preference disadvantages cannot be fully eliminated.

The data collection instrument and procedures were approved by the Human and Social Sciences Research Ethics Committee (HSSREC) of the University of KwaZulu-Natal (Protocol reference number: HSSREC 00000470/2019) and an informed consent was obtained from each respondent.

3.4 Empirical methods of data analysis

The process of data generation described above was followed by descriptive and econometric analyses. Following the data collection, the data was captured in SPSS 25 software. The data was then analysed through descriptive statistics, Principal Component Analysis and several econometric methods using SPSS25, and other software, namely STATA IC15 and Microsoft Excel. The econometric analysis was conducted using multinomial logistic regression.

This project has empirically examined issues of rural youth unemployment, rain-fed farming, youth entrepreneurship, and food value chains, employing data from various districts in KwaZulu-Natal.

Previous studies have measured entrepreneurial spirit and psychological capital using hypothetical questions that were subjective. The questions stated an individual's preferences based on what they say, not based on what they do or what they would do under certain situations. This study used various scenarios relating to entrepreneurship characteristics and psychological capital dimensions to understand the response of rural youth to different situations. Most scenarios were business-related to determine if the youth are business-minded. The measures of entrepreneurial spirit and psychological capital employed in this study are intended to address the bias problem, which is common in stated preference studies.

Descriptive statistics were used to explain and compare the resource endowments of the youth. Furthermore, descriptive statistics were used to understand the interests of the rural youth to engage in primary agriculture, relative to other agricultural activities along the value chain. In addition to percentages, frequencies and means, statistical tests (like the Pearson correlation *chi-square* test and the *t-test*) were also employed.

Principal Component Analysis (PCA) is a multivariate analytic technique that reduces the dimensionality of interrelated variables, while simultaneously retaining the existing variation of the data. It prevents multicollinearity within the data set and also makes interpretation of the data relatively easier (Gujarati and Porter, 2009; Jolliffe, 2011). The Kaiser criteria rule of thumb, retaining components with eigenvalues greater than one, is employed. Furthermore, a Kaiser-Meyer-Olkin (KMO) test is used to test the validity of the PCA, i.e. if the KMO value is less than 0.5, then PCA is not suitable. PCA was used to create indexes for entrepreneurial spirit and managerial capabilities.

3.5 Summary

This chapter has described the research methodology. It began with justifying the choice of the study areas. It then presented the conceptual models adopted, namely the sustainable livelihoods framework, the theory of reasoned behaviour, and the theory of planned behaviour. It then described the respective study areas chosen. This was followed by the narration of the data collection process, including the sampling procedures, the questionnaire development,

pre-test, interviews conducted, focus group discussions, and key informant interviews. Finally, the empirical methods of data analysis were explained.

4 RURAL YOUTH ENDOWMENT WITH NATURAL, PHYSICAL AND FINANCIAL ASSETS IN THE CONTEXT OF SMALLHOLDER RAIN-FED CROP FARMING IN SELECTED RURAL AREAS OF KWAZULU-NATAL

This chapter evaluates the natural, physical and financial assets (including market access) available to rural youth in the context of smallholder rain-fed farming potential in rural areas in the province. It presents their endowments in relation to these assets and the challenges therein. This is done taking into account the opportunities that the endowments provide, together with the challenges presented owing to their scarcity, for engaging rural youth in rain-fed farming.

4.1 Introduction

The key challenges of the smallholder sector in Africa include a limited knowledge of farmers on farming as a business, a poor record-keeping culture, and mixing farm and family operations (Audretsch 2009; Morgan *et al.*, 2010). In South Africa, the key challenges are a lack of self-reliance and a dependency mindset, limited ownership of or access to agricultural-related assets, limited capacity to hire needed services, lack of knowledge and skills in value addition, high transaction costs of accessing input and product markets, and a lack of adequate understanding (by the relevant stakeholders) of the heterogeneity and complexity of the sector. All these challenges complicate on-farm entrepreneurship interventions in the sector.

South Africa's 26.7% unemployment rate reflects spatial inequalities linked to historical policies of 'separate development', as the unemployment rate among the youth (25-34 years), currently estimated at 31.2%, is more pronounced in the rural areas than in formal urban areas (National Youth Development Agency, 2012; Southern Africa Labour and Development Research Unit, 2013; StatsSA, 2016). Given these statistics, it would seem that the agricultural sector is better placed to create job opportunities, particularly in the rural areas where entrepreneurship education has the potential to enable the youth to gain skills and create their own jobs (Premand *et al.*, 2016). Most entrepreneurship programmes in South Africa target the youth in both rural and urban areas (see for example, Food Agriculture and Natural Resource Policy Analysis Network (2012) and DTI (2013)). This project contributes to this target through generating knowledge and identifying intervention areas for integrating the rural youth into profitable food value chains.

According to the South African National Youth Policy, the definition of youth includes individuals between the ages of 14 and 35 years of age (National Youth Commission, 2015). The South African youth is estimated to constitute about 36% of the South African population (AgriSETA, 2016). Unemployment is found to be very high among the South African youth, increasing from 32.1% in second quarter of 2008 to 37.5% in the second quarter of 2016 (Community Survey, 2016). The issue of unemployment among the youth has become a global concern (Bezu and Holden, 2014). Several factors contribute to the high unemployment levels among the youth of the world, and especially in South Africa.

Youth unemployment is a serious problem, especially in rural areas of developing countries where the majority depend on rain-fed agriculture as a source of income, food and employment. It is very difficult for the majority of rural youth to obtain decent work in many countries with developing and emerging economies, particularly in Africa and South-Central Asia (Filmer and Fox, 2014). Most of the youth in the world (88%) live in developing countries. These same countries have about 2.5 billion ha of rain-fed land, with a reasonable potential for rain-fed crops. Over 80% of this land is in Sub-Saharan Africa and Latin America, which means, depending on the technology and climatic changes, these regions are central to the future of rain-fed farming (Alexandratos, 1995). Globally, young people account for approximately 24% of the working poor, and this is more prevalent in Africa, where over 70% of the youth manage to survive on US\$2 per day or less (FAO, 2017). In Sub-Saharan Africa, youth unemployment is one of the most pressing challenges, and agriculture is seen as a sector of opportunity for African youth (Filmer and Fox, 2014). South Africa has very high youth unemployment, where the majority of the rural youth has given up looking for work.

The reduction of youth unemployment is a major concern for most international organisations such as the Food and Agriculture Organization (FAO), the United Nations (UN), the World Bank, and the International Labour Organization (ILO). The United Nations 2030 agenda for sustainable development highlighted youth unemployment as being a major concern. The United Nations has planned to develop a global strategy for youth employment creation and to implement a global pact for the ILO, with an aim of reducing unemployment by 2020 (United Nations, 2015). To this effect, international organisations (the UN, the World Bank and the ILO) have created the Youth Employment Network (YEN) (International Labour Organisation 2011).

Given that most entrepreneurship programmes in South Africa are aimed at assisting the youth in both rural and urban areas, there is a need to provide evidence on the extent to which rural

development initiatives in rain-fed agriculture have influenced the participation by rural youth in farming. For young people, agriculture is often seen as outdated, un-profitable and hard work (Agriculture for Impact, 2014). Empirical evidence on how the youth could be attracted into farming remains scarce, despite its importance in shaping the country's future policies that are aimed at creating a sustainable rural economy and, at the same time, addressing South Africa's socio-economic challenges linked to rural-urban migration. This evidence could inform policy on the long-term future of smallholder agriculture and shed light on what needs to be done to ensure sustainability in the sector.

Although the available statistics indicate that unemployment is highest among the rural youth in South Africa, individuals in this age category have little interest in farming or in starting their own agribusinesses, as they generally perceive the agricultural sector as a 'back-breaking and non-status' occupation (Swarts and Aliber, 2013). This is despite the fact that there is under-utilised potential for the productive use of rain-fed land for food production and beneficiation in the food value chain. There is a limited involvement of young people in farming. Farming, an economic activity perceived to be 'not sexy' by the youth, is taken to be an older person's occupation that does not bring in 'quick' money. This is not good news for the future of agriculture. How can we reverse this perception? Why do such attitudes prevail? What are the reasons for lack of interest and enthusiasm by the youth to take up farming as a livelihood strategy in rural areas? This can change only if small farms become significant contributors to rural livelihoods, affording such households to earn a decent quality of life. What also serves as a hurdle is the culture of youth aspiration to move away from the farms, not being inspired to become enterprising farmers (Jayne *et al.*, 2010; Maepa *et al.*, 2014). Specific programmes need to be targeted at youths to enable them to explore business opportunities in smallholder farming. Is there any role, for instance, for new technologies, such as information communication technologies (ICT), to make farming more appealing for the rural youth? It is important to evaluate the opportunities created by such trending technological innovations and the prevailing resource and mindset challenges/constraints, not to mention institutional hurdles.

Unemployment is a global challenge faced by many countries. In both developed and developing countries, there is a pattern of unemployment, with youth having lower access to the labour market relative to adults. South Africa is no exception. Studies conducted by Statistics South Africa and the Labour Force Survey (LFS) indicate relatively higher rates of unemployment among the youth. Youth unemployment in South Africa ranged between 52

percent and 56 percent in 2013 and 2017, respectively, with the latter being the all-time highest rate recorded. The majority of these people are African youth in rural areas who have limited access to information, thus resulting in limited opportunities for them.

O'Higgins (2001) highlights the point that, although youth unemployment differs per country, there are features that he found similar among the nations where he conducted his studies. First, he states that most countries have higher youth unemployment rates, relative to adult unemployment rates. This is relevant to the case of South Africa, where 67.4 percent of the national unemployment is experienced by the youth (StatsSA, 2017). In some cases, youth unemployment is double the figure of adult unemployment. The second feature is the strong linkage between youth unemployment and adult unemployment. According to O'Higgins (2001) and Moleke (2003), factors affecting the aggregate labour market that directly impact on adult unemployment also have more noticeable effects on youth unemployment. The last factor is the relationship between employment and country's economic growth.

In South Africa, youth unemployment is a national challenge that is not evenly spread. There are population behaviours and demographical traits that seem to render some groups more vulnerable relative to other groups (Rees, 1986; O'Higgins, 2001; Ryan, 2001; Du Toit, 2003). Those demographical traits include gender, education, location and ethnic determinants. South Africa seems to be a practical example of the latter. Because of pre-democracy laws, the dominant ethnic groups seem to be more vulnerable than the minority groups are. Furthermore, young females experience higher unemployment rates, relative to young males. Youth in rural areas are more vulnerable to unemployment because they lack labour market information, with some of them being inexperienced with the processes involved in job applications, and they typically lack access to information networks that would provide them with adequate and relevant information.

South Africa's unemployment rate has been increasing over the past decade, from 25.5 percent in 2007 to 36.6 percent in 2017 (StatsSA, 2017). This rate has increased over the years, regardless of the interventions by government through different policies and programmes. According to Moleke (2003), the pattern shown in research by the Organisation for Economic Co-operation and Development (OECD), that unemployment falls in countries when their levels of education improve, is not applicable in South Africa. This means that a lack of education and a lack of skills as an explanation for the prominent level of unemployment are not relevant in the South African context, as more and more graduates remain unemployed in

South Africa. A lack of opportunities and a lack of exposure to relevant information might be one part of the reasons for unemployment, especially among the rural graduates.

In view of the youth unemployment challenges in South Africa and the nature of the challenges, it is important to understand the extent of the national response in addressing these challenges. This is critical, given the fact that the social, economic and psychological consequences of youth unemployment are huge and have a negative implication for the growth of a nation. Unemployed people become depressed, socially degraded, lose morale, and become discouraged and hopeless, leading in most cases to substance abuse and crime.

4.2 Livelihood assets and youth participation in smallholder rain-fed farming

Participation in the agricultural sector is decreasing, and more individuals are leaving the sector. According to the Community Survey (2016), the number of households that are involved in agricultural activities has seen a 19% decrease since 2011 in the agricultural households. KwaZulu-Natal (25.2%), Free State (21.7%) and the North West (21.6%) recorded the highest reductions in agricultural households. This might result from a change in the demographics of the rural sector, as the participants move away from the agricultural or rural sector, to urban regions, or even into unemployment.

Young people are forced from the rural to urban areas due to a lack of incentives, profitable opportunities, and unattractive rural environment (Khué *et al.*, 2016). Ranchhod (2017) also notes that there was a decrease in agricultural employment after the implementation of the minimum wage policy in 2003. The youth of today are not interested in the rural agricultural sector as a means of employment, even though very high unemployment exists among the youth, not only in South African but also in the world. Although the number of educated youth in South Africa has increased over the last 20 years, the number of youth (15-34 years) employed declined between 2008 and 2016 (Community Survey, 2016). There is a general lack of employment opportunities for the increasingly educated youth in the country.

Agriculture is one of the sectors that can employ more people with no skills and even no experience. Globally, it is one of the main employers of less-skilled people (Food and Agriculture Organization, 2014). With recent policies and laws in South Africa such as the minimum wage policy, the agricultural sector's employment rate has relatively decreased, as commercial farmers are adopting technology. Commercial farmers are opting to become more technology intensive than labour intensive to decrease the costs of production caused by the

increasing minimum wages. However, the youth can still explore entrepreneurial opportunities and create employment within the sector. Sustainability of livelihoods and income can be generated through agriculture and independently as an entrepreneur within the agricultural sector. Youth in rural areas, especially those with relatively low education levels and no work experience, can develop themselves and sustain their livelihoods through involvement in agriculture (Food and Agriculture Organization, 2014). Although studies suggest that some youth find agricultural opportunities and programmes to be unattractive, there are various opportunities within the sector that could help to decrease youth unemployment and dependence on government.

A study conducted by the Food and Agriculture Organization (2014) identifies challenges faced by young people in agriculture. These challenges include lack of information, knowledge and education, limited access to land, inadequate access to financial services, difficulties in accessing green jobs, limited access to markets and productive land, and limited involvement in policy dialogue. De Janvry *et al.* (2001) states that the uncertainty of the tenure or the duration to use land by the people in rural areas affects their investment into the land. If South Africa is to view agriculture as a sector to help alleviate youth unemployment, these issues have to be addressed. Such challenges can be addressed through the provision of workshops in rural areas, improving access to credit, and infrastructural development. The promotion of financial packages specifically catering to the youth, and mentoring and training programmes, together with start-up funding opportunities, could help to reduce the severity of the challenge. In developing countries like South Africa, rural youth involvement in agriculture can assist in reducing poverty and food insecurity among rural households, while creating jobs. Programmes that will also attract youth to agriculture might also be necessary in areas where the youth do not find agriculture to be attractive.

Therefore, research that examines the challenges and opportunities in pursuing entrepreneurial development pathways in rain-fed agriculture in South Africa, linking the youth to profitable food value chains and exploring avenue for establishing small farming businesses, is expected to contribute to sustainable rural development, empowerment of the rural youth, youth employment creation in the rural areas, and informing policy on the relevant and priority intervention areas in this sector. Knowledge-based actions in these areas create opportunities for the unemployed rural youth to venture into entrepreneurship programmes, creating job opportunities (for themselves and others) and raising incomes.

Participation of youth in rain-fed crop-farming businesses will be dependent on the opportunities and constraints facing each youth. The space within which youth can change their situation will be defined by their goals and aspirations. This space is likely to differ, depending on the situation of each youth. The challenge is in gaining an understanding of how these differences (heterogeneity) affect youth participation in rain-fed farming. What are the determinants of their aspirations and goals to further expand existing rain-fed farming activities? For those currently not involved in farming, the key issue is to understand their interest and willingness to participate in rain-fed crop-farming businesses and the constraints and challenges hindering them from doing so.

4.3 Evaluation of natural assets

Natural resources, such as land, water, forests and air, and coastal erosion and storm protection are all aspects that fall within the natural capital factor (DFID, 1999; Kuipers, 2014). Natural resources are of extreme importance for individuals such as smallholder farmers who depend on resource activities for their livelihoods (DFID, 1999). The key, most important natural resources in farming are land and water.

4.3.1 Access to land among rural youth

Land is a scarce resource and, with an increasing world population, it will become even more scarce in the future. In South African rural communities, which comprise about four million small farms (Aliber and Hart, 2009), land is a critical resource that determines their livelihoods (Bezu and Holden, 2014). Rural dwellers who do not own agricultural land, for various reasons, find themselves pushed out of agriculture to other economic sectors (Bezu and Holden, 2014). However, farmers who have access to agricultural land, but are frequently exposed to natural shocks (e.g. drought), might be compelled to diversify into the non-farm sector as an ex ante risk management or an ex post risk-coping mechanism (Reardon *et al.*, 1998).

As a result of the discriminatory past apartheid land policies, the most productive land in South Africa (87%) is in the possession of about 60,000 white farmers (National Treasury, 2014). Inaccessibility to productive assets such as land has also been identified as a factor that makes the agricultural sector unattractive to the youth (Swarts and Aliber, 2013). To correct the skewness of land ownership in the country, the government, through the Department of Rural Development and Land Reform (DRDLR), has introduced several programmes to enhance

access to land and to reduce rural poverty. However, the land reform programme has failed to meet its set targets in terms of the amount of land redistributed (National Treasury, 2014).

An aspect that is important when analysing youth ownership and access to agricultural land is the issue of property rights. Property rights are distinguished mainly into two major types (Schlager and Ostrom, 1992). Firstly, operational level property rights, which include the right to enter a defined physical property (access rights) and the right to obtain the products of a resource (withdrawal rights). Secondly, collective choice property rights, which include management rights (for example, to transform and use a resource), exclusion rights (to determine who is entitled to access, withdrawal rights, and who decides about the transfer of such entitlements), and alienation rights (the right to sell or lease a resource). Given that only registered owners hold all five types of rights (access, withdrawal, management, exclusion, and alienation), Schlager and Ostrom (1992) argue that different bundles of property rights, whether they are *de facto* or *de jure*, affect the incentives that individuals face, the types of actions they take, and the outcomes they achieve. They further contend that alienation rights, combined with rights of exclusion, produce incentives for owners to undertake long-term investments in a resource. Through the purchase or lease of all or part of the property rights that owners hold, the individuals receiving those rights can capture the benefits produced by long-term investments.

Various analysts have identified the absence of stable and enforced property rights as a major impediment to growth in today's developing countries (Payne, 1996). However, despite this emphasis on the importance of private property rights, collectively owned or managed property remains a widespread phenomenon in the developing world. Collective or partly collective structures (e.g. for land) continue to be predominant in many parts of Sub-Saharan Africa. These forms of land ownership can yield substantial benefits in terms of equity, but may also generate significant efficiency costs. Past studies (e.g. Smith, 2004; Deininger and Jin, 2006) have confirmed the aspect that property rights, for instance those that govern the use of a particular plot of land, affect farmers' future investment decisions. Schlager and Ostrom (1992) further indicate that alienation permits a resource to be shifted from a less productive to a more productive use, which is a phenomenon that is closely linked to John Baptiste Say's definition of an entrepreneur in the early 1800s (The Economist, 2009). Given the above information, it is important to also assess the prevailing property rights in the study areas and analyse their potential effects on entrepreneurship development, particularly with regard to innovation, risk taking, and growth within the rain-fed smallholder sub-sector.

Empirical evidence from the sampled youth shows that only 64.2% have access to productive land for farming (Figure 4.1 below). This means that a significant percentage of young people have no access to the single, most important asset in farming. The challenge is worse among young people who are not currently engaged in farming, confirming why some of the youth do not participate in farming. Between the three municipalities, Alfred Duma has the lowest percentage of youth with access to agricultural land. Youth respondents reported that land held under the Permission to Occupy (PTO) is only allocated when one is married. However, 92% of the sampled youth were not married and thus would not qualify to receive land from the traditional leaders. This situation continues to exist, despite recent reports having identified an estimated 3 million hectares of underutilised land in rain-fed farming areas across the country. The existence of this underutilised potential for productive use of rain-fed land presents an opportunity for increasing the participation by youth in farming.

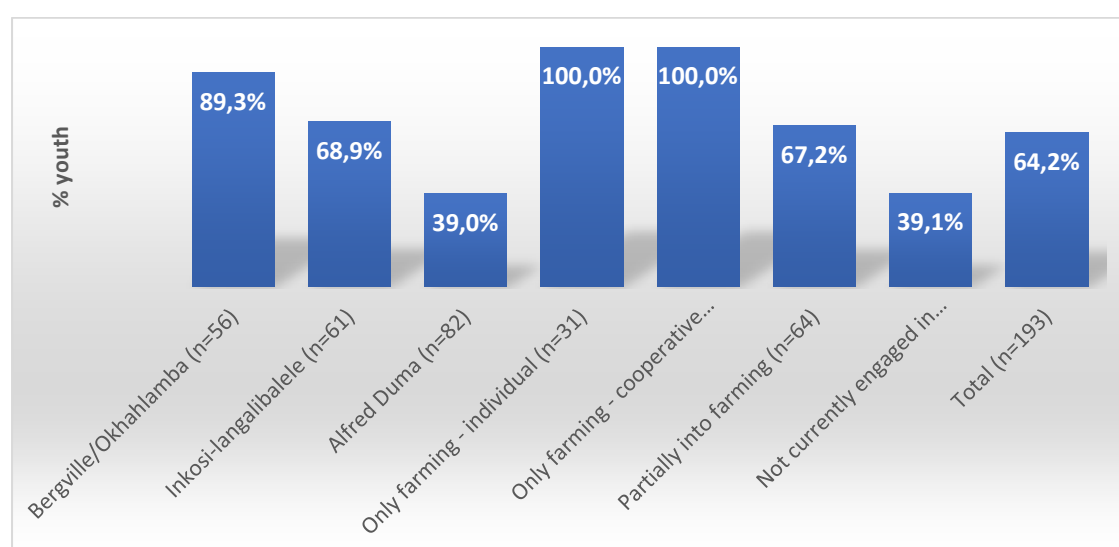


Figure 4.1: Access to land for agricultural production – observations from sampled youth

Source: Survey data, October 2018

The average land holding is 3.56 ha, and is higher among those farming on a substantial basis, i.e. youth who only farm as an individual or part of a cooperative (Table 4.1).

Table 4.1: Average land holding reported by the sampled rural youth

	N	Mean	Std. Dev	Min	Max
Only farming – individual	30	6.37	16.74	0.03	90.00
Only farming – cooperative	15	6.55	12.81	0.50	50.00
Partially into farming	43	1.83	3.15	0.00	20.00
Not currently engaged in farming	32	1.83	2.47	0.01	11.00
Total	120	3.56	9.88	0.00	90.00

Source: Survey data, October 2018

Most of the youth interviewed do not actually own the land themselves, which instead belongs to their parents or family. However, most have the right of use. Table 4.2 shows the land holding rights held by the youth/their families on the land. Much of the land that the youth have access to is held on a PTO basis, and only a few lease/borrow land at rental charges that range from R500 to R5000 per hectare per year.

Table 4.2: Means of land holding – observations from the sampled rural youth

Means of land holding	Plot 1 (%)	Plot 2 (%)	Plot 3 (%)	Plot 4 (%)
Owned/Inherited – PTO	81.6	71.4	77.7	73.7
Owned private	1.7	2.4	0	0
Leased/rented	6.7	9.5	7.4	5.3
Borrowed	2.5	2.4	3.7	10.5
Received from chief on a temporary basis	7.5	14.3	11.1	10.5
Total	100.0	100.0	100.0	100.0

Source: Survey data, October 2018

Contrary to the common narrative that smallholder farmers in South Africa typically do not have secure land tenure rights, the results from the sampled youth show otherwise. Only 20% of the youth find it difficult to make long-term land use decisions because of the current land ownership system. Such youth indicated that, since the land belongs to their parents or the family, they must consult before making any decisions about the land. However, most of those with access to land did not report any challenges with the tenure system. Table 4.3 below,

which shows the responses of the youth to different statements on land tenure rights issues, confirms these results. Land tenure insecurity does not seem to be a major constraint among rural youth who have access to land.

Table 4.3: Land tenure rights – observations from the sampled rural youth

Land tenure rights	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged	Total
I believe I know my legal rights	80.0	80.0	71.7	63.6	72.6
I believe am able to exercise my rights over land	76.7	80.0	69.6	69.7	72.6
I believe I am free to choose what to produce	93.3	86.7	87.0	90.9	89.5
I trust I can use the land I am operating for more than 10 years	93.3	86.7	84.8	90.9	88.7
I do not see threats of eviction from the land I am using	80.0	80.0	82.2	81.8	81.3
I always find it easy to approach the relevant authorities	82.8	100.0	84.1	80.7	84.9
I believe I will be treated fairly by local authorities at any given moment	83.3	86.7	84.8	84.4	84.6

Source: Survey data, October 2018

Access to land among youth: Dannhauser and Nquthu municipalities

Access to land has been highlighted as being the most important factor that influences youth participation in farming. A high proportion of the youth (70.8%) indicated that they have access to land. However, there are statistically significant differences regarding access to land among the different categories of youth. Most of the youth who are actively participating (95.8%) and those who are assisting at home (86.8%) highlighted the fact that they have access to land, as compared with those who are not participating (56%). Comparing between the municipalities, 72.5% of the youth with access to land are in Dannhauser and 68.9% in Nquthu. Only 29.1% indicated that they do not have access to land. During the interviews, the youth indicated that

they have access to land through their parents. Access to land through parents affects youth decision-making, investments, and sustainability, as the youth cannot easily decide what to do on a particular piece of land. Thus, for them to make land-use changes, they need permission from their parents, which, in turn, affects their participation in farming. A study conducted by Hosaena and Helder (2018) found that security of land tenure is positively associated with on-farm employment opportunities among the youth.

Table 4.4: Access to land among the rural youth

Land access	Type of youth			P-value	Municipality		Total
	Actively participating	Assisting at home	Not participating		Dannhauser	Nquthu	
% of youth with access to land	95.8	86.8	56	0.000***	68.9	72.5	70.8
% of youth without access to land	4.2	13.2	44	0000***	31.1	27.5	29.1
The average number of plots	1.7	1.0	1.3	0.002***	1.37	1.87	1.64
Average land size (hectares)	5.9	2.0	1.9	0.466	5.91	1.79	3.66

Note: *** indicates 1% level of significance.

Source: Survey data, 2019

4.3.2 Water availability and accessibility

Rain-fed farming systems form an important part of agricultural production in the region, and in South Africa as a country (Hardy *et al.*, 2011; You *et al.*, 2011). However, the major challenge is the increasing unreliability, variability and insufficiency of the rainfall in many areas. The situation has worsened over the past two decades because of climate change. Production seasons have shifted and, in some instances, even shortened owing to changing rainfall patterns. These changes demand that smallholder farmers should develop some resilience and adaptive capacity to mitigate and reduce the effects of climate change on their farming businesses. Rural youth in farming also bear the brunt of climate change, with adverse impacts on production enterprises. Figure 4.2 below shows that most of the sampled rural youth (56%) reported that the rainfall patterns in the past four years in their areas have largely been

unreliable. There were no significant differences between the three municipalities. Farming in such conditions is very difficult and strategies are needed for adapting and reducing the negative effects of the changing rainfall patterns on farming.

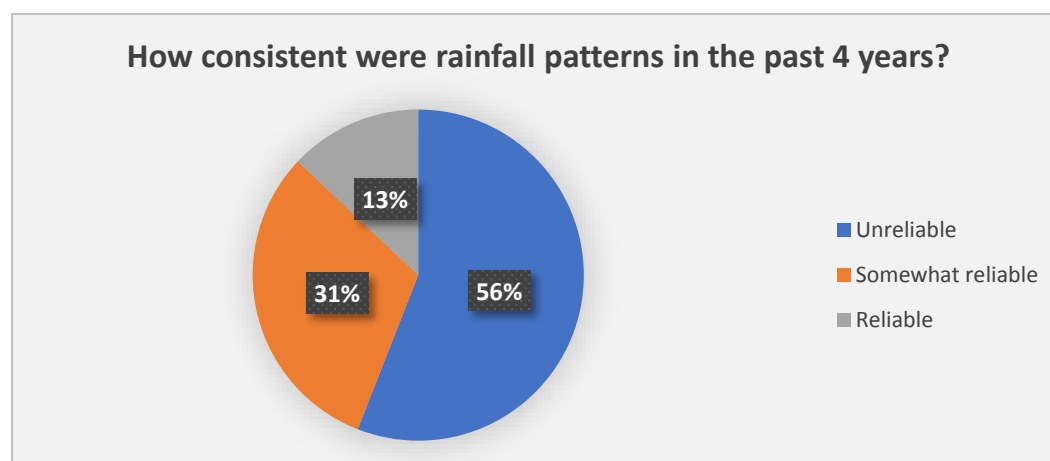


Figure 4.2: How consistent has been the rainfall patterns over the past four years?

Source: Survey data, October 2018

Table 4.5 below shows the number of times the sampled youth experienced different natural hazards in the past five production seasons. The results show that drought is the most common natural hazard, although there are reported cases of hailstorms (58.1%) and floods (29.3%). The youth indicated that drought results in poor crop growth and drying of pastures, leading to crop failure and death of livestock. Some mentioned experiencing drinking water shortages and their inability to cultivate in the presence of drought. The floods and hailstorms were reported to lead to waterlogging, damaging and washing away of plants, drowning of livestock, especially young animals, and destruction of property. However, some indicated that floods and hailstorm bring water for irrigation.

Table 4.5: Number of times sampled youth experienced different natural hazards

Frequency of natural hazard	Drought	Floods	Hailstorms
None	14.9	70.7	41.9
Once	42.6	19.4	35.1
Twice	22.6	5.8	9.9
Three times	8.7	2.1	4.7
Four times	5.1	1.0	2.6
Five times	6.2	1.0	5.8
Total	100.0	100.0	100.0

Source: Survey data, October 2018

Most of the youth are not doing anything to reduce the effects of drought on their livelihoods. However, some of the youth reported several mitigation strategies that they have employed in the past (Table 4.6 below). These include water harvesting in tanks and small dams, irrigation using water from the rivers, springs or dams where possible, buying water or animal feed, using council water, and drilling boreholes. One of the youth in INkosi Langalibalele Municipality dug a small dam near their field to harness run-off water from the rain and then used this to irrigate their crops. This approach has allowed them to grow diversified crops, including horticultural crops, not normally grown in rain-fed farming systems. A scan through the strategies shown in Table 4.6 below shows that some of the strategies that are more sustainable, and these should be promoted in rain-fed farming. Identifying and promoting these strategies, such as water harvesting, conservation agriculture, mulching and use of early warning information, could enhance the success of rain-fed farming among rural youth.

Table 4.6: What did youth do to reduce the effects of drought?

What youth did to reduce the effects of drought	Frequency	Percent
Nothing	36	36.7
Water harvesting in tanks	18	18.4
Irrigate using cans with water pumped or manually transported from rivers/springs/dams	17	17.3
Buy water or animal feed	6	6.1
Use council water – to supply water through taps or tanks	5	5.1
Drilled a borehole and installed a tank	5	5.1
Water harvesting in dams (construct dams)	2	2.0
Pray or conduct traditional rituals for the rains	2	2.0
Construct greenhouses	2	2.0
Control weeds to enhance water use efficiency	1	1.0
Practise conservation agriculture	1	1.0
Search for early warning information from others	1	1.0
Mulching	1	1.0
Water livestock from other farmers' dams	1	1.0
Total	98	100.0

Source: Survey data, October 2018

4.4 Evaluation of physical assets

Physical capital is explained by the DFID (1999) as comprising the basic infrastructure and producer goods needed by individuals to support their livelihoods. These include buildings,

farming equipment, communication assets, and transport (DFID, 1999; Kuipers, 2014). Livestock is also considered as a physical asset. Access to infrastructure and farming equipment is very important to the development and performance of the agricultural sector and the farming business (Makhura and Wasike, 2003; Díaz-Pichardo *et al.*, 2012). Limited access to physical assets limits the participation of smallholders and/or emerging farmers in the market. The agricultural sectors of developing countries are unfortunately characterised by small-scale farmers who have limited access to physical assets. Senyolo (2007) mentions that the lack of infrastructure, such as electricity, dams and roads, increases the costs incurred by emerging farmers.

Empirical evidence shows that rural youth endowment with agricultural-related physical assets, except for the ox-drawn plough, is low (Table 4.7 below). This makes it difficult for youth to engage in agricultural production, as most of the operations are mechanical. Those currently engaged in farming hire most of the equipment, such as tractors and transport services. However, it was reported that the cost of these services is sometimes prohibitive, and so some youth cannot afford them when needed. The result is a delay in the timeous conducting of critical farming operations, thereby affecting the performance of their farming enterprises. The availability of affordable land preparation and transport services would greatly improve the performance of youth farmers. Some youth report that, although they are aware of the importance of water harvesting, they do not have the resources to buy and install water tanks or to build dams. Enhancing the endowment of the youth with agricultural assets or related services might lessen their burden of farming, and make it attractive to young people.

The findings also show that endowment with communication-related technologies, such as cell phones, radios and television sets, is relatively higher among rural youth. Nearly 70% of the sampled youth have smartphones and hence access to the internet and various social media platforms. Young people are referred to as the technology generation, which indicates that they can use and understand ICTs better than the older generation can. Thus, there is an opportunity in this regard to develop innovative approaches for providing agricultural-related information and advisory services through such platforms. Involving the youth in developing such services would ensure that the technologies are appropriate to the needs of youth in farming and would be easily adopted.

Table 4.7: Ownership and access to assets among the sample rural youth (percentages)

Asset	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged	Alfred Duma	INKosi Langali balele	Okhah lamba	Total
<i>Communication assets</i>								
Cell phone (non-smart)	66.7	53.3	50.7	59.8	65.9	47.5	55.4	57.3
Smart phone	76.7	80.0	70.1	64.4	58.5	77.0	76.8	69.3
Radio	76.7	66.7	71.6	63.2	63.4	75.4	67.9	68.3
Television	83.3	66.7	73.1	59.8	57.3	83.6	67.9	68.3
Computer/laptop	23.3	26.7	11.9	10.3	15.9	14.8	10.7	14.1
<i>Agricultural-related assets</i>								
Trailer/cart	13.3	13.3	7.5	1.1	3.7	11.5	3.6	6.0
Water tank	36.7	46.7	32.8	21.8	26.8	27.9	35.7	29.6
Motor vehicle	16.7	13.3	17.9	9.2	7.3	16.4	19.6	13.6
Plough	70.0	80.0	71.6	51.7	45.1	77.0	75.0	63.3
Planter, harrow or cultivator	46.7	20.0	20.9	3.4	4.9	16.4	35.7	17.1
Tractor	16.7	13.3	9.0	4.6	1.2	14.8	12.5	8.5
Fork or spade	0.0	6.7	4.5	2.3	2.4	4.9	1.8	3.0

Source: Survey data, October 2018

Most youth share access to most of the above physical assets with other people, especially other household members or colleagues within their cooperative (Figure 4.3 below). Most of the assets are not owned by the youth themselves but belong to their household. However, they do hold use rights, just as any other members of their household do. Those who share mobile

phones said they use their brothers' or sisters' cell phones to access the internet and other related services. Generally, it is difficult for a youth to acquire larger assets, especially farming equipment, while they are still living with their parents. Independent young people who had moved away from their parental homes were more inclined to own their own assets.

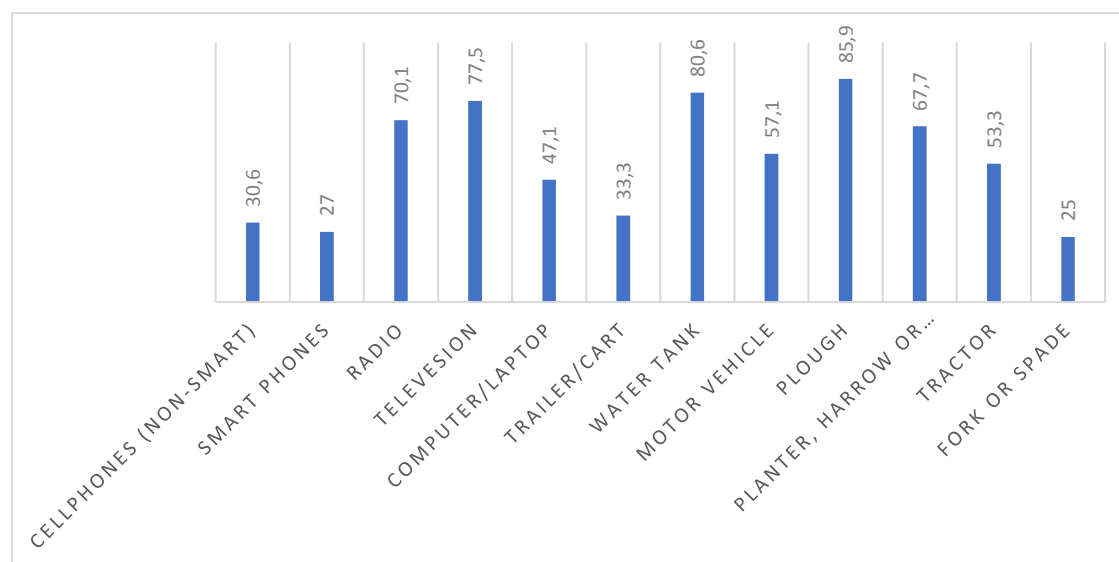


Figure 4.3: Access to assets as a group among the sampled youth

Source: Survey data, October 2018

Livestock ownership among rural youth is very low. Only 38.7% of the sampled youth own some form of livestock that they have control over (Table 4.8 below). Livestock ownership is higher among the youth currently engaged in some substantial form of farming. This indicates that such youth are practising mixed farming, which is a common practice in most rural communities in Sub-Saharan Africa (Thornton and Herrero, 2015). Crop and livestock farming systems have several benefits that are important to rain-fed farming. These include improved soil fertility, reduced nutrient losses, reduced use of synthetic fertilisers and pesticides, and improved yields. Income diversification is another reason for practising mixed farming (Powell and Williams, 1995; Renard, 1997).

Table 4.8: Livestock ownership among the sampled youth

Categories		Own livestock (%)
Type of youth	Only farming – individual	66.7
	Only farming – cooperative	60.0
	Partially into farming	49.3
	Not currently engaged in farming	17.2
Local municipality	Alfred Duma	39.0
	INkosi Langalibalele	29.5
	Okhahlamba	48.2
Total		38.7

Source: Survey data, October 2018

A comparison across the three local municipalities shows that more youth in Okhahlamba (also known as Bergville) own livestock than those in the other two local municipalities do. Discussions with extension officers revealed that the area is suitable for livestock production. The common types of livestock kept by the sampled youth are goats, cattle and poultry. A few also keep sheep and pigs. The average ownership of goat numbers 11.6, while that for cattle numbers 9.5. Goats were indicated to be good business because of the favourable environment and the thriving local market. They are used in rituals, which are conducted almost on a weekly basis in the rural communities. Generally, small ruminants and poultry constitute liquid assets, which can easily be converted into cash whenever the need arises.

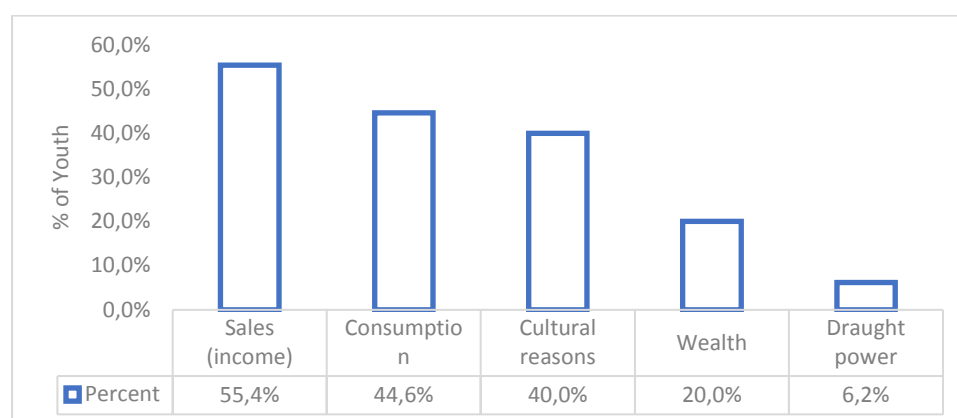
Table 4.9: Mean livestock ownership among the sampled youth

Livestock	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Total
Goats	14.3 (10.9)	6.8 (3.4)	11.9 (7.5)	10.0 (6.3)	11.6 (8.1)
Cattle	11.6 (11.7)	5.3 (4.7)	9.8 (7.0)	8.0 (4.0)	9.5 (9.0)
Poultry	32.2 (20.3)	23.2 (15.6)	19.6 (18.9)	15.8 (17.1)	22.3(18.9)
Sheep	12.0 (7.3)	12 (0.0)	-	4 (0.0)	10.7 (6.5)
Pigs	1.0 (0.0)	8.0 (1.4)	-	6.0 (6.0)	4.8 (3.6)

Note: Standard deviations are shown within parentheses ().

Source: Survey data, October 2018

The main purposes for keeping livestock are for income, consumption and cultural reasons (Figure 4.4 below). A few of the youth keep livestock as a form of wealth, while those with cattle rarely use them for draught power. As noted in earlier discussions in this section, the youth utilise tractor services for mechanical operations related to land preparation and other purposes.

**Figure 4.4: Main purposes for keeping livestock among the sampled youth**

Source: Survey data, October 2018

The common challenges threatening livestock production in the surveyed communities are disease outbreaks, non-affordability of livestock vaccines, limited grazing areas, limited access to grazing areas, and unavailability of livestock support services (Table 4.10 below). These

challenges reduce the opportunities for the rural youth to earn their livelihoods through participation in the livestock value chain. Conflicts regarding grazing areas are a common phenomenon and a potentially explosive social issue in the rural communities. Some livestock farmers have resorted to travelling long distances in search of good pastures for their cattle. However, this strategy suggests that it then becomes difficult to simultaneously practise both crop and livestock production.

Table 4.10: Main challenges with livestock production

Challenges with livestock	Percent of Cases
Disease outbreaks	58.9
Unable to vaccinate owing to financial constraints	28.8
Few grazing areas	31.5
Limited access to grazing areas	17.8
No access to support services	13.7
Stock theft	5.5
Lack of knowledge	5.5
Shortage of drinking water	4.1
Snakes eat smaller livestock	2.7
Livestock losses through death	1.4
Fodder is expensive	1.4
Trespassing	1.4
Attacks from other animals	1.4
Premature births	1.4

Note: The responses are from a multiple response question and hence they do not add up to 100.

Source: Survey data, October 2018

Although mentioned by only 5.5% of the sampled youth, extension officers working in the Okhahlamba Local Municipal area report that the major challenge affecting livestock farming in their communities is stock theft. This is confirmed by Maluleke *et al.* (2016) in a study of rural farmer's perspectives on stock theft in South Africa. The 2017/2018 stock theft crime statistics released by the South African Police ranked Bergville as 11th in the country, with 168

cases reported by March 2018 (a 6.3% increase from 2017 figures). Stock theft in South Africa increased by 7.2%, and KwaZulu-Natal province has the highest number of reported cases (6,322 cases) when compared with the other provinces (Government of South Africa, 2018). Rural farmers are more vulnerable to stock theft because they lack resources to insure their assets against loss and to hire security services. Livestock farming is a growing and lucrative business because of the increasing demand for meat products. However, livestock farming will not succeed if not all of the above challenges are addressed.

4.5 Evaluation of financial assets

Financial capital refers to the financial resources that people use to achieve their livelihood outcomes (DFID, 1999; Kuipers, 2014). DFID (1999) argues that, of all the categories of livelihood assets, financial capital is the category that is least available to the poor. More specifically, the evaluation of financial capital is concerned, among other things, with the availability of formal and informal financial service organisations, the services they provide, and the conditions under which they operate, and the level of access to the services. Different sources of financial capital are available and consist of, among others, wages, savings, allowances and pensions (Kuipers, 2014). Most rural households in South Africa receive their financial capital from a mixture of sources, such as salaries, wages, social grants, income from businesses, and pension remittances (StatsSA, 2012, as cited by Thamaga-Chitja and Morojele, 2014).

Sinyolo *et al.* (2017) mentions that most of the smallholder farmers in the country are recipients of at least one of the categories of social grants provided by the South Africa Social Security Agency (SASSA). In South Africa, social grants were paid to about 17.5 million recipients in October 2017. There are seven general social grant payments available in the country, provided through the SASSA: Older Person's grant, War Veteran's grant, Disability grant, Grant-in-Aid, Care Dependency grant, Foster Child grant, and the Child Support grant (SASSA, 2017a). Although these grants are not directly paid for activities in the agricultural sector, research has indicated that social grants can and have been used to complement income received from farming activities. Recently, much focus has been placed on the impacts of social grants on economic participation in South Africa (e.g. Neves *et al.*, 2009; van den Berg *et al.*, 2010; Mabugu *et al.*, 2014; Ardington *et al.*, 2016; Sinyolo *et al.*, 2016; Ranchhod, 2017). There have, however, been mixed results and hence inconclusive results on the effects of social grants and participation in the rural and agricultural sector.

Empirical evidence from the sampled youth (Table 4.11 below) shows different sources of income for the various households of the youth. Their most common sources of income are social grants, remittances, temporary employment, permanent employment, crop and livestock sales, and own businesses. Sinyolo *et al.* (2017) state that most smallholder households in South Africa receive income from social grants. The trend is similar across the three municipalities under study. However, comparison by category of youth shows that crop and livestock sales are an important source of income for those involved in agriculture on a more substantial basis, as compared with the others.

Table 4.11: Sources of income – sampled rural youth

	Type of youth (%)				Municipality (%)			All
	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Alfred Duma	INkosi Langa-libalele	Okhahlamba	
Social grants	89.7	73.3	86.6	89.7	82.9	88.5	92.7	87.4
Remittances	32.1	7.7	44.4	36.6	40.7	23.0	48.6	36.2
Temporary employment	30.8	38.5	36.5	19.5	20.3	19.7	54.5	28.3
Permanent employment	28.6	23.1	27.8	23.2	26.6	14.8	40.5	25.4
Livestock	63.3	26.7	29.9	8.0	23.2	19.7	33.9	25.1
Crop income	66.7	53.3	20.9	2.3	8.5	19.7	44.6	22.1
Own business	32.1	38.5	27.8	8.9	16.7	13.1	42.9	20.7
Arts and crafts	10.0	20.0	11.9	2.3	2.4	9.8	14.3	8.0
Pensions	0.0	18.2	2.0	0.0	0.0	4.9	0.0	1.9

Source: Survey data, October 2018

Table 4.12 below and Figure 4.5 below show that, in terms of proportional contributions to total household income, permanent employment followed by own business and then temporary employment contribute more than the other sources of income do. Remittances contribute 13%, while crop and livestock production contribute 11% each. Despite being the most common and probably the most consistent source of income, social grants only contribute 7% to the total

income of youth households. This finding differs from other recent studies that have shown social grants to contribute more than 30% and, in some cases, almost 70% of the total income of rural households (see Sinyolo *et al.*, 2017; Wale and Chipfupa, 2018). Contrary to statements by Sinyolo *et al.* (2016), the findings from this study show no concerns that social grants may act as a disincentive for youth to not participate in economic activities such as agriculture. Social grants are not the most important source of income for the youth and their households. Comparison by local municipality shows that youth in Okhahlamba receive more income, on average, from their own businesses, temporary employment, crop and livestock sales, and social grants, when compared with the others. The youth in Alfred Duma receive more income from permanent employment and remittances, as compared with others. The findings also show that the youth farming as part of a cooperative are more engaged in crop production, and hence receive a higher income than the rest. Those farming as individuals appear to perform better in their livestock enterprises, as compared with the rest. The youth partially engaged in farming, or not engaged at all, receive higher income from permanent employment. This demonstrates that such youth are more interested in formal or even temporary employment that brings in quick money, as compared with other economic activities that take some time to generate income.

Table 4.12: Estimated income from the sampled youth

Sources of income	Type of youth (Rand)				Municipality (Rand)			All
	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Alfred Duma	INkosi Langali-balele	Okhahlamba	
Permanent employment	3900	2533	7728	7519	11123	3321	3790	6668
Own business	25960	5593	2294	671	1844	912	15498	5401
Temporary employment	5083	2330	5761	2926	3897	2514	6341	4161
Remittances	1750	0	6149	2615	4710	2533	2702	3477
Livestock income	13793	1813	1842	231	938	1855	7044	2937
Crop income	6862	11339	2672	127	1451	3246	4446	2844
Social grants	1778	1311	2212	1965	1688	2121	2221	1971
Arts and crafts	100	328	609	237	288	137	668	349
Pensions	0	2560	287	0	0	944	0	289
Total income	59675	26504	27298	14327	24239	15440	41673	26448

Source: Survey data, October 2018

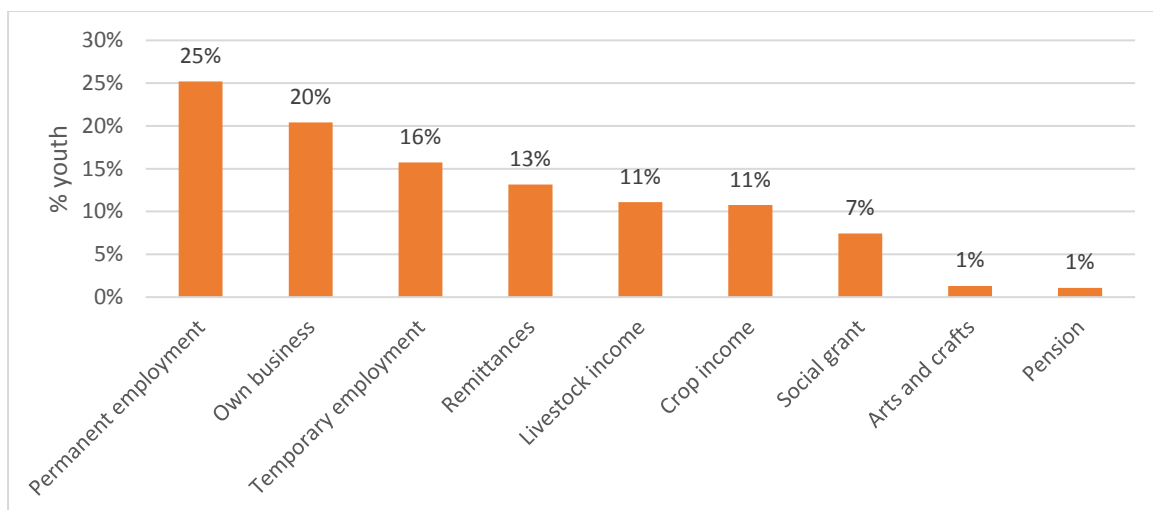


Figure 4.5: Proportion of income from each source – observations from the sampled youth

Source: Survey data, October 2018

Regarding access to financial resources, the literature indicates that the lack of access to credit is a major constraint experienced by emerging and smallholder farmers in South Africa (Senyolo, 2007; Jordaan, 2012; Ndlela, 2015). Not only is access to financial institutions a challenge, the process of credit applications itself hugely influences the access of smallholder/emerging farmers to credit (Aliber and Hall, 2012; Chauke *et al.*, 2013). Factors that make it difficult for the farmers to gain access to credit include complicated procedures, collateral requirements, long waiting periods, and waiting times for payments (Senyolo, 2007; Manganhele, 2010; Kiplimo *et al.*, 2015).

Findings from the sampled youth confirm the points noted in the above-mentioned literature (see Table 4.13 below). The findings show that access to credit among rural youth is very low. Only 9% of the youth reported to have accessed credit in the preceding 12 months before the survey. Comparing the categories of the youth reveals that youth group engaged only in farming as individuals has a higher proportion accessing credit, as compared with the other groups. None of the youth farming as part of a cooperative or partially into farming had gained access to credit in the preceding 12 months. This could be the reason why the youth have diversified sources of income, as discussed above, because they want to self-insure themselves and provide working capital (Barrett *et al.*, 2001). The results also show that most of the credit was intended for consumption purposes (55.6%), and only 27.8% was directed towards agricultural production. This is a challenge because consumption credit tends to deplete the little resources that the youth have, and render them more vulnerable to poverty (Chipfupa and Wale, 2018).

Table 4.13: Savings and access to credit among the sampled youth

	Type of youth (%)				Municipality (%)			Total
	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged	Alfred Duma	INkosi Langali-balele	Okhahlamba	
Access to credit	36.7	0.0	0.0	8.0	7.3	9.8	10.7	9.0
<i>Type of credit</i>								
Consumption	45.5	0.0	0.0	71.4	50.0	50.0	66.7	55.6
Agricultural production	45.5	0.0	0.0	0.0	16.7	50.0	16.7	27.8
Other production credit	9.1	0.0	0.0	28.6	33.3	0.0	16.7	16.7
<i>Source of credit</i>								
Relative or friend	0.0	0.0	0.0	14.3	0.0	16.7	0.0	5.6
Money lender	18.2	0.0	0.0	42.9	66.7	16.7	0.0	27.8
Savings club	0.0	0.0	0.0	14.3	0.0	0.0	16.7	5.6
Input supplier	27.3	0.0	0.0	0.0	0.0	50.0	0.0	16.7
Banks	54.5	0.0	0.0	28.6	33.3	16.7	83.3	44.4
Own savings	50.0	46.7	44.8	29.9	32.9	26.2	62.5	39.2

Source: Survey data, October 2018

The major sources of credit among the youth comprise commercial banks (44.4%), followed by moneylenders (27.8%) and input suppliers (16.7%). The interest charged on the loans depends on the source, but it ranges between 10% and 60% per annum. Commercial banks have significantly lower interest rates than the moneylenders, who charge between 30% and 60% interest rates per annum. The perceptions of the youth towards informal credit sources are negative because of the unfavourable conditions of the loans. Nevertheless, some of the youth use moneylenders as their source of credit because they cannot meet the commercial bank requirements for obtaining a loan. Regarding repayment, most youth (83.3%) who had accessed credit indicated that they were able to service their debt with minimum challenges. This points to good debt management practices among the youth, which is important in operating a farm business.

Most of the youth do not have some form of savings. Only 39.2% indicated to have either informal (44.9%) or formal (52.6%) savings, or both (2.6%). The percentage of those with savings is higher among the youth engaged in farming and those in Okhahlamba Local Municipality. Figure 4.6 below shows the average amount of loans and savings that the youth received or have. Youth who farm as individuals received an average of R16,338 in the preceding twelve months before the survey. Although some of the youth reported to have savings, these were very low, at an average of R2049. These savings are not adequate to cater for the starting or working capital required by youth to successfully operate their farming enterprises.

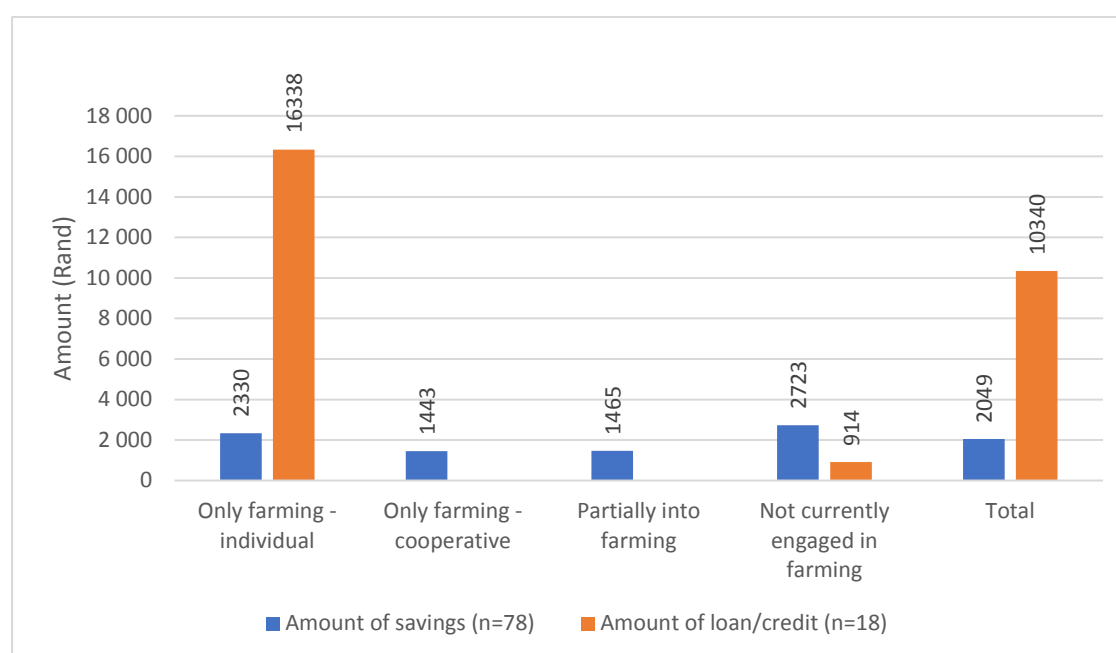


Figure 4.6: Amount of savings and loans received

Source: Survey data, October 2018

Table 4.14 below presents the reasons that were given by youth for not taking up credit in the preceding 12 months before the survey. The findings show that most of the youth do not want to become indebted for fear that they would be unable to repay their loans. This shows a low risk-taking propensity among the youth. The other reasons are more common and include the lack of collateral, high interest rates, and inaccessibility of the credit. The lack of access to financial institutions and a lack of knowledge about the credit conditions and requirements limit the access to credit by youth.

Table 4.14: Reasons for not taking credit

Reasons	Percent
I do not want to be indebted	48.7
I could not secure the collateral	15.6
It isn't easily accessible	13.6
The interest rate is high	11.0
I do not need it yet	9.6
No money to pay back	8.4
I have got my own sufficient money	7.1

Note: The responses are from a multiple response question and hence they do not add up to 100.

4.6 Summary

The purpose of this chapter has been to evaluate the natural, physical and financial assets (including market access) available to rural youth in the context of smallholder rain-fed farming potential in rural areas in the province. The chapter began by giving a background on youth unemployment, the challenges thereof, and the potential role of the agricultural sector in the productive engagement of rural youth in the rural economy. It then presented the livelihood assets in relation to youth participation in smallholder rain-fed farming. This was followed by an assessment of the role of access to natural assets, mainly land and water, to enable participation by rural youth in rain-fed farming activities. Finally, it presented an evaluation of financial assets, drawing from the empirical results.

5 RURAL YOUTH ENDOWMENT WITH HUMAN, SOCIAL AND PSYCHOLOGICAL ASSETS IN THE CONTEXT OF SMALLHOLDER RAIN-FED FARMING IN THE SELECTED RURAL AREAS OF KWAZULU-NATAL

This chapter evaluates the human, social and psychological capital assets that are available to rural youth in the context of smallholder rain-fed farming potential in the rural areas of the study areas. The discussion focuses on the role of these assets in the productive engagement of the rural youth in farming and related economic activities. The lack of these assets is presented as challenges or inhibitors to engaging the rural youth in the sector.

5.1 Introduction

The aim of this chapter is to evaluate human, social and psychological assets (including incentives of secure land tenure and leadership capabilities) in relation to entrepreneurial spirit and management requirements, with particular attention to the youth in selected rain-fed farming areas. This report, therefore, presents research findings regarding the selected rural communities in KwaZulu-Natal province, with the respondents being the youth.

Youth unemployment is a major challenge in South Africa. Although the rate at which young people are graduating with a university education has doubled since 1994 (Statistics South Africa, 2016), this has not been matched by significant increases in job creation in the economy. The Labour Market Survey 2017 report shows that, while employment increased by 358,000 (2.3%) from 2016 to 2017, unemployment grew by 337,000 (5.7%) in the same period, resulting in a 0.6% increase in the unemployment rate (Statistics South Africa, 2017). At the time of reporting, the overall unemployment rate in South Africa was 36.6%, and the majority of those not employed were below the age of 25 years (Statistics South Africa, 2017). Youth unemployment stood at 38.8% in the second quarter of 2018, and the trend has been increasing in the past decade (Statistics South Africa, 2018). The inability of the economy to absorb the growing numbers of people entering the labour market has created a huge challenge for the South Africa government. The problem is worse in rural communities because of limited opportunities, and the consequence is seen in an exodus of young people to urban areas in search of better employment opportunities. This rural to urban migration has created pressure on basic service delivery in the urban areas, while the lack of employment opportunities has also contributed to increasing levels of youth delinquency and drug abuse. The problem of

youth unemployment is not unique to South Africa alone, and similar trends have also been observed globally and in the Sub-Saharan Africa region (ILO, 2017).

The strategic and policy documents introduced by the South African government following the new democratic dispensation in 1994 have given much attention to youth employment and entrepreneurship development in rural areas and agricultural value chains. The country's main policy documents (e.g. National Development Plan Vision 2030; New Growth Path Framework; Medium Term Strategic Framework; DAFF Medium Term Strategic Framework) identify the inability to create employment as being one of the major challenges in the country. The policy documents also identify the need to provide vulnerable groups, particularly young people in rural communities, with opportunities for engagement in the broader rural economy. The need for inclusive rural economies and agricultural transformation with a focus on youth is seen as a key area for creating employment, improving livelihoods and reducing poverty. Among the mix of proposed strategies is the potential role of agricultural value chains to offer opportunities for youth to be gainfully engaged in agricultural-related enterprises. However, a recent report published by the Alliance for a Green Revolution in Africa (AGRA) shows that not much progress has been achieved in Africa in creating job opportunities for the youth in the agricultural value chains. For example, in South Africa, it is reported that only 2% of the youth are engaged in new job opportunities in the agricultural sector, against a target of 30% set for all African countries (AGRA, 2018). This shows that much still needs to be done to enhance the role played by the sector in creating jobs and enhancing the livelihoods of young people.

Although the past decade has been characterised by drought and unreliable rainfall attributable to climate change, rain-fed farming remains an important part of the South African farming system, especially in the rural areas (Hardy *et al.*, 2011). The sector presents opportunities for youth to become gainfully engaged in productive and income-generating activities. However, besides the general lack of interest to participate in farming among the youth (Chipfupa and Wale, 2018b), there are several other challenges that hinder young people from taking up opportunities in agriculture. The focus of this study deliverable is to assess some of these factors, particularly those that are related to three livelihood assets, i.e. the factors of human, psychological and social capital. The extent to which young people are endowed with these assets will determine their propensity to participate in the agriculture value chains. The analysis is conducted within the context of the adapted sustainable livelihoods framework (SLF), which

adds psychological capital (PsyCap) as the sixth livelihood asset (Chipfupa and Wale, 2018b; Phakathi and Wale, 2018).

5.2 Human, social, and psychological capital as livelihood assets

The human, social and psychological capital assets are three important categories of assets in sustainable livelihoods analysis. A livelihood can be defined simply as comprising the ways in which a person supports his or her life or existence (Scoones, 1998; De Satge, 2002). The new discourse on livelihood analysis suggests that a household has six, rather than five, categories of livelihood assets, i.e. human, social, financial, physical, natural and psychological capital (Chipfupa and Wale, 2018b; Phakathi and Wale, 2018). The additional livelihood asset, PsyCap, is closely linked to the human and social capital attributes and presents a unique dimension in that it focuses on an individual's endowment with a mindset that allow them to utilise available opportunities, even in the presence of constraints. While human capital deals with what a person knows, and social capital is mostly about whom they know, PsyCap is about who a person is and their aspirations (Avolio and Luthans, 2006). This is certainly important for the youth to grasp, because their engagement in entrepreneurship depends on their entrepreneurial spirit, which is a function of their positive PsyCap endowment.

The aspect of human capital is defined as the stock of knowledge, experience and skills possessed by an individual that allows them to engage in economic production activities (Cinnirella and Streb, 2017). Human capital is directly linked to access to education and training. Better endowment with human capital increases labour productivity and therefore the performance of the smallholder agricultural sector (Okpachu *et al.*, 2014). Given the advancements in farming technology and the current drive towards climate-smart agriculture, education and training will assist present day farmers and value-chain actors to understand, appreciate and embrace these complex changes. It is important to ascertain what stock of human capital the youth possess and its adequacy for enhancing their participation in farming and agricultural value-adding activities.

Social capital is about the social relationships associated with an individual. Roberts and Lacey (2008) state that “social capital is anything that contributes to the facilitation of individual or collective action, trust, social norms, reciprocity, networks and social relationships.” Understanding the social capital dimensions of the youth is critical for two reasons. First, it determines access to other assets through horizontal and vertical interactions (Njuki *et al.*, 2008; Wale and Chipfupa, 2018). The horizontal interactions enhance information sharing and

hence awareness of available services and how to access them, while the vertical interactions enhance linkages to important institutions, such as extension services, credit facilities, tribal authorities and markets. Secondly, social capital facilitates social learning through positive social influences that directly impact upon one's thinking and behaviour. This is important when targeting youth, who are naturally prone to be influenced by the behaviour of others, such as their peers and role models (includes parents/guardians). Regarding entrepreneurial development, the use of role models could provide a pathway for developing and boosting the entrepreneurial spirit of youth in agriculture.

The existing literature show that access to social capital for young people results in expanded choices, enhanced employment opportunities, increased confidence, and improved engagement and communication (Semo, 2011; Spires and Cox, 2016).

There is evidence that shows that a person's social environment determines their propensity for succeeding in life (Coleman, 1988). In other words, there is a link between social capital and human capital. However, the reverse relationship is somewhat vague. Different arguments are presented in literature as to the extent to which human capital is necessary to augment social capital (Roberts and Lacey, 2008). While some, like Coleman (1988) and Schuller (2001), argue that there is no evidence to support that notion, Glaeser (2001) has a differing view. It is important to unpacking this relationship from both angles for promoting youth participation in agriculture. Understanding their social relationships and the influence of human capital on those relationships, and vice versa, could be the difference between identifying those who are likely to successfully initiate and sustain their farming enterprises, and those with lower potential to do so. Comparing the two forms of capital, some very important differences are noted. While human capital is about the individual, social capital is concerned with social relations. The measures of human capital are tangible and quantifiable, such as duration of schooling, qualifications and skills. On the other hand, social capital indicators, such as attitudes/values, membership/participation and trust levels, are not easy to measure. Human capital tends to follow a linear model regarding an individual, while social capital follows an interactive model, characterised by networks and social relationships (Schuller, 2001; Roberts and Lacey, 2008).

PsyCap is defined as "an individual's positive psychological state of development that is characterized by (1) having confidence (efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to

goals (hope) to succeed; and (4) when beset by challenges (not problems) and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success” (Luthans *et al.*, 2015, p2). PsyCap deals with the human mindset and has a significant role in determining one’s way of thinking and acting, and hence their success or failure. PsyCap is a key asset to mobilise and efficiently utilise other livelihood assets (Chipfupa and Wale, 2018b). For example, given the assertions by Fredrickson (2001), the youth endowed with positive PsyCap are more likely to create long-lasting friendships and networks. These interactions and connections help such individuals to enhance their capacity, enabling them to be resilient to stress and to thrive in situations that others may find overwhelming (Keyes and Haidt, 2003). Positive PsyCap is also closely linked to a strong will to achieve, higher entrepreneurial spirit (the drive to engage in entrepreneurship) and higher aspirations in life (Chipfupa and Wale, 2018a). These are critical characteristics for youth in relation to their establishment of farming enterprises or engagement in the agricultural value chain.

5.3 Description of the features of the respondents drawing from the survey

5.3.1 Youth involvement in farming

Table 5.1: Sample population of the study

Municipality	Type of youth				All
	Only farming – individual (15.6%)	Only farming – cooperative (8.5%)	Partially (33.7%)	Not engaged (42.2%)	
Alfred Duma	8	0	30	44	82
Inkosi Langalibalele	7	12	14	28	61
Okhahlamba	16	5	23	12	56
Total	31	17	67	84	199

Source: Survey data, October 2018

Table 5.1 above shows that only 24.1% of the interviewed youth were fully engaged in farming, either as individuals or as part of a cooperative. Just over a third were participating in farming, albeit in a limited capacity. Such youth were mainly supporting their family in agricultural-related activities or, in some rare instances, employed by another farmer in the community. The majority of the sampled youth (42.2%) were not involved in farming or any agricultural-related economic activity. The major reasons for not farming were lack of inputs, lack of information or knowledge on farming, and lack of financial resources to start-up and sustain farming operations. Other youth reported that, owing to a lack of fencing to protect against stray

animals, they are unable to practise farming. A lack of access to land and the inconsistent and unreliable rain were also hindering youth from engaging in farming. A few are not interested in farming, while some think that farming is not profitable and thus is not a lucrative business venture (see Table 5.2).

Table 5.2: Youth reasons for not farming

Reason	N	Percent of Cases
Lack of farming inputs	11	23.4
Lack of information/knowledge	11	23.4
Lack of financial resources	8	17.0
No fencing to protect against stray animals	6	12.8
No access to land	6	12.8
Inconsistent and unreliable rainfall	5	10.6
I was not interested	3	6.4
Farming is not profitable	3	6.4
I am too lazy to do farming	1	2.1
I was still attending school	1	2.1
I am busy with some other business	1	2.1
Poor soil fertility	1	2.1
Livestock died from diseases	1	2.1
Livestock rustling	1	2.1
I don't know/never thought about it	1	2.1
I used to work with people who do not appreciate the mindset of young people	1	2.1

Source: Survey data, October 2018

The major reason for not being involved in any other agricultural economic activity outside farming was a lack of information or knowledge regarding such activities (Table 5.3 below). A few reported that they lacked the financial resources to start such economic activities, while others were engaged in various other non-agricultural businesses. Other reasons included a limited exposure to the right people with the knowledge to mentor youth on how to initiate and

operate an agricultural-related business. A very small proportion of the youth felt that there were no opportunities for such agricultural economic activities in their areas.

Table 5.3: Youth reasons for not being part of any other agricultural economic activity outside crop farming

Reason	N	Percent of Cases
Lack of information/knowledge	25	58.1
Lack financial resources	6	14.0
I was/am still studying	4	9.3
I was engaged in some other non-agricultural business	3	7.0
I have not been yet exposed to the right people	3	7.0
I did not have opportunities for other agricultural economic activities	2	4.7
I have no interest	1	2.3
I got married recently	1	2.3
I have tried and failed	1	2.3

Source: Survey data, October 2018

5.3.2 Employment status

Table 5.4 below shows that just over half (51.5%) of the interviewed youth were not employed, but were actively seeking employment. Approximately 20% were employed mostly as part of a learnership programme under their respective municipalities, while 9.6% were self-employed. Other youth were still studying, while a few were discouraged workers, and some, though able and available to work, were not actively pursuing any job or business opportunities. Discouraged workers represent people who want to work, but because they are unable to find jobs, have lost hope and thus are no longer actively seeking work. The trend is almost similar across the three municipalities, although Alfred Duma has a higher proportion of youth employed by others, and Okhahlamba has more youth who can be categorised as discouraged workers.

Table 5.4: Employment status of the sampled rural youth

	Alfred Duma	Inkosi- Langalibalele	Okhahlamba	Total
Unemployed but actively pursuing	48.8	57.4	49.1	51.5
Employed by others	34.1	13.1	5.5	19.7
Self-employed	4.9	13.1	12.7	9.6
Student	9.8	1.6	12.7	8.1
Discouraged worker	1.2	3.3	10.9	4.5
Employed by family	0.0	4.9	7.3	3.5
Not actively pursuing	1.2	6.6	1.8	3.0
Total	100.0	100.0%	100.0	100.0

Notes: Pearson Chi-Square = 40.60; P value = 0.000

Source: Survey data, October 2018

More than half of the youth (53.5%) who are currently unemployed indicated that they had been employed before (Figure 5.1 below). The results show that most of the jobs were in the agriculture, manufacturing, retail and service sectors, doing menial work. The jobs include general work, farm labourers, shop assistants, till operators, secretaries, petrol attendants, security guards, waiters and road maintenance. Most of the jobs were contract based and once the contracts ended, the jobs were never renewed.

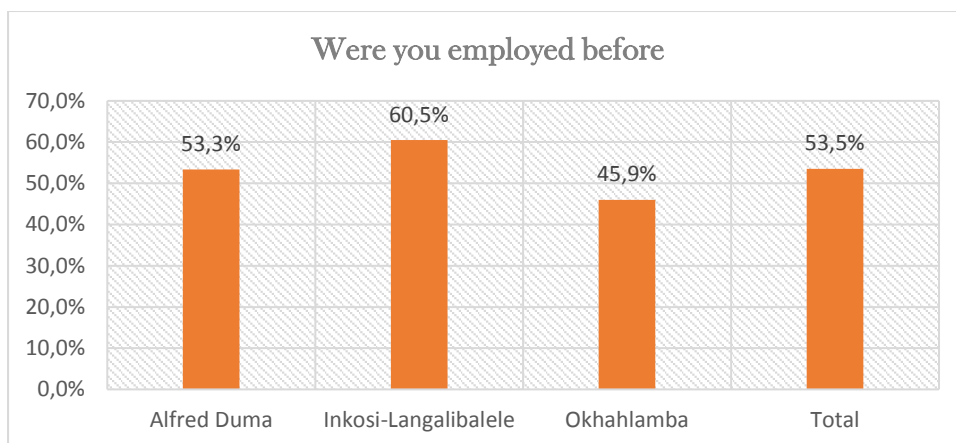


Figure 5.1: Unemployed youth who were employed before

Source: Survey data, October 2018

5.4 Human capital assets of youth in relation to their entrepreneurial spirit and management capabilities

This section characterises the youth in terms of their human capital assets in relation to their entrepreneurial spirit and management capabilities. The issues that are discussed include youth demographic information, level of education and farming experience, involvement and interest in agriculture, health status, access to agricultural-related skills training, and potential labour availability.

5.4.1 Demography and human capital

The results show that the average age of the sampled youth is 26 years. The youth engaged in farming on a fulltime basis, whether as an individual or cooperative, are slightly older than their counterpart respondents. Discussions with such youth suggested that, as youth grow older and remain unemployed, they resort to agriculture almost as an option of last resort. Maturity brings with it realistic expectations and willingness to explore opportunities in agriculture, if available. The results show that there are more females than males among the youth. This is characteristic of the gender balances of all KwaZulu-Natal districts. The gender ratio in uThukela district is 87:100, which indicates a ratio of 87 males per every 100 females (Statistics South Africa, 2014). However, the gender results for the youth engaged in farming as their main livelihood activity are contrary to what is often reported in the literature, that women constitute the majority of smallholder farmers (Altman *et al.*, 2009). Most of the youth under study who are engaged in farming on a more substantial basis are male. There are several

possible reasons for this, including the possibility that female youth are less interested in farming or that female youth have less access to agricultural economic opportunities, as compared with male youth. Further results show that about 92% of the sampled rural youth are single, and only 8.2% are married or cohabiting with their partners.

Table 5.5: Some socio-demographic characteristics of the youth

Indicator	Only farming – individual (n = 31)	Only farming – cooperative (n = 17)	Partially (n = 67)	Not engaged (n = 84)	Total (n = 199)
Age	28.7 (5.1)	28.4 (5.2))	25.6 (4.1)	25.4 (4.5)	26.2 (4.7)
Gender (%)					
<i>Female</i>	45.2	41.2	64.2	60.7	57.8
<i>Male</i>	54.8	58.8	35.8	39.3	42.2
Marital status					
<i>Single</i>	90.0	88.2	89.4	95.2	91.9
<i>Married</i>	3.3	0.0	4.5	3.6	3.6
<i>Cohabiting</i>	6.7	11.8	6.1	1.2	4.6
Years of school	11.2 (1.9)	11.8 (2.4)	12.0 (1.3)	11.5 (1.7)	11.6 (1.7)
Experience	4.9 (4.2)	6.2 (7.8)	5.5 (5.7)	1.2 (3.0)	3.9 (5.2)

Note: () = Standard deviations

Source: Survey data, October 2018

Level of education – The average number of years of schooling completed is 11.6, with a range of 4-16 years. The level of education attained among the youth is fairly high. The results indicate that 55% of the rural youth had completed matric, while about 15% have a post-matric qualification (Figure 5.2 below). There are no significant differences between the different categories of youth or the three municipalities regarding the level of education of the youth.

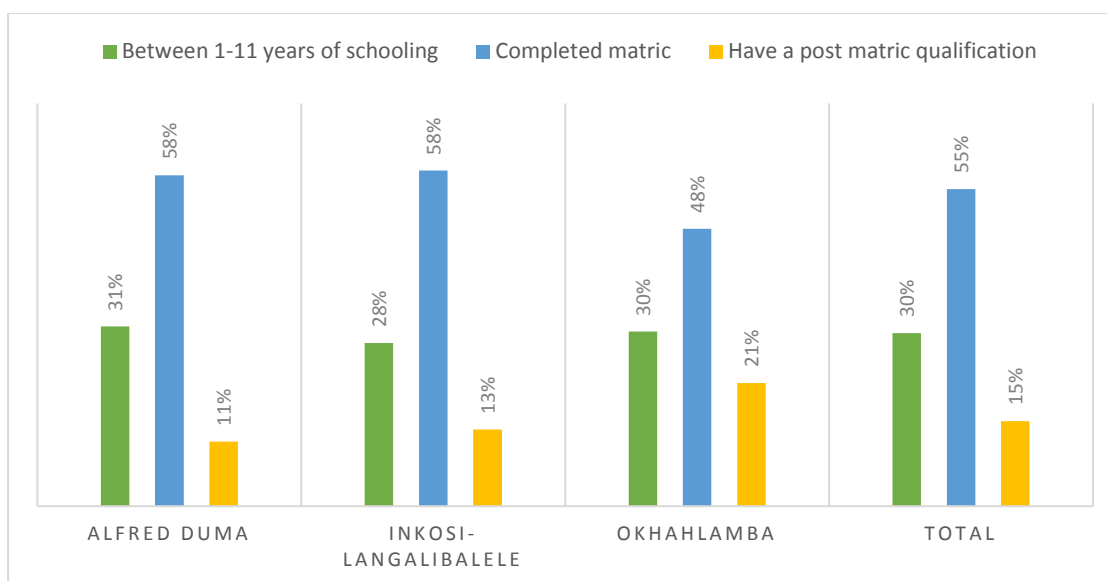


Figure 5.2: Level of education among the sampled rural youth

Source: Survey data, October 2018

Only 4.5% of the youth have an agricultural-related tertiary qualification. This means that the qualifications of those rural youth with a post-matric qualification are mostly held in another field of study, other than agriculture. Discussions showed that most of such members of the youth had a Diploma in Public Management. They earned this qualification with the intention to find employment within the municipalities or government departments. However, such employment opportunities are close to none. Some see the need for diversifying their qualifications, but lack the financial resources to do so. Most studied using the National Student Financial Aid Scheme and thus no longer have access to that source of financial aid.

Indigenous knowledge – The study also intended to assess the stock of indigenous knowledge (IK) related to farming among the rural youth engaged in farming at all levels. The results show that 71.8% of the youth reported having some form of indigenous knowledge to do with farming. The most common form of IK is the use of different traditional methods of improving soil fertility, such as the use of cow dung or chicken droppings and eggshells as a form of fertiliser. Other common types of indigenous knowledge mentioned include the following:

- Use of aloe and snuff to treat certain ailments in livestock
- Traditional methods of treating diarrhoea in goats or cows after birth
- Use of natural herbs, ashes and soap water to control pests
- Feeding livestock with a certain herb that causes them to return home on their own after grazing

- Use of certain tree species that increase growth (*muunga*) and treat worms in livestock
- Shelling grain using a stick
- Putting scarecrows in the crop fields to scare away stray livestock
- Soaking seeds in seawater before planting to control potential infections
- Pouring chicken blood in irrigation to improve plant growth
- Goat breeding or fertility enhancement using traditional medicine
- Castration of bulls using traditional equipment

Chronic illness – The presence of chronic illnesses among the youth and other members in their households was also apparent. A third of the youth indicated that they are taking care of chronically-ill household member(s), while 18.6% have some form of chronic illness themselves (Figure 5.3 below). Chronic illnesses affect labour productivity when ill health manifests during times for work, or when productive time is taken away through having to nurse sick family members. For affected youth, the presence of chronic illnesses affects their entrepreneurial spirit and management capabilities.

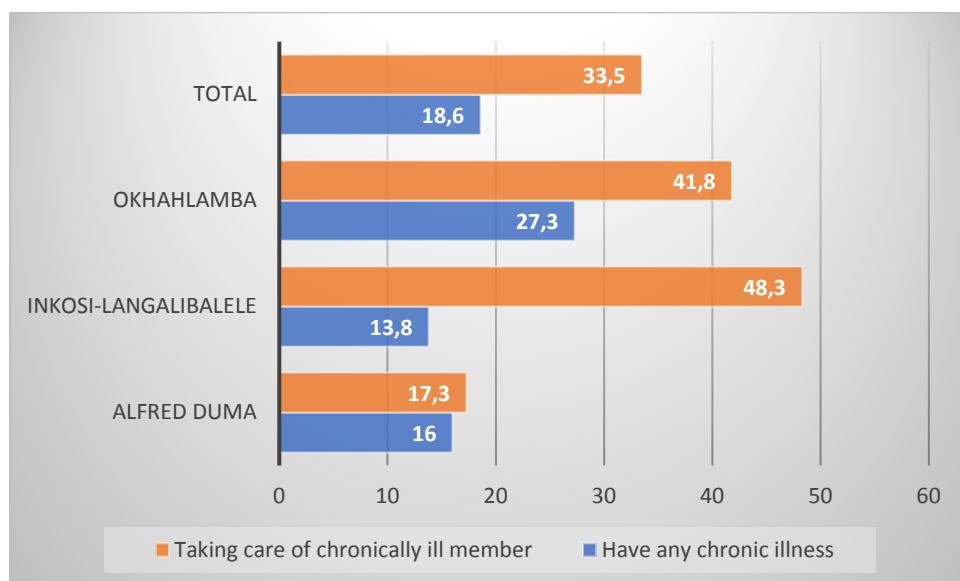


Figure 5.3: Presence of chronic illnesses in youth households

Source: Survey data, October 2018

The results show that rural households with youth members have a higher average household size of 6.41, when compared with the district average of 4.5 (Statistics South Africa, 2014). Households in Okhahlamba with youth members have a higher average size when compared with the other municipalities (Table 5.6 below). Larger households that are associated with

higher adult equivalence, especially in the rural community where the levels of poverty are high, are associated with greater economic burdens. However, the results of the dependency ratio, which is a measure of economic burden in a household, show otherwise. The average dependency ratio figures for all the municipalities are less than 1, except for Inkosi Langalibalele. This means that there are more members within the productive age range in the households, as compared with the number of dependents, and when all things are normal, that indicates lower economic burdens on the households. Opportunities for productive engagement in the rural areas are limited, and most people are considered to survive on social grants as their main source of income. This reality shows that the capacity of these households to financially support their youth to develop and sustain farming or agricultural-related economic activities is limited. However, in terms of labour, households with a higher adult equivalence might have more family labour available, which could be used to support youth farming enterprises.

Table 5.6: Youth household demographics

Household Indicators	Alfred Duma	Inkosi Langalibalele	Okhahlamba	Total	P value
Household size	6.21 (2.83)	6.10 (2.28)	7.04 (3.27)	6.41 (2.82)	0.141
Adult equivalence	4.23 (1.63)	4.03 (1.30)	4.83 (2.00)	4.34 (1.66)	0.026
Number of dependents	1.94 (1.50)	2.56 (1.75)	2.41 (1.76)	2.26 (1.66)	0.065
Economically productive members	4.15 (1.81)	3.41 (1.46)	4.63 (2.20)	4.06 (1.88)	0.002
Dependency ratio	0.51 (0.47)	1.02 (1.03)	0.62 (0.50)	0.70 (0.73)	0.000

Note: () Standard deviations

Source: Survey data, October 2018

5.4.2 Youth interest in agriculture

Studies in the past have shown that the youth perceive agriculture as giving a low status, dirty and unattractive job (Adekunle *et al.*, 2009; Ahaibwe *et al.*, 2013; Kising'u, 2016). To most of the youth, agriculture is a part-time job and not a profession or a livelihood strategy (Abdullah *et al.*, 2012). The youth prefer non-agricultural careers because they perceive them as being

more stable, providing relatively more income, and requiring less physical labour (Taferre and Woldehanna, 2012; White, 2012; Swarts and Aliber, 2013). This explains the high rates of migration of youth from rural areas to urban areas in search of better job opportunities. Qwabe (2018) has stated that poor media coverage regarding successful, wealthy farmers has led the youth to believe that agriculture does not have the capacity to provide them with the luxurious lifestyles they aspire to. Moreover, having seen no change in the lives of their parents and grandparents, who have been smallholder farmers for decades, the youth might have developed a negative attitude towards agriculture in general, and smallholder farming in particular.

The results described in Section 5.1 show that most of the rural youth either do not participate in farming or do so at a very limited capacity. Thus, this survey also sought to assess the extent of the interest of the youth in agriculture by asking them to rate their interest in rain-fed farming (includes livestock), irrigation farming, and agricultural value-adding activities.

Table 5.7: Youth interest in agriculture

	Not at all	It depends on the enterprise	Don't know	Interested
Rate your interest in rain-fed farming/livestock (%)	22.8	21.6	9.0	46.7
Rate your interest in irrigation farming (%)	9.6	19.2	7.2	64.1
Rate your interest in agricultural value adding activities (%)	9.0	13.8	19.2	58.1

Source: Survey data, October 2018

Rain-fed farming – About 46.7% of the rural youth interviewed expressed interest in rain-fed farming, while 31.8% were not sure or have no interest at all (Table 5.7 above). However, 21.6% of the youth indicated that their interest depends on the enterprise under consideration or the availability of consistent rainfall. Those who said that their interest depends on the enterprise mentioned maize enterprise as their preferred option. They believe that other crops do not perform well under rain-fed farming conditions.

Several reasons were given for the interest of the youth in rain-fed farming. Most believe that, given the rainfall conditions, this form of farming is viable in their communities. They see opportunities for earning an income and creating employment for themselves and others. Some believe that rain-fed farming is less costly (less labour intensive and reduces costs of accessing

water) when compared with irrigation farming and hence it is easier to implement. Others with an inclination towards livestock farming indicated that rain-fed farming is important to them because their livestock depends on rainfall for watering and grazing. They see opportunities in the increased demand for livestock and related products, and wish to exploit the potential market. Some of the youth expressed their passion for rain-fed farming. However, a few youths indicated that they have no choice because rain-fed farming is the only economic opportunity possible in their community. The majority of the youth who expressed having no interest in rain-fed farming indicated the persistent droughts and inconsistent and unreliable rainfall, which makes rain-fed farming impossible, as their main reason.

Table 5.8 below shows some interesting results. A comparison of the interests in rain-fed farming by category of youth shows that some of the youth who are currently engaged in farming on a fulltime basis, whether as an individual (10%) or cooperative (20%), do not have an interest in farming. It seems that such youth are only engaged in farming because it is the only option available. Otherwise, if opportunities were to arise in other sectors, they would stop farming. Similar behaviour was also observed among some smallholder irrigation farmers in Jozini (Wale and Chipfupa, 2018). The results also show that 53% of the youth who are currently not engaged in farming do, however, have an interest in rain-fed farming.

Table 5.8: Interest in rain-fed farming by type of youth

	Not at all	It depends on the enterprise	Don't know	Interested
Only farming – individual (%)	10.0	33.3	0.0	56.7
Only farming – cooperative (%)	20.0	53.3	0.0	26.7
Partially (%)	29.6	22.2	9.3	38.9
Not engaged (%)	23.5	8.8	14.7	53.0
Total (%)	22.8	21.6	9.0	46.7

Source: Survey data, October 2018

Irrigation farming – The results shown in Table 5.7 above show that a much higher proportion of rural youth (64.1%) expressed an interest in irrigation farming, as compared with rain-fed farming. This is because the youth felt that irrigation farming, or the ability to irrigate crops whether from a tank, river or through an irrigation scheme, is better than rain-fed farming. They expressed the view that water is then guaranteed or readily available, making it possible to grow crops all year round and earn better profits from farming. Some indicated that they know of some people in their communities using irrigation and have observed that their enterprises are productive. One youth group in Inkosi Langalibalele Municipality, having realised the challenges of inconsistent rainfall, took it upon themselves to dig a dam near their fields for harvesting rainwater. Now they can irrigate and are quite successful in their farming. About 19.2% of the youth indicated that their interest in irrigation farming depends on the type of the crop enterprise. If the crop requires a lot of water or frequent watering, such as spinach, then irrigation is a preferred option. Only 9.6% said that they have no interest in irrigation farming because it is too costly and that it is not possible, given the dry conditions in their area.

Agricultural value-adding activities – Some of the rural youth (58.1%) expressed interest in participating in agricultural value-chain activities, such as selling inputs, agro-processing, transport, and packaging (Table 5.7). Such interest is evident across all the categories of the youth (see Table 5.9 below). The results in Table 5.7 also show that about 19.2% indicated that their interest depends on the type of agricultural value chain business, while 16.2% either are not sure or have no interest at all. Further analysis showed that 68.4% of the youth with no interest in rain-fed farming are interested in agricultural value-adding activities. This is an

important result because it shows that youth do not necessarily have to be involved in the actual crop or livestock production, but they can be involved in the several activities that support rain-fed farming along the value chain.

The major reasons for interest in value-adding activities were that most of the youth believed that such economic activities add value to agricultural produce, and thus increase the opportunities for earning higher profit margins. The youth also saw opportunities for diversifying their incomes by engaging in agricultural value-adding activities, while others believe that such activities create more job opportunities. Some of the youth specifically singled out the transportation of agricultural produce as a lucrative business opportunity, given the limited number of service providers in their areas. However, the interest of some of the youth was based on the misconstrued belief that value-adding activities are easy to carry out, and they do not require much work. Such beliefs should be corrected. What was also quite apparent during the survey is the lack of information that youth have on the agricultural value-chain activities. Some seemed surprised that they could also venture into such businesses.

Table 5.9: Interest in agricultural value-adding activities by type of youth

	Not at all	It depends on the enterprise	Don't know	Interested
Only farming – individual (%)	10.0	33.3	10.0	46.7
Only farming – cooperative (%)	20.0	13.3	13.3	53.3
Partially (%)	7.3	16.4	16.4	60.0
Not engaged (%)	7.5	3.0	26.9	62.7
Total (%)	9.0	13.8	19.2	58.1

Source: Survey data, October 2018

5.4.3 Access to agriculture-related skills training

Access to agriculture-related skills training among the rural youth is very limited. Figure 5.4 below shows that only 21.2% of the youth had received some agriculture skills training in the past. There is, however, a relationship that can be observed between youth participation in farming or agricultural-related activities and skills training. A higher percentage of the youth currently engaged in farming on a more substantial basis had received one or more forms of

agriculture skills training, compared with those with limited or no involvement in farming. The implications of this relationship should be explored further to inform strategies for increasing rural youth participation in rain-fed agriculture. A comparison of access to agriculture skills training according to municipality showed that more of the youth in Okhahlamba Municipality (43.4%) had received some training as compared with Inkosi Langalibalele (18.3%) and Alfred Duma (8.8%) municipalities.

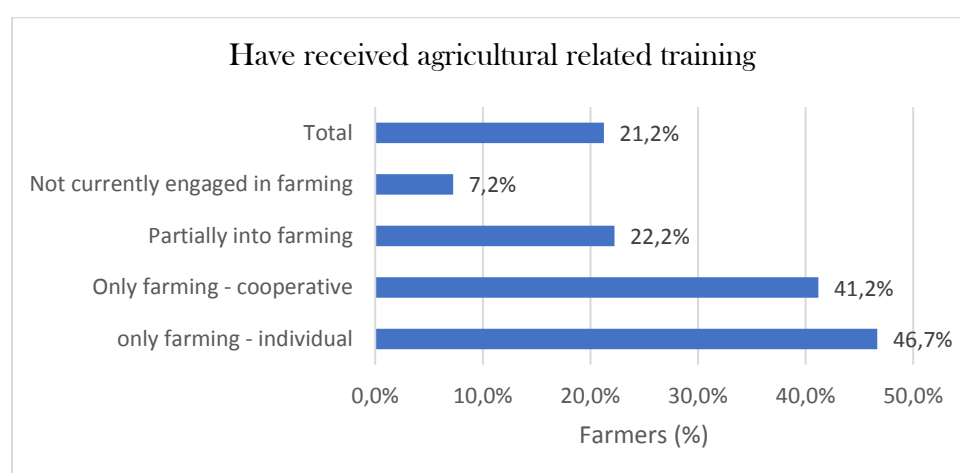


Figure 5.4: Respondents who received agriculture-related skills training

Source: Survey data, October 2018

Table 5.10 below shows that most of the training received was related to crop production. This indicates that much emphasis has been placed on crop production, and less on other important aspects such as livestock farming, climate change and water management, agricultural value chains, commodity marketing, and financial management. These are critical skills that are important for improving the entrepreneurial spirit and management capabilities of rural youth for operating their small, agriculture-related businesses. The youth seem to experience no challenges in understanding and utilising the knowledge and skills gained from the training. The results show that about 95.1% of the youth who had received training indicated that they fully understood and were able to put into practice all the advice they received from the training.

Table 5.10: Type of agricultural skills training received by the sampled rural youth

Type of training	Percent of Cases
Crop production	82.9
Livestock production	14.6
Agriculture commodity marketing	12.2
Water management/climate change coping strategies	7.3
Value addition (processing and packaging)	7.3
Financial management/bookkeeping	4.9
Engine repairs	2.4
Livestock drugs	2.4
Processing	2.4
Poultry	2.4

Source: Survey data, October 2018

The results show that three organisational sectors play an important role in providing agricultural-related skills training to rural youth, i.e. the DARD extension officers, private companies, and Non-Governmental Organisations (NGOs) (see Table 5.11 below). Some established, fellow farmers also play an important role in transferring skills to young people with an interest in agriculture through mentoring. However, the discussions show that this is usually at the instigation of the youth themselves. Training provided by private companies is usually product-based. Thus, a private company interested in the bean crop would support the training of farmers in the production of beans. In most cases, such support will also include the provision of inputs and marketing the produce. Hence, it is important to identify areas of mutual benefit, through which the private sector could support rain-fed agriculture by youth in the rural areas.

Table 5.11: Actors providing agricultural-related skills training

Institution	Percent of Cases
DARD – Extension Officers	56.1
Private Company	34.1
NGOs	12.2
Fellow Farmers	7.3
Department of Education and Training	4.9
Parents/relatives Knowledge	4.9
College	4.9
Grain SA	2.4
Livestock Improvement Cooperative	2.4
Department of Rural Development and Land Reform	2.4
Animal Health Technician	2.4

Source: Survey data, October 2018

5.5 Rural youth endowment with social capital assets

5.5.1 Social networks

Social networks define the social relationships that are important for developing a strong social support system, which is critical to the success of any business. The survey investigated the membership of the rural youth in different social networks. The results in Table 5.12 below show that only 19.3% of the youth were part of an agricultural cooperative. Some of the youth farming as individuals (24.1%) or supporting their family farming operations (16.4%) are also members of agricultural cooperatives. Discussions with the youth revealed that some of the cooperatives are constituted for the purposes of accessing support from government, and not necessarily of engaging in farming as a collective. The same phenomenon was also observed among some irrigation farmers in Jozini (Wale and Chipfupa, 2018). Further analysis shows that satisfaction with the governance of the cooperatives (84.2%) and trust in the leadership (81.8%) among members is quite high. The few who said that they do not have trust in the cooperative leadership are not happy with financial management and accountability issues.

Table 5.12: Youth membership in different social networks

Type of youth	Members in an agricultural cooperative	Members in a youth club/group	Part of a social media group
Only farming – individual	24.1	35.7	77.4
Only farming – cooperative	100.0	26.7	71.4
Partially into farming	16.4	29.7	79.1
Not currently engaged in farming	3.6	8.6	79.5
Total	19.3	21.3	78.5

Source: Survey data, October 2018

Several reasons were given why most of the youth were not part of any cooperative (see Table 5.13 below). The majority (46.2%) indicated that they have no information about cooperatives, their purpose, constitution and operation. Another group said that they do not have any agricultural cooperatives in their community, and thus could not join. It seems that such youth have knowledge about cooperatives and their function, but are not proactive in organising themselves into a collective. About 11% prefer working alone so that they do not have to deal with the numerous challenges associated with cooperative governance and management. Others said that they have no time to allocate to a cooperative because of other commitments, such as schooling and other businesses. Some are mobile, not staying in the same place for long. This affects their commitment to any location-specific development programme.

Table 5.13: Youth reasons for not being a member of an agricultural cooperative

Reason	Frequency	Percent
I do not know about cooperatives	49	46.2
We do not have any cooperative in my area	20	18.9
I prefer working alone	12	11.3
I do not have time	8	7.5
I frequently leave the area	4	3.8
The cooperative that we used to have collapsed	3	2.8
I do not have land	2	1.9
One is being formed at the moment	2	1.9
I do not see the need	2	1.9
The cooperative is not open to everyone	1	0.9
I will join soon	1	0.9
People are jealous	1	0.9
I do not have knowledge on how to create a cooperative	1	0.9
Total	106	100.0

Source: Survey data, October 2018

Membership in youth clubs/groups is also very low. Only 21.3% of the youth are members of a youth club. Comparison by category of youth show that membership in a youth club is significantly low for the youth who are not engaged in farming (8.6%). The youth who are members of youth clubs felt that their membership has helped them in the following areas:

- Increased access to agricultural inputs and animal health products;
- Gained knowledge and experience – life skills, agriculture and business;
- Financial – assisted in saving money and access to credit from stokvels and government;
- Access to business, job and academic opportunities;
- Teaches good behaviour (stay away from drugs) and improves communication with others; and

- Fitness and health.

Youth membership on a social media platform is quite high. About 78.5% indicated that they are members of a social media platform, such as Facebook, WhatsApp, Twitter and Instagram (Table 5.14 below). This is expected, since 92.6% of the youth own a smartphone. The average number of hours that rural youth spend on social media per day is 3.2 hours (std.dev = 2.97; min 0.17; max 20). This is relatively high, given that a working day comprises 8 hours of work. On average, they spend ZAR 84.18 (std.dev = 96.45; min 10; and max 500) on airtime/data per month. The common types of information that the rural youth access through social media are updates on friends/celebrities, job opportunities, education, business opportunities, general news and social events (Table 5.14 below). Only 16.8% and 12.6% use social media to access information on farming techniques/technologies and on markets and prices, respectively.

Table 5.14: Types of information accessed by the youth on social media platforms

Information types	Percent of Cases
Updates on friends/celebrities	66.4
Job opportunities	56.6
Education/life skills	49.7
Business opportunities	39.9
General news	34.3
Social events	30.1
Farming techniques and technologies	16.8
Religion	13.3
Markets and prices	12.6
Political updates	1.4

Source: Survey data, October 2018

Thus, most of the youth believe that being a member of a social media platform has helped them to increase their access to information (52.6%) and enhance their communication and networking (37.6%). Only 9.8% indicated that their membership of social platforms has not helped them at all. They said that there is nothing productive that they do on social media, except to talk to friends. Further discussions revealed that it is possible to use social media

platforms to support youth in farming/agricultural related businesses. They indicated that social media can prompt youth to start discussions about farming through sharing agricultural information and advice. For this to happen, most think that there is a need to create a page/group on Facebook/WhatsApp for sharing information on agricultural inputs and output markets, commodity prices, government programmes, and agricultural job and business opportunities. Some also think that a platform could be created, where youth could market their produce through social media and information.

Table 5.15 below shows the other social networks that are available to the rural youth. Half of the youth are members of a given church, while 26.5%, mostly male, also belong to a soccer team. It was reported that the church offers mostly spiritual and emotional support to young people, while besides fitness and good health, soccer clubs also enhance socialisation among male youth. These other networks play a very important buffer role in the lives of young people, given the stresses and depression brought about by the inability to find employment and by peer pressure.

Table 5.15: Other social networks as source of information for the sampled rural youth

Other social networks	Percent of Cases
Church	50.0
Soccer	26.5
Stokvel	5.9
Youth league – political	5.9
Athletics	4.0
Community meetings	2.9
Netball team	2.9
Dance club	2.9
Youth desk	2.0
Friends	2.0
Ward committee	1.0

Source: Survey data, October 2018

5.5.2 Other sources of information

Other than social media, youth have several other sources of information, as shown in Table 5.16 below. These include both print and electronic media, DARD extension officers, community meetings, and short message services (SMS).

Table 5.16: Other sources of information for the sampled rural youth

Other sources of information	Percent of Cases
Media (newspapers, radio, TV)	56.0
Extension officers	24.4
Community meetings	23.3
Phones (SMS, text)	20.7
Traditional leaders	9.3
The internet	8.3
Friends	8.3
Fellow farmers	7.8
Farming committees	4.1
Non-Governmental Organisations (NGOs)	4.1
Family	2.6
Library	2.6
Training workshops	2.1
Small Enterprise Development Agency	0.5

Source: Survey data, October 2018

However, contact by rural youth with extension officers or any industry role players is limited. A significant 62.4% of the youth rarely, or never, had any such contact before the survey (Table 5.17 below). In some places, the youth professed ignorance of the extension officers for their respective wards. However, reports from the local DARD offices show that each ward has a designated extension officer who visits their localities several times every week. Thus, the challenge might be that some of the youth are not aware of the platforms that extension officers use to meet with farmers. This is possible, given that not all of the three local offices have

programmes that specifically target the youth, but rather work with all farmers. The general sentiment among the extension officers is that most of the youth are not interested in farming and are difficult to work with because they are not patient and want to get quick returns. The experiences with past youth-led programmes have shown such perceptions to be valid. Officers also reported that they have no youth policy that relates to agriculture in the country. Hence, the absence of such a framework to give direction makes it difficult to work with young people.

Table 5.17: Contact with extension officers or other industry role players

	Frequency	Percent
Never	85	48.3
Rarely	23	13.1
Sometimes	41	23.3
Often	17	9.7
Always	10	5.7
Total	176	100.0

Source: Survey data, October 2018

5.6 Youth endowment with positive psychological capital

The PsyCap endowment of the youth was assessed, based on the four constructs of PsyCap, i.e. self-confidence, hope, optimism, and resilience. However, this survey deviates from the approach first suggested by Luthans *et al.* (2007), which uses a set of hypothetical ‘stated preference’ questions to ascertain one’s PsyCap endowment. This was deemed necessary to reduce some of the biases (mainly strategic and hypothetical biases) associated with such questions. In this survey, scenarios were constructed, pretested and presented to youth during the survey. The scenarios were designed to ascertain how youth would have acted or behaved in each situation. Analysis of their responses and the reasoning behind those responses revealed their respective endowments with PsyCap.

Self-confidence

The levels of confidence of the rural youth in themselves and their own ideas are generally high. In a scenario where, as members of a cooperative, the mindsets and beliefs of the youth are not in agreement with the decisions being taken by the leadership, most of the youth (70.2%) indicated that they would oppose the leader’s opinions and make decisions based on

their own beliefs (Table 5.18). The list below sets out a summary of the reasons given for their responses:

- One should always do what he/she believes is right
- Good leaders should be able to listen to the ideas from everyone
- If you keep quiet, wrong decisions will lead to undesirable outcomes and business failures
- If we are working together, we should make decisions together. Cooperation is key.
- In a cooperative, everyone is equal and their voices should be heard.
- I will address leaders with respect and share my opinion
- When the business fails due to inappropriate decisions, all members will suffer
- Keeping quiet makes the leadership believe that it is right
- I will express my opinion because keeping quiet is counter productive
- I will oppose and motivate my standing in a constructive way
- To be a leader does not mean you are the sole decision maker

Table 5.18: Self-confidence responses from sampled rural youth

Suppose you are a member of a youth cooperative in your area and you attend monthly meetings. In these meetings, you do not always agree with some of the decisions taken by the leadership. You are in one such meetings and wish to oppose some ideas raised by the leader, to what extent are you most likely to do the following?	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Total
Oppose the leader's opinions that are not aligned to your beliefs	64.5	81.3	70.1	70.2	70.2
Agree with the leader to avoid conflict	38.7	25.0	28.4	26.2	28.8
Agree with the leader to show respect for their position	46.7	12.5	37.3	26.2	32.0

Notes:

- Figures shown are percentages of youth most likely to agree with the statement.
- Questions were asked independently of each other, so column totals do not add up to 100.

Source: Survey data, October 2018

However, there were some youth who displayed a lack of self-confidence. About 32% and 28.8% of the youth indicated that they would agree with the leader to show respect for their position and to avoid conflict, respectively, even if they did not agree with their decisions. Some believe that leaders are the bosses, and are more educated and knowledgeable than the rest of the public, and so they should be respected. Others indicated that they do not like conflicts and confrontations, and so would agree with the leader's decisions, while some believe that it is normal to have such situations, and thus, one should let go. Comparisons between the different categories of the youth showed that a lower percentage of the youth farming as individuals exhibited high self-confidence, when compared with the other groups. Members of this group of youth were more inclined to agree with the leaders to avoid conflict or to show respect, irrespective of their own opinions, as compared with the others.

Hope

The hope held by the youth for the future is not high, but could be considered to be fair. In a scenario outlining the different challenges that young people face today, about 84.2% agreed with the statement that they believe they still have the potential to work through the challenges (Table 5.19 below). These youth exhibit the willpower to achieve and believe that the situation can change; they just need to keep on trying and working hard. Most indicated that one should not give-up, but keep on trying different ways, and one day it will come through for them. However, 40.6% of the youth agreed with the statement that they believe that there is no possibility of resolving the challenges. This group of youth indicated that these problems have been in existence for far too long, and so they do not see how they could be resolved. Others said that the government, specifically the National Youth Development Agency (NYDA), is corrupt and full of empty promises, and has failed to solve the unemployment issue in the country.

The results also show that about 70% of the youth have placed their hopes in the government or some of their relatives to address the challenges on their behalf. Most of these youth believe that it is the government's duty to create funding and employment opportunities for young people. Some said that, as the youth, they neither have the power nor the means to address some of the challenges, and their only hope is in the government. This shows that, psychologically, some youth are not sure anymore, especially as regards their future. Although it is good to see that most of the youth place their hope in themselves, it is worrying to see that some of the youth place their hope in others and/or have lost all hope for the future.

Table 5.19: Hope: responses from sampled rural youth

Young people/youth often face challenges with unemployment, lack access to capital, lack of access to information and poverty, among others. Given the possibility of any of these prevailing constraints, to what extent do you believe that:	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Total
There is no possibility of resolving these constraints	38.7	37.5	50.0	34.5	40.6
You still have the potential to work through the challenges	90.3	81.3	80.0	85.7	84.2
The government or a relative can address the issues	67.7	81.3	75.8	64.3	70.1

Notes:

c. Figures shown are percentages of youth most likely to agree with the statement.

d. Questions were asked independent of each other, so column totals do not add up to 100.

Source: Survey data, October 2018

A comparison by category of youth showed that a higher percentage of the youth partially into farming have lost all hope, as compared with others. The youth who farm as individuals in their personal capacity have a high percentage of people who believe that there is still an opportunity for them to work through their challenges, while more of the youth farming as part of a cooperative, when compared with others, have their hope in the government or relatives. Discussions revealed that the youth farming as a cooperative receive support from government and other organisations; hence, their responses are understood in this light.

Optimism

The level of optimism among the rural youth can generally be considered as high. The responses to the scenario set out in Table 5.20 below show that 76% of the young people look forward to a positive and desirable future in their lives. Given the challenges encountered in their businesses, as depicted in the scenario, such youth said that they would continue with their businesses and take the failures as temporary setbacks. Most indicated that business challenges are common and can be overcome. One only needs to identify the source of the

problem and put more time and effort in to address it. Others indicated that they are not quitters; they cannot succeed unless they go through challenges. Only 16.9% are pessimistic and indicated that they would quit the business and find something else to do. They believe that one cannot continue with something that is not working; a business without profit is nothing. Others were more cautious in their optimism (46.2%). Although they have a feeling of confidence regarding the situation, they are also ready for any possible difficulties or failures, and hence would reduce their time spent in the business and look for other opportunities. Comparison between the different types of youth showed that those currently not engaged in farming are more optimistic than the others are.

Table 5.20: Optimism: responses from sampled rural youth

Let's say you have been running your business for some time and you are familiar with the daily responsibilities of your business. Lately, however, you have been making no profit. To what extent are you most likely to do the following?	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Total
Continue with the business and see the failures and setbacks as temporary	74.2	73.3	71.2	81.0	76.0
Invest less of your time on your business and seek other opportunities	33.3	46.7	50.0	47.6	46.2
Quit the business and find something else to do	23.3	26.7	18.2	11.9	16.9

Notes:

- Figures shown are percentages of youth most likely to agree with the statement.
- Questions were asked independently of each other, so column totals do not add up to 100.

Source: Survey data, October 2018

Resilience

The results given in Table 5.21 below show that the resilience of the rural youth can also be considered to be high. Resilience is about the ability to adjust and adapt in the face of challenges, quickly bouncing back and moving on. Presented with a scenario of multiple rejections of their applications for funding, most (above 90%) of the youth indicated that they would not give up but would consult their peers already in business and get some advice, and/or

send their application to a different financial institution. Most said that they would keep on trying and look for different ways for financing their business. They believe that there are other ways of funding a business, and thus giving up is not an option for many. Only 16.2% indicated that they would give up and forget about the business. Some of these youth said that, no matter how many times you try, the banks would never give you a loan. Others indicated that they would give up because they believe there is no other way.

Table 5.21: Resilience – responses from sampled rural youth

Suppose your application for financial support from a bank or funding agency has been rejected multiple times? To what extent are you most likely to do the following?	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Total
Give up and forget about the business	9.7	31.3	18.2	14.3	16.2
Consult your peers already in business and find out how they managed to obtain funding	100.0	93.8	97.0	95.2	96.4
Send your application to a different financial institution	93.5	93.8	95.5	88.1	91.9

Notes:

- Figures shown are percentages of youth most likely to agree with the statement.
- Questions were asked independently of each other, so column totals do not add up to 100.

Source: Survey data, October 2018

A comparison by category of youth showed that a higher proportion of the youth who are farming as a cooperative (31.3%) are less resilient, when compared with the other groups.

5.7 Youth entrepreneurial characteristics

5.7.1 Separation of business and personal/family operations and record keeping

The separation of business and personal/family affairs among the rural youth engaged in farming or agricultural-related economic activities is still limited. Only 45.9% indicated that they often or always separate the two. About 17.6% indicated that they do separate, albeit inconsistently, while 36.5% rarely or never separate their business and personal/family operations (see Table 5.22 below). Similar results have been found among small-scale irrigation farmers (Wale and Chipfupa, 2018). The extent of the problem is higher among the

youth partially engaged in farming. These youth are those who mainly support their family farming operations, with 43.6% indicating that they rarely or never separate farming business and family operations.

Table 5.22: The extent to which the sampled rural youth separate business operations from family operations

Type of youth	Extent of separating your business operations from personal/family operations				
	Always	Often	Sometimes	Rarely	Not at all
Only farming – individual	33.3	10.0	26.7	3.3	26.7
Only farming – cooperative	50.0	0.0	21.4	0.0	28.6
Partially into farming	33.3	12.8	10.3	2.6	41.0
Total	36.5	9.4	17.6	2.4	34.1

Source: Survey data, October 2018

The practice of record keeping is also low, as 47.7% of the interviewed youth indicated that they rarely or never keep any farming or business records. Only 39.3% of the youth indicated that they keep records consistently, while the practice is inconsistent for 13.1% of the youth. As with the separation of business and family operations, a higher percentage of youth partially into farming either do not keep records or they do so inconsistently. The youth who farm as part of a cooperative are better in their record keeping, when compared with the others. Generally, these findings show that adherence to business management principles is still lacking among the youth in farming or agricultural-related businesses.

Table 5.23: The culture and frequency of record keeping by the rural youth

Type of youth	How frequently do you keep records of your farming business activities				
	Always	Often	Sometimes	Rarely	Not at all
Only farming – individual	33.3	0.0	18.5	7.4	40.7
Only farming – cooperative	28.6	28.6	28.6	0.0	14.3
Partially into farming	22.0	14.6	4.9	4.9	53.7
Total	27.4	11.9	13.1	4.8	42.9

Source: Survey data, October 2018

5.7.2 Perceptions of success in business

The survey team asked the youth a question on how they would measure success in business. Most of the youth (66.9%) indicated that they would consider their business to be successful if their production level or profit increased. Others said they would consider their business to be successful if their standard of living, especially their lifestyle, improved. They specifically mentioned that, when one owns a car, a house and lives a luxurious life, they could then be considered to be successful in business. About 8.1% reported that an increase in the demand for their product and its market expansion would be an indicator of a successful business. Business growth and the ability of the business to employ more people are some of the other indicators that were mentioned. In general, these responses show that most of the rural youth appreciate what a business is and what the expectations about running a business are.

Table 5.24: The ways in which the sampled rural youth understand and measure success in business

	Frequency	Percent
When production and/or profits are high	107	66.9
Improvement in standard of living and lifestyle	17	10.6
The demand of the product is high/more customers	13	8.1
Business expansion over time	6	3.8
If it continues to employ other people	6	3.8
Not sure	5	3.1
Ability to give back to the community	2	1.3
When business continues without interrupting	2	1.3
When business breaks-even	1	0.6
Business operates without credit	1	0.6
Total	160	100.0

Source: Survey data, October 2018

5.7.3 Entrepreneurial traits

The entrepreneurial spirit of the youth was assessed based on ten entrepreneurial features and traits compiled from the literature (Schumpeter, 1934; Dollinger, 2008; Frederick and Kuratko, 2010; Herrington, 2011; Allen, 2015; Maluleke, 2016). As with the PsyCap assessment, various scenarios were presented to the youth during the survey to ascertain how they would have acted or behaved in each situation. An assessment of their entrepreneurial spirit was then derived from their responses and reasoning.

Risk-taking and tolerance for failure

The results show that most of the youth have a low tolerance for risk and failure, which seems to be more pronounced among the youth not currently engaged in farming or agricultural-related economic activities. Table 5.25 below describes an investment portfolio scenario that was presented to all the youth under survey. A total of 86.6% of the youth indicated that they were likely to choose a portfolio that guarantees them a 15% return on their initial investment. They were clear that they were not willing to take the risk, and others said that they hated losing. Others felt that a 15% return was too much money to expect, and hence there was no need to take on what they called an “unnecessary risk”. Only 24.5% were willing to take a higher risk to double their initial investment. Most of these indicated that business is about taking calculated risks, and if you do not do so, the chances of becoming a successful entrepreneur are limited. A high proportion of the youth partially into farming were risk averse and had a high tolerance for failure.

Table 5.25: Risk-taking and perceived tolerance for failure

Financial constraint is one of the major challenges facing young entrepreneurs. Suppose there is an investment introduced to you with two options. To what extent are you most likely to do the following?	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Total
Choose an investment with 50% chance of losing everything and 50% chance of doubling your money	25.8	20.0	30.3	20.2	24.5
Choose an investment with 100% guarantee that your money will generate a 15% return on investment	79.3	81.3	84.8	91.6	86.6

Notes:

- c. Figures shown are percentages of youth most likely to agree with the statement.
- d. Questions were asked independently of each other, so column totals do not add up to 100.

Source: Survey data, October 2018

Seizing an opportunity

Most of the youth indicate that they are ready to take advantage of opportunities that come their way, regardless of their current situation. This is very encouraging. Given the scenario described in Table 5.26 below, which is intended to ascertain how the gainfully employed youth would behave when offered a profitable business opportunity, 78.4% said that they would take the opportunity while still remaining employed. Their approach, though, remained cautious, because there is no guarantee that the business would succeed, which shows that they are not willing to let go of the opportunity, even while they have a good job. Some of them (32%) showed their entrepreneurial prowess by indicating that they would be bold enough to quit their jobs to pursue the business opportunity. Most of these youth want to be their own bosses and believe that a business is a better opportunity than a job, both in terms of sustainability and income. One of them indicated that a business is a legacy that will remain for generations to come. However, 38.5% exhibited tendencies that are negative to the entrepreneurial character. They said that they would ignore the opportunity and continue with their job because of fear that the business might not succeed. Not many significant differences

exist between the different types of youth, although the youth practising farming, whether as an individual or cooperative, show high percentages of those who indicated that they would quit their jobs to pursue the business opportunity.

Table 5.26: The extent to which the sampled rural youth seize an opportunity

Suppose you have a stable job with great benefits and realize a good business opportunity in your community. To what extent are you most likely to do the following?	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Total
Quit the job and pursue the business opportunity	40.0	50.0	29.9	27.4	32.0
Continue with your job and ignore the opportunity	27.6	25.0	43.3	41.0	38.5
Take the new opportunity whilst still employed	79.3	73.3	74.6	81.9	78.4

Notes:

- Figures shown are percentages of youth most likely to agree with the statement.
- Questions were asked independently of each other, so column totals do not add up to 100.

Source: Survey data, October 2018

Being determined and persistent

Table 5.27 below shows the results of a scenario that was given to youth to show their determination and persistence in dealing with some of the challenges likely to be encountered by nascent young entrepreneurs. The results show that most of the youth are determined and persistent, and would not allow a temporary setback to affect the focus on their business. Given the fact that they do not meet the minimum commercial bank requirements to access a loan, 72.2% and 60.4% of the youth said that they would likely look for other options, e.g. other formal organisations that offer support (microfinance organisations), and family and friends, respectively, to finance their businesses. They are willing to explore all avenues to start their businesses. However, informal sources of finance were not a likely option for most of the youth because of the high interest rates charged and the lack of oversight in that sector. Doing nothing and opting out of business was an option for only 3.6% of the youth. Comparison by category of youth showed that the youth partially into farming are the only group with some who would

opt out, given the challenges. A higher proportion of the youth who are farming as a cooperative (43.8%), compared with the other groups, said that they would consider informal sources of finance, such as loan sharks and stokvels, as an option. Their determination was such that they were willing to take on more risk associated with doing business with such type of organisations. Maybe this is because, in a cooperative, the financial risk is spread across many members and hence it is easier to manage.

Table 5.27: The extent to which the sampled rural youth are determined and persistent

Most youth intending to get into business do not meet the commercial banks' credit requirements to access financial resources. If you face this challenge, to what extent are you most likely to do the following?	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Total
Source finance from other formal organizations that offer financial support, e.g. microfinance institutions	70.0	56.3	61.2	57.1	60.4
Source finance from informal organizations like cooperatives, stokvels and loan sharks	30.0	43.8	23.9	20.5	25.0
Borrow from family and friends	70.0	62.5	67.2	78.6	72.2
Do nothing – opt out of business	0.0	0.0	9.1	0.0	3.6

Notes:

- Figures shown are percentages of youth most likely to agree with the statement.
- Questions were asked independently of each other, so column totals do not add up to 100.

Source: Survey data, October 2018

Proactive and strong drive to achieve

A scenario was presented to the youth to ascertain how they would cope with excessive pressure caused by increased workload at work and competing family commitments. The responses recorded in Table 5.28 below show that most of the youth are proactive and have a strong drive to achieve on a large scale, despite immediate challenges. About 86.6% indicated that they would work longer hours than usual or hire someone to ensure that they would meet their business and family commitments. This, accordingly, is because they do not want to disappoint their customers, but would want to keep their trust so that the customers would continue to support their business. Some said they would sub-contract or outsource to a

neighbour to address the temporary problem (55.2%). Only 16.8% exhibited negative entrepreneurial tendencies by saying that they would consider cancelling some contracts to minimise the workload. These respondents believed that their family comes first, and were not willing to work longer hours. Others believed that, by cancelling some of the contracts, they are protecting their customers and reputation. A comparison between the different types of youth showed that a higher proportion of the youth currently not engaged in farming than in the other groups indicated that they would cancel some of the contracts.

Table 5.28: The extent to which the sampled rural youth are proactive with a strong drive to achieve

At some stage in the business, it is possible to receive many contracts from buyers in the same week. Suppose you have more contracts than usual, need to attend a compulsory meeting and have some family commitments at the same time. To what extent are you most likely to do the following?	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Total
Work longer hours than usual including weekends or hire someone to get the job done	83.3	87.5	88.1	86.9	86.8
Cancel some contracts to minimize workload	10.0	12.5	13.6	22.6	16.8
Contract neighbour business to make up quantity	75.9	50.0	44.6	57.1	55.2

Notes:

- Figures shown are percentages of youth most likely to agree with the statement.
- Questions were asked independently of each other, so column totals do not add up to 100.

Source: Survey data, October 2018

Independent

The youth were presented with a scenario to ascertain whether they are independent. Table 5.29 below shows that, given the financial constraints and their immediate needs, almost 90% of the youth were most likely to look for piecework and earn some money for themselves. They said that, since they are adults (aged over 18), they want to be independent and they cannot continue to look to their family for financial support, especially given the level of poverty in

the rural areas. However, 47.7% of the youth were less independent and indicated that they would ask their family to give them money. These youth felt that their family would understand their difficulty. The trend is similar across all types of youth, with a slightly higher proportion of those partially into farming exhibiting tendencies of being less independent. The results in Table 5.29 also show that some of the youth were likely to do both. Such individuals would like some degree of financial independence, but are too afraid to let go of the family support.

Table 5.29: How independent are the sampled rural youth?

Young people often face financial constraints and challenges in their lives. There are times when one needs money to buy toiletries, data/airtime or other personal items. Suppose you find yourself in such a situation, to what extent are you most likely to do the following?	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Total
Look for piece work and earn some money for yourself	90.0	93.8	89.4	89.3	89.8
Ask family to give you money	40.0	43.8	43.9	54.2	47.7

Notes:

- Figures shown are percentages of youth most likely to agree with the statement.
- Questions were asked independently of each other, so column totals do not add up to 100.

Source: Survey data, October 2018

Innovation or creativity

The scenario described in Table 5.30 below was intended to show the innovation or creativity among the young people. However, the responses that the youth gave are inconclusive; hence, it is difficult to make a judgement on the innovativeness or creativity of the youth. The youth were asked what they would most likely do when faced with a decision on how to expand their business and increase their profits. About 90% indicated that they would brand their products and give them a fresher, new look. They understood that rebranding might attract more customers and hence more profits. This response shows some level of creativity, such that one might be tempted to conclude that most of the youth are innovative. However, a significant part of the same group of youth (66.5%) also indicated that they would most likely increase production and flood the market with their products. They failed to understand that flooding the market with their products, if not matched by demand, might actually reduce their profits.

This second choice does not demonstrate innovativeness, and it is contrary to the expected entrepreneurial behaviour. This simply shows that the youth were not sure of what to do, and hence their responses were positive for both cases.

Table 5.30: How innovative or creative are the sampled rural youth?

Suppose you are running your own business and you intend to expand it and increase your profits by attracting more customers. To what extent are you most likely to do the following?	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Total
Increase production and flood the market with your products	63.3%	43.8%	73.1%	66.7%	66.5%
Rebrand your products, give them a fresh and new look	86.7%	100.0%	90.9%	88.1%	89.8%

Notes:

- Figures shown are percentages of youth most likely to agree with the statement.
- Questions were asked independently of each other, so column totals do not add up to 100.

Source: Survey data, October 2018

Efficiency and profitability

Given an opportunity to improve the efficiency and profitability of their business operations, most of the youth (64.1%) indicated that they would most likely adopt new technology to replace their labour-intensive operations with more efficiency-oriented machines (Table 5.31 below). The youth understood that such a move would reduce their costs, while increasing production, such that they were willing to let go of their workers to improve their business. This shows a high degree of appreciation of the importance of being efficient and profitable in business. However, the results also show that 38.7% of the youth said that they would continue to operate labour-intensively and forgo the potential profits. The major reason given for this decision was that it is believed that it is socially and morally wrong to retrench people from work. Thus, such youth found it difficult to make the bold decision that was in the best interest of the organisation. This behaviour is not synonymous with traits of entrepreneurship. No major differences were observed between the different youth groups.

Table 5.31: How do the sampled rural youth look at efficiency and profitability?

Suppose you are running a labour-intensive business and an opportunity arises for you to make more money through adopting new equipment/technology. However, taking this route means laying-off a significant number of your employees. To what extent are you most likely to do the following?	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Total
To adopt new technology and retrench most of your workers	70.0%	62.5%	56.1%	68.7%	64.1%
Continue being labour intensive and forgo the potential profits	40.0%	50.0%	45.2%	31.3%	38.7%

Notes:

- Figures shown are percentages of youth most likely to agree with the statement.
- Questions were asked independently of each other, so column totals do not add up to 100.

Source: Survey data, October 2018

Embracing change/growth

The results show that most of the youth are prepared to embrace change that is associated with the modern-day entrepreneurial process. Table 5.32 below describes a scenario where youth are supposed to make decisions regarding the transformation to modern ways of farming, as opposed to the conventional approaches. Most of the youth (82.6%), regardless of their current involvement in farming, indicated that they would switch to modern methods of farming. They said that modern ways of farming save on time, produce more, and make it easier to conduct farming. Only 14.8% of the young people would stick with their traditional ways of farming. These youth believe that their traditional farming methods are cheap and easy to use. Others think that new technology has flaws, which would lead to losses in the long run. The latter responses and thinking are contrary to the mainstream entrepreneurial behaviour.

Table 5.32: How far do the sampled rural youth embrace change/growth?

Farmers are introduced to new modern methods of operating their businesses that are different from their traditional methods. For example, they are introduced to modern inputs like genetically improved seeds, artificial insemination, new packaging machinery, computers for record keeping, etc. Suppose you are a young farmer who has been using the traditional method, to what extent are you most likely to do the following?	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Total
Switch to modern technology	73.3	81.3	84.6	84.5	82.6
Continue with the traditional methods	23.3	18.8	13.6	11.9	14.8

Notes:

- Figures shown are percentages of youth most likely to agree with the statement.
- Questions were asked independently of each other, so column totals do not add up to 100.

Source: Survey data, October 2018

Self-reliance

The responses that were given by the youth to the scenario presented in Table 5.33 below show that most of the youth are not self-reliant, but still perceive that their success depends on the actions of government and other stakeholders (73.7%). They indicated that they need help and mentorship, which will assist them to be successful. However, 51.8% of the youth indicated that they would successfully initiate and run their business, with minimum assistance from government. This group shows some degree of self-reliance, which is key in entrepreneurship. The challenge emanates from the fact that some of the youth (25%), who initially said that they would most likely initiate and run their own businesses, also indicated that they need close assistance and mentorship from government. This demonstrates the inclination towards dependency on government handouts and support, even if one is self-sufficient, which is a behaviour entrenched in most South Africa rural communities. Compared with the other categories of the youth, those farming as cooperatives have a significantly lower percentage of youth who are not self-reliant.

Table 5.33: How self-reliant are the sampled rural youth?

The success of any young entrepreneurs depends on how one perceives that the outcome of an event is within their control. Suppose you are given a start-up capital to start a business, to what extent are you most likely to do the following?	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Total
Successfully initiate and run the business with less assistance/mentorship	56.7	50.0	44.8	56.1	51.8
Need close assistance and mentorship from the government and other stakeholders to successfully run the business	80.0	43.8	80.3	72.0	73.7

Notes:

- Figures shown are percentages of youth most likely to agree with the statement.
- Questions were asked independently of each other, so column totals do not add up to 100.

Source: Survey data, October 2018

Visionary and goal-oriented

The youth were asked questions to ascertain if they were visionary and goal oriented by checking if they set goals in their personal and business lives. A high proportion of the youth indicated that they do set goals in both their personal and business lives (Table 5.34 below). They understand that, for one to succeed, he or she should plan and be focused. Some said that when one sets goals, he or she creates pressure on himself or herself to work hard and achieve those goals. However, among the different groups of youth, a higher proportion of those currently engaged in farming on a more substantial basis do set goals in their business life, as compared with the youth partially or not engaged in farming.

Table 5.34: To what extent are the sampled rural youth visionary and goal oriented?

Setting goals helps young entrepreneurs stay productive and focused in their personal and business life. To what extent do you do the following?	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Total
Do you set goals or targets in your personal life	96.7	86.7	86.6	90.4	89.7
Do you set goals or targets in your business life	93.3	93.3	69.7	66.3	73.7

Notes:

- Figures shown are percentages of youth most likely to agree with the statement.
- Questions were asked independent of each other, so column totals do not add up to 100.

Source: Survey data, October 2018

5.8 Summary

The purpose of this chapter has been to evaluate the human, social and psychological capital assets available to rural youth in the context of smallholder rain-fed farming potential in rural areas of the study areas. The chapter began by giving a background on the description of the features of the rural youth, drawing from the survey data. It then dealt with the role of human capital assets (human capital, social capital, and psychological capital) in youth entrepreneurial spirit and management capabilities. These assets are also useful inputs in the productive engagement of rural youth in farming and related economic activities. Finally, it presented the need for and access to skills training, and the development of youth entrepreneurial characteristics (separation of business and personal/family operations, record keeping, and behavioural traits).

6 INCENTIVE SCHEMES, THEIR ACCESSIBILITY AND EFFECTIVENESS TO THE RURAL YOUTH IN THE CONTEXT OF RAIN-FED FARMING WITHIN AVAILABLE FOOD VALUE CHAINS

This chapter describes the formal and informal incentive schemes that are available to the rural youth, as well as their accessibility and effectiveness. It presents the role of government/non-government programmes/projects and services in the context of engaging the rural youth in rain-fed farming and food value chains. It also presents details regarding youth satisfaction with services received and their perceptions.

6.1 Background

In South Africa, persistently high youth unemployment is one of the largest social and economic challenges (Wilkinson, Pettifor et al. 2017), and the problem is more prevalent in the rural areas (Swarts and Aliber 2013). The situation worsened between 2008 and 2014 when youth unemployment increased from 32.7% to 36%. Unfortunately, since then, youth unemployment has risen higher than that of adults by more than 20% (StatsSA, 2014). In 2016, more than half of the youth in the country were unemployed (International Labour Organization, 2016). Moreover, youth unemployment in the country is ten times higher than in its neighbouring countries such as Mozambique (Geest 2010). The most vulnerable are the rural youth with limited access to information.

Consequently, rural areas are dominated by unemployed youth who experience poverty and food insecurity, among other socio-economic issues. However, over the years, agriculture has been shown to have great potential for poverty reduction and economic growth, worldwide. According to the National Planning Commission (2012), the agricultural sector has the potential to create a million jobs by 2030, most of which will be in the smallholder farming sector. Furthermore, there is a potential for creating 145,000 jobs in agro-processing (National Planning Commission, 2012). This shows both the capacity and the potential of the South African agricultural sector. Rural unemployed youth could adopt agriculture as a livelihood strategy to enhance their livelihoods and reduce the impact of the high unemployment rate.

However, most of the youth are not interested in agriculture, and South Africa is not an exception (Mathivha, 2012). The low levels of youth involvement threaten not only the goal of the National Development Plan Vision 2030, but also the future of the agricultural sector (Abdullah, Samah et al. 2012). The literature indicates that youth perceive that participating in

agriculture is a low status, dirty and unattractive job (Adekunle, Adefalu et al. 2009; Ahaibwe, Mbowa et al. 2013; Kising'u 2016). To them, agriculture is a part-time job and not a profession or a livelihood strategy (Abdullah, Samah et al. 2012). The youth prefer non-agricultural careers because they perceive them as being more stable, providing relatively more income, and requiring less physical labour (Tafere and Woldehanna, 2012; White, 2012; Swarts and Aliber, 2013).

Many studies (Hung, 2004; Nnadi and Akwiwu, 2008; Adekunle, Adefalu *et al.*, 2009; Muhammad-Lawal, Omotesho *et al.*, 2009) have been conducted researching the participation of youth in primary agriculture, and the results highlighted very limited involvement. According to Adekunle, Adefalu *et al.* (2009), the participation by the rural youth in agriculture is constrained by their limited access to credit facilities and relevant information, poor returns to agricultural investments, and limited knowledge and lack of access to farming inputs. Furthermore, Kising'u (2016) has stated that land and access to financial capital significantly affect youth participation in agricultural enterprises. These few studies showed that, although there is very limited youth involvement in agriculture, the few who are currently involved face multiple challenges.

The unresolved problems facing the limited numbers of youth who are involved in agriculture serve as disincentives for aspiring participants. Thus, in response, over the years, government and various stakeholders have initiated various policies, programmes and projects to both resolve the challenges and encourage aspiring youth to participate in agriculture. The programmes initiated include Youth in Agriculture and Rural Development (YARD), the Comprehensive Rural Development Programme (CRDP), and the LandCare programme. All these initiatives aimed at solving the existing issues faced by the youth involved in agriculture. Furthermore, these initiatives aimed to create an interest and awareness of the opportunities that can be explored within the agricultural sector. In promoting agriculture, government has prioritised youth entrepreneurial development (Herrington, Kew et al. 2010, Herrington, Kew et al. 2017), noting that small farms operated as businesses can turn into being more profitable.

Given the statistics highlighted above, it can be concluded that youth unemployment is a pressing challenge in South Africa. It is a complex and multi-dimensional socio-economic problem, rather than a simple youth labour supply and demand gap issue. Agriculture has a potential role to play in addressing this challenge. Therefore, it is important to understand the extent to which the incentives introduced in rural areas are helping to improve youth

involvement in agriculture, as well as the incentives for business\enterprise development along the agricultural value chain.

6.2 Programmes/projects targeting youth in agriculture/rural development

In responding to the various issues faced by the youth, which include the high rates of unemployment, the South African government has initiated programmes and projects to help to assist youth who are venturing into agriculture. However, the accessibility and coverage of these programmes and projects are very limited. For instance, the findings (Figure 6.1 below) show that government programmes that target the youth in rural areas have not reached most of the youth residing in the former Bantu ‘homelands’. Only 24 percent of the youth actively farming were beneficiaries. Thus, if agripreneurship is to be achieved in rain-fed smallholder agriculture, all related stakeholders, including those administering state programmes, ought to be capacitated to reach as many youths as possible, especially in rural areas.

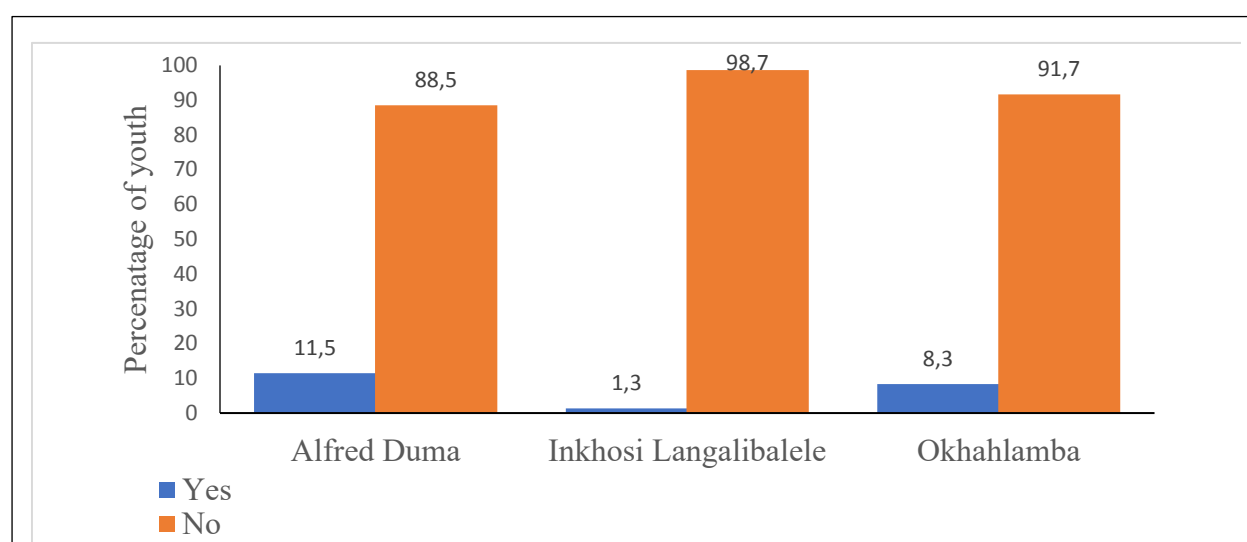


Figure 6.1: Rural youth beneficiaries assisted by government programmes per location

Source: Survey data (2021)

Some of the programmes and projects are discussed in the following sub-sections.

6.2.1 Junior LandCare

Department/Agency

The then “Department of Agriculture Forestry and Fisheries (DAFF)”

Objective

This programme aims to address issues of youth unemployment, skills development, school nutrition, and environmental education (DAFF, 2018), as well as increasing the number of youth involved in farming. This is achieved through empowering previously disadvantaged rural youth by providing training in facilitation and leadership skills (GCIS, 2016). The programme is divided into two dimensions, namely In-school Junior Care, and Out-of-school Junior Care.

The In-school Junior Care programme is being implemented in schools through permaculture gardens, nurseries and conducting camps. The aim of this programme is to equip learners with skills, such as those in permaculture, nursery establishment, poster development, debating, drama, speech, and life skills. The Out-of-school Junior Care programme focuses mainly on unemployed matriculated school leavers and agricultural graduates. The skills and areas covered under the Out-of-school Junior Care include conservation agriculture, fence construction, alien identification and control, fire-fighting, project management, health and safety, project management, mixed farming, plant production and entrepreneurial skills (DAFF, 2018).

Target group and eligibility criteria

The In-school Junior Care target group comprises Grade 8 to 12 learners in secondary schools, whereas the Out-of-school Junior Care programme targets unemployed matriculants and agricultural graduates, up to the age of 35. Involvement in Out-of-school Junior Care can be achieved through being a beneficiary of a LandCare project, a member of the local LandCare committee, a member of an environmental club, and by being a young agricultural entrepreneur/farmer (DAFF, 2018).

Access and effectiveness

There is currently no information available on the effectiveness of the programme. However, in the DAFF's annual performance report for the financial year 2012/13, statistics show that the Out-of-school LandCare projects managed to transfer skills to 12,280 youth through the implementation of different types of training, such as project management, chainsaw operation, and gabion construction. As a result of these implemented programmes, several youths were able to secure jobs, while some have become service providers in the different government departments. Junior LandCare has managed to create 100 school gardens and to provide JoJo water tanks and drip irrigation systems in South African schools. Furthermore, the programme

has managed to take youth to different camps where they were trained in different environmental issues, and how they could contribute positively in their own communities.

Challenges

The major challenge identified in the Junior LandCare programme is the insufficiency of funding for the other sub-programmes, such as conservation agriculture (DAFF, 2017). This then means that the targeting of the programme becomes limited, and also that the programmes being implemented are limited to available funds.

6.2.2 Youth in agriculture and rural development

Department/Agency

The then “Department of Agriculture and Rural Development”.

Objective

YARD was launched in 2008 and was aimed at developing and encouraging young people to participate in agriculture and at ensuring food security and economic stability in the country (DREAD, 2014). The following is a summary of the specific objectives of YARD:

- Encourage and increase the active participation of youth in the agricultural sector
- Implementing appropriate programmes, policies and services for the needs of the youth
- Developing youth leadership skills at all levels in agriculture and rural development
- Encourage economic equality for the youth through Agricultural Black Economic Empowerment (AgriBEE) and other programmes, and
- Advocate for equal participation and representation of the youth in decision making in the agriculture and rural development sectors.

Target group and eligibility criteria

The YARD targeted South African youth between the ages of 15 and 24 who were interested in participating in agriculture activities.

Access and effectiveness

There is a lack of empirical evidence on the access to and effectiveness of the programme, as well as on the performance of the programme. However, based on our DARD district visits, the officials acknowledged the existence of the programmes, although nothing was happening on

the ground. The designated officials at the district level responsible for coordinating youth programmes stated that it is a challenge to work with the youth. They highlighted the point that programmes/projects headed by youth always fail in their first stage on implementation. Typically, the youth will mismanage the funds allocated to them, or unresolved individual differences arise between members of the youth involved, which results in conflicts developing. Thus, the majority of the officials would prefer not to be involved with projects or programmes headed by youth who only operate under their existing *modus operandi*.

6.2.3 National Rural Youth Services Corps

Department/Agency

The then “Department of Rural Development and Land Reform”.

Objective

This programme was implemented in September 2010. The main focus of the initiative was to develop the unemployed youth who reside in remote areas. The development of these youth would then improve the community services provided in their communities. The objectives of the programme were to recruit and train youth through Further Education and Training programmes that were linked with each community’s developmental projects (Department of Rural Development and Land Reform, 2014). Furthermore, the programme developed and trained youth to acquire multi-disciplinary skills through civic education. Other than training the youth, the programme also provided support to the communities that were already involved in self-development initiatives through the CRDP.

The vision of the programme is to decrease the level of youth unemployment in rural areas and to increase literacy and skills, while increasing disposable income for the youth through entrepreneur opportunities (Department of Rural Development and Land Reform, 2014). The interventional development and training strategy of this programme was comprised of a two-year skills and incubation (Further Education and Training) programme. The incubation programme included training in numeracy, literacy, and construction and entrepreneurship skills. After the two-year incubation process, participants were placed in projects and received a stipend from the government.

Access and effectiveness

The programme is not easily accessible because of certain stringent requirements that should be met. Individuals should have completed at least Grade 10, which limits the number of people who are able to participate in the programme. There is no information available that describes the effectiveness of the programme.

Challenges

The rural youth should meet the following requirements for them to enrol in the programme:

- Must be aged between 18 and 35,
- Must have completed at least Grade 10,
- Must be currently residing in remote areas and must be willing to stay in the programme for the given period of the programme (Department of Rural Development and Land Reform, 2014).

These requirements effectively disqualified most of the vulnerable youth who had dropped out of school before completing Grade 10. These are the youth who have the most difficulties in securing employment, given their relatively low educational qualifications. Although the programme was implemented nationally, the coverage in terms of the number of youth reached was limited. During the initial implementation plan of the programme, only four participants were taken per municipal ward (Department of Rural Development and Land Reform, 2014).

6.2.4 Comprehensive Agricultural Support Programme (CASP)

Department/Agency

The then “Department of Agriculture, Forestry and Fisheries (DAFF)”.

Objectives

The programme was initiated in 2004/05 and continues to the current time. The objective of the programme is to provide post-settlement support to the targeted beneficiaries of the land reform programme and to other farmers who have acquired land through private means and who are involved in value-adding enterprises. The expected outcome of the programme is to:

- Increase the creation of wealth in agriculture and rural areas
- Increase sustainable employment
- Increase incomes and increase foreign exchange earnings
- Reduce poverty and inequalities in land and enterprise ownership
- Improve farming efficiency

- Improve national and household food security
- Promote stable and safe rural communities and reduce levels of crime and violence
- Improve investor confidence, leading to increased domestic and foreign investment
- Pride and dignity in agriculture as an occupation and sector.

Target group

The main target group of the programme comprises land reform beneficiaries and farmers who own land privately and are engaged in value-adding activities. Furthermore, the programme assists subsistence and household producers. This means that this programme is not specifically a youth programme, although young people can also benefit from it.

Access and effectiveness

In a Department of Agriculture progress report, the effectiveness of the programme was measured in terms of expenditure (Department of Agriculture, 2006). In the financial year 2004/05, the programme underspent the money that was allocated to it. KwaZulu-Natal, Mpumalanga and Northern Cape were the provinces that managed to spend the most of their budget. Of the allocated amounts, 100 percent, 80 percent and 77.1 percent were spent in KwaZulu-Natal, Mpumalanga and the Northern Cape, respectively, while 9.7 and 23.4 percent were spent in the Free State and the North West, respectively.

Challenges

The challenges that were identified in the CASP progress report of 2004/05 were as follows:

The delivery systems for CASP at the Provincial levels are not effective – It was noted that the time interval allowed between the programme design and the launch was not sufficient. There was not sufficient time to internalise the grant conditions, finalise the norms and standards, and to design an effective delivery system within the given time before implementation. There was also poor communication between the Provincial Departments and the Provincial Treasury which had received the money. Poor planning resulted in a mismatch between the business plan and the actual progress on the ground.

Procurement and tender system cumbersome – Some provinces complained that the tender and procurement systems were cumbersome, and that delays were inevitable. The tender committees were not in all place and, in some instances, the tender specifications were not followed by the project proponents.

The mobilisation of civil society is lacking – The awareness campaign for CASP was limited and it was not clear to the general population, including youth, who the targeted beneficiaries were. It was also not clear whether the identified projects would be based on the Land Redistribution for Agricultural Development (LRAD) database and how other recipients of the other programmes would be prioritised. In some instances, where projects had disintegrated and been discontinued, the additional allocation revived interests among the previous beneficiaries and this caused internal conflict.

The financing criteria are not clear – The first phase of CASP was limited to on-farm and off-farm infrastructure only; however, the needs of the beneficiaries were more extensive than was expected. It was also not clear whether the grant should be extended to beneficiaries of other government programmes or be used to rehabilitate failed initiatives. The issue of ‘double dipping’ in some projects suggested that interdepartmental coordination is the key in addressing the diverse project needs.

Lack of capacity – The programme has weak monitoring and evaluation systems at the project level, as well as at the provincial level. The lack of engineers and economists to plan and design the programmes was identified as being a critical constraint. There were few experts in the field, as most of the extension officers are generalists.

6.2.5 Agricultural Broad-Based Black Economic Empowerment Fund (AgriBEE)

Departments/Agencies

The then “Department of Agriculture, Forestry and Fisheries” and the “Land Bank”.

Objectives

The AgriBEE Fund was established by DAFF and the Land Bank. The fund is managed and administered by the Land Bank, and DAFF is responsible for overseeing the fund and its impacts (Western Cape Government, 2017). The AgriBEE Fund supports those Small-, Medium- and Micro-sized Enterprises (SMMEs) within the agriculture sector who wish to acquire shareholdings in existing, commercially feasible and sustainable enterprises. It also offers funding to previously disadvantaged individuals for the development of enterprises that undertake value-adding activities.

The fund aims to promote the entry and participation of black people in the agricultural, forestry and fisheries value chains through providing funding for equity acquisition and enterprise

development. It also aims to ensure that there is an increasing number of black people who own, manage and control viable enterprises in the Agriculture, Forestry and Fisheries (AFF) sectors (Directorate: Cooperatives and Enterprise Development, 2016; DAFF, 2018).

Target group

The target group comprises black South Africans, and the project/enterprise to be funded should be 100% black owned. However, the fund gives preference to applicants whose membership consists mostly of black women, black youth, black people with disabilities, and black farm workers. The fund excludes government employees and Land Bank employees, as well as politicians (Directorate: Cooperatives and Enterprise Development 2016, DAFF 2018).

Access and effectiveness

Applicants can download the necessary application forms from the DAFF website, and the completed application form must be submitted to the Provincial Department of Agriculture. The application must be accompanied by constitutional and founding documents. The applicant must make a presentation of his or her business plan to the Land Bank, if necessary. In addition, an own contribution of 10% is required from applicants and should be paid to the Land Bank. This shows a level of commitment from the applicants. For the employment of rural youth, this requirement is a challenge because they do not possess the required amounts of money. The maximum grant amount that an applicant can apply for is R5 million, although DAFF and the Land Bank may exercise their discretion and approve applications of more than R5 million, for which own contributions of 20% are required in such cases (DAFF 2018).

The AgriBEE is currently operational. According to DAFF (2017), an amount of R88 232 million was transferred to public entities during the period under review, of which R51 168 million was spent. Three projects were approved, funds were disbursed, and the implementation process of two has been completed, whereas one of the projects was 98% completed.

Challenges.

There had been rampant mismanagement of the fund, meaning that the fund money had been used for other purposes, which resulted in the programme being suspended in 2008/9 (Western Cape Government 2017).

6.2.6 Micro Agricultural Financial Institutions of South Africa (MAFISA)

Department/Agency

The then “Department of Agriculture, Forestry and Fisheries”.

Objective

MAFISA is a financial scheme that was introduced to provide financial services to smallholder farmers and agribusinesses to enhance their agricultural activities (DAFF, 2012). The funds are currently administered by Land Bank on behalf of the DAFF (LandBank, 2017). The scheme provides its service through the provision of short- to medium-term loans. The loans are used for purchasing production inputs, small equipment and implements, and the loan borrowed must be used for the purpose for which it was applied for. The maximum loan amount permitted is R500 000 per person. The loan borrowed must be paid in full and with interest. In addition, for loans above R25 000, collateral is required. This is a disadvantage for young farmers because the majority of them in most cases are unable to provide security for the loans (DAFF, 2012).

Target group and eligibility criteria

The scheme targets South African smallholder farmers, land and agrarian reform beneficiaries, farm workers, co-operatives and small agribusinesses from historically disadvantaged groups. Their gross household monthly non-farm income must not be more than R20 000, and their total enterprise turnover must not be more than R1 000 000. They can apply as an individual, group or an entity. However, the enterprise must be in respect of either farming or agribusiness. Individuals applying for loans in their own names must be of the age of 21 and above, while applicants between the ages of 18 and 21 must provide parental/guardian consent, as required (DAFF, 2012).

Access and effectiveness

MAFISA is accessed through intermediaries registered with national credit regulator. These intermediaries include private and public institutions, which are allocated funds by MAFISA to provide assistance to smallholder farmers and agribusinesses (DAFF, 2012). According to the LandBank (2017), no on-lending took place during 2017. The MAFISA had managed to assist different enterprises for livestock, sugar cane, and horticultural crops. In the financial year 2011/2012, MAFISA, through one of its intermediaries called Eastern Cape Finance Corporation, disbursed a total amount of R9 328 235 in funds to 1286 recipients, which led to

the creation of 1568 jobs. In addition, through another intermediary called the Gauteng Enterprise Propeller, funds amounting to R152 099 were disbursed to 23 recipients, which created 34 jobs(DAFF, 2012).

Challenges

The challenges encountered by MAFISA included lack of insurance and lack of plans on recovery, if intermediaries were not able to repay.

6.3 Other NGOs and private-sector initiatives targeting youth in agriculture and rural development

The private sector and various NGOs have also taken the responsibility to initiate programmes and projects that assist in encouraging and attracting youth into agriculture. Although there are no specific programmes catering for the youth, there are general initiatives that young people can benefit from. One of those initiatives is discussed below.

Abalimi Phambili Farmer Support Programme

Department/Agency

LIMA Rural Development Foundation.

Objective

The programme was implemented in 2002 and continues to date. The main aim of the programme is to provide smallholder farmers in remote areas with essential services that are necessary for effective agricultural enterprise development (LIMA, 2018). The programme does not specifically target youth, but it is a general programme that youth involved in agriculture can also benefit from. The programme has been implemented through the deployment of teams of technically qualified agricultural facilitators, extension assistants and master farmers. These locally based teams service an average of 800 farmers per district through the hands-on provision of technical training and also facilitate access to markets. Field staff are supported by regional agricultural managers, whose knowledge is augmented with a complement of in-house specialists, including horticulturists, agricultural economists, engineers, and skilled community development practitioners.

Target group and eligibility criteria

The target group comprises all smallholder farmers in remote areas, with no age category limits.

Access and effectiveness

According to LIMA (2018), Over 10 200 permanent agricultural jobs and 2 377 seasonal agricultural jobs have been created through the APP, and more than 9 700 farmers have received free training. As a whole, these farmers produce a turnover of more than R120 million annually from their farming livelihoods. The programme is accessed by smallholder farmers in KwaZulu-Natal (Nongoma, Jozini and Msinga), Eastern Cape (Umzimkulu, Bizana, Lusikisiki, Matatiele, Umzimvubu and Ixopo), Mpumalanga (Bushbuckridge), and Limpopo (Maruleng/Sekororo and Ofcalaco).

Challenges

There are no challenges that LIMA has stated to have experienced while implementing the programme.

6.4 Other initiatives supporting youth in business/enterprise development

6.4.1 National Youth Development Agency (NYDA)

Department/Agency

The NYDA is a national agency initiated by The Presidency. It is a government imitative.

Objective

The agency was established primarily to address challenges faced by the nation's youth through entrepreneurship development. It also plays a leading role in ensuring that government, private sector and civil society prioritise youth development and contribute towards identifying and implementing solutions that address youth development challenges through entrepreneurial development and support (NYDA, 2017).

Target group and eligibility criteria

The Agency targets South African youth, regardless of race, gender, colour, creed and political affiliations. However, the Agency is biased toward unemployed youth in rural areas, currently out of school, female youth, youth with disabilities and youth in conflict with the law (NYDA, 2015).

Access and effectiveness

The NYDA is currently an active. According to the 2017 Annual Report, the Agency had attained its third clean audit record (NYDA, 2017). The programmes under NYDA support youth businesses as well as business development, i.e. NYDA Grant Funding and Business Development Support services and the Volunteering Mentorship Programme. It was highlighted in the 2017 Annual Report that a total of 698 youth-owned enterprises, 134 individuals and 69 co-operatives had received funding through the grant fund. Business Development Support Services provided support in the development of youth businesses. In 2017, according to the Annual Report, 63 407 young entrepreneurs were supported to develop their businesses through the Business Development Support Services under NYDA. In addition, the Volunteering Mentorship Programme aims to transfer business management skills and knowledge to the youth who are in businesses through the supervision of experienced volunteer business mentors (NYDA, 2016).

NYDA is accessible at the individual level, community level, provincial level and national level. At the individual level, the Agency provides direct services to youth such as the provision of information, career guidance services, mentorship, skills development and training, and entrepreneurial development. At a community level, it encourages young people to become agents for change in their communities through involvement in community development activities, social cohesion activities, national youth service programmes and dialogue. Lastly, at provincial and national levels, the Agency facilitates the participation of youth in developing key policy inputs, which shape the socio-economic landscape of South Africa through its policy development, partnerships and research programmes (NYDA, 2015).

Challenges

According to the National Youth Development Agency (2018), there are requirements that a recipient of services must meet, and among those is experience, such as experience in the business you are proposing to start or in a job related to that type of business. This is one of the requirements that hinder funding for most youth, as most of them have never been employed and/or managed a business.

6.4.2 Junior Achievers South Africa

Department/Agency

This is a non-governmental organisation (NGO) funded by private initiatives such as ABSA, Transnet and Investec. This NGO works closely with NYDA, but it is not part of the NYDA.

Objective

The initiative aims at promoting entrepreneurship and financial literacy among youth, especially those still in school. The NGO facilitates training on financial literacy and entrepreneurial development. Participants get the opportunity to pitch their business ideas to apply for grants and sometimes loans to start their businesses with collaboration from NYDA and ABSA Bank. Modiba (2017) has stated that, since the programme is implemented in schools, when the learners get support from their teachers, they should run school-based businesses and conduct money-generating events. He further highlighted the fact that such programmes and initiatives assist learners in developing an entrepreneurial spirit at an early stage. It becomes relatively easier for such a young person to venture into business as they grow. Hence, his suggestion is that entrepreneurship should be included in the school curriculum, especially in rural areas where there are limited numbers of entrepreneurs who young people would look up to.

Target group and eligibility criteria

The target group of the NGO comprises mainly the youth. There is an Entrepreneurship Academy programme that focuses on pupils in Grade 10 and Grade 11. Furthermore, there is a programme called the Youth Enterprise Development Programme that is implemented in two phases. The first phase is designed for pupils in Grade 10 to Grade 12, while the second phase is designed for the unemployed youth who are not in school.

Access and effectiveness

In 2017, the programme reached 6 661 learners in all 9 provinces (Junior Achievers SA, 2017). The programme was facilitated in 96 schools and community centres. This means that in 2017, 6 661 youth were equipped with the necessary skills to successfully initiate their own businesses. Furthermore, they are trained in financial literacy.

Challenges

The challenge with the programme is that limited funds hinder them from reaching more schools and more unemployed youth.

6.5 Youth access and participation in other agricultural and rural development initiatives

6.5.1 Types of projects/programmes and types of assistance

Out of the 244 young respondents interviewed, only 14.1 percent indicated that they consider themselves as beneficiaries of any of the following youth programmes:

- ‘One Home One Garden’,
- ‘Livestock Programme’,
- ‘Food Security Programme’, and
- ‘Conservation Agriculture Farmer Innovation Programme’.

These programmes are run by the Department of Agriculture and Rural Development (DARD). They are provincial programmes that target rural areas in the endeavour to increase food security and alleviate poverty.

The NGO programmes included:

- Muselwa Trading Projects
- Mpilonhle project.

All these programmes were not specifically tailored for the youth. They are provincial programmes that target rural areas in the endeavour to increase food security and alleviate poverty.

Table 6.1: Types of services received

Types of services received	Percentage of respondents who received support
Inputs (seeds, fertilisers, pesticides, and vaccines)	46.4
Training	39.3
Financial assistance	14.3
Food security	3.6
Other (studying / knowledge)	3.6

Note: This is a multiple answers question; hence the responses do not add up to 100.

Source: Survey Data (2018)

The duration of the programmes varies according to the type of programme and the agent managing the programme. For example, the financial assistance beneficiaries indicated that the support received was once-off, while the beneficiaries who received support in the form of training sessions indicated that the programme had run for about 18 months. The inputs beneficiaries indicated a variety of durations, ranging from 1 year to 3 years.

6.5.2 Youth satisfaction with support received and recommendations for improvement

In terms of satisfaction with the support received, the majority of the youth respondents indicated that they are satisfied with the support received. About 50 percent of the youth who had received financial support reported being satisfied with the support received, relative to the 25 percent who indicated that they were not satisfied. The youth who indicated being neutral about the financial support received accounted 25 percent of the total beneficiaries. In terms of support received through the provision of inputs, 91.7 percent of youth indicated being satisfied, and 8.3 percent indicated being neutral about the inputs support received. The financial assistance and input support have assisted the beneficiaries to reduce their production costs, thereby increasing their profits. The quality of the support and the way in which the support was provided to the youth was satisfactory. This information is shown in Table 6.2 below.

Table 6.2: Youth satisfaction with the support received

Type of programme	Were you satisfied with the support received?			
	Unsatisfactory	Neutral	Satisfactory	Total
Financial assistance	25	25	50	100
Inputs	0	8.3	91.7	100
Training	18.2	0	81.8	100
Other (Skills/knowledge)	100	0	0	100

Source: Survey Data (2018)

The surveyed youth who indicated not being satisfied with the support, as indicated in Table 6.2 above, mentioned the following reasons:

- Under the input beneficiaries, for example, one respondent indicated that they were not satisfied with the support because they had received feedstock for their livestock during drought season only, and the feed was not sufficient.
- The other respondent who is a beneficiary of training indicated that they are not satisfied with the training because, after the training session, they were not given the resources to start farming/implement what they had learned. The lack of access to land and inputs was highlighted to be the factors that most hinder the application of the knowledge they had acquired through training sessions.

The other areas of dissatisfaction for some of the youth include:

- Under the input beneficiaries, for example, one respondent indicated that they were not satisfied with the support because they received feedstock during drought season, which was not enough.
- The other respondent who is a beneficiary of training also indicated that they are not satisfied with the training because, after the trainings, they were not given the necessary inputs to start farming or implement what they have learnt. Lack of access to land and inputs was highlighted to be the most hindering factors to apply the knowledge they have acquired through the trainings.

Through the support received, 96.8 percent of the beneficiaries indicated that they believe they have benefited from participating in the programmes, whereas 3.2 percent indicated they did not benefit from the support received. The youth who received financial assistance as support indicated that they have benefited from the programme, as they received money that assisted in purchasing items of essential farm equipment that were too expensive for them to afford by themselves. The same reasoning of affordability was given for the input (seeds, fertilisers, pesticide, vaccine and herbicides) beneficiaries. Livestock farmers indicated that they receive vaccines from the Department (DARD), which they would not afford otherwise. The youth who believed they did not benefit from the support/partaking in any of the programmes were beneficiaries of the input programme. They indicated that the quantities of the inputs supplied are too little to have a noticeable impact.

The beneficiaries who received training as a form of support indicated that they had benefited from such support. The youth indicated that they had acquired skills through the training, which enabled them to grow vegetables and they have acquired knowledge on improved farming techniques. For this reason, they believe they are now well equipped and able to transfer the

skills to others. In addition, they said that the support had helped them in improving their production and productivity, resulting in an increase in profits.

6.5.3 Youth perceptions on the nature of support

Duration of the support provided

As shown in Table 6.3 below, 54.2 percent of the youth indicated that the support they received has had a short-term impact, while the remainder indicated that they perceive that the support they have received has had a long-term impact.

Table 6.3: Perception of the impacts of the support

Perception of the benefit given	Percentages of respondents
Short-term benefit/support	54.2
Permanent benefit/support	45.8
Total	100

Source: Survey Data (2018)

Table 6.4 below contains information regarding whether the youth think the support they received should continue or not. About 16.2 percent of the youth do not think that the support should continue. The beneficiaries of the training programmes stated that, after the completion of the training (18 months), they have acquired all the skills they need. They do not see the need to continue with the programme. However, they require inputs and land to start practising what they have learnt. Some said that the quantities of the inputs they received under the input support programme are too little to make any impact, and hence it does not make any sense to continue. Most of the youth who do not want the support to continue have large livestock/farms, and hence have not realised any impact from the assistance, given the scale of their production.

Table 6.4: Views on whether the support should continue or not

Views on whether the support should continue	Percentages of respondents
Agree	83.8
Disagree	16.2
Total	100

Source: Survey Data (2018)

The youth who agreed that the support received should continue accounted for 83.8 percent of the total number of beneficiaries. Some beneficiaries of input support believe that the programme should continue because most households in the remote areas depend on agriculture as their main source of income and food. Discontinuing the input programmes will result in poverty and worsened food insecurity. Most households cannot afford to buy the inputs for themselves, thus the programmes providing inputs enable such households to engage in farming. The input support programmes are also assisting with the provision of tractor services for land preparation, which is expensive and unaffordable for many. Some of the youth indicated that training programmes should continue because they provide them with necessary knowledge and skills regarding agriculture, and thereby improves the quality of their produce. Training also exposed the youth to knowledge through demonstrations and practical experiences of conducting farming. There are some of the youth who indicated that none of the programmes should end because these programmes help to assist in keeping youth busy, and hence away from social ills like crime, drug abuse and teenage pregnancies.

The recommendations for improvement of the programmes include the view that the input programmes should provide adequate seeds during all planting seasons, and not only during drought seasons. A further recommendation for the training programmes is that the relevant programmes should assist with farm placement for practical learning and land access after attending the programme so that youth would be able to practise what they were taught.

6.5.4 The role of youth development agencies in agripreneurship development

Most of the sampled youth were not aware of the youth development agencies that are available to assist them in their entrepreneurial endeavours (Table 6.5 below). Only 13.6% of the sampled youth indicated that they were aware of youth development agencies. These results are in line with the literature that reports that most of the rural youth are not aware of the programmes and organisations formulated to assist them (Herrington, 2010). This is because most of the organisations are in urban areas, making it difficult for most of the rural youth to access them.

Among the youth who indicated being aware of youth development agencies, only 1.3% indicated that they were a part/member of any youth development agency. Furthermore, the results show that only 0.8% of the sampled youth identified that there were youth development agencies working in their area. The youth in Alfred Duma and Okhahlamba all indicated that there were no youth development agencies in their area, while 2.5% of the youth in Inkosi

Langalibalele confirmed that there were youth development agencies in their area. During the survey, the youth were asked if they were paying transport costs to reach/access the development agencies. Most of them noted that access was within a walking distance, taking less than an hour.

The empirical findings indicate that the majority of the rural youth have not been reached by the development agencies. Thus, the youth development agencies should use social media and other platforms to disseminate information about their activities and the support they provide.

Table 6.5: Accessibility of youth development agencies in rural areas (%)

	Actively farming	Assisting in farming	Not farming	Alfred Duma	Inkhosi Langalibalele	Okhahlamba	All sampled youth
Are you aware of any youth development agency(ies)	13.4	10.9	15.1	9.2	21.5	10.7	13.6
Are you a member of any youth development Agency(ies)	3.0	1.6	0.8	1.1	1.3	2.4	1.6
Is there are any development agency(ies) in your area	1.5	0	0.8	0	2.5	0	0.8

Source: Survey (2021)

Of the 224 youths interviewed in Alfred Duma, Inkhosi Langalibalele and Okhahlamba local municipalities, only 16.1% indicated that they were beneficiaries of support programmes. The programmes that the youth were beneficiaries of included the “One home, One garden” and food security programmes that are provided by the Department of Agriculture and Rural Development. Most of the programmes were not specifically tailored specifically for the youth. They are provincial programmes that are targeting rural areas with the endeavour to increase food security and alleviate poverty. For instance, the SEDA 2020/2021 annual report recognises the shortage of service point centres for serving SMMEs and cooperatives in South Africa. In response, SEDA has collaborated with various municipalities and private organisations, with an aim of improving accessibility to the local communities (SEDA, 2021).

It is imperative for all agriculture and rural development stakeholders to understand the nature and context of the targeted youth, before designing and rendering services, training, and development programmes, to ensure the relevance of those efforts. The empirical results from uThukela municipality indicate that, with the exception of NYDA, most of the sampled youth

were not aware of the youth development agencies that are available to assist them in their entrepreneurial endeavours. Potential entrepreneurs in South Africa are unaware of the entrepreneurial structures and agencies that are tailored to assist them (Herrington, 2010). This is because most of the organisations are in urban areas, making it difficult for most of the rural youth to become aware of their existence and to access their services. Moreover, because of their unawareness of available agencies, their perceptions of services rendered by the agencies are still questionable.

The majority of the sampled youth had not made any effort to contact development agencies. According to Figure 6.2 below, more than 90% of the sampled youth indicated that they had not contacted any of the youth development agencies. About 2.5% of sampled youth in Inkosi Langalibalele district municipality, 4.8% in Okhahlamba district municipality, and none in Alfred Duma district municipality had contacted youth development agencies.

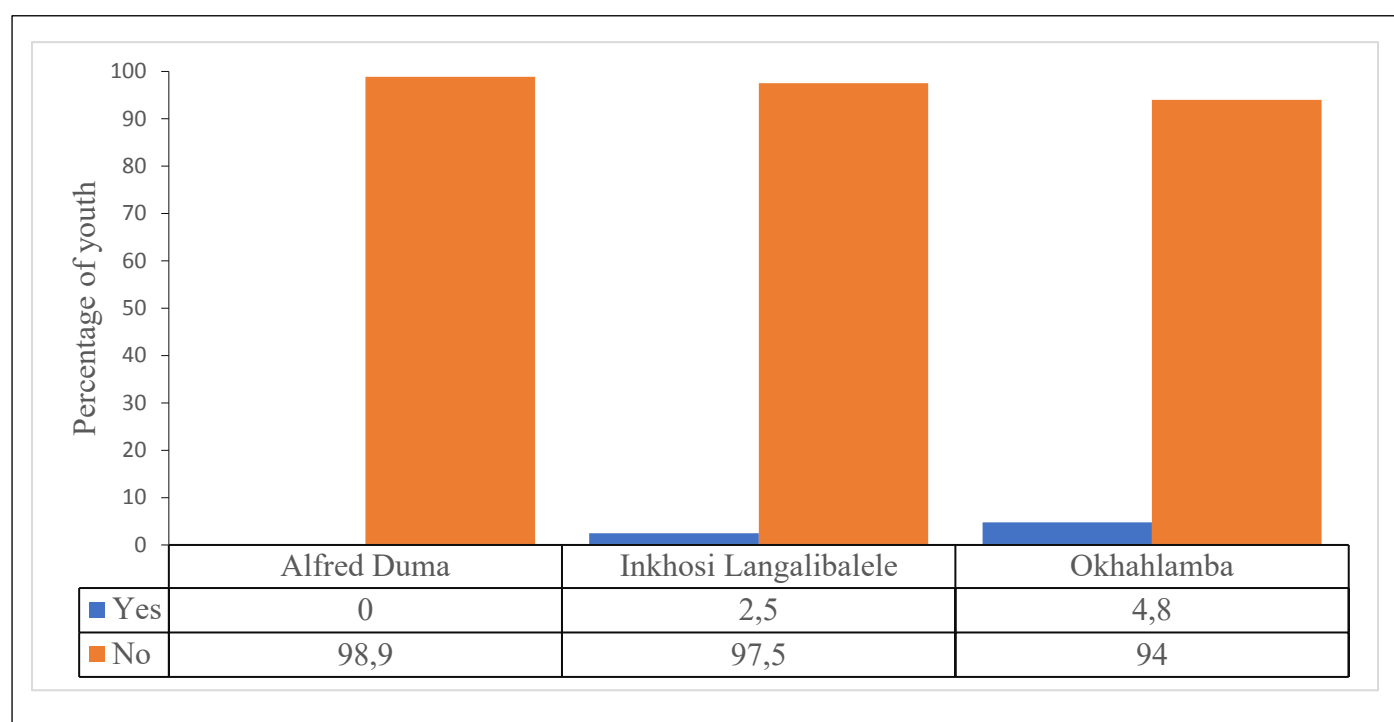


Figure 6.2: Efforts made by rural youth to contact development agency/ies

Source: Survey (2021)

During the survey, the youth were asked as to the reasons for not contacting the development agencies (see Table 6.6 below).

Table 6.6: Reasons for not contacting youth development agencies

Youth reasons for not contacting development agencies	Actively farming	Assisting in farming	Not farming	Alfred Duma	Inkhosi Langalibalele	Okhahlamba	All sampled youth
I didn't know about them	38.8	50.0	35.3	49.4	25.3	44.0	40.0
I don't have their contact details	7.5	3.1	7.6	10.3	6.3	2.4	6.4
I think I do not qualify for their assistance	0	0	3.4	0	5.1	0	1.6
Not interested	3.0	9.4	8.4	0	12.7	9.5	7.2
They never helped anyone before	1.5	0	1.7	3.4			1.2
We don't have development agencies in our area	4.5	4.7	0.8	0	1.3	7.1	2.8

Source: Survey data (2021)

According to the youth interviewed, development agencies are not accessible and lack information about what they offer. A study in the Western Cape found little or no empirical evidence on the role of youth development agencies towards youth agripreneurship development (Gwija *et al.*, 2014). In sum, the results indicate that the majority of the rural youth have not been reached by the development agencies. Thus, youth development agencies ought to use social media and other platforms to disseminate information about their activities and the services they provide. The importance of the collaboration of all related stakeholders cannot be overstated for ensuring the availability and accessibility of services of development agencies to rural communities.

According to the 2018/2019 NYDA Annual Report, the Agency states that it has achieved 100% performance according to the Annual Performance Plan (APP). The APP is a performance scale with a number of indicators, e.g. the number of entrepreneurial training sessions conducted, which are used in evaluating the performance of most government departments. In the 2019/2020 financial year, the NYDA achieved 96% in performance, including in 2020/2021 financial year (NYDA, 2020; NYDA, 2021). At the national level, the NYDA contributes positively towards youth entrepreneurship development and the reduction of youth unemployment through the provisions of financial and non-financial services (e.g. entrepreneurial training).

Although South Africa's NYDA Annual Report (2021) recognises the significance of entrepreneurial initiatives for fostering youth entrepreneurship and inclusion in the economy, this study could not establish the impacts of its interventions. The development agency's reports do not match with the impact evaluations because their number-based evaluation criteria do not measure impacts. Their APP should be computed based on the impacts on youth livelihoods, employment, poverty, food security or insecurity, and other outcome socioeconomic variables.

Youth development initiatives and programmes have to be tailored according to the context and needs of the targeted youth. Youth development agencies ought to be accessible in rural areas, and there is a need to improve the dissemination of information on the agencies and their respective services. Similarly, policies that cultivate youth agripreneurship are of paramount importance in South Africa.

6.6 Sources of livelihoods for the youth in rural areas

Table 6.7: Livelihood strategies for rural youth

Sources of livelihoods	Household head (20%)		Not the Household head (80%)	
	% of respondents	Average income per annum (R)	% of respondents	Average income per annum (R)
Social grant	78	17767	89	29390
Remittances	50	15625	32	11380
Arts and Craft	6	9300	10	3627
Permanent employment	24	19465	26	48146
Temporary employment	19	22828	30	43638
Own business	21	6750	21	57981
Farm income	23	4259	19	23128

Source: Survey Data (2018)

Table 6.7 above compares the household livelihood strategies for the youth who are household heads, and for those who are not household heads. Of the 199 youth interviewed, 20% were household heads. According to Table 6.7 above, 78 and 50 percent of the youth who are

household heads indicated that social grants and remittances, respectively, are their main sources of livelihood. The figures are similar for the youth who are not household heads, as 89 and 32 percent of them indicated that social grants and remittances, respectively, are their main sources of livelihoods. This is a clear indication that the majority of the youth survive through social grants. Entrepreneurship in rural areas is very poor as a livelihood strategy. Only 21 percent of the youth indicated that entrepreneurship (own businesses) is their livelihood strategy. This low statistic includes both family businesses and businesses owned by the youth. Among households headed by the youth, only 23 percent indicated farm income as a livelihood strategy. The statistics are relatively lower among the youth who are not household heads, as only 19 percent indicated farm income as their livelihood strategy. Such low statistics are in agreement with the literature regarding the low involvement of youth in agriculture. What is more disturbing is the fact that, among households headed by youth, farm income per annum is the lowest (R4 259), when compared with other sources of income.

6.7 Lack of secure land tenure for young people

Only 64.2% of the youth surveyed have access to productive land for farming. This means that a significant proportion of the young people do not have access to the single most important asset in farming. This negatively affects their involvement in farming, regardless of their interests to be involved. The average land holding among those with access to agricultural land is 3.56 ha, and this differs across the categories of the youth (Table 6.8 below). Those currently farming on a substantial basis have access to larger land holdings than the youth partially or not farming at all do.

Table 6.8: Average land holding reported by the sampled rural youth

	N	Mean	Std. Deviation	Minimum	Maximum
Only farming – individual	30	6.37	16.74	0.03	90.00
Only farming – cooperative	15	6.55	12.81	0.50	50.00
Partially into farming	43	1.83	3.15	0.00	20.00
Not currently engaged in farming	32	1.83	2.47	0.01	11.00
Total	120	3.56	9.88	0.00	90.00

Source: Survey data, October 2018

Most of the youth interviewed do not actually own the land themselves, which instead belongs to their parents or family. However, most of the youth have the right of use. Table 6.9 below shows the land holding rights held by the youth/their families on the land. Much of the land that the youth have access to is held under a Permission to Occupy (PTO) basis, and only a few are leasing/borrowing at rental charges, which ranges from R500 to R5000 per hectare per year.

Table 6.9: Means of land holding – observations from the sampled rural youth

Means of land holding	Plot 1	Plot 2	Plot 3	Plot 4
Owned/Inherited – PTO	81.6	71.4	77.7	73.7
Owned private	1.7	2.4	0	0
Leased/rented	6.7	9.5	7.4	5.3
Borrowed	2.5	2.4	3.7	10.5
Received from chief on a temporary basis	7.5	14.3	11.1	10.5
Total	100.0	100.0	100.0	100.0

Source: Survey data, October 2018

Some of the youth received the land on a temporary basis from the chief, which means that the land can be reclaimed at any time. However, the results show that insecurity in land tenure is not a major challenge. Only 20% of the youth find it difficult to make long-term land use decisions under the current land ownership system. These respondents said that, since the land belongs to their parents or the family, they must always consult before making any decisions on the land. Table 6.10 below shows the percentages of youth who agreed with certain statements on issues of land tenure rights. The results generally confirm the above assertion that insecurity in land tenure does not seem to be a major constraint among the rural youth who have access to land. The major challenge is gaining access to land. The discussions revealed that people are only given land under a PTO when they are married. Given the result noted in Section 6.1.1 that 92% of the sampled youth were not married, most of the youth would not qualify to receive land from the traditional leaders.

Table 6.10: Land tenure rights: observations from the sampled rural youth

Land tenure rights	Only farming – individual	Only farming – cooperative	Partially into farming	Not currently engaged in farming	Total
I believe I know my legal rights	80.0	80.0	71.7	63.6	72.6
I believe am able to exercise my rights over land	76.7	80.0	69.6	69.7	72.6
I believe I am free to choose what produce	93.3	86.7	87.0	90.9	89.5
I trust I can use the land am operating for more than 10 years	93.3	86.7	84.8	90.9	88.7
I do not see threats of eviction from the land am using	80.0	80.0	82.2	81.8	81.3
I always find it easy to approach the relevant authorities	82.8	100.0	84.1	80.7	84.9
I believe I will be treated fairly by local authorities at any given moment	83.3	86.7	84.8	84.4	84.6

Source: Survey data, October 2018

6.8 Summary

This chapter has dealt with incentive schemes, and their accessibility and effectiveness to the rural youth in the context of rain-fed farming within the available food value chains. It began with an assessment of government and other programmes/projects that target youth in agriculture and rural development. This was followed by a discussion of youth access to services and their participation in any agricultural and rural development initiatives. Finally, it examined youth satisfaction with services received, perceptions of those who never received information about the nature of the services, the role of youth development agencies, and the role that insecure land tenure has as an inhibitor of agripreneurship development.

7 ACCESS TO INFORMATION, ADVISORY AND SUPPORT SERVICES: SOME EMPIRICAL EVIDENCE FROM KWAZULU-NATAL

This chapter is about access to agricultural information (about inputs, outputs, markets, climate and technologies), training, and advisory/support services provided to the rural youth. It highlights the available sources of information, options and inherent challenges.

7.1 Introduction

This chapter aims to assess the access to information and the available advisory and support services among rural youth who are engaged in rain-fed farming and other activities along the agricultural value chain. The background to this assessment emanates from the poverty and unemployment problems that the rural youth face in South Africa (Chapter 1).

Developing and empowering rural communities, especially young people, is critical for achieving improved welfare and the promotion of inclusive rural growth. Agriculture is at the centre of any rural development interventions. Recently, the focus has placed been on finding strategies for increasing youth participation in the sector. However, the successful involvement of the youth depends on their access to adequate and relevant information on new production technologies, marketing channels, input and produce prices, market requirements (quality and standards), on the best place and time to sell, and potential buyers. This information is meant to inform their on-farm decisions and livelihood strategy choices, in addition to changing their attitudes towards agriculture and rural life. According to Baloyi (2010), the lack of access to relevant information is one major chronic challenge that affects the smallholder sector in South Africa. Rural producers, especially smallholder farmers, have little information about markets because the cost of obtaining the information is high (Montshwe, 2006). This lack of information affects the access by smallholders to both input and output markets, and hence, they do not realise the full potential of engaging in agricultural activities. This, in turn, negatively affects the succession of conducting agricultural practices by the youth.

7.2 Research findings: sources and access to information by the rural youth

7.2.1 Sources of information and advisory services

Initially, the study assessed the extent to which the access by the rural youth to relevant and adequate information is a constraint to engaging in rain-fed farming and AVAEAs. The findings show that, for most of the sampled youth (78%), access to relevant and adequate

information is a constraint to agriculture (Table 7.1 below). Discussions revealed that, on the marketing side, some of the youth have little knowledge of the products in demand, do not always know the prevailing input and output prices, and do not recognise the different players in the market. This is in addition to other limited production-related information regarding new crop varieties, types of inputs, new technologies of production, and climate change. This confirms findings from previous studies (e.g. Montshwe, 2006; Baloyi, 2010), which showed that limited access to information is a major constraint to smallholder agriculture production. Comparison by district shows no differences. However, a small percentage of the rural youth who are currently actively engaged in agriculture, when compared with others, face information constraints. This indicates that access to relevant and adequate information could be related to the extent of involvement in agricultural farming by the youth concerned.

Table 7.1: Lack of access to relevant and adequate information as a constraint to engaging in agricultural activities

		No – it is not a constraint (%)	Not sure (%)	Yes – it is a constraint (%)	Total (%)
District	Amajuba	17.3	4.8	77.9	100.0
	UMzinyathi	13.3	8.3	78.3	100.0
Type of youth	Actively engaged in primary agriculture	20.6	9.5	69.8	100.0
	Partially engaged in primary agriculture	5.6	3.7	90.7	100.0
	Engaged in both primary agriculture and AVAEAs	0.0	0.0	100.0	100.0
	Not engaged in both	18.2	7.1	74.7	100.0
Total		15.2	6.7	78.1	100.0

Notes: District: P-value – 0.092; Type of youth: P-value – 0.043

Source: Survey data, April-May 2019

The common sources of information for the rural youth are print and electronic media (radio, television, newspapers, etc.), mobile phones (short message service and calls), social media, the internet, and the community (meetings and social networks). Most of these sources are based on ICTs and demonstrate their importance in gaining access to information among young

people. The results show that access to extension services among rural youth, including training, is limited. Only 29% and 15.2% indicated extension services as their source of information, respectively. Several studies have shown that the public agricultural extension in South Africa has been facing challenges because of a shortage of extension agents, limited resources, and lack of skills (Mmbengwa *et al.*, 2009; Terblanché *et al.*, 2012; Raidimi and Kabiti, 2017).

Similarly, access to information provided through NGOs is also minimal. A comparison between the two districts shows that more of the youth in Amajuba have access to internet, social media and training, while those in uMzinyathi rely more on their family, community networks, and relations for information. The FAO (2014) has highlighted the fact that some smallholder farmers rely on informal networks (traders, friends and family) as sources of information. However, these sources might have outdated information, making them unreliable. According to Mangisoni (2006), relying on informal networks for market information is risky. This is because it leaves farmers vulnerable to opportunistic behaviour existing in such information sources. Furthermore, a higher proportion of the rural youth who engaged in both primary agriculture and AVAEAs indicated training and NGOs as their sources of information, as compared with the other groups of rural youth. This could explain their diversification in terms of livelihoods activities.

Two challenges are identified, based on the above findings. The first is that the rural youth have limited access to the sources that are customarily known to provide information and advisory services on rain-fed farming. Extension services and training by resource agents from the DARD, NGOs and private organisations are supposed to equip young farmers with knowledge on farming. However, this is not the case, and it is difficult to ascertain the benefits (in terms of enabling youth to make informed decisions) of information received by the youth through the other channels. According to Sikwela and Mushunje (2013), information is only as important as its source. This means that the usefulness of any information depends on its source and credibility. Given the plethora of information available from various sources, one of the challenges for the youth is to identify the quality, objectivity and credibility of the information. Secondly, the rural youth commonly access information through virtual or non-verbal communication. Despite the several advantages, communication through such channels is mostly one-way, unless it has been specifically designed to be interactive. One-way communication has disadvantages in that it does not promote interaction between the receiver of the information and the sender. In the case of the rural youth, this means that they are not in

a position to ask for further clarification or raise new follow-up questions. This affects learning, especially in farming, which is most productive when received through interactive platforms, such as training, mentorship and agricultural extension visits.

Table 7.2: Common sources of information for the rural youth in KZN

Sources of information	District		Type of youth				Total
	Amajuba	UMzinyathi	Actively engaged in primary agriculture	Partially in primary agriculture	Engaged in both primary and AVAEAs	Not engaged in both	
Print/Electronic media	84.6	78.3	86.8	92.6	75.0	73.7	81.3
Phone	70.2	68.3	68.1	70.4	50.0	72.7	69.2
Social media	66.3	55.0	79.8	53.7	62.5	59.6	60.3
Internet	63.5	30.0	42.2	46.3	50.0	44.4	45.5
Community	32.7	52.5	44.8	51.9	37.5	38.4	43.3
Extension	30.8	27.5	27.4	33.3	50.0	22.2	29.0
Training	21.2	10.0	15.8	11.1	12.5	18.2	15.2
NGOs	13.5	12.5	13.9	13.0	50.0	11.1	12.9
Family	1.0	20.8	1.9	24.1	25.0	9.1	11.6

Source: Survey data, April-May 2019

Table 7.3 below shows the ranking by the surveyed youth of the different sources of information, according to importance to rain-fed farming. Although agricultural extension is not a common source of information among rural youth, it was ranked as the highest, showing its usefulness or worth in rain-fed agriculture. Other studies have found that most smallholder farmers rely mainly on agricultural extension officers for the transmission of information (Mangisoni, 2006). However, as indicated in the literature (Terblanche, 2007a, b; Koch and Terblanche, 2013), the reliability of extension services as a source of information is limited because of the quality of the services provided by extension officers. Training is ranked third, while mobile phones and NGOs are ranked fourth and fifth, respectively.

Table 7.3: Sources of information ranked by the youth in KZN

Sources of information	Actively engaged in primary agriculture	Partially engaged in primary agriculture	Engaged in both primary agriculture and AVAEA	Not engaged in both	Total
Extension	4.43	4.50	4.50	4.45	4.46
Print/Electronic media	4.36	4.26	4.67	4.30	4.32
Training	4.22	4.33	5.00	4.22	4.26
Mobile phone	4.41	4.18	4.50	4.07	4.20
NGO	4.14	4.43	4.50	3.91	4.17
Internet	4.39	4.04	4.50	4.05	4.16
Community	4.18	4.32	3.67	3.97	4.12
Social media	4.17	4.28	4.20	3.98	4.11
Family	4.50	4.15	4.50	3.33	3.92

Source: Survey data, April-May 2019

Social media is ranked second from last, showing that the youth do not currently receive information that is relevant for farming through this channel. Chapter 5 has shown that young people mostly use social media for networking, social event notices, sharing photos and status updates, and celebrity gossip. The various social media platforms are rarely used to share information on agriculture or farming. However, this is a media opportunity that has not been exploited and has great potential for enhancing the development of rain-fed farming enterprises for the youth. Studies in other countries such as Kenya have already demonstrated how young farmers can productively use ICTs to access information on crop production and marketing (see AGRA, 2015; Irungu *et al.*, 2015).

A comparison between the different groups of the youth shows that those engaged in both primary agriculture and AVAEAs rank most of the sources of information at a higher level, as compared with the others. This shows that this group of young people find the information received from most of these sources as relevant, especially given the number of activities they are engaged in. Unlike the others, they also ranked print and electronic media higher than all

the other sources. This implies that business-related information and opportunities are also shared through print and electronic media.

Figure 7.1 below presents the responses of the youth on whether they incurred any cost in accessing information from each channel. Over 90% of the sampled youth indicated that they bear some costs in accessing social media, the internet, print and electronic media and phones (Figure 7.1). A rough estimation of the costs of accessing social media and the internet is presented in Section 4.1.1 below. Half of the youth incur costs to attend training workshops or courses. The costs are related to the transport needed for attending the training and, in some cases, fees for registration. Very few of the youth incur expenses related to accessing the other sources of information. The findings indicate that gaining access by the youth to their common sources of information might be expensive. This partly explains why most youth indicated that gaining access to relevant and adequate information is a challenge.

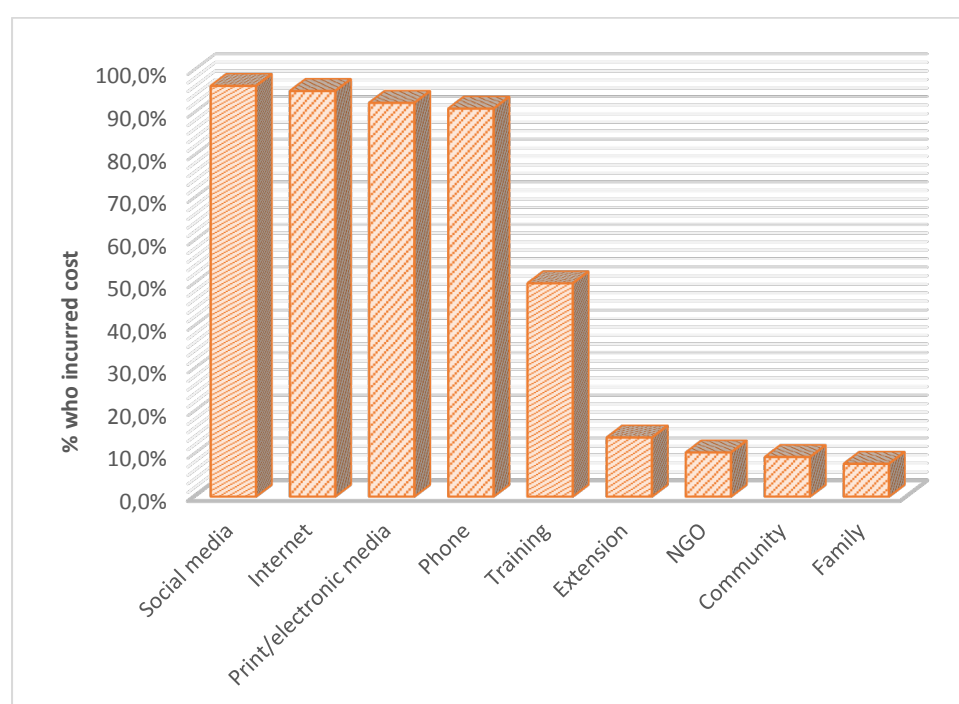


Figure 7.1: Is there any cost incurred in accessing information?

Source: Survey data, April-May 2019

7.2.2 Information accessed through ICTs

ICTs, i.e. radios, television, social media, mobile phones, and the internet, are a significant source of information for rural youth. The results show that the extent of access to traditional

ICTs, i.e. radio and television, is high among rural youth. About 72% and 79.5% of the rural youth have access to radio and television, respectively. However, according to Qwabe (2018), televisions and radios are not effective in disseminating information to farmers because, most of the time, the farmers are in the fields. Most of the information is also generic, and not targeted to the context of the youth. Nevertheless, new technologies have devised portable radio systems that can be carried anywhere.

Empirical evidence suggests that access to ICT assets among the sampled youth is quite high. The youth are also quite active on social media platforms, with about 78.5% using at least one of the several available platforms such as Facebook, WhatsApp, Twitter and Instagram. As noted earlier, about 69% of the youth own a smartphone, which is a critical asset in accessing the internet and various social media platforms. Discussions revealed that the ICT infrastructure in the surveyed communities is getting better and fewer challenges are experienced regarding access to mobile networks. However, the affordability of internet data bundles is a challenge, especially among the unemployed youth, who form most of the youth in the rural communities. Table 7.4 below shows the different types of information accessed by the youth through the social media. Currently, the direct use of the various platforms for agricultural purposes is very limited.

Almost 80% of the youth indicated that they have access to social media (Figure 7.2 below). These results confirm the findings regarding the three local municipalities in uThukela district (see Chapter 5), which showed that 78% of the youth were members of a social media platform. There were no significant differences between the groups of the youth. However, a slightly higher proportion of the youth who are engaged in both primary agriculture and AVAEAs are part of social media.

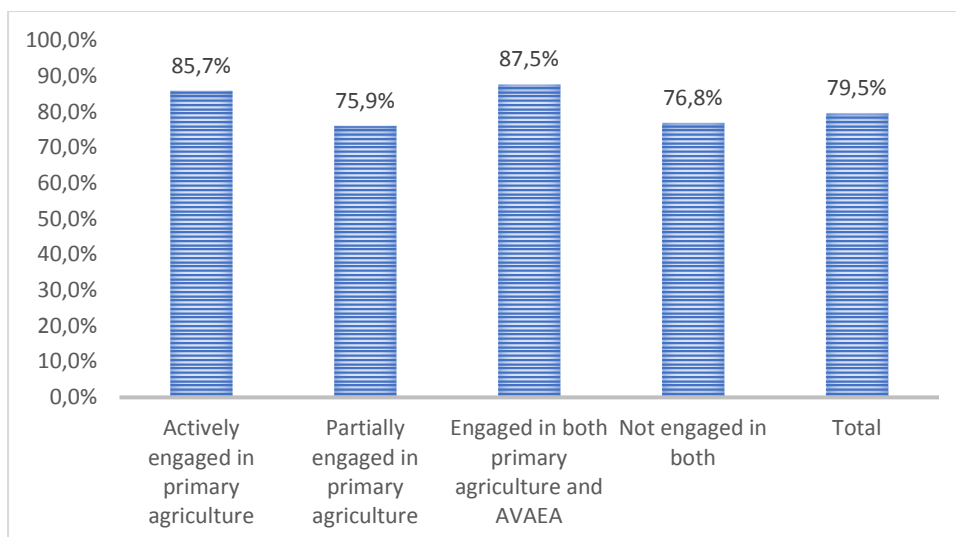


Figure 7.2: Proportion of youth who are part of any social media

Source: Survey data, April-May 2019

Access to social media and the internet in the rural areas is directly linked to ownership of smart mobile phones. The results show that about 76.1% of the rural youth own a smartphone, while 55.8% also reported owning a non-smart mobile phone. This means that most of the rural youth do have a platform to use for accessing social media and the internet. Indeed, most of the youth spend a considerable amount of time per day on social media (7.2 hours per day) (Table 7.4 below). The time spent on social media is highest among the youth who are not engaged in any of the activities and those who are partially involved in farming. These findings demonstrate that, when youth are not productively engaged in economic activities, they spend most of their time on social media chatting to friends and following their celebrity icons on Twitter and Instagram. Several studies show that youth have the highest rates of social media use and spend more time on it (Third *et al.*, 2017; Goodyear *et al.*, 2018). Going forward, the challenge is how government and other stakeholders might tap into this and disseminate agriculture-related information relevant to the youth.

Table 7.4: Time and money spent by the rural youth on social media

Type of youth	N	Hours spend on social media per day		Money spent on data per month	
		Mean	Std. Dev	Mean (Rands)	Std. Dev
Actively engaged in primary agriculture	54	4.1	4.7	264.6	1352.0
Partially engaged in primary agriculture	41	7.9	12.2	76.4	91.1
Engaged in both primary agriculture and AVAEAs	7	3.1	2.3	136.0	150.7
Not engaged in both	76	9.4	19.8	83.1	233.5
Total	178	7.2	14.6	139.3	765.6

Source: Survey data, April-May 2019

The challenges regarding access to social media and the internet relate to the cost of data bundles per month. On average, the rural youth spend approximately R139.00 per month on data bundles. A comparison between the different youth groups shows that those actively engaged in primary agriculture, followed by those engaged in both, use significantly more money on data bundles per month, compared with the others (see Table 7.4 above). Since such youth spend less time on social media, this means that they probably spend more time on the internet.

The challenge with the use of ICTs by most rural youth is that the information they access through these channels is not related to farming, but to other areas of their lives. As noted earlier, most of this information is related to updates on friends/celebrities, job opportunities, education, business opportunities, general news and social events (Table 7.5 below). Only 16.8% and 12.6% use social media to access information on farming techniques/technologies, and on markets and prices, respectively. Future research and development activities should target the ways and means of increasing the use of social media in disseminating agriculture- and business-related information.

Table 7.5: Type of information accessed by the youth on social media platforms

Information types	Percent of Cases
Updates on friends/celebrities	66.4
Job opportunities	56.6
Education/life skills	49.7
Business opportunities	39.9
General news	34.3
Social events	30.1
Farming techniques and technologies	16.8
Religion	13.3
Markets and prices	12.6
Political updates	1.4

Source: Survey data, October 2018

7.2.3 Agricultural training and advisory services

Education plays a vital role in gaining market access by reducing transaction costs, and the costs of finding and analysing the information (van Tilburg and van Schalkwyk, 2012). Most of the youth (79.5%) indicated that the lack of knowledge and skills remain inherent constraints in engaging in agricultural activities (Table 7.6 below). There were no significant differences across the districts. However, among the different groups of youth, all of those engaged in both primary agriculture and AVAEAs report a lack of knowledge and skills as a significant deterrent to their farming and business enterprises. These findings suggest that the rural youth experience limited access to agriculture training and advisory services. Bennell (2007) indicates that youth have been excluded from policy and strategic support. He suggests that, because of their heterogeneity, they are viewed in most developing countries as a problematic social group that is difficult to engage with. However, in South Africa, efforts have been made to develop policies and frameworks to work with young people in the economy. Nevertheless, DARD still does not have a youth policy that outlines a framework for supporting youth in farming.

Table 7.6: Lack of knowledge and skills as constraints to youth in engaging in agricultural activities

		Not a constraint (%)	Not sure (%)	A constraint (%)	Total
District	Amajuba	13.5	2.9	83.7	100.0
	UMzinyathi	15.0	9.2	75.8	100.0
Youth	Actively engaged in primary agriculture	20.6	7.9	71.4	100.0
	Partially engaged in primary agriculture	5.6	7.4	87.0	100.0
	Engaged in both primary agriculture and AVAEA	0.0	0.0	100.0	100.0
	Not engaged in both	16.2	5.1	78.8	100.0
Total		14.3	6.3	79.5	100.0

Source: Survey data, 2019

The results in Table 7.7 below confirm the above conclusion. Only 32% of the rural youth have access to training related to agriculture/farming. More of the youth in Amajuba have received agriculture-related training, compared with the other district. This suggests that the extension and advisory services in the district might be better, when compared with uMzinyathi. However, they are still below the expectations and would not support stronger participation by youth in rain-fed farming or AVAEAs. Comparing the different types of youth shows that those actively involved in primary agriculture, followed by the group engaged in both farming and value-adding activities, have higher percentages of members who had received training. This suggests that the available training opportunities are targeted at those who are interested in agriculture, leaving aside those yet to show some interest or those not involved (ADA, 2017; DAFF, 2018; AgriSETA, 2019). This again demonstrates the need for more research and development activities to be conducted on why most of the rural youth are not keen to take up farming or to engage in AVAEAs. One of the MSc students working for this project is dealing with this question, comparing the interests of the youth for primary agriculture versus AVAEAs. This study is expected to generate useful empirical evidence and insights, given that

there is potential for the youth partially involved in primary agriculture to develop an interest in farming, if they were to acquire more knowledge and skills in the area.

Table 7.7: Youth who received farming-related training

		Received agricultural / farming related training (%)
District	Amajuba	37.5
	UMzinyathi	27.5
Youth	Actively engaged in primary agriculture	46.0
	Partially engaged in primary agriculture	29.6
	Engaged in both primary agriculture and AVAEA	37.5
	Not engaged in both	24.2
Total		32.1

Source: Survey data, 2019

The common types of training received by the rural youth are related to crop production, agricultural commodity marketing, packaging, and business planning. Other training received by approximately 21% of the youth included pricing and basic financial management principles, such as bookkeeping (Table 7.8 below).

Table 7.8: Types of training received by rural youth in KZN

Types of training	Percent of Cases
Crop production	40.3%
Agricultural commodity marketing	30.6%
Packaging of fresh produce	26.4%
Business planning	25.0%
Pricing of produce	20.8%
Financial management	20.8%
Processing of farm produce	16.7%
Business start-up	15.3%
Livestock production	9.7%
Other	6.9%

Source: Survey data, April-May 2019

There is limited training available related to livestock production; yet, Chapter 4 has shown that the youth typically have special interest in livestock farming. About 69% of the youth in the two districts own some form of livestock, with the common types being poultry (44%), cattle (36%) and goats (30%). Thus, knowledge and skills on livestock production are critical to the success of youth enterprises in rain-fed farming. Furthermore, the findings show limited training is provided in AVAEAs. A few of the youth received training on processing of fresh produce. However, more numbers of the youth should be trained and supported on how to add value to their produce. This knowledge is vital, if youth are to engage in profitable value chains that have the potential to generate a sustainable livelihood from rain-fed farming. In sum, the content of the training offered in the rural areas has to be informed by needs assessments that consider relevance and local context. The previous WRC project (WRC report no. 2278/1/18) has also confirmed that the training provided to smallholder farmers in KZN has, by and large, been top-down, ad hoc in nature, and based on what the trainers think, and not based on a needs assessment and relevance (Wale and Chipfupa, 2018).

Government extension officers provided most of the training that the rural youth under study received from DARD (Figure 7.3 below). This shows the importance of the role that the government should take in ensuring that youth have the know-how and skills needed to engage

in rain-fed farming and AVAEAs effectively. Some also received agricultural-related training from private companies, parents and fellow farmers. It was reported that the private sector usually provides training when they engage youth as contract farmers to produce a specific product. Thus, the training is meant to ensure that the youth produce high-quality crops that meet the market standards or expectations of the private sector. Knowledge obtained from parents includes indigenous knowledge and skills on how to cope with constraints in farming.

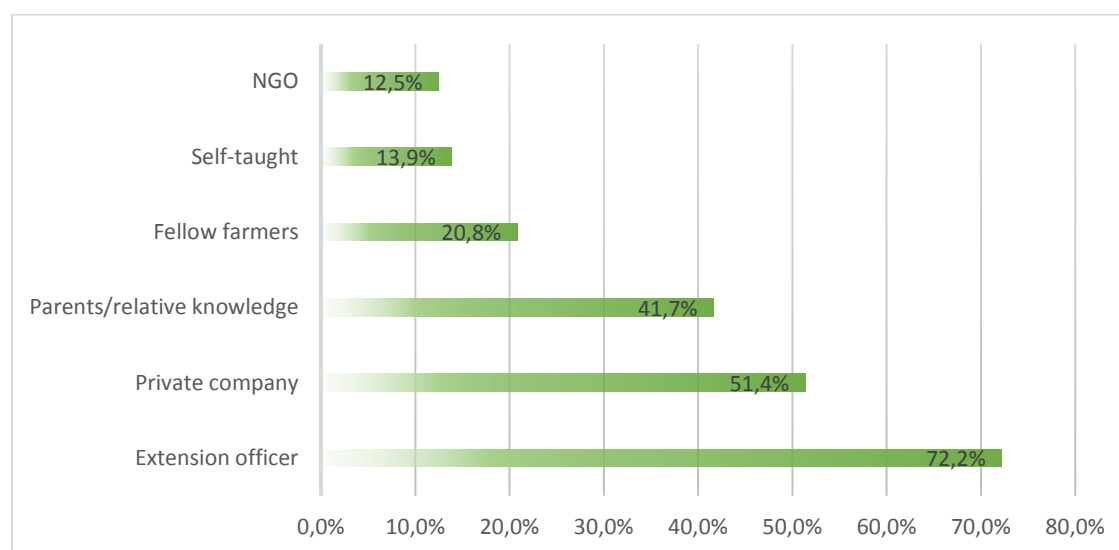


Figure 7.3: Training provided to rural youth in KZN

Source: Survey data, 2019

7.2.4 Agricultural inputs and product market information

Market information includes information on consumer preferences, quantities demanded, produce prices, market requirements, and opportunities (Baloyi, 2010). Such information allows smallholders (including youth) to make informed decisions relating to the available inputs, the supply of necessary produce, identifying the potential buyers of the produce, contract enforcement, and monitoring.

The common source of input and output market information among the rural youth is the use of ICTs (58.4%), followed by fellow farmers (8.8%). Oyeyinka and Bello (2013) found similar results. In their study, smallholder farmers reported using their phones to exchange information and inform each other about market locations. This confirms the role of ICTs in promoting smallholder agriculture. The results also show that a significant proportion of the youth who engaged in some form of rain-fed farming (24.6%) do not have access to market information.

These youth cannot take advantage of price and product opportunities presented in the market. This will affect their farm production and management decisions. The findings provide empirical evidence on some of the challenges that might be affecting the participation of the youth in high-value markets. They also explain why rain-fed farming is not a lucrative enterprise for most of the youth. Without market information, the youth are unable to obtain the best input and output prices, and might not be able to access the newer inputs and technologies that would improve their efficiency and performance in farming.

A higher percentage of the youth engaged in both primary agriculture and AVAEAs (87.5%) indicate ICTs as comprising their primary source of market information, as compared with the other groups of the youth. Most of the youth who reported not having access to relevant sources of market information are either actively or partially engaged in primary agriculture. There are no significant differences between these two groups. There are also no significant differences in terms of access to market information between the two study districts. This shows that the challenges of lack of access to market information cut across most of the rural youth engaged at different levels in farming, regardless of their geographical location.

Table 7.9: Sources of market information for the youth in KZN

		None	Radio	Extension officers	Fellow farmers	Contracting agencies	Hawkers	ICT	Total
District	Amajuba	24.1	0.0	7.4	18.5	1.9	1.9	54.3	100.0
	UMzinyathi	28.2	1.4	0.0	1.4	1.4	0.0	67.6	100.0
Youth	Actively engaged in primary agriculture	27.0	0.0	6.3	7.9	3.2	0.0	55.6	100.0
	Partially engaged in primary agriculture	29.6	1.9	0.0	9.3	0.0	1.9	57.4	100.0
	Engaged in both primary agriculture and AVAEA	0.0	0.0	0.0	12.5	0.0	0.0	87.5	100.0
Total		24.6	0.8	3.2	8.8	1.6	0.8	58.4	100.0

Note: P value – 0.007

Source: Survey data, 2019

The rural youth engaged in rain-fed farming were also asked if they knew the output price before selling. Their responses show that most of the youth know the price before selling (Figure 7.4 below). However, a few do not know the prices before selling their output and this challenge is greater among the youth engaged in both primary agriculture and AVAEAs. Hence, such youth are vulnerable to being short-changed by the market, including by the middlemen (van traders or hawkers). They are most likely to obtain less income, compared with what they would otherwise have achieved. Having prior knowledge of the prices allows youth the latitude to make informed decisions on the market channel they want to participate in.

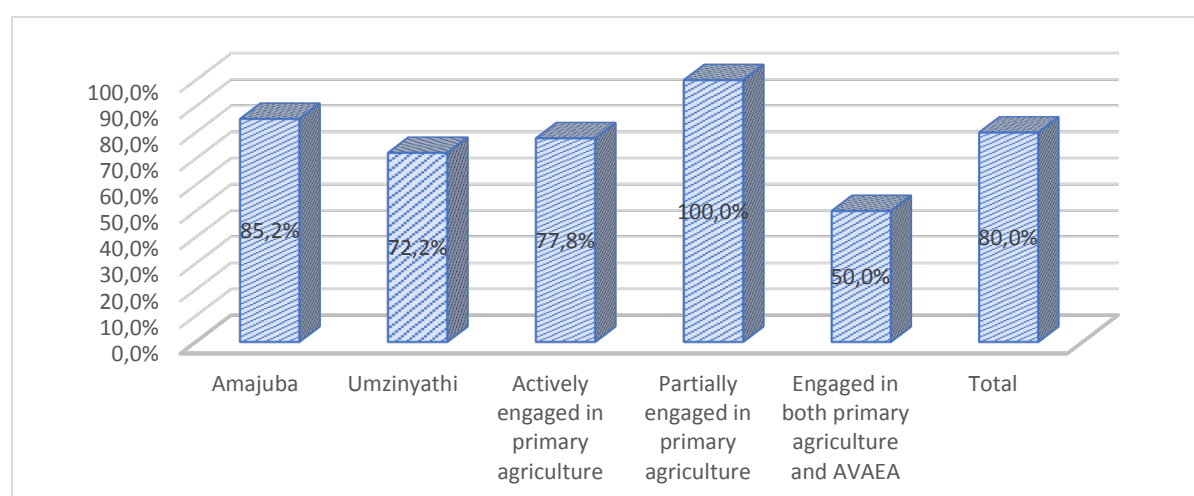


Figure 7.4: Do young farmers know the output price before selling?

Source: Survey data, 2019

The study also sought to assess the information-seeking behaviour of the rural youth. Figure 7.5 below shows that 50% of the youth engaged in rain-fed farming spend time actively looking for output price information before selling their produce. This means that half of the youth do not look for such information. However, not actively looking for the price information does not necessarily mean that they do not have the information. Rural youth can gain access to unsolicited information through other sources, such as friends, social networks, and radios. However, for those who do not have any access to any price information, such a negative information-seeking behaviour would be detrimental to their farming businesses. The result is that the youth end up selling their produce at whatever price that the hawkers are offering. This challenge of having negative information-seeking behaviour is higher among the rural youth actively engaged in primary agriculture. This affects their gainful employment in the sector. Discussions with the youth in the field revealed that some do not know where to look for such

information. Thus, it remains essential to create platforms for sharing market information that are accessible and affordable to rural youth.

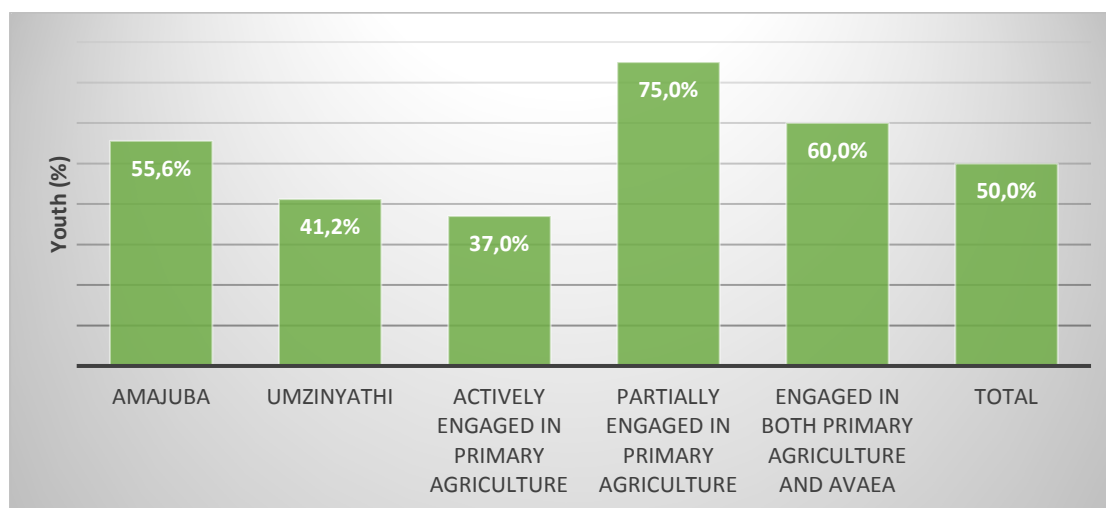


Figure 7.5: Do young farmers spend time looking for output price information before selling?

Source: Survey data, 2019

7.3 Indigenous knowledge and its importance to farming

As noted above, indigenous knowledge is important in rain-fed farming, especially given the numerous challenges that the rural youth encounter in farming. It is an essential source of critical information that could enhance the success of rain-fed agriculture. Indigenous knowledge forms the basis of how most local communities in SSA have been making important farm decisions on soil fertility management, crop variety selection, water conservation and environmental management, among other things (Nyong *et al.*, 2007; Chipfupa, 2017). The results noted in Chapter 5 have shown that most of the rural youth (71.8%) have some stock of indigenous knowledge related to farming. The most common form of indigenous knowledge concerns the use of various traditional methods of improving soil fertility, such as the use of cow dung or chicken droppings and eggshells as a form of fertiliser. This is meant to address the soil fertility challenges prevalent in some of the communities whose land has limited agricultural potential. Other common types of indigenous knowledge mentioned include the following:

- Use of aloe and snuff to treat certain ailments in livestock
- Traditional methods of treating diarrhoea in goats or cows after birth

- Use of natural herbs, ashes and soap water to control pests
- Feeding livestock with a certain herb that prompts them to return home on their own after grazing
- Use of certain tree species that increase growth (*muunga*) and treat worms in livestock
- Shelling grain by using a stick
- Putting scarecrows up in fields to scare away straying livestock
- Soaking seeds in seawater before planting to control potential infections
- Pouring chicken blood into irrigation water to improve plant growth
- Using traditional medicine to enhance goat breeding or fertility
- Castration of bulls using traditional equipment.

Most of the knowledge stock is in the domain of experienced and older farmers. Going forward, the key is how to transfer this knowledge to the youth so that they can use it and develop it further. The mentorship programme discussed above could assist in doing just that.

7.4 Opportunities and constraints for improving access to farming information among the youth

This study has identified some opportunities for improving the access to information among the youth in rain-fed farming and AVAEAs.

- Access to both traditional (radio and television) and modern ICTs (smartphones, social media) among rural people is quite high. This presents opportunities for strengthening the role of ICTs in the provision of information among the youth interested in farming. Platforms could be created, both on the internet and social media, which are specifically tailored to cater to the information needs of the youth already in farming, and those aspiring to join the sector. The platforms could be presented in various forms, starting from blogs where the youth can discuss and share information, experiences and ideas, and progressing to web pages or social media groups for sharing information on agricultural inputs and output markets, commodity prices, government programmes, and agricultural job and business opportunities. Other platforms could be linked to markets and thereby allow youth to participate in the markets through social media and the internet.
- The provision of affordable ICTs, including data bundles, is part of the seven priority areas that are the focus of the Government of South Africa in the coming decade. This

is an opportunity for improving existing ICT infrastructure and connectivity in rural areas. This also provides a platform for initiating detailed discussions among different stakeholders, including the government and the private sector, and thereby devise strategies for lowering the costs of data in the country. The reduction in the price of data bundles and airtime would allow for easier access to agriculture information among the rural youth.

- The government, through the KwaZulu-Natal DARD, has an agricultural extension system that is meant to service the rural communities. Traditionally, this system is designed to work with adults, who constitute most of the smallholder farmers in the rural communities. The same extension agents could also service the youth. However, the youth are a unique and dynamic group of people who respond, react and think differently to adults. Their mindsets, demands, tastes and preferences are different. A transformation is thus required in the agricultural extension system so that it can be adapted to service youth farmers. This entails the development of an agricultural extension framework to guide the provision of extension support to young people interested in farming. There is also a need for the training of extension agents on practical approaches and methodologies for engaging the youth along the food value chain.
- There are many agricultural resource persons and persons with expertise (teachers, other farmers, and government officials who are not necessarily extension officers) in the rural communities with a potential to support the youth in rain-fed farming in terms of information and advice. However, there are no existing platforms through which the youth can engage with such people. The creation of such platforms would enhance the access to farming information by the rural youth.

Evidence shows that the access to farming information among the rural youth is limited. This has affected their participation in both primary agriculture and AVAEAs, and the success of their enterprises. The following are the main constraints that hinder the youth in accessing information relevant to the agricultural sector.

- Poor infrastructure in remote areas results in low network connectivity and limits the youth from fully utilising ICT facilities to access information. Although internet connectivity in South Africa has improved generally, there are still challenges in the rural areas. The internet penetration figures for 2017 show that rural provinces, such as

KwaZulu-Natal (39.2%) and North West (32.1%), are low when compared with urban provinces such as Gauteng (54.7%) and Western Cape (75%), where connectivity is high (McLeod, 2017).

- Most sources of information for the youth are accessed through modern ICTs, such as the internet, social media, and phones. However, accessing information through these sources is not free and comes with a monetary cost associated with acquiring the ICT facilities or devices (smartphones), airtime, and internet and social media data bundles. Given the economic situation in rural areas, the use of modern ICTs by the youth is affected by affordability. This negatively impacts upon learning and skills development. However, alternative methods of gaining access to information (such as newspapers, radios and television) also require the youth to spend money to buy the devices and for the electricity to use them.
- Although the rural youth surveyed indicated ICTs as comprising an important source of information, the relevance and usefulness to farming or agriculture of the information currently received through these channels, mainly social media and internet, is limited. For example, only less than 15% rural youth have access to information related to agriculture through social media. This is a challenge that can easily be changed into an opportunity by improving access to production and market-related information among the rural youth in rain-fed farming.
- Limited access to agricultural training and advisory services is a significant challenge for rural youth. The traditional sources of information, such as agricultural extension officers, are not effective in providing adequate and relevant information to young people that would assist them in managing and enhancing the performance of their enterprises. Furthermore, the available agricultural training and advisory services are focused more on the youth who are actively involved in primary agriculture and AVAEAs, while neglecting those youth partially involved or not engaged at all.
- The rural youth in farming generally have a negative information-seeking behaviour. This means that they do not always deliberately take steps to search for and obtain the important information needed for their operations. This behaviour affects their access to critical information at crucial periods in their operations. A critical issue to note is that a person would not be able to demand information if the person does not know about its value. Accordingly, a lack of awareness about and knowledge of certain types

of information and their importance in farming could also be affecting the demand for such information by rural youth.

7.5 Market access

Entrepreneurship is a concept or practice that can hardly be realised in an environment where producers have no access to input and product markets (Kahan, 2012). Greater market access means increased trade, and from increased trade comes greater income growth. However, inasmuch as there is no commonly accepted definition of market access, there is no single agreed measure of market access in the literature. Drawing from the literature, after identifying the commonly produced crops and livestock, a number of market access indicators are assessed. These include variables such as distance to the source of major variable inputs, distance to point of sale, road type, road accessibility during different seasons, major sources of market information, access to extension services, and market-related transaction costs (e.g. market information and search costs, negotiation and bargaining costs, and monitoring and enforcement costs). It is important to include transaction costs in the indicators for market access, as they are generally considered as an embodiment of the barriers to market participation, particularly by poorly resourced producers (Key *et al.*, 2000). Although transaction costs are not easy to measure, several attempts have been made in the past to study the influence of transaction costs on the choice of marketing channels for African producers of various agricultural commodities, such as beef (Shiimi *et al.*, 2012), bananas (Woldi and Nuppenau, 2011) and coffee (Fafchamps and Hill, 2005). The detailed market access assessment among rural youth in farming will be provided in Chapter 7. However, a few of the above variables are briefly discussed here.

Participation in markets, both crop and livestock markets, is very low. Only 22.1% and 25.1% of the sampled youth participated in crop and livestock markets, respectively. Literature indicates that limited access to markets will hinder youth engagement in viable and sustainable agricultural ventures (Zeller *et al.*, 1998). The international influence exerted by supermarkets and the high standards of their value chains are also making market access for young rural farmers more difficult to attain (Food and Agriculture Organization, 2014). Training and the provision of market information to young farmers in remote areas could remedy this challenge and assist young farmers in identifying niche markets.

Figure 7.6 below shows that most of the youth who sell their crop produce, do so at the farm gate (36.4%) directly to consumers. Other common market outlets include van traders (22.7%),

shops in the nearest town, i.e. Ladysmith (22.7%), and local shops (20.5%). None of the sampled youth participates directly in the National Fresh Produce Markets or the local grain markets. There is always an intermediary who retains most of the value of the crop (Wale and Chipfupa, 2018). No value-adding activities were reported and accordingly the price obtained by the youth for their produce is quite low.

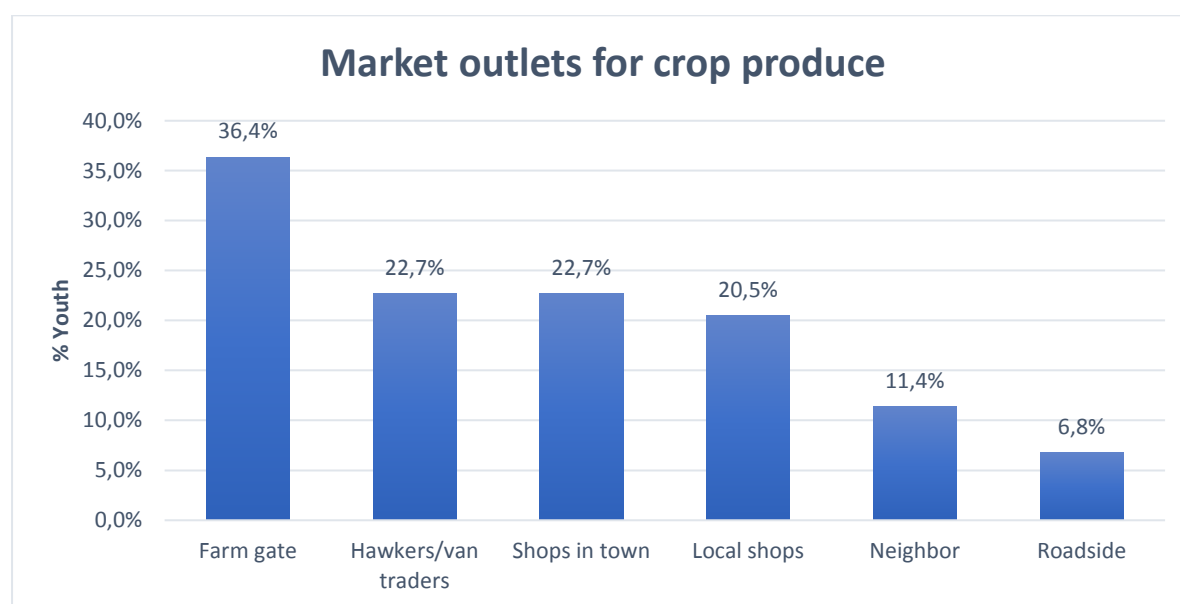


Figure 7.6: Market outlets for crop produce – observations from the sampled youth

Source: Survey data, October 2018

Similarly, the market for livestock is mostly local. Results show that 89% of those youth who sold their goats did so to community members, particularly for ritual purposes. The market for poultry (91%) is also provided by the local community, while cattle were mostly sold through local auction sales (58%) as well as directly to other community members (31.6%).

Table 7.10 below shows the average distances to the major input and output markets. The mean walking times needed to reach the nearest source of major inputs and the nearest point of sale are 56.33 and 52.69 minutes, respectively. However, considering these minimum and maximum distances, some of the youth farmers are noted to reside far away from the markets, and this would potentially affect their farming businesses. Such youth are most likely to incur higher transaction costs in market participation.

Table 7.10: Distance to the input and output markets – observations from sampled youth

	What is the walking distance to the nearest source of major inputs (minutes)				What is the walking distance to the nearest point of sale of your produce (minutes)			
	Alfred Duma	INkosi Langalibalele	Okhahlamba	Total	Alfred Duma	INkosi Langalibalele	Okhahlamba	Total
N	12	21	27	60	4	12	19	35
Mean	56.67	46.67	63.70	56.33	80.00	82.83	27.89	52.69
Std. Dev	33.39	55.99	69.00	58.54	66.96	89.43	34.25	66.00
Std. Error	9.64	12.22	13.28	7.56	33.48	25.82	7.86	11.16
Minimum	15.00	1.00	5.00	1.00	40.00	0.00	0.00	0.00
Maximum	120.00	240.00	360.00	360.00	180.00	270.00	120.00	270.00

Source: Survey data, October 2018

The types of road used by the youth to access the crop and livestock markets depend on the local municipality. Generally, an equal percentage of the youth indicated that they use gravel and paved roads to access the markets. However, comparing the municipalities shows that a higher proportion of the youth in Okhahlamba use gravel roads, compared with the other two areas, while more of the youth in Alfred Duma use paved roads to access the markets. From these results, one can infer that the youth in Alfred Duma and INkosi Langalibalele are served by better roads than those in Okhahlamba are, and hence will have a comparative advantage in the sale of their produce.

Table 7.11: Type of roads used to access markets – observations from sampled youth

Local municipality	Type of road used to access markets (%)			
	Gravel	Paved/tarred	Both	Total
Alfred Duma	26.7	60.0	13.3	100.0
INkosi Langalibalele	31.8	54.5	13.6	100.0
Okhahlamba	61.0	36.6	2.4	100.0
Total	46.2	46.2	7.7	100.0

Source: Survey data, October 2018

Owing to the types of roads, a higher proportion of the sampled youth in Okhahlamba indicated experiencing accessibility challenges during the rainy season (Table 7.12 below). Most of the youth in the other two municipalities reported that their roads are always accessible. Hence,

youth market participation will definitely be affected by the state of their roads. Road infrastructure is key to on-farm entrepreneurship and the aspirations of young people to engage in farming as a business (Kosec *et al.*, 2012; Chipfupa and Wale, 2018).

Table 7.12: Accessibility of major roads to markets

Local Municipality	Rate accessibility of major road to markets (%)				
	Not accessible at all	Not accessible during rainy season	Accessible	Some parts are accessible	Total
Alfred Duma	0.0	7.1	85.7	7.1	100.0
INkosi	5.0	25.0	70.0	0.0	100.0
Langalibalele					
Okhahlamba	2.5	52.5	45.0	0.0	100.0
Total	2.7	36.5	59.5	1.4	100.0

Source: Survey data, October 2018

7.6 Summary

This chapter aimed to assess the access to information and advisory and support services among the rural youth in rain-fed farming communities of the study areas. The findings show that access to relevant and adequate agriculture-related information (agricultural input and product market information) is a challenge for most rural youth. Youth have limited access to information on crop varieties, inputs, new technologies, markets, prices and climate. This limits youth participation in the sector because it affects the performances of the enterprises and hence, the incentives of the youth to engage in farming. The chapter summarises the common sources of information for the youth, including ICTs, training, and advisory services. It closes by describing the links between market information and market access, as well as indigenous knowledge (and its importance to farming) with opportunities and constraints for improving access to farming information.

8 YOUTH INTEREST (OR LACK THEREOF) IN SMALL-SCALE RAIN-FED CROP FARMING AND RELATED BUSINESSES: EMPIRICAL EVIDENCE FROM KWAZULU-NATAL

This chapter deals with youth interest (or lack thereof) in small-scale, rain-fed crop farming and related businesses. It presents empirical evidence on the factors affecting youth interest and participation in rain-fed crop farming and in value-adding economic activities. It also assesses the factors that affect youth interest (or lack thereof) in small-scale, rain-fed crop farming and related businesses.

8.1 Introduction

Over the years, smallholder agriculture has remained at the foundation of poverty reduction and economic growth, worldwide (Baiphethi and Jacobs, 2009). In most parts of Sub-Saharan Africa (SSA), smallholder agriculture, especially rain-fed farming, still holds the greatest potential (De Fraiture and Wichelns, 2010). The continent holds about 68.9% of unutilised rain-fed farming land (IWMI, 2000; Abrams, 2018), which can be used to meet future food demand by smallholder farmers. The agricultural sector, alone, employs more than half of the total SSA labour force, with approximately 80 percent working under smallholder farming (Food and Agriculture Organization, 2016). With poverty reduction and job creation being the priority of most African countries, smallholder agriculture is regarded as a solution to Africa's chronic problem of rural youth unemployment (Mathivha, 2012). In South Africa, agriculture is one of the sectors that serve as the backbone of the country's economy (DAFF, 2018). About 7 percent of the national formal employment is in this sector. In 2013, the sector was reported to contribute about 3 percent to the Gross Domestic Product (GDP). This highlights the importance of agriculture as an important sector for creating employment, food security, and sustaining the household livelihoods.

Despite its potential, there are multiple challenges in primary smallholder farming that make it less favourable for new entrants, particularly the youth, to enter into the sector. These challenges include limited water and land access, lack of market access and market information, lack of financial support, low returns on investments, and poor access to adequate information (Dorward *et al.*, 1998; Chikazunga *et al.*, 2007; Barrett *et al.*, 2010; Salami *et al.*, 2010). The challenges threaten the sustainability of the sector, especially given the ageing smallholder farming population, common across the African continent (Leavy and Smith,

2010; IFAD and FAO, 2014). Elderly smallholder farmers are less likely to adopt new technologies that are meant to increase agricultural productivity and food security, while protecting the environment (IFAD and FAO, 2014). In addition, the ageing smallholder farmer population, together with the negative perceptions that the youth have towards primary agriculture, have led to poor succession planning in the sector, which threatens its sustainability (LDA, 2005).

According to the FAO (2016), rural youth are the future of food security and rural poverty reduction. The African continent has one of the world's populations that are experiencing the youth population bulge. About 75% of the population is under the age of 35, and the youth population is expected to increase in the future (FAO, 2018a). In South Africa, in particular, the youth constitute nearly a third of the population (SA, 2019). Most of the youth are faced with major challenges, such as health problems (Bennell, 2007; Bennell, 2010), and socio-economic challenges, such as unemployment and poverty (Filmer and Fox, 2014). Among the challenges highlighted, unemployment is a serious problem among rural youth on the African continent, including South Africa. Although the problem of youth unemployment is seen as a global issue, the youth population bulge in Africa makes it more critical (Baah-Boateng, 2016). It makes it difficult for the majority of youth to be absorbed into the labour force (Proctor and Lucchesi, 2012). Hence, agriculture represents a sector of opportunities for the youth (Brooks *et al.*, 2013; Filmer and Fox, 2014; Moyo *et al.*, 2015). However, there is limited involvement by the youth in farming. Their potential to participate is also hampered by several challenges, such as limited access to land, markets and financial services (IFAD, 2014). Others choose not to pursue agricultural livelihoods because they view primary agriculture as being unattractive, old-fashioned, unprofitable and hard work (Leavy and Smith, 2010; Panel Montpelier, 2014).

Unlike primary smallholder agriculture, agricultural value chains seem to have the potential to attract people, especially the youth, into agriculture and create various income-generating opportunities. This could be attributed to its potentially desirable features in terms of the working environment not being considered “dirty” and potentially more financially rewarding. Agricultural value chains can be defined as the inter-linkage of economic activities that take place in livestock and crop production, from the initial stages of production up to the final stage of consumption (Haggblade *et al.*, 2012). This includes the vertical chains of activities, starting from input supply to production, through to processing and distribution, up to retailing to relevant consumers. Value chains also comprise horizontal coordination and linkages of stakeholders at the same level within the chain, such as group selling. Compared with primary

agriculture (3 percent), this component of agriculture contributes about 12% to the national GDP (Kuschke and Cassim, 2019). Such statistics suggest that agricultural value chains, as compared with primary agriculture, have relatively more potential for creating economically attractive, income-generating opportunities, particularly for rural youth. Hence, this chapter aims to assess the reasons for the interest/disinterest of the youth in small-scale businesses in the rain-fed, crop-farming food value chains. It also focuses on the motivations for encouraging participation of youth and opportunities for small-scale businesses in the rain-fed, crop-farming food value chains.

8.2 Research findings

8.2.1 Socio-demographic characteristics of the respondents

Table 8.1 below shows the socio-demographic characteristics of the respondents. The average age across all categories of youth is 26 years. However, when comparing the categories of youth, the findings indicate that those who are actively participating are older than those who are assisting at home are. These findings are in line with those of Kimaro and Towo (2015), who found that the younger youth are less likely to participate in farming, as compared with the older youth. This shows that maturity affects engagement in rain-fed smallholder farming. Youth who are mature and unemployed take a deliberate decision to start their farming activities so that they can earn a living. The average years of schooling received across all categories of youth is 11 years. There are no statistically significant differences in years of schooling across the different groups of youth. This means that the majority of the youth have completed grade 11, but not matric.

Table 8.1: Demographics of interviewed rural youth – continuous variable (N = 224)

Youth characteristics		Type of youth			Municipality		Total
		Actively participating	Assisting at home	Not participating	Dannhauser	Nquthu	
Gender (% youth)	<i>Female</i>	53.5	64.2	64	53.8	66.7	60.7
	<i>Male</i>	46.5	35.8	36	46.2	33.3	39.3
Occupation (% youth)	<i>Fulltime farmer</i>	100	0	0	39.4	25.8	0
	<i>Regular salaried job</i>	0	1.9	0	0	0.8	32.1
	<i>Temporary job</i>	0	11.3	8	7.7	5	0.4
	<i>Self-employed</i>	0	1.9	3	1	2.5	6.3
	<i>Student</i>	0	7.5	14	12.5	4.2	1.8
	<i>Unemployed</i>	0	75.5	8	39.4	61.7	51.3
Age		27.7 (5.1)	26.3 (4.2)	25.5 (5.4)	26.1 (5.4)	26.7 (4.8)	26.4 (5.1)
Years of schooling		11.8 (2.4)	11.7 (2.1)	11.2 (2.0)	11.7 (2.2)	11.4 (2.2)	11.5 (2.2)
Farming experience (years)		6.9 (5.2)	9.8 (6.5)	1.2 (3.3)	3.6 (4.4)	6.1 (6.9)	4.0 (6.0)
Non-agricultural business experience (years)		1.4 (3.2)	2.4 (3.9)	1.5 (4.6)	2.1 (4.9)	1.4 (3.0)	1.7 (4.0)

Note: standard deviations are shown within brackets ()

Source: Survey data, 2019

The average farming experience across all groups of the youth is 5 years. On average, the youth in Nquthu municipality have significantly more years of experience in farming (6 years), when compared with the youth in Dannhauser municipality (4 years). The youth who are assisting at home with rain-fed smallholder farming activities have the highest average farming experience, compared with those who are actively participating in farming. This means that the youth who are actively participating do not consider the years they were helping their parents in farming activities as being experience. Most youth start to learn farming from their parents from a young

age as part of their family chores. In general, the youth have moderate knowledge of farming practices.

More female youth were actively participating in rain-fed smallholder farming than the male youth were. In rural areas, males are more likely to migrate to cities/towns in search of employment opportunities, as compared with females (Muhwava *et al.*, 2010; Moses *et al.*, 2017). The results further indicate that 51.3% of the sampled youth were unemployed. Nquthu municipality has the highest percentage of unemployed youth (61.7%), compared with Dannhauser municipality (39.4%). The majority of the youth (93.3%) still live with their parents. This is consistent with the results of Auta *et al.* (2010), who found that a low proportion of youth were household heads, while the majority still lived with their extended families.

8.2.2 Current levels of youth participation

The study findings show that there is low participation of the youth in farming, more particularly in smallholder farming. Of the 224 youths interviewed, only 71 (31.7%) were engaging in either crop or livestock production or both. Livestock production involves keeping livestock, such as goats, cattle, sheep, broilers, domestic chickens, layers and pigs. Field crop production mostly involves growing crops such as maize, sweet potatoes, potatoes, pumpkins, and dry beans. Other crops grown mainly in gardens in the rainy season include tomatoes, cabbages, brinjals, green pepper and butternut. Table 8.2 below shows that 7.6% of the youth were involved in livestock production, 3.6% in crop production, and 20.5% in both crop and livestock production.

Table 8.2: Youth engagement in rain-fed smallholder farming activities

Youth engagement in rain-fed farming activities	Frequency	% of youth
Livestock production	17	7.6
Crop production	8	3.6
Both crop and livestock production	46	20.5
Total	71	31.7

Source: Survey data, 2019

The youth indicated that they keep livestock for consumption, sales (income), cultural reasons and wealth, as well as for draught power. The reasons for engagement in crop production

include consumption, income, employment creation, and wealth as well as draught power. However, most of the youth surveyed are engaged in livestock and crop production for their own consumption and income generation. This is in line with other studies that have indicated that smallholder farming is mainly conducted for the production of staple foods for the household's own consumption and income (Andrew *et al.*, 2003; Lahiff and Cousins, 2005).

Table 8.3 below shows the training received by the sample youth in both Dannhauser and Nquthu municipalities. About 32.6% of sampled youth stated that they had received training. The most common types of training received by the majority of the youth were in crop production (40.3%), agricultural commodity marketing (30.6%), packaging of fresh produce (26.4%), business planning (25%), pricing of produce (20.8%) and financial management (20.8%). The results also show they had limited access to training on the processing of farm produce (16.7%), business start-up (15.3%), and livestock production (9.7%). According to Alphaxard and Yannicke (2016), training on financial literacy, business planning, and sales is also important for youth in order for them to become better entrepreneurs in the agricultural sector.

Table 8.3: Training received by rural youth (%)

Type of training	Type of youth			Municipality		Total
	Actively participatin	Assisting at home	Not participatin	Dannhauser	Nquthu	
Crop production	53.1	13.3	40	48.7	10.8	40.3
Agricultural commodity marketing	37.5	20	28	30.8	30.3	30.6
Packaging of fresh produce	28.1	6.7	36	23.1	30.3	26.4
Business planning	21.9	33.3	24	25.6	24.2	25
Pricing of produce	25	13.3	20	20.5	21.2	20.8
Financial management	21.9	33.3	12	20.5	21.2	20.8
Processing of farm produce	21.9	6.7	16	15.4	18.2	16.7
Business start-up	15.6	20	12	15.4	15.2	15.3
Livestock production	12.5	13.3	4	10.8	9.1	9.7
Other	3.1	13.3	8	7.7	6.1	6.9

Source: Survey data, 2019

Most of the youth who are participating in rain-fed farming have received training in crop production. However, even those who are not participating in rain-fed farming have received training in various areas. During the interviews in Dannhauser municipality, most of the youth indicated that they have been offered training by the Provincial Department of Agriculture and Rural Development through the extension officers because they were promised that the government is going to introduce opportunities in farming. However, none of the youth indicated that they have received training in the areas of leadership.

8.2.3 Factors affecting youth participation

Baloyi (2010), one of the MSc students who contributed research under this Report, has examined the factors affecting youth participation in rain-fed smallholder farming. The multinomial logistic regression results (Appendix 3) show that marital status, experience, and time spent on social media increase the probability that rural youth will not participate in rain-fed farming activities relative to assisting at home. The factors that increase the probability of their participation include dependency ratio, access to agricultural training, access to land, cooperative membership, and self-confidence. An increase in the dependency ratio enhances the propensity of rural youth to actively participate in rain-fed farming, rather than assisting with farming activities at home, *ceteris paribus*. Their likelihood to actively participate in rain-fed smallholder farming activities, relative to assisting at home, increases by 7%. The higher the economic burden in youth households is, or the more dependents there are in the households, the more likely the youth would actively participate in rain-fed smallholder farming activities. In this regard, farming is taken as a source of income, which gives youth the ability to contribute (both in terms of food and income) to the welfare of their own families. The challenges at home drive them into farming as a way out of poverty (IFAD, 2013; Nwanze, 2014; IFPRI, 2016).

On the other hand, youth who are single are more likely to not participate in rain-fed farming activities, relative to assisting at home, *ceteris paribus*. This means that single youth are more inclined to make the decision to not engage in any agricultural activities, as they have freedom and are more independent. This result is consistent with other studies (Nnadi and Akwiwu, 2008; Kimaro and Towo, 2015). The most plausible reason for this finding is that most single youth still reside with their parents and, hence, have fewer responsibilities (Nnadi and Akwiwu, 2008). To a greater extent, this is true because being married brings about responsibilities, e.g. providing basic necessities such as foods, healthcare, education, and shelter (Douglas K *et al.*,

2017; Yunusa and Giroh, 2017). In addition, youth who are single are more mobile. Hence, they are in a better position to take advantage of job and business opportunities that are away from their homes. This flexibility in their movements increases their probability of not participating in rain-fed smallholder farming activities.

The results show that the experience of the rural youth in farming decreases the probability that they will not to engage in rain-fed smallholder farming activities, relative to assisting at home, *ceteris paribus*. This means it increases the probability of youth to engage in smallholder farming activities. However, the coefficient for the square of experience shows that the relationship is non-linear, and further increases in experience in turn increase the likelihood of youth not participating in smallholder farming activities, relative to assisting at home. Participation in smallholder rain-fed farming activities is more likely to increase with farming experience, up to a certain point where further experience decreases this likelihood. This suggests that, with more experience and exposure to the sector, youth might realise that farming is not an easy sector, especially given the hard work and frequent challenges. Coupled with the fact that smallholder agriculture is not a sector that generates ‘fast money’, this prompts them to turn away from agriculture and look for opportunities elsewhere. As shown in Table 8.4 below, rural youth face several challenges that negatively affect the profitability of smallholder farming businesses, and hence youth’s participation in smallholder farming. Consequently, this turns most youth away from farming. Accordingly, this reinforces the need for the government and its stakeholders to take into account factors that affect participation by the youth in farming in order to promote the sustainability in the sector.

Table 8.4: Constraints to engagement in rain-fed smallholder farming

Major challenges	% of youth
Lack of funding opportunities	82.2
Limited exposure to relevant opportunities in rural areas	76.8
Lack of knowledge and skills	79.4
Lack of access to relevant and adequate information	78.1
Poor access to markets	65.5
Lack of access to land	67.2
The high costs of data bundles	60.7
Poor infrastructure	58.0
Poor network connectivity	47.8

Source: Survey data, 2019

Furthermore, the rural youth with a member participating in rain-fed farming activities in their households are 38% less likely to not participate in rain-fed farming, relative to assisting at home, *ceteris paribus*. This means that they are more likely to participate, relative to those assisting at home. This reiterates the value of the demonstration effect on the youth's engagement in rain-fed smallholder farming activities. These findings are in line with a study conducted by Nnadi and Akwiwu (2008) who found that youth with other household members participating in farming activities (such as parents) have a higher probability of participating in farming. Having a household member engaged in farming activities, especially those performing better, influences or stimulates desire, interest, and engagement of the youth in farming.

Access to agricultural training significantly increases the probability of rural youth to actively participate in rain-fed smallholder farming activities by 14%, relative to assisting with farming activities at home, *ceteris paribus*. This is in line with several studies (Mutandwa *et al.*, 2008; Mapila *et al.*, 2012; Sinyolo and Mudhara, 2018) that have emphasised the importance of training in smallholder farming participation. As noted above, most of the youth interviewed have received training in the areas of crop production, agricultural commodity marketing, packaging fresh produce, business planning, pricing, and financial management. However, few had received training in livestock production and business start-up. Therefore, there is a need for providing training in areas such as livestock and business start-up, as they are important in smallholder farming.

Access to land increases the likelihood of youth participating in rain-fed smallholder farming activities, relative to assisting at home, *ceteris paribus*. This finding is consistent with several studies (Ghebru *et al.*, 2018; Maritim *et al.*, 2019; Twumasi *et al.*, 2019) that have empirically proven that access to land increases the probability of youth engagement in farming activities. Improved accessibility to land among the youth would encourage young people to think positively about farming activities, thus increasing their propensity to participate in farming activities (Douglas K *et al.*, 2017). This reinforces the need for the current land reform policies to place youth at the centre of their programmes in terms of land allocation. As highlighted above, most youth access land through their parents. This affects their decision-making, investments and improvements they can make in the land, as they do not have rights over the land. Therefore, this should be reconsidered in the land distribution programmes in order to increase the probability of participation by rural youth in rain-fed smallholder farming activities.

The results further show that the youth who are members of a farming cooperative are more likely to actively engage in rain-fed farming activities, relative to assisting at home, *ceteris paribus*. This increases their likelihood to participate in rain-fed smallholder farming by 57%, relative to assisting at home. The findings suggest that being a member in a farming cooperative makes it easier for youth to participate in farming. Farming cooperatives help to improve production through gaining access to resources and information through viable and strong connections with extension agencies (Msimango and Oladele, 2013). There is also potential to use the cooperatives as institutions for accessing both input and output markets. However, the functionality of farming cooperatives in South Africa is threatened by several challenges, such as lack of training, finance, and management skills, as well as conflict among members (Van der Walt, 2005). Therefore, this should be taken into account by the government and other stakeholders promoting collective action through cooperative development among the youth. Collective action institutions, such as cooperatives, can play key roles in reducing transaction costs among smallholder farmers, improving market access, and enhancing their bargaining power. Therefore, the youth should be provided with proper skills so that they can manage the cooperatives efficiently.

The results also show that spending more time on social media increases the probability of youth not to participate in rain-fed farming activities, relative to assisting in farming activities at home, *ceteris paribus*. This generally means that spending more time on social media decreases the participation by the youth in rain-fed smallholder farming activities. This result is in line with several studies (Kirschner and Karpinski, 2010; Othman *et al.*, 2017) that have found that spending more time on social media is negatively associated with academic performance. Although these studies are not in the agricultural sector, they show that time spent on social media has a negative effect on participation in something, productivity or performance. Most of the youth spend most of their time talking to friends and strangers, and following celebrities. The youth are also exposed to attractive lifestyles and attractive professions on social media, which affect the way in which they view farming, thus negatively affecting their participation in farming activities.

Negative perceptions related to farming decrease the probability of youth to engage in rain-fed smallholder farming activities by 26%, relative to assisting at home, *ceteris paribus*. This means that the youth who perceived farming as laborious are less likely to participate in rain-fed smallholder farming activities. Therefore, the way in which the youth view farming, whether positively or negatively, affects their participation in farming activities. This is supported by

other studies (Outley, 2008; Auta *et al.*, 2010; Kimaro and Towo, 2015; Cheteni, 2016; Douglas K *et al.*, 2017) that have reported that the perceptions of youth towards farming affect youth participation in farming. The findings suggest that the perception of the youth regarding farming is an important factor that determines their participation in smallholder farming. As noted in the literature, most youth view farming as being old-fashioned, unprofitable and a lot of hard work. Therefore, a change should be made to the way in which smallholder farming is practised through the introduction of machinery to make it less labour intensive. This could change the perceptions of youth towards farming, and positively influence their participation in rain-fed smallholder farming.

Moreover, self-confidence increases the likelihood that youth would actively engage in rain-fed smallholder farming activities, relative to assisting with farming activities at home, *ceteris paribus*. This means that the youth who are confident are more likely to actively engage in rain-fed smallholder farming activities. The results show that psychological capital is an important resource that youth should have in order to participate in the smallholder sector. Smallholder farming is a sector that faces several challenges; therefore, it needs youth with a mindset that says ‘I can do it’ and ‘I am prepared to face challenges’ (Chipfupa, 2017). Several studies (Cele and Wale, 2018; Chipfupa and Wale, 2018b; Chipfupa and Wale, 2018a; Phakathi and Wale, 2018) have demonstrated that psychological capital is an important factor for the aspirations of smallholder farmers and entrepreneurial development, as well as a productive use of irrigation water. Therefore, the incentives introduced to support youth engagement in farming should also concentrate on building a strong mindset for youth through training.

8.2.4 Youth perceptions towards rain-fed smallholder agriculture

According to the theory of reasoned behaviour, people’s perceptions and attitudes affect their reaction towards a particular activity (Fishbein and Ajzen, 2011). This study measured perceptions of the rural youth toward smallholder farming in order to determine whether they had a positive or negative attitude towards farming. The study assessed the extent to which youth agree or disagree with a number of statements to measure the perceptions of the youth toward rain-fed smallholder farming. Table 8.5 below shows that about 85.7% of youth agree and 6.7% disagree that rain-fed smallholder farming can be run as a profitable business. This indicates that rural youth view farming as they would any other profitable businesses. However, in practice, smallholder farming is not run as a business, and there are still inherent challenges, such as failure to keep records, thinking of farming as a way of life (and not a business), and

mixing family and farming operations. About 88.9% of the youth agree and 7.6% disagree that rain-fed smallholder farming can provide employment opportunities for rural youth. This indicates that rural youth believe that unemployment among youth can be addressed through participation in rain-fed smallholder farming activities.

Table 8.5: Youth perceptions towards rain-fed smallholder farming (%)

Perceptions	The extent of agreement (%)		
	Disagree	Neutral	Agree
Rain-fed smallholder farming can be run as a profitable business	6.7	7.6	85.7
Rain-fed smallholder farming can provide employment opportunities for rural youth	7.6	8.5	83.9
I prefer irrigated smallholder farming compared to rain-fed smallholder agriculture	20.2	9.9	69.9
Rain-fed smallholder farming is not for educated people	55.4	6.7	37.9
Rain-fed smallholder farming is attractive to the youth	42	12.1	45.9
Rain-fed smallholder farming is laborious	38.9	12.9	48.2
Rain-fed smallholder farming would be my last option for a career if I get options	64.3	8.5	27.2

Source: Survey data, 2019

Most of the youth (69.9%) indicated that they preferred irrigated farming, as compared with rain-fed smallholder farming. During the interviews, youth highlighted the shortage/variability of rainfall as a serious problem in rain-fed farming. On the other hand, 55.4% of the youth disagree that rain-fed farming is not for educated people. However, a significant 37.9% agree that rain-fed farming is not for educated people. In addition, 27.2% disagreed that rain-fed smallholder farming would be their last option for a career, if they were to get other options. The findings show that youth are willing to take care of their family as their livelihood strategy. However, the challenges highlighted above need to be addressed to achieve greater participation in farming. The results show that most of the youths interviewed have positive attitudes toward farming. This suggests that there is a potential for greater youth participation in rain-fed smallholder farming.

Comparing by level of engagement in farming, only 52.8 percent of the youth currently engaged in agriculture believe that they can become wealthy/rich through their engagement in the sector, compared with 84.2 percent of those not so engaged. This is worrying because this means that those engaged in agriculture are not experiencing the benefits from farming and do not see any value in continuing. An analysis of the sources of income showed that agriculture is the lowest source of income among the youth engaged in agriculture. This shows that monetary gains from their involvement are not being properly realised.

Table 8.6: Youth perceptions of agriculture

<i>Perceptions of agriculture</i>	Not engaged (n = 152)	Engaged (n = 72)
Agriculture can provide employment opportunities for the youth.	84.2	88.9
Agricultural enterprises can be run as a profitable business.	80.9	88.9
One can be wealthy/rich through engagement in agricultural activities	84.2	52.8
Agriculture is not for old and uneducated people only	55.9	52.8

Source: Survey data, 2019

8.2.5 Propensity of rural youth to participate in agricultural value-adding activities

Youth currently engaged in primary agriculture

As noted earlier in Sub-section 4.2.1, the youth who were already engaged in agriculture at the time of the study numbered 71. Within this group, the study aimed to assess their interest to engage in other agricultural activities, i.e. agricultural value-adding economic activities (AVAEAs) or in the whole value chain (engage in both primary and AVAEAs), relative to engaging in primary agriculture only. This was done to ascertain whether, given the opportunity, the rural youth already engaged in primary agriculture would continue practising primary agriculture, or whether they would switch to other “better” agricultural activities. Taking into account the fact that youth regard primary agriculture as a low-status job, this assessment was necessary. The questions that were presented to the youth were structured as presented in Table 8.7 below.

Table 8.7: Structure of the questions

Interest to engage in other agricultural activities	Response (Yes / No)
I am currently engaged in primary agriculture and would like to stay in this activity	
I am currently engaged in primary agriculture and would like to switch to AVAEAs	
I am currently engaged in primary agriculture and would like to do both	

Source: Survey, 2019

Figure 8.1 below shows that 78% of the rural youth who were already engaged in primary agriculture had an interest to participate in the whole value chain, meaning they aspired to incorporate AVAEAs into their existing primary agricultural activities. In the same regard, only 18% of the youth already engaged had no aspirations of switching to or adding AVAEAs to their primary agricultural activities. The graph also shows that only 4% of the youth were willing to switch from primary agriculture to AVAEAs. In general, the results show that the majority of rural youth are willing to learn and incorporate AVAEAs into their already existing primary agricultural activities. However, only a few are willing to completely switch to AVAEAs. This is reasonable, given that switching would require a major change in the activities that they are already comfortable and familiar with. Thus, from the results, it can be concluded that the expansion of engagement in AVAEAs among the rural youth practising primary agriculture should be done as an additional diversification strategy to their already existing agricultural activities, and not as a solitary option. There is a need, however, for further research to be done to identify factors that influence the shifts discussed above; that is, the willingness to stay in primary agriculture, to switch, or to incorporate AVAEAs by the youth already engaged in primary agriculture.

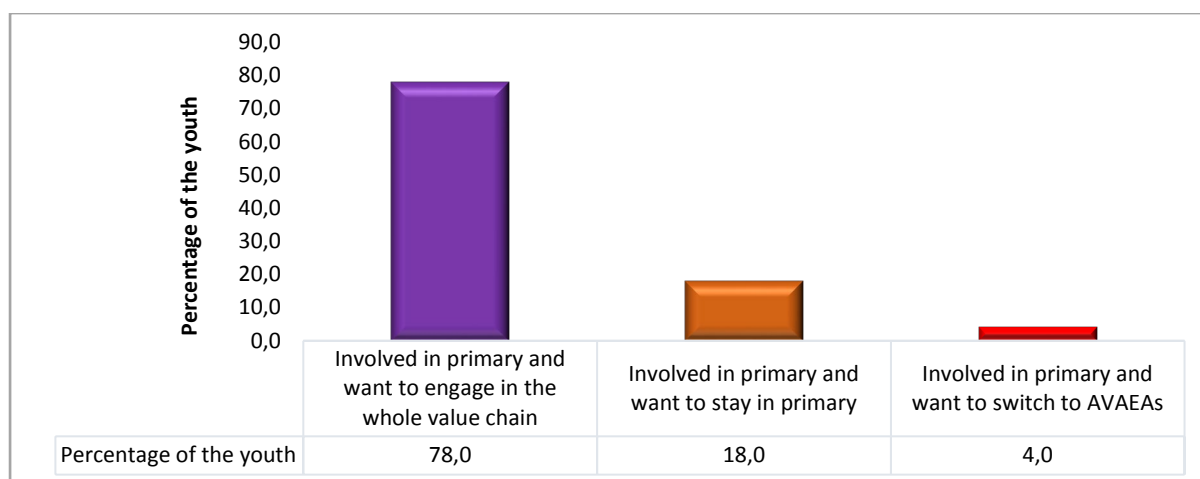


Figure 8.1: Aspirations of rural youth already in primary agriculture

Source: Survey data, 2019

Youth currently not engaged in primary agriculture

The youth who were not engaged in any agricultural activities were asked about their interests to engage in farming. The results indicate that more than half of the youth currently not engaged do have an interest to engage in agricultural activities (Figure 8.2 below). The majority of the youth prefer to engage in the whole value chain (incorporating primary and AVAEAs) rather than to engage in primary agriculture on its own. Only 18% of the youth are interested in engaging in primary agriculture, and this highlights very limited interest. These results are in line with findings by Bezu and Holden (2014) who found that rural youth do not prefer primary agriculture as their main livelihood strategy. In general, the results suggest that there is potential to engage the rural youth in agricultural activities, especially along the value chain. However, the question that remains is that, since the rural youth do aspire to engage in agricultural activities, why have they not initiated such activities already? This question is answered through an empirical analysis described in the following section.

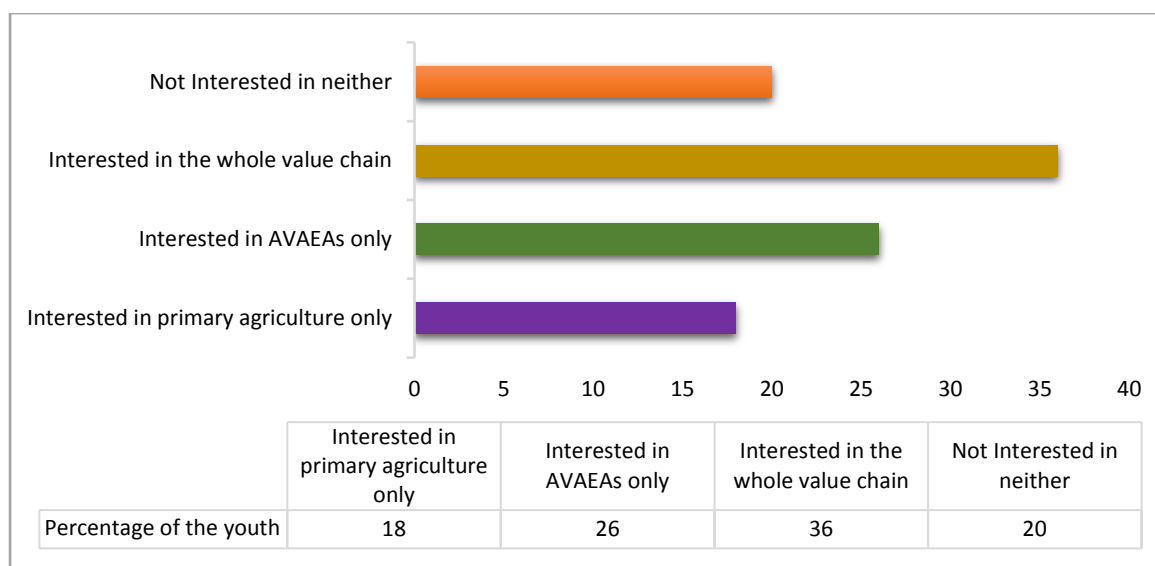


Figure 8.2: Aspirations of the rural youth not currently practising agriculture

Source: Survey data, 2019

Interest to engage in AVAEAs for the youth not engaged

Given the interest of the youth in AVAEAs, the study sought to ascertain what kinds of AVAEAs they would be interested and able to engage in, without major external support. The youth identified transportation of agricultural produce, processing of animal skins, and selling of fresh produce and inputs (Figure 8.3 below). In their reasoning, the above-identified activities require limited financial investments and relatively manageable skills endowment, and thus are easy to initiate. However, according to O'Planick (2016), transportation of agricultural produce is deemed less sustainable, as it is periodic and does not return the same remuneration as the transportation of passengers (taxi driving) does. Thus, although such an activity might be of interest to youth, its sustainability is less likely to be long-term.

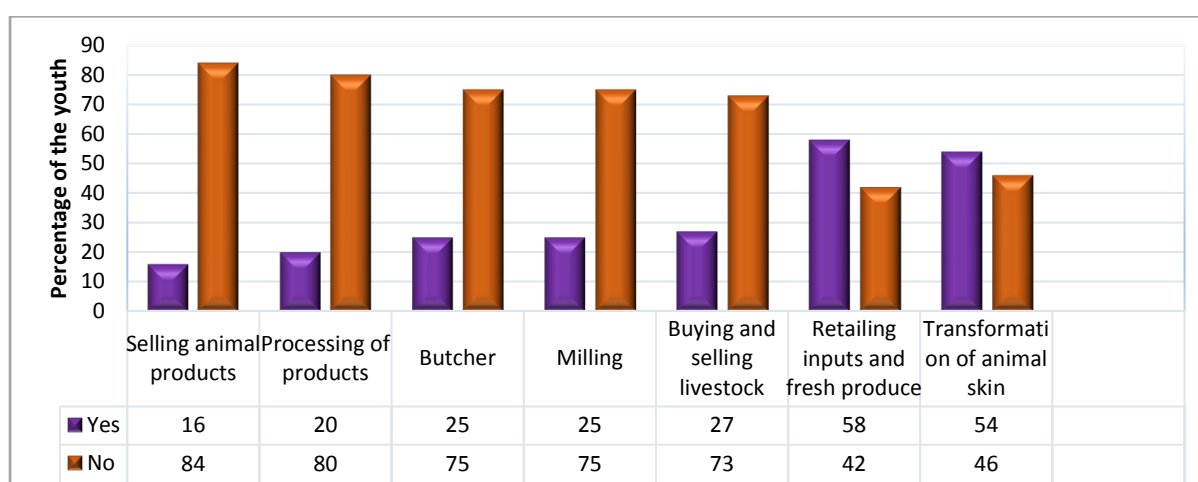


Figure 8.3: AVAEAs aspired to by rural youth

Source: Survey data, 2019

The buying and selling of animals, together with the selling of animal products, were the least of the AVAEAs that the rural youth aspired to engage in. The main challenge with these activities is that there are high rates of livestock theft in rural areas. Furthermore, the youth indicated that their families would use the livestock for family consumption, if kept in the household yard. Figure 8.4 below depicts the major challenges that the youth perceive to be limiting them from engaging in AVAEAs. A lack of capital for initial investment, lack of skills, and lack of equipment are the leading constraints hindering the rural youth from engaging in AVAEAs. These results are in line with findings reported by Ngore (2010), who identified finance as being the main constraint limiting youth engagement in agribusiness. Furthermore, the study results are in line with those of Mitchell and Coles (2011) and Adekunle *et al.* (2009), who also found the lack of skills and/or knowledge to be the limiting factors affecting youth participation in agricultural entrepreneurial activities.

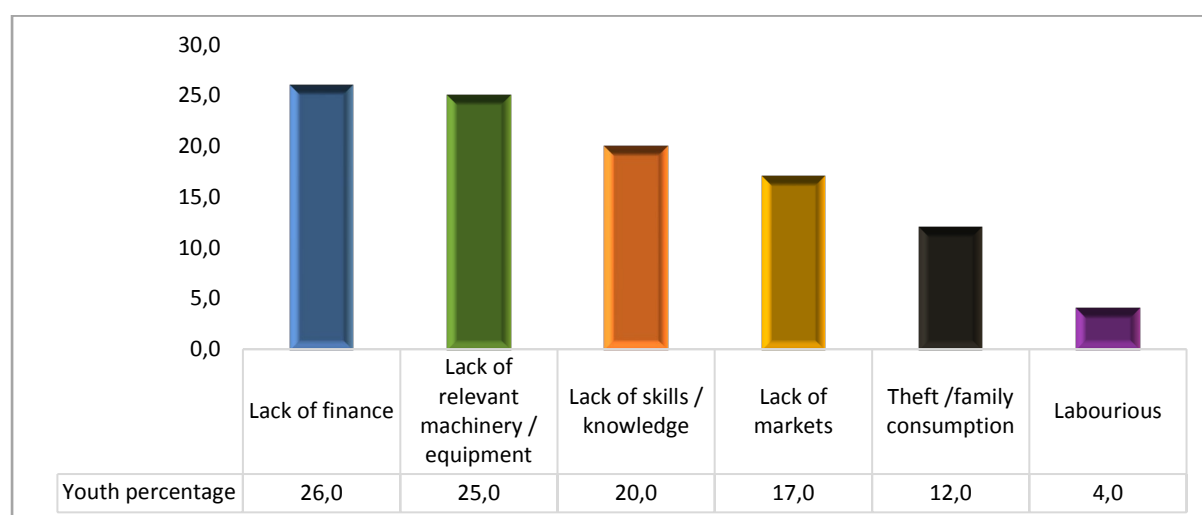


Figure 8.4: Perceived constraints hindering youth participation in AVAEAs

Source: Survey data, 2019

8.2.6 Factors behind youth interest (and lack thereof)

An empirical regression model was estimated, and the results are presented in Table A3.1 in the Appendix. The results suggest that location, age, education, social media, land, access to credit, having a household member in agriculture, training, positive psychological capital, dependency ratio, ICT, and wealth have a significant influence on the choice of agricultural economic activities that rural youth are interested to engage in.

Three variables affect the interest by the youth to engage in primary, in AVAEAs, and in the whole value chain, relative to not engaging in any agricultural activity. Having a household

member currently practising any form of agricultural economic activity increases the likelihood of youth being interested to participate in primary, AVAEAs and the whole value chain, relative to not participating, by 15%, 22%, and 2%, respectively. These results are in line with Morrow *et al.* (2005) and Casson and Giusta (2007), who classified youth as individuals whose decisions and aspirations are derived from the actions and successes of the people around them. Both those studies found that youth from successful, entrepreneur-headed households were more willing to initiate their own businesses, relative to their counterparts. Furthermore, Nnadi and Akwiwu (2008) found that the rural youth who participated in agricultural activities were typically youth whose parents were already involved in agriculture. Although questions as to whether their participation was voluntary or not remain unanswered, it is worth the attention to highlight the impact of social capital endowment, particularly the demonstration effect, for rural youth as an important aspect of enhancing their interest in agriculture.

Formal education significantly decreases the probability of the rural youth being interested in engaging in primary, AVAEAs, and the whole value chain by 1%, 4%, and 2%, respectively, relative to not engaging in any form of agricultural activity. The higher the level of formal education attained, the lower the likelihood will be of the youth being interested in engaging in agricultural economic activities. The better-educated youth aspire to take on other opportunities in government or the private sector. Although the study results are in agreement with the findings by Bezu and Holden (2014), who found formal education to be associated with the preference of youth for off-farm employment, they are in contrast with findings by Nnadi and Akwiwu (2008), who found education to have a positive relationship with youth participation in agriculture.

The reason for the negative association between formal education and the interest of the youth in agriculture, as found in this study, might be that the common economic activity in the selected districts where the data was collected, especially in Amajuba district, is manufacturing. Thus, youth in possession of matric might prefer to engage in such economic activities, and not in agriculture. Furthermore, the educated youth might believe that they stand a better chance of obtaining more rewarding employment in other sectors, when compared with their uneducated counterparts. The difference in active economic activities in the two districts is also highlighted by the significance of the variable “Location”. This variable indicates that the youth who reside in Umzinyathi district are more likely to be interested in participating in AVAEAs, and this likelihood is by a magnitude of 29 percent, compared with the youth residing in Amajuba district.

Furthermore, the rural youth who have access to credit are less likely to be interested in participating in any agricultural activity, relative to having no interest to engage in any. Their likelihood decreases by 10% for primary, 12% for AVAEAs, and 11% for the whole value chain. Further analysis shows that most of the youth with access to loans obtain them from the banks. This means that such youth who qualify for bank loans are those who are already employed in other sectors, or those who have already initiated businesses; hence, their lack of interest to participate in agricultural-related activities.

Access to social media (WhatsApp, Twitter, Instagram, etc.) significantly decreases the likelihood of rural youth being interested in engaging in primary agriculture only and AVAEAs only, relative to participating in none. In general, the results indicate that the rural youth who are engaged in social media are less likely to be interested in agricultural economic activities, relative to participating in none. These findings are worrying, given the transformation of the world by the 4IR. However, one would have expected this, given that, currently, there is very limited agricultural content on these platforms. The information typically found on these social platforms is related to entertainment, celebrities and luxurious lifestyles. This results in youth aspiring for such lifestyles through careers that would make them famous, like those in the entertainment industry. This can be attested to by the further analysis that showed that the role models of most of the youth are people in the entertainment industry, and not agriculture. The impact of the demonstration effect of social media content on the choices of the youth cannot be overstated.

It is then unexpected to ascertain that access to primary ICT assets like radio and television significantly increases the likelihood of youth being interested in partaking in AVAEAs, only, by 4%, relative to not participating in any given agricultural activity. This might be because the content chosen to be displayed in social media is dictated and controlled by the preference of the user, while that displayed on TV and radio is not. Youth with access to TV and radio have access to a variety of information, including agricultural information, through shows like “Living Land” on SABC 2, and this could be the reason for their interest to partake in primary agriculture.

The rural youth with positive psychological capital have an increased likelihood of being interested in participating in AVAEAs only and primary agriculture only by 3% and 6%, respectively. Given the demanding, volatile nature of income in the agricultural sector, it is understandable that only the youth who are endowed with psychological capital are more likely to engage in agriculture. Furthermore, considering the negative attitude that the youth generally

have towards agriculture-related activities, it will require a very confident youth to choose to overlook the challenges involved and nevertheless actively engage in agriculture-related activities.

Agricultural training significantly increases the probability of rural youth being interested in engaging in AVAEAs and in the whole value chain by 16% and 23%, respectively, relative to engaging in none. This means that the youth who have received agriculture-related training are more likely to be interested to engage in agricultural activities. This is in line with the findings by Adekunle *et al.* (2009) who indicated that a lack of skills is a hindering factor for youth involvement in agricultural economic activities. Taking into account the findings in Section 4.2.1.1 indicated that only a few youths have received agricultural training. Thus, skills development in the rural areas is necessary. Furthermore, the results of this study indicate that the rural youth who have access to land have an increased probability of engaging in the whole value chain by 9%, relative to not engaging in any agricultural activity. This is as expected, as land has been identified by past studies as being one of the major factors that affect youth participation in agriculture.

The results show that an increase in household wealth will decrease the likelihood of the youth being interested in engaging in the whole value chain by 9%, as compared with not participating in any agricultural activity. This means that youth from relatively wealthier families, who have seen that most of the wealth comes from non-agricultural sources, are less likely to be interested to engage in smallholder agriculture-related activities. These findings are in line with those of Zizzamia (2018) who highlighted the fact that youth, who have financial support from their families, are more likely to wait for what they perceive as “better jobs”, than their fellow counterparts are. Moreover, youth from wealthier families have the available resources to explore opportunities in urban areas. However, these results are contrary to those of Bezu and Holden (2014), who found that youth from families with relatively high asset values preferred farming as a livelihood strategy. In their reasoning, the authors stated that such youth have all the necessary resources to take advantage of the agriculture-related opportunities around them. The difference in the findings might be accounted for by the endowment in agriculture-related assets. Both studies, including this one, did not separate agricultural assets from the total household assets. Youth from a wealthier family that is endowed with greater agricultural assets might have the interest to engage in agriculture and utilise those assets. Furthermore, youth from a wealthier family not endowed with agriculture-related assets might not be

interested in engaging in agriculture. The youth in this study are mostly from households that are not well endowed with agricultural assets.

The greater the number of dependents (children and elders) there is in a household (labour-constrained households), the lower the likelihood will be of the youth from such a household being interested in participating in the whole value chain. Yobe *et al.* (2019) also found that households with more numbers dependents were less likely to choose an agriculture-dominant livelihood strategy. This might be because the available working population, including the youth, are then responsible to foster the dependents in the household and to also do household chores, leaving them with less remaining time to engage in other activities, including agricultural economic activities. These findings are similar to those of Todes *et al.* (2010) and Mutenje *et al.* (2010), who indicated that the dependency ratio has a significant influence on the economic activities that household members choose to do.

The square of the variable age shows a very interesting trend with the interest of the youth to participate in primary agriculture only. The trend indicates that age and the interest of rural youth to engage in primary agriculture have a “u” shaped relationship. This means that, at first, the interest to engage in primary agriculture decreases until a certain age, and then starts to increase again, as the youth get older. This is not surprising, as further analysis showed that the average age of the youth already engaged in agriculture is higher than that of those who are not engaged. Furthermore, at a younger age, the youth might show no interest in agriculture, as they still have hope and aspirations of obtaining employment in other sectors. As they get older, they realise the limited opportunities and increased responsibilities that come with age, and start to show an interest in engaging in primary agriculture.

8.3 Summary

This chapter has empirically examined youth interest (or lack thereof) in small-scale, rain-fed crop farming and related businesses. It has dealt with the factors affecting youth participation in rain-fed crop farming and value-adding economic activities. This is followed by an empirical assessment of the perceptions of the youth towards rain-fed smallholder agriculture. The factors that enhance or inhibit the propensity of the youth to participate in agricultural value-adding activities are described in the section that follows. Finally, the chapter dealt with the factors affecting youth interest (and lack thereof), using the survey data collected.

9 ASPIRATIONS AND GOALS OF YOUTH TO PARTICIPATE IN RAIN-FED CROP FARMING AND RELATED BUSINESSES

This chapter examines the aspirations and goals of the youth to participate in rain-fed crop farming and related businesses. This is done, taking into consideration their current engagement, resource endowment and the prevailing constraints.

9.1 Introduction

In Africa, more than 60% of the rural poor depend mostly on agriculture for their livelihoods (Abrams, 2018). Regardless of the continent's inconsistent and insufficient rainfall, agricultural production is mostly rain-fed (You *et al.*, 2011). Rain-fed agriculture in the Sub-Saharan Africa region represents 70% and 35% of the population's employment and Gross Domestic Product (GDP), respectively. In South Africa, rain-fed farming includes both livestock and crop production, and plays a vital role in the country's agricultural sector. Most crops (such as maize, sunflower, sugar cane, and sorghum) that contribute significantly to food security are produced under rain-fed farming. In addition, livestock production, mainly cattle and sheep, also contributes significantly to food security and sustainability (Hardy *et al.*, 2011). The agricultural practices in rain-fed areas are dominated by smallholder farmers (Rockström, 2003; Abrams, 2018). Globally, there are approximately 500 million smallholder farmers (IFPRI, 2016). About 80% of the food consumed in most developing countries is produced by smallholder farmers (IFAD, 2013).

One of the major problems regarding African agriculture is the ageing smallholder farming population (Leavy and Smith, 2010; IFAD and FAO, 2014). These older smallholder farmers are less likely to adopt new technologies for increasing agricultural productivity and ensuring food security for the growing population while protecting the environment (IFAD and FAO, 2014). In addition, the lack of a succession plan also threatens the sustainability of smallholder farming (LDA, 2005).

The African continent represents one of the world's populations that are experiencing a youth population bulge. Approximately 75% of the population is under the age of 35, and is expected to increase in the future (FAO, 2018a). In South Africa, in particular, the youth constitute nearly a third of the population (StatsSA, 2019a). Most of the youth are faced with major challenges, such as malnutrition, malaria, and HIV/AIDS (Bennell, 2007; Bennell, 2010) and socio-economic challenges such as unemployment and poverty (Filmer and Fox, 2014). Among the

challenges highlighted, unemployment is a serious problem among the rural youth on the African continent, including in South Africa. Although the problem of youth unemployment is seen as a global challenge, the youth population bulge in Africa makes it more critical (Baah-Boateng, 2016). With the African continent continuing to experience a growing youth population bulge, it will be difficult for the majority of the youth to be absorbed in the labour force (Proctor and Lucchesi, 2012). Agriculture represents a sector of opportunities for the youth (Brooks *et al.*, 2013; Filmer and Fox, 2014; Moyo *et al.*, 2015). However, there is a limited involvement of the youth in farming. Their potential to participate is also hampered by several challenges, such as limited access to land, markets and finance (IFAD, 2014). Some of the youth are choosing not to pursue agricultural livelihoods because they view agriculture as being unattractive, old-fashioned, unprofitable and hard work (Leavy and Smith, 2010; Panel Montpelier, 2014).

Over the years, agriculture has remained at the foundation of poverty reduction and economic growth, worldwide (Baiphethi and Jacobs, 2009). In most parts of the Sub-Saharan Africa (SSA) region, agriculture is at the centre of food security and employment. The agricultural sector, alone, employs more than half of the total SSA labour force, with approximately 80 percent being in smallholder farming (Food and Agriculture Organization, 2016). With poverty reduction and job creation being the priority of most African countries, the importance of smallholder agriculture for the livelihoods of many people, especially rural households, cannot be ignored. In South Africa, agriculture is one of the sectors that is considered as forming the backbone of the country's economy (DAFF, 2018). About 7 percent of the formal national employment is in the sector. Furthermore, its contribution to the country's economic growth cannot be overlooked. In 2013, primary agriculture (without accounting for its contribution along the value chain) was reported to contribute about 3 percent to the GDP. This highlights the importance of the sector to employment creation, food security, and sustaining household livelihoods.

Increasing involvement in agriculture, particularly through expanding primary smallholder agriculture, has the potential to assist in poverty alleviation, reducing unemployment and increasing incomes for rural households. There are, however, various challenges in primary smallholder farming that make it less favourable for new entrants, particularly the youth. These challenges include limited access to water and land, lack of market access and market information, lack of financial support, low returns on investment, and poor access to adequate information (Dorward *et al.*, 1998; Chikazunga *et al.*, 2007; Barrett *et al.*, 2010; Salami *et al.*,

2010). These challenges remain in the sector, despite various interventions by the government and other stakeholders made through different policies and programmes. Given these challenges and also considering the negative perceptions that the youth generally have towards primary agriculture (Wale and Chipfupa, 2018), it is as expected that the sector is experiencing poor succession planning. Given the high youth unemployment and the prioritisation of the smallholder sector as part of the broader job creation strategy (National Development Plan Vision 2030), the low participation of the rural youth in farming is a major rural development paradox. It is a question that requires further research to be done as to why there is both rampant rural youth unemployment and lack of interest to make a living from agriculture by the youth.

Unlike primary smallholder agriculture, agricultural value chains have the potential to attract people, especially the youth, into agriculture and create various income-generating opportunities. This could be attributed to its potentially desirable features in terms of the working environment not being considered “dirty” and possibly being more financially rewarding. Agricultural value chains can be defined as the inter-linkage of economic activities that take place in livestock and crop production, from the initial stages of production up to the final stage of consumption (Haggblade *et al.*, 2012). This includes the vertical chains of activities initiating from input supply, to production, through to processing and distribution, up to retailing to relevant consumers. Value chains are also composed of horizontal coordination and linkages of stakeholders at the same level within the chain, such as group selling. Compared to the 3 percent contribution of primary agriculture, this component of agriculture contributes about 12 percent to the national GDP (Kuschke and Cassim, 2019). Such statistics suggest that agricultural value chains have relatively more potential for creating economically attractive income-generating opportunities, particularly for rural youth.

Entrepreneurship has been recognised providing as a strategy for transforming the agricultural sector and addressing the problem of rural youth unemployment (Sidhu and Kaur, 2006; Alsos *et al.*, 2011). On the African continent, entrepreneurial potential has been recognised among smallholder farmers (Juma and Spielman, 2014). Therefore, there is a need for multi-faceted interventions to be made to support the rural youth for entrepreneurship development in smallholder farming and to motivate the rural youth to view agriculture as a career of opportunity. Such interventions have to be informed by empirical evidence. Furthermore, the increasing role of Information and Communication Technologies (ICTs) in agriculture has shown the potential to attract youth in the agricultural sector, since they are a ‘techno-savvy’ generation. The improved use of ICTs would improve agricultural technology adoption,

entrepreneurship, and profitability in the sector, encouraging the youth to participate more in agriculture, more particularly in smallholder farming (Irungu *et al.*, 2015). In addition, and unknown to many, ICTs can play an essential role in addressing the challenges of smallholder farmers highlighted above and improve the livelihoods of the rural poor (Khazaeli *et al.*, 2018). Therefore, in order to address the problem of rural youth unemployment through the inclusion of the youth in rain-fed smallholder farming and the establishment of the small farming businesses, there is a need to examine their levels of entrepreneurial endowment and to understand what influences them to participate (or not) in rain-fed smallholder farming.

9.2 Results and discussion

An analysis was conducted to gain an understanding of the characteristics of the rural youth interviewed, their demography, resource endowments, interests in primary agriculture and value-adding activities, endowment with positive psychological capital, and opportunities for and constraints against engaging in rain-fed smallholder farming. The statistics compare the asset endowments against the socio-economic and demographic characteristics of the youth according to their typology and location.

9.2.1 Description of the youth demographics

As shown in the statistics reported in Table 9.1 below, there is a significant difference between the genders regarding youth typology and location. In general, the sample is dominated by women (60.7%). The reason for this could be that, in rural areas, men often migrate to search for employment opportunities in cities, often leaving behind women in rural areas. Furthermore, within the youth already engaged in agriculture, the same pattern is seen, as more than 50 percent of the sample comprise women. It could be that the men remaining in the rural areas often take up other responsibilities, such as taking care of the livestock or relatively more demanding jobs like bricklaying, resulting in their limited involvement in agriculture.

The results also indicate that most of the youth interviewed were unemployed. This is not surprising, given the unemployment statistics of the country and those of the province in which this study was conducted. The average age of the sampled youth is 26.4 years. The t-test, however, highlights a statistical difference in the age distribution between the two types of youth, 27.7 and 25.8 years for those engaged in agriculture those and not engaged, respectively. There is no statistical difference in the dependency ratio among the youth, based on engagement in agriculture and location.

Table 9.1: Demographic characteristics of the youth (percentages) (n = 224)

Demographic characteristics		Districts			Youth engagement in agriculture			Total n = 224
		Amajuba (n = 104)	Umkhanyakazi (n = 120)	Chi square test	Engaged (n = 72)	Not engaged (n = 152)	Chi-square test/ t-test	
Gender	Female	53.8	66.7	3.8**	52.8	64.5	2.8*	60.7
	Male	46.2	33.3		47.2	35.5		39.3
Marital status	Single	94.2	98.4	2.9	94.4	97.3	6.7**	96.5
	Married	3.8	0.8		5.6	0.7		2.2
	Cohabiting	1.9	0.8		0	2.0		1.3
Main occupation	Full-time farmer	22.5	39.4	20.2***	94.4	0.0	216.1** *	30.4
	Regular salaried job	0	0.8		1.4	0.0		0.4
	Temporary job	7.7	5.0		4.2	9.2		6.3
	Self-employed	1.0	5.0		0.0	2.6		3.1
	Student	12.5	4.2		0.0	11.8		8.0
	Unemployed	39.4	62.5		0.0	76.3		51.8
Age		26.1	26.6	-0.8	27.7	25.8	2.6**	26.4
Household size		6.4	6.9	0.0	6.3	5.9	0.4	6.9
Dependency ratio		2.3	1.4	0.9	1.9	1.2	1.1	1.6

Source: Survey data (April 2019)

Table 9.2 below shows the family structures of the sampled youth. The chi-square test indicates a significant difference between the two groups. Most of the youth reside with their paternal/maternal families (86 percent), with a very limited percentage (4 percent) who reside with their own families. Nevertheless, the impact of the demonstration effect should be noted.

Table 9.2: Family status of the youth (in percentages)

Household characteristics		Type of youth			
		Engaged (n = 72)	Not engaged (n = 152)	Chi- squa re test	Total (n = 224)
Family status	Stays alone	3.0	9.0	0.9	10.0
	Stays with own family	13.0	5.0		4.0
	Stays with maternal/pater nal family	84.0	86.0		86.0

Source: Survey data (April 2019)

9.2.2 Current engagement of the youth in agriculture

Table 9.3 below classifies the youth by their current engagement in agriculture. The chi-square test indicates a significant difference between the two groups. About 83 percent of the youth engaged in agriculture have family members already participating in the sector, compared with the 58 percent of the youth who are not engaged. This is in line with Eddy *et al.* (2010a), who identify youth as people whose interests/aspirations are evidence-based. Thus, it then becomes plausible to assume that the engagement of the youth in the sector is a result of a direct influence experienced from the members of the households already engaged. However, one can argue that the engagement of the youth in the sector, given the household member participation, does not necessarily reflect interest. It might be that the youth are obligated to assist their parents in maintaining the family farm/garden (Ahaibwe *et al.*, 2013). Such a claim is also supported by the family structure of the sampled youth.

Table 9.3: Involvement of the youth in primary agriculture (percentages)

Household characteristics		Type of youth			Total (n = 224)
		Engaged (n = 72)	Not engaged (n = 152)	Chi- squa re test	
Any of the household members involved in primary agriculture?	Yes	83.3	58.6	13.5* **	66.5
	No	16.7	41.4		33.5

Source: Survey data (April 2019)

The sample selected for study is comprised of two different groups of rural youth: the youth who are already actively engaged in agricultural activities, and the youth who are currently not engaged in any agriculture-related activities. For ease of reference, the youth engaged in agricultural activities will be referred to as “engaged,” and the youth who are currently not engaged in any agricultural activities will be referred to as “not engaged”. Youth engaged refers to those taking part in primary agriculture only because of the absence of youth engaged in other agricultural activities in the selected districts. Table 9.4 below shows the frequency of the two groups of youth in the sample. The majority of the respondents was sampled from the Umzinyathi district, relative to Amajuba, to account for the differences in the total population of the two districts (Amajuba total population = 499 839 and Umzinyathi total population is = 510 838).

Table 9.4: Youth engagement in agriculture (n = 224)

Youth typology	Districts		Total
	Amajuba	Umzinyathi	
Engaged	41.0	31.0	72.0
Not engaged	63.0	89.0	152.0
Total	104.0	120.0	224.0

Source: Survey data (April 2019)

There is very limited youth participation in agricultural activities, not only in the two districts, but also in South Africa and in most parts of the SSA region (Aphunu and Atoma, 2010; Abdullah and Sulaiman, 2013; Ahaibwe *et al.*, 2013; Bezu and Holden, 2014; Adesina and Favour, 2016).

9.2.3 Resource endowment of the rural youth

This research utilises the SLF, which considers all the resource bases of an individual, including their vulnerability, challenges, and strengths in choosing and maintaining a livelihood strategy (Ellis, 1998). This sub-section details the resource endowments of the youth. This sub-section compares the youth not engaged and the youth engaged in terms of their endowments in human, financial, social, natural, physical, and psychological capital. Furthermore, the descriptive elements compare the perceptions and entrepreneurial traits endowed among the two different groups of the youth.

(i) Human capital

The skills and cognitive knowledge that one is endowed with have a role in influencing one's ability and interest to partake in or initiate a particular activity. Human capital forms part of the managerial skills component of entrepreneurship, as pointed out in Section 3. Endowment in education, skills, and training plays an important role in enhancing the entrepreneurial capabilities of an individual. Thus, Table 9.5 below presents the human capital endowments of the sampled youth. A relatively higher percentage (45.8) of the youth not engaged in agriculture have post-matric qualifications, relative to those engaged (28.3). This suggests that the educated youth do not have the interest to participate in agricultural activities, and are keen to do something else. This supports the findings reported by Bezu and Holden (2014) and Abdullah and Sulaiman (2013) that linked formal education to exposure to and preference for off-farm wages and/or livelihood strategies.

Table 9.5: Human capital endowment of the youth (in percentages)

<i>Types of skills</i>	Not engaged (n=152)	Engaged (n=72)	Chi-Square test
<i>Formal Education</i>			
Have tertiary qualification (post-matric)	45.8	28.3	8.5**
<i>Training</i>			
Have received agriculture-related training	26.3	46.5	7.6*
Have attended leadership-related training	75.7	66.7	4.0
Have exposure to business planning	57.9	47.2	2.5
Have exposure to financial recording	63.2	55.6	4.2
<i>Managerial skills (Soft skills)</i>			
I am willing and able to delegate and allocate tasks	51.3	69.4	8.2*
I prefer planning things before I execute them	91.4	94.4	5.1
I often manage to finish tasks within the time I set to complete the tasks	38.8	34.7	7.1
I prefer to be in leadership positions whenever I am in a group	58.5	58.3	0.1

Source: Survey data (April 2019)

Over the years, the South African Department of Agriculture, Forestry, and Fisheries has initiated programmes and projects with the aim of transferring skills and knowledge to all youth, regardless of whether they are engaged in the agricultural sector or not. These initiatives include agriculture-related learnerships, internships, and training/workshops (AgriSETA, 2016). However, the results of this study suggest that these training sessions did not reach all the youth. Table 9.5 above shows that only 46.5 percent of the youth engaged in agriculture

received agricultural-related training. These statistics suggest a need for agricultural training within the youth in the sampled areas.

The study further shows that about 47.2 and 57.9 percent of the youth engaged and not engaged, respectively, have exposure to business planning. This is unexpected, as one would expect the youth already in agriculture to have had greater exposure to business planning, as they are currently managing and running their agricultural businesses. These low statistics support Kahan (2012) and Wale and Chipfupa (2018), who stated that farming initiatives in remote areas are often run as a means of obtaining a living, and not as a business initiative. This explains why the majority of youth who are running agricultural initiatives do not have business plans or exposure to business planning. This mindset should be changed for any transformation to be realised in rural communities. Farming enterprises should be recognised and operated as business entities.

Concerning soft managerial skills as being relevant to entrepreneurship, both groups of the youth show a relatively high percentage of endowment in planning, delegation, and leadership skills. However, the two groups have a low percentage of individuals endowed with time-management skills. Their inability to manage time is likely to affect their productivity when/if such youth initiate businesses. Since time management can be learned and improved on through experience, it should not be seen as a constraint.

Training received by the youth

Table 9.6 below shows the training received by the sample youth in both the Dannhauser and Nquthu municipalities. About 32.6% of the sampled youth reported that they had received training. The most common types of training received by the majority of the youth are on crop production (40.3%), agricultural marketing (30.6%), packaging of fresh produce (26.4%), business planning (25%), pricing of produce (20.8%), and financial management (20.8%). The results also show their limited access to training on the processing of farm produce (16.7%), business start-up (15.3%), and livestock production (9.7%). According to Alphaxard and Yannicke (2016), training on financial literacy, business planning, and sales are also important for youth in order for them to become better entrepreneurs in the agricultural sector.

Table 9.6: Training received by rural youth (%)

Type of training	Actively participating	Assisting at home	Not participating	Dannhauser	Nquthu	All sampled youth
Crop production	53.1	13.3	40	48.7	10.8	40.3
Agricultural commodity marketing	37.5	20	28	30.8	30.3	30.6
Packaging of fresh produce	28.1	6.7	36	23.1	30.3	26.4
Business planning	21.9	33.3	24	25.6	24.2	25
Pricing of produce	25	13.3	20	20.5	21.2	20.8
Financial management	21.9	33.3	12	20.5	21.2	20.8
Processing of farm produce	21.9	6.7	16	15.4	18.2	16.7
Business start-up	15.6	20	12	15.4	15.2	15.3
Livestock production	12.5	13.3	4	10.8	9.1	9.7
Other	3.1	13.3	8	7.7	6.1	6.9

Note: This is a multiple-response question and hence the responses do not add up to 100%.

Source: Survey data, 2019

Even those youth who are not participating in rain-fed farming have received training in various areas. During the interviews in the Dannhauser municipality, most of the youth indicated that they had been offered training by the Provincial Department of Agriculture and Rural Development through the extension officers, as they were promised that the government would be going to introduce opportunities in farming. However, based on the results, none of the youth indicated that they had received training in the areas of entrepreneurship. This reinforces the need for such training, particularly in starting and running a profitable business. Figure 9.1 below describes the training providers for the interviewed youth. Extension officers, provided through the DARD, are the leading training providers, while other training providers include fellow farmers, private companies, non-governmental organisations (NGOs), and parents/relatives.

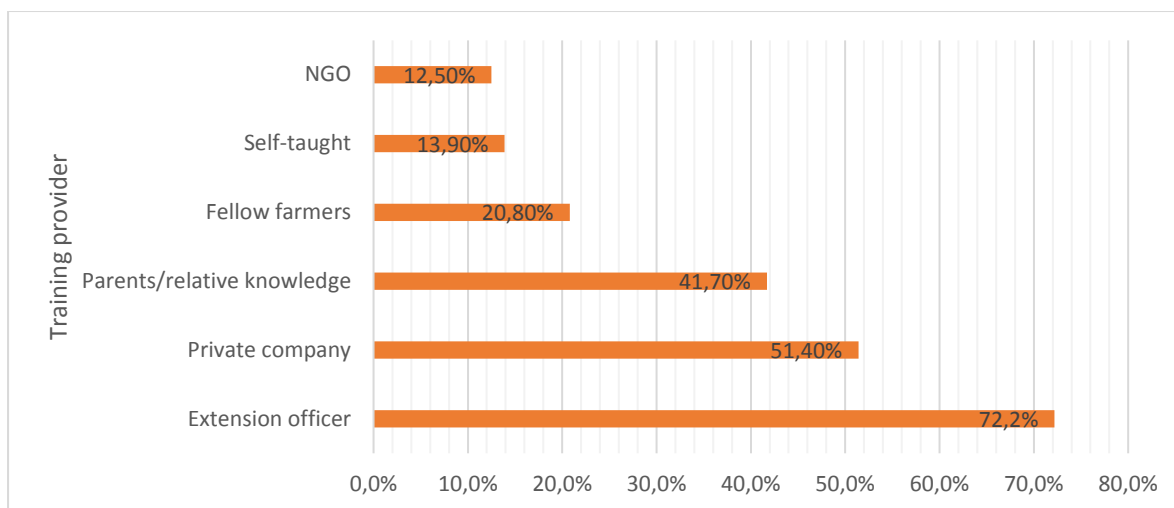


Figure 9.1: Training providers for rural youth (%)

Source: Survey data, 2019

(ii) Social capital and access to information

The importance of social capital endowment among the youth cannot be overemphasised, given the impact it has on the decisions the youth make. Furthermore, considering the influence of the demonstration effect and social validation on the behaviour and choices of the youth, it is essential to integrate social capital endowment when exploring their interest in agriculture or any sector. Morrow *et al.* (2005) identify youth as individuals who make decisions and choices, based on what they see. Furthermore, Ray (2006) and Bernard *et al.* (2014) have highlighted the point that people's aspirations are often derived from the achievements of others around them. Given this, this study endeavoured to understand if the youth have role models that they admire and wish to emulate (Figure 9.2 below).

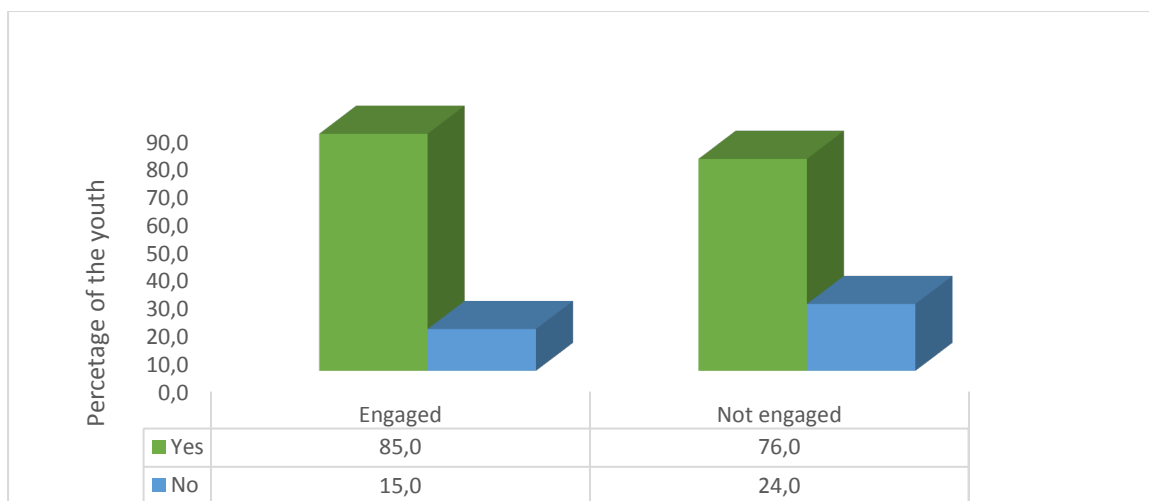


Figure 9.2: Do the youth have a role model? (n = 224)

Source: Survey data (April 2019)

The majority of the youth in both groups do have role models. The study further sought to identify the sectors in which the youth have role models (Figure 9.3 below). The figure indicates that the majority of the youth engaged in agriculture have role models in the entertainment industry, education and agriculture, while those not engaged have role models in entertainment, education, and manufacturing. The commonalities of these findings suggest that the youth in both groups look up to individuals in entertainment, that is, singers, actors, bloggers, etc. This is expected, given the information that they receive through social media (Table 7.5). This makes it essential to integrate information about agriculture into social media platforms. Agriculture should be marketed and promoted like the entertainment industry.

The distinguishing factor among the two youth groups is the third sector, where their respective role models are in. For the engaged youth, their third frequent sector of their role models is in agriculture. They are inspired and wish to imitate people who are doing the same things as they are doing, suggesting the importance of the demonstration effect.

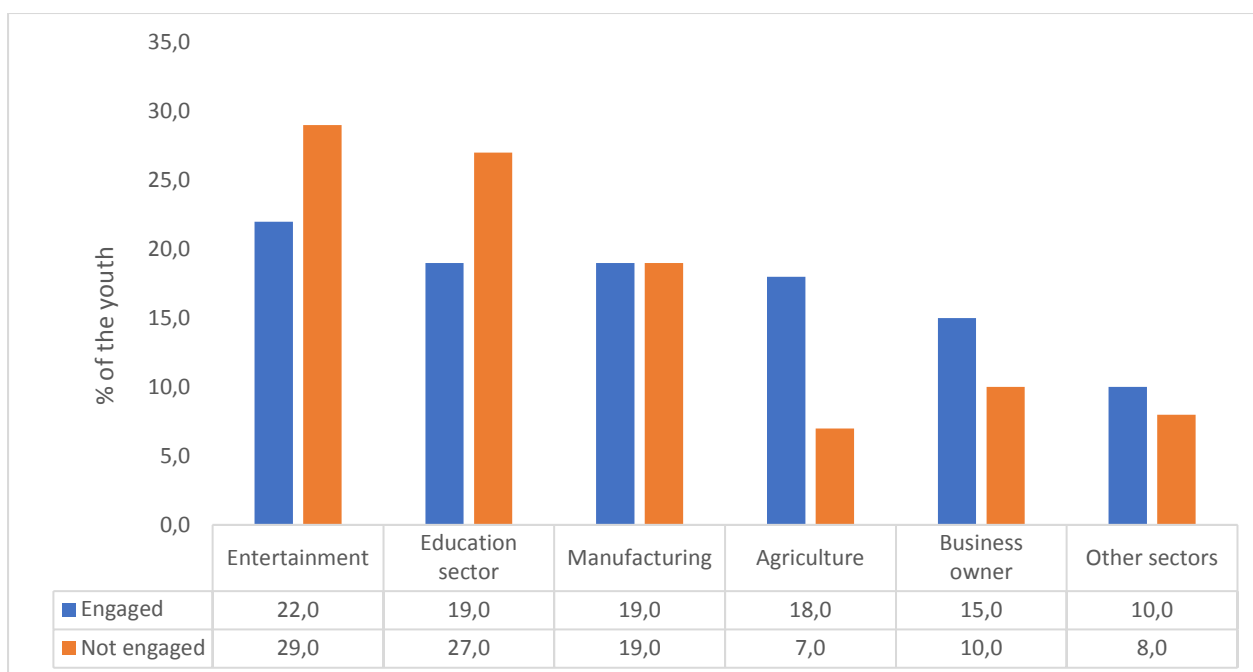


Figure 9.3: Youth role models per sector (n = 224)

Source: Survey data (April 2019)

Figure 9.4 below presents information about the role models in the respective study areas. The youth in Umzinyathi have role models in entertainment, the education sector, and agriculture, while those in Amajuba have role models in entertainment, manufacturing and education. Given the economic structures of the two districts, it is expected for the youth in Amajuba to have role models in the manufacturing sector. It is worth noting that the majority of this manufacturing involves chrome chemicals, and not agro-processing. However, the presence of these manufacturing activities in the district might be an indication that the district has an environmentally allowing structure for manufacturing-related activities. Thus, there might be potential agro-processing initiatives that the youth in this district could initiate.

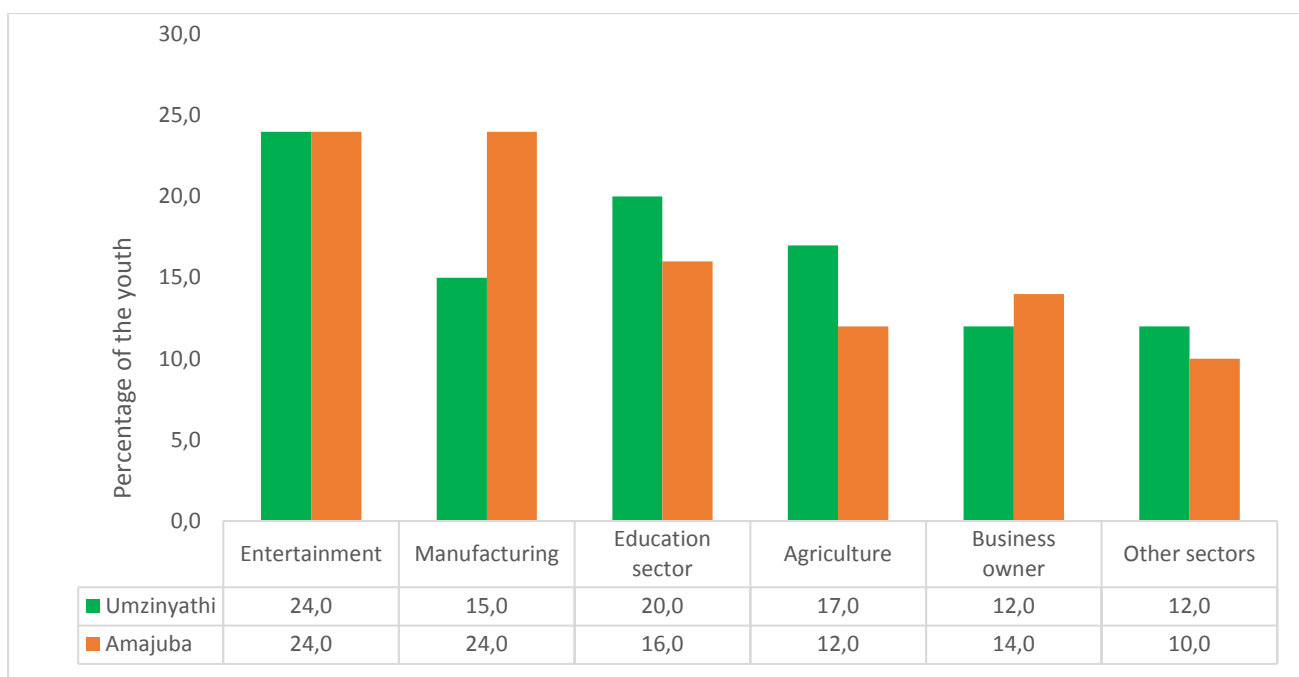


Figure 9.4: Youth role models per sector, per location (n = 224)

Source: Survey data (April 2019)

Access to information has been identified as being one of the major challenges faced by smallholder farmers in remote areas, irrespective of age (Munyua, 2007; Nakasone *et al.*, 2014). Moreover, Adesina and Favour (2016) have linked the lack of access to relevant information as a contributing factor to the minimal participation by youth in agriculture. Given that the majority of the sampled youth are not currently engaged, data was collected on the common sources of information (not limited to agricultural information) used by the youth. Figure 9.5 below confirms that the majority of the youth reported electronic media (TV, radio, etc.) as their primary source of information, followed by phones (calls and SMS) and social media. Some of the youth indicated community meetings as being their source of information. According to the FAO (2014), one should be cautious with information received from informal sources, as such information is often not reliable.

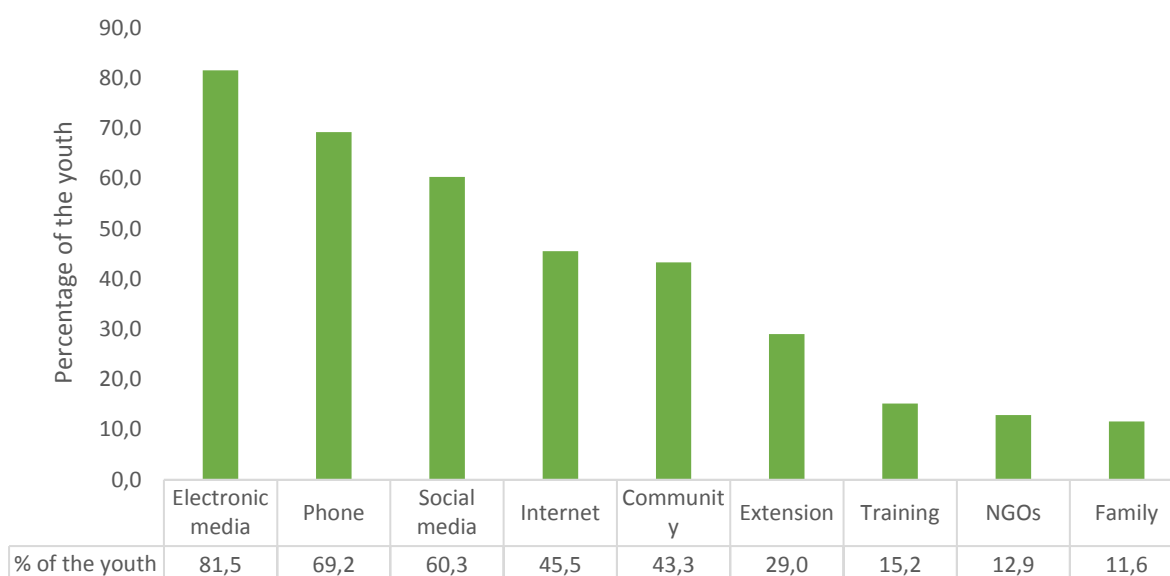


Figure 9.5: Sources of information for the sampled youth

Source: Survey data (April 2019)

In the rural areas, the sources of agricultural information commonly relied on are agricultural extension officers, training sessions and NGOs. However, the results show that these sources of information are the least identified by the rural youth. One can argue that the relatively low figure for agricultural extension services could be attributed to the limited number of sampled youths engaged in agriculture. This highlights a need for the dissemination of agricultural information in the rural areas, ideally through platforms (e.g. social and electronic media platforms) that the rural youth have access to.

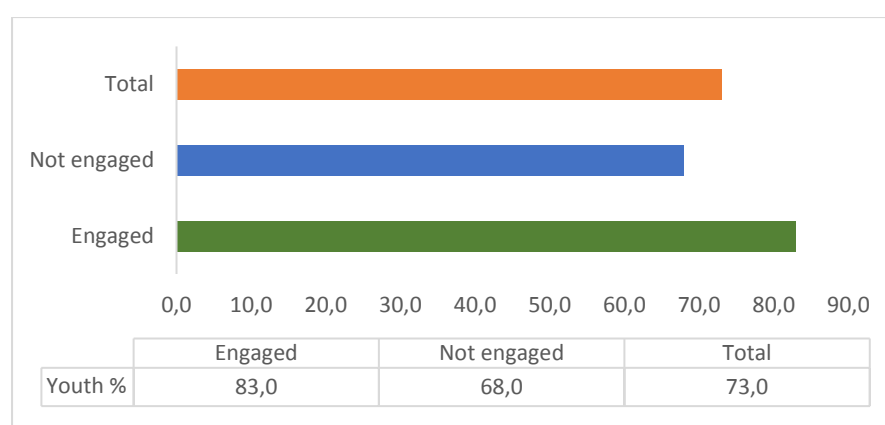


Figure 9.6: Social media accounts (WhatsApp, Facebook, Twitter, etc.)

Source: Survey data (April 2019)

It is almost impossible to refer to the youth and not mention social media in this digital age of the 4th industrial revolution (4IR). Figure 9.6 above shows that 73 percent of the total sampled

youth have social media accounts. Among the two groups of the youth, those already engaged in agriculture have a high percentage of individuals with social media accounts, relative to those not engaged. The study shows that there are developments in the integration of ICT usage in the agricultural sector. Although this study did not investigate the types of information accessed through these accounts, it is important to acknowledge the usage of ICT by young farmers, as this usage could assist in the development of platforms that could be used for the dissemination of agricultural information.

As shown in Table 9.7 below, the majority of the youth (74.6%) are members of social media (Facebook, WhatsApp, Instagram, Twitter), particularly those who are participating in rain-fed farming. This is in line with Mackey (2016), who found that the majority of South African youth have access to social media. Social media facilitates the sharing of skills, knowledge, and information among rural youth (Shava and Chinyamurindi, 2018).

Table 9.7: Youth membership to the local organisations and social media (%)

Organisations and social media	Actively participating	Assisting at home	Not participating	Dannhauser	Nquthu	All sampled youth
Social media (WhatsApp, Facebook, etc.)	84.5	69.8	70	82.7	67.5	74.6
Youth club (Political groups)	25.4	24.5	26	18.3	31.7	25.4
Community groups (Church, Soccer)	19.7	32.7	24	10.6	37	24.7
Credit/Saving associations	19.7	20.8	30	27.9	21.7	24.6
Agricultural cooperatives	19.7	1.9	2.8	5.8	9.2	7.6
Business cooperatives	11.3	5.7	4	4.8	8.3	6.7

Note: This is a multiple-response question and hence the responses do not add up to 100%

Source: Survey data, 2019

About 25.4% of the youth are members of youth clubs. Furthermore, a small percentage of the youth reported being members of agricultural (7.6%) and business (6.7%) cooperatives. This low participation level is seen, despite the many strategies and structures that have been introduced by the government to encourage youth participation in cooperatives. According to

Van der Walt (2005), most of the cooperatives in South Africa have failed because of poor management, lack of training, and lack of funds.

Table 9.8 below shows that the youth not engaged in agriculture spend 8.5 hours per day, on average, on social media, as compared with 3.7 hours spent by the youth engaged. This means that the youth not engaged spend twice the time that youth who are engaged spend on social media, because of the spare time they have. The study found that the youth engaged in agriculture spend relatively more money on data and airtime, relative to the youth not engaged.

Table 9.8: Hours and money spent on data to access social media

Type of youth	Hours spent on social media per day		Money spent on data/airtime per month	
	Mean	Std. Dev	Mean (Rands)	Std. Dev
<i>Engaged</i>	3.7	0.5	235.3	153.0
<i>Not engaged</i>	8.5	1.6	76.3	17.3
<i>Total</i>	6.8	1.1	131.9	54.6

Source: Survey data (April 2019)

(iii) Financial capital

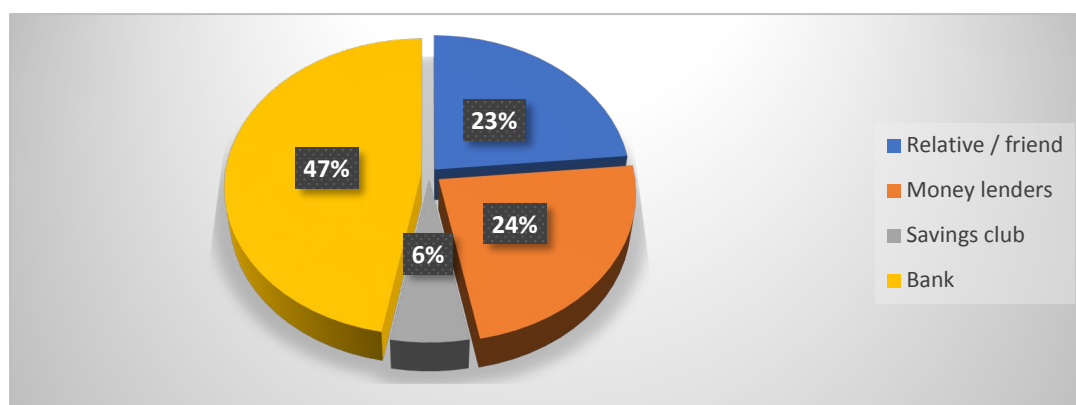
Globally, the lack of access to financial capital is ranked as the major constraint for aspiring youth entrepreneurs (Lewis, 2001; Audretsch and Keilbach, 2004; Herrington *et al.*, 2017). Table 9.9 below indicates that the sampled youth do not have adequate access to financial capital, as only 10 percent had accessed credit/loan facilities in the preceding 12 months prior to the study.

Table 9.9: Perceived and actual access to credit

		Not engaged (n=152)	Engaged (n=72)	Total (n=224)
<i>Perceived access to credit</i>				
Know a source where they can take a loan if they needed one		42.8	50.3	43.4
If yes, where / who is the source?	Formal source	54.7	59.5	56.4
	Informal source	45.3	40.5	43.6
Believe they'd qualify for a formal loan if they applied		13.4	28.3	15.5
<i>Actual access to credit</i>				
Have you taken any loan in the past 12 months?		10.5	14.2	10.5

Source: Survey data (April 2019)

Figure 9.7 below indicates that the primary source of credit for the few that have access comprises banks. These are the youth who are already economically active, owning their businesses or employed full-time.

**Figure 9.7: Sources of credit (n = 22)**

Source: Survey data (April 2019)

Since the majority of the sampled youth reported not to have taken credit for various reasons (Figure 9.8 below), the study sought to understand whether or not the youth believe they would qualify to access credit facilities if they wanted or needed to. About 28 and 13 percent of the

youth engaged and not engaged, respectively, indicated that they believe so. Moreover, only 43.4 percent of the sampled youth know where they can apply for a loan, if they needed one, demonstrating a lack of information. Thus, entrepreneurial activities will not occur for many of the rural youth, if the dissemination of information is not improved.

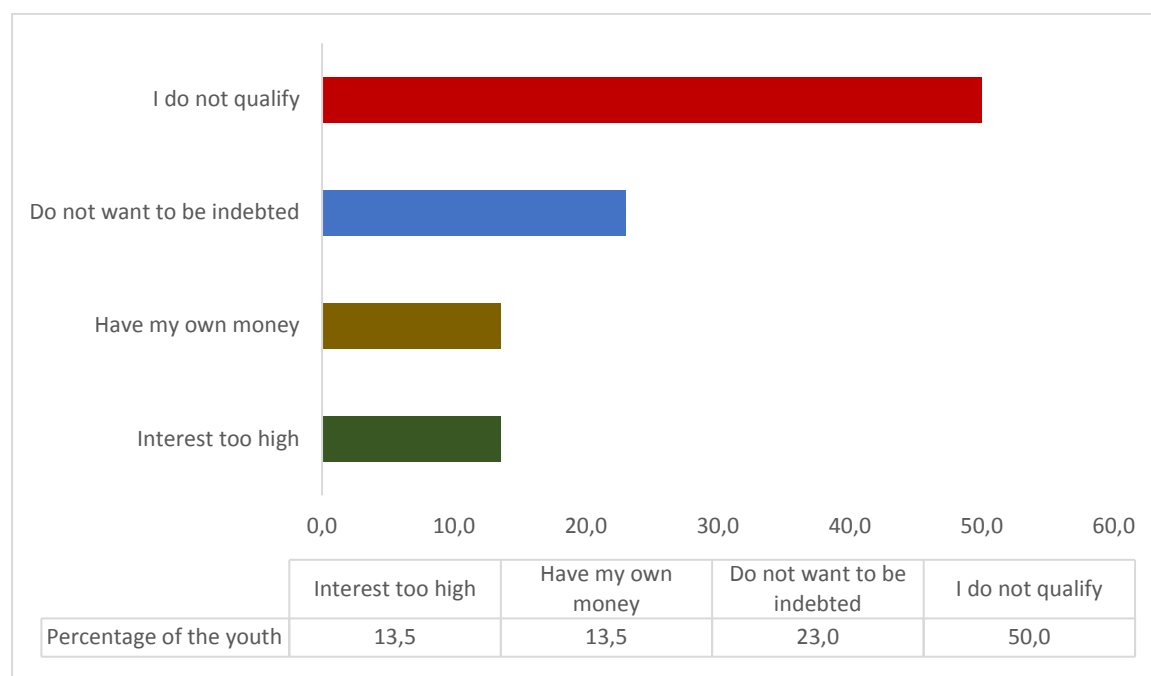


Figure 9.8: Reasons for not taking credit

Source: Survey data (April 2019)

(iv) Sources of income for the youth

Figure 9.9 below shows the different income sources of the sampled youth. Salaries include money received from temporary work and permanent employment, while agriculture refers to money generated through primary agriculture, livestock sales, and AVAEAs. The results show that the majority of households receive social grants as their source of income. This is in line with findings from several studies done in South Africa's rural areas (Chipfupa and Wale, 2018; Yobe *et al.*, 2019). The second most common source of income comprises remittances. Agricultural income is among the least common sources of household income, despite the results (Table 9.10 below) that indicate a high percentage of household members being engaged in agriculture. Even for the youth who are engaged in agriculture, agricultural income is not their major source of income. This suggests that the majority of these young farmers practise farming for subsistence reasons, and not as business enterprises. This could send a discouraging message to the youth who aspire to farm in the future. That is one of the reasons that complicate the cultivating of a culture of conducting farm entrepreneurial activities.

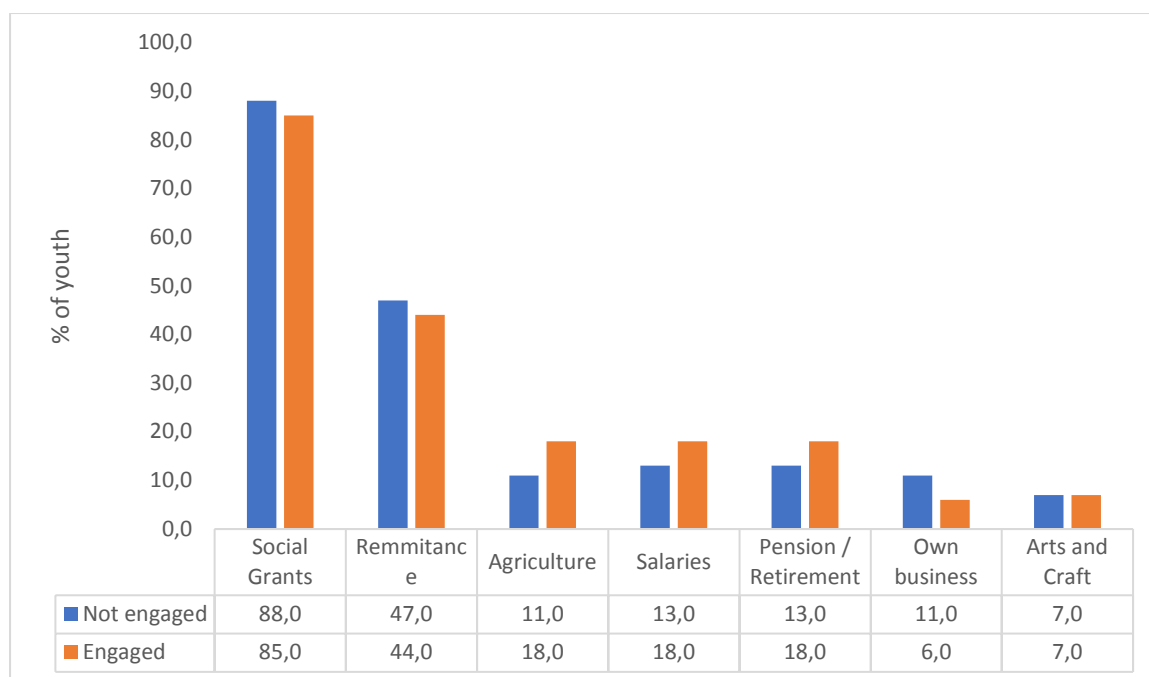


Figure 9.9: Sources of household income

Source: Survey data (April 2019)

The sources of livelihoods identified in Table 9.10 below are the sources of income for the households where the youth reside. These include income from permanent employment, social grants, remittances, temporary employment, crop/livestock income, pension/retirement, own business, and arts and crafts, as well as income from sales of livestock products (eggs, hides, live animals). The results show that, on average, permanent income contributes 39% to the household average income. However, only 30% of the youth indicated that permanent employment is their source of livelihood. On the other hand, social grant income contributes 24% to the household income. Social grants represent the most important source of livelihoods for the majority of the youth (89%) interviewed. Therefore, it can be concluded from the findings that social grants constitute a primary source of livelihoods for the interviewed youth in both Dannhauser and Nquthu municipalities.

The youth who are not participating in farming are relatively poor, with a total average income of less than 40% of those assisting at home and those actively participating. It is quite possible that poor liquidity is a particularly severe constraint on engaging in farming for these households. The households where the youth reside receive income of R26,204 per annum, on average, from the social grants received, whether by themselves, parents, siblings, grandparents, or other members of the family. These findings are in line with a study conducted in the KwaZulu-Natal province that has found social grants to be an important source of

livelihoods for the majority of people in the rural areas (Chipfupa, 2017; Sinyolo *et al.*, 2017a; Sinyolo *et al.*, 2017b). On average, the results indicated that remittances contribute 9% to the youth household income. Remittances are the other most important source of income in rural areas (Mohammed and Tolossa, 2016). The majority of people in rural areas migrate to urban areas/cities/towns for employment opportunities, and then send remittances to their relatives in the rural areas (Deotti and Estruch, 2016). Temporary employment and crop income each contribute 7% to the youth household income. The crop income comes from sales of rain-fed crops, such as maize, potatoes, sweet potatoes, and beans. There are statistically significant differences in crop income between the different groups of youth. The youth who are actively participating receive significantly higher crop income, when compared with the youth who are assisting at home and not participating in rain-fed smallholder farming.

Table 9.10: The average estimated income (R) per year from various sources of livelihoods for rural youth per year

Sources of income	Actively participating	Assisting at home	Not participating	p-value	Total average income	Proportion (%)	% of youth who indicated income as a source of livelihood
Permanent employment	49,020	87,618	14,210	0.22	42,613	39	30.4
Social grant income	26,971	31,968	22,604	0.03**	26,204	24	89
Remittances	11,044	14,253	7,699	0.21	10,310	9	47.3
Temporary employment	7,270	11,785	6,136	0.26	7,839	7	30.8
Crop income	16,940	6,693	499	0.03**	7,176	7	20
Livestock income	11,924	5,178	1,244	0.04**	5,560	5	39.3
Pension/retirement	6,166	4,596	1,997	0.20	3,933	4	14.7
Own business	5,346	360	12,418	0.07*	3,344	3	13.4
Livestock products	4,563	0	0	0.31	1,446	1	1.7
Arts and crafts	1,606	630	320	0.08*	802	1	8.9
Total average income	140,851	163,080	57,127	0.03**	109,227	100	

Note: ** and * indicate the levels of significance at 5% and 10% levels, respectively

Source: Survey data, 2019

Livestock income contributes about 5% of the total household income. There are statistically significant differences in livestock income between different groups of youth. The youth actively participating received greater livestock income. The income is generated through the sales of livestock such as goats, cattle, sheep, poultry and pigs. The average income derived from crops, live animals, and sales of livestock products for the households with youth actively participating in rain-fed smallholder farming is R33,427 per annum. When contrasted with South Africa's minimum wage rate of R3500 per month (R42,000 per annum) for 2019 (National Treasury, 2019), it is clear that the youth would prefer wage employment, as compared with actively operating their own small farming businesses. Self-employment (own

business) contributes less to the youth household income, and a low proportion of the youth indicated their own business income as their sources of livelihoods. This is in line with GEM studies that have indicated that entrepreneurship in the rural areas of South Africa is generally low. Most youth face several challenges when it comes to starting businesses, such as a lack of access to markets, high transaction costs, lack of finance, and the poverty of public services (e.g. agricultural extension), as well as the high cost of resources. In addition, income from livestock products and arts and crafts each contribute 1% to the youth household income. Moreover, income derived through arts and crafts comes from the sale of products such as traditional beads and accessories, handcrafted brooms, and African grass mats.

(v) Natural and physical capital

Natural capital in this study refers to the land that the youth own/have access to, while physical capital refers to the physical assets owned/accessed by the youth, such as tractors and motor vehicles. Table 9.11 below indicates that all of the sampled youth who are engaged in agriculture have access to land, with the average land size being 5.9 hectares. However, only 55.6 percent of the youth not engaged have access to land, and, on average, they have access to 2 hectares of land per youth. During the focus group discussions, some of the youth reported that the land is available but not fenced, and there is not enough water available. Even the youth who are engaged in agriculture reported being unable to utilise all of their land because of straying animals and water shortages. Thus, the challenge for the rural youth in the two districts is not access to land, but rather issues related to property rights and land ownership. The majority of the youth who reported having access to land referred to land that is owned by their parents. Some of the youth do not have control over what should be produced on that land. Thus, at face value, the youth have access to land, but in reality, they do not have access to land in a way that is productive.

Table 9.11: Youth endowment in natural capital (percentages)

	Engaged (n = 72)	Not engaged (n = 152)	Total (n = 224)
Have access to land	100.0	55.6	70.5
Land size (hectares)	5.9	2.0	3.7

Source: Survey data (April 2019)

Figure 9.10 below shows the household assets that the youth own/have access to. The majority of the youth have access to or own televisions, radios, and smartphones. This is as expected, as electronic media was identified as a major source of information by the youth. A very limited number of the youth have access to agriculture-specific assets, like tractors.

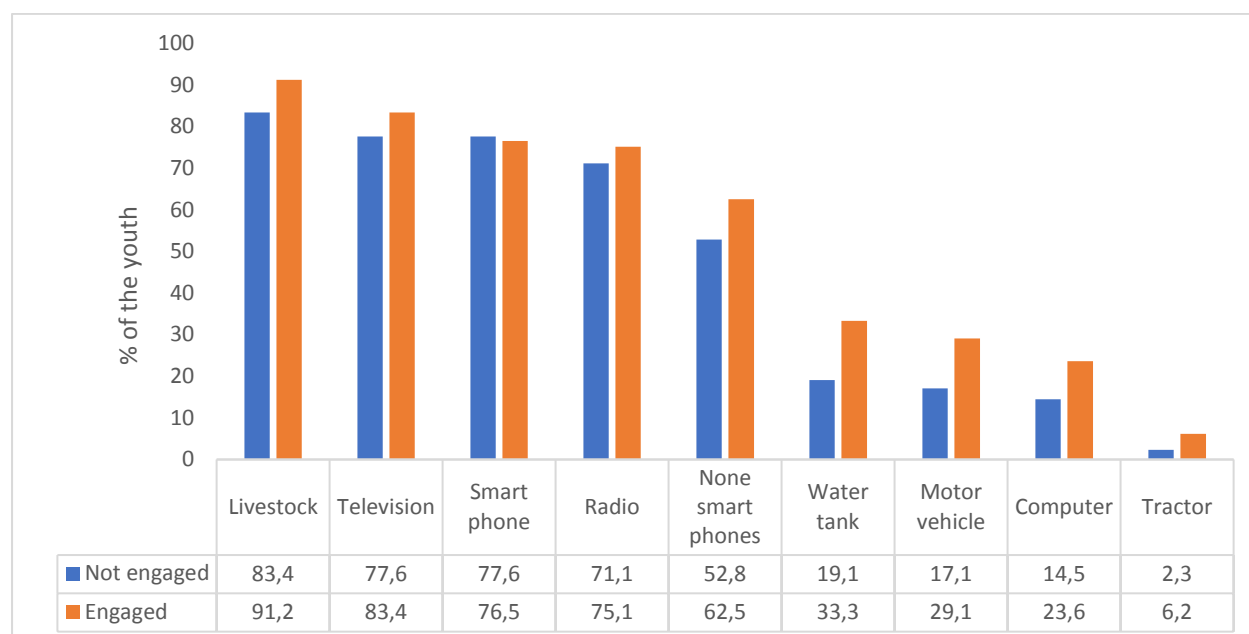


Figure 9.10: Physical asset endowment of the youth

Source: Survey data (April 2019)

Physical assets: ICTs

Figure 9.11 below shows that a low percentage of the youth own/have access to a tractor. Tractor services are critical to rain-fed farming and would significantly affect youth participation in the sector. These findings are consistent with Adekunle *et al.* (2009) who found that the lack of access to tractors and other inputs used in farming is a challenge among young people, thus hindering their participation in farming. On the other hand, the results show that access to ICT assets by most of the youth is high, mainly conventional ICTs such as television and radio. In addition, most of the youth own modern ICTs, such as smartphones (77.2%) and basic mobile phones (55.8%). About 74.6% of the youth interviewed indicated that they use smartphones to access the internet and social media, such as Facebook, WhatsApp, Twitter and Instagram. On average, they spend around R110 per month on airtime/data bundles. Furthermore, the results indicate that only 21% of the youth have access to or own motor vehicles.

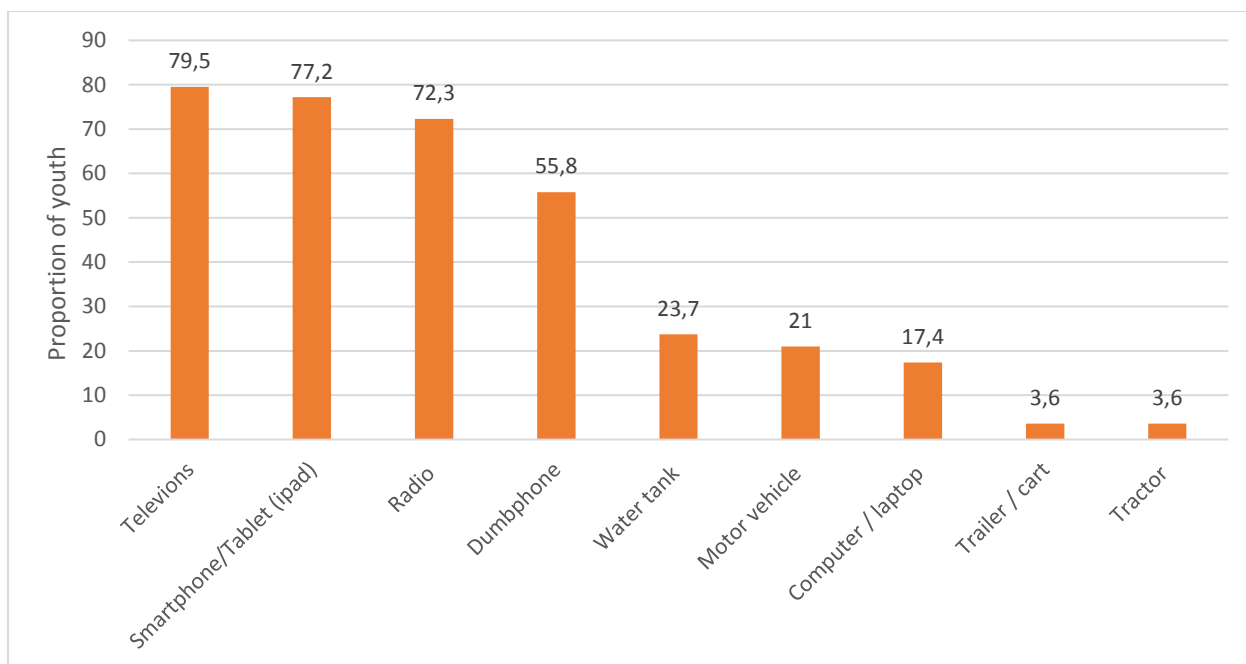


Figure 9.11: Communication and agricultural production assets the youth have access to (%)

Source: Survey data, 2019

(vi) Psychological capital

This sub-section provides the results for the various positive psychological capital dimensions, namely hope, optimism, self-confidence, and resilience for the different groups of the youth. Table 9.12 below shows the psychological capital endowment of the two groups of youth. In general, the majority of the sampled youth are endowed with positive psychological capital. It should be noted, however, that there is a possible over-estimation attributable to self-reporting, as the youth stated what they think about themselves, instead of revealing their actual behaviour.

Table 9.12: Psychological capital endowment of the youth

Psycho-capital constructs	Positive psychological capital statements	Not engaged (n=152)	Engaged (n=72)
<i>Hope and optimism</i>	Could engage family and friends to provide a parcel of land to me	68.4	77.8
	Could engage traditional authorities/leaders to provide a parcel of land to me	61.8	76.4
<i>Resilience and persistence</i>	Could reapply when they re-advertise, if I was rejected before	75.0	87.5
	Could apply to a different place when rejected	79.6	90.3
	Could continue with the business even if it was not making a profit and try to make changes	70.4	76.4
	Could continue with the business even if it was not making a profit and seek for advice	88.1	91.7
<i>Self-confidence</i>	Could accept a leadership position if elected	67.1	68.0
	Could oppose my leaders' opinion if it is against my beliefs	63.8	79.2

Source: Survey data (April 2019)

The dimensions were derived based on interviews conducted that described various scenarios that captured specific aspects of psychological capital. Each scenario described contains three multiple statements, and the youth were required to rank the extent to which they agree or disagree with the statements under each scenario, using a Likert scale of 1-5 (1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree). The answers of the youth to these questions are reliable as the measures of dimensions stipulated below. The youth gave reasons as to why they chose specific scenarios.

a. Hope and optimism

As highlighted in Sub-section 9.2.2, hope represents the enthusiasm to attach yourself to positive future outcomes or goals, and optimism represents the confidence/positive expectation of succeeding, now and also in the future. Hope is about having the determination and finding alternative ways to achieve goals, i.e. the individuals with high hope have the ability to find alternative paths to achieve their anticipated goals, should the original paths become blocked (Luthans and Youssef, 2004; Luthans *et al.*, 2007). The first scenario on unemployment was

used to ascertain whether the youth were optimistic and hopeful about the future in terms of businesses as a way of addressing the problem of unemployment. The findings in Table 9.13 below show that a large proportion of the youth (64.3%) were optimistic about the potential of small businesses to address the unemployment problem in the future. Thus, they are more positive about the future, regardless of the current high unemployment situation. Most of the youth were confident that they would be able to start businesses, and the government is doing more in introducing interventions/funding for starting a business. However, some of the youth indicated that there would be fewer business opportunities in the future, blaming the government for not doing enough. These are probably individuals with a syndrome of dependency, expecting the government to do everything for them (Wale and Chipfupa, 2018).

Table 9.13: Hope and optimism of the rural youth (%)

Scenario	Actively participating	Assisting at home	Not participating	All sampled youth
<i>Unemployment is a challenge in South Africa for young people, particularly in rural areas. The creation of small businesses among youth is regarded as a strategy to address the unemployment problem. As a young person who is also affected by the same problem, to what extent do you agree to the following statements regarding business opportunities for rural youth in the future:</i>				
There will be more business opportunities in the future for rural youth	63.4	79.3	57	64.3
The situation will remain the same	15.5	5.7	12	11.6
There will be fewer business opportunities in the future for rural youth	21.2	7.6	25	19.6
<i>Youth in South Africa face challenges in trying to access land. Let's say you are one of them interested in farming but facing challenges in trying to access the land. To what extent would you do the following:</i>				
Engage your family so that they parcel out to you a piece of land	77.5	69.8	68	71.5
Talk to traditional leaders to check for the possibility of renting land	76.1	69.8	50	66.5
Do nothing and hope that land will be available one day	2.8	1.9	8	4.9

Note: a. The percentages capture the results of 'agree' and 'strongly agree' responses.

b. The frequencies are above 100% because the questions were asked separately.

Source: Survey data, 2019

The second scenario considers the issue of land access among the youth. Most of the youth reported that they would either engage with their family to provide a parcel of land to them (71.5%), or talk to traditional leaders to query the possibility of renting land (66.5%). The majority of these youth are actively engaged in rain-fed smallholder farming. There is small proportion of the youth who indicated that they would do nothing and that they are not hopeful.

b. Resilient and persistent

Table 9.14 below presents the results for measuring resilience and persistence. Resilience is the ability to bounce back from a failure, difficult situation, or conflict (Luthans, 2002; Luthans and Youssef, 2004; Abrams, 2018). The first scenario depicts receiving an unsuccessful response to a job / bursary / university / college / or internship application to ascertain if the youth could stand up and continue after experiencing a difficult situation/unsuccessful response. Only about 5% of the youth indicated that they would stop making applications. The findings show that most of the youth (83%) would then apply to a different institution, and others reported that they would then make an effort to improve their submission and apply again when position is re-advertised (79%). These are the youth who are resilient and persistent, i.e. they bounce back instead of giving up. It takes a resilient individual to bounce back and keep on applying. This scenario also measures a hope dimension, which involves trying alternative options to achieve their objective.

Table 9.14: Resilience and persistence of the rural youth (%)

Scenario	Actively participating	Assisting at home	Not participating	All sampled youth
<i>Suppose you made an application (for a job/ bursary/ university, college/ internship) and received an unsuccessful response. To what extent are you most likely to:</i>				
Apply when they advertised	87.3	69.8	78	79
Apply to a different institution	90.1	81.1	79	83
Stop making applications	2.8	5.7	8	5.8
<i>Making a profit is one of the reasons why people start businesses. Suppose you are running a business, and you have been making losses for the past three years. To what extent are you most likely to:</i>				
Give up and forget about the business	9.8	5.7	12	9.8
Continue with the business and consult a business advisor/peer	91.5	88.6	88	89.3
Continue with the business and change the way you do things	77.4	66	72	72.3

Note: a. The table only included the results of ‘agree’ and ‘strongly agree’ responses.

b. The frequencies are above 100% because the questions were asked separately

Source: Survey data, 2019

Regarding the reactions of the youth to a loss in business, the results show that a high proportion of the youth (89%) would continue with the business and consult a business advisor/peer. Others (72%) indicated that they would continue with the business and change the way in which they run their businesses. Only about 10% of the youth indicated that they would give up and forget about the business. These are the youth who unable to bounce back after years of business struggles, and would not even consider alternatives to solve the problem.

c. Self-confidence

Table 9.15 below presents the results regarding the measure of self-confidence. Individuals with high self-confidence choose tasks that are more challenging (Cavus and Gokcen, 2015). The first scenario regarding the nomination of leadership was included to ascertain whether the youth believe in their capabilities to take on a challenging task, such as being part of leadership.

The results show that a large proportion of the youth (67.4%) indicated that they would accept becoming part of the leadership, if they were nominated. About 32.5% of the youth indicated that they would rather give the opportunity to someone else, while 21.4% chose to ask for some time to think about the nomination.

The second scenario considers the issue of confidence in terms of raising your voice about what is right or what you believe in. Being self-confident also considers standing up for what is right, rather than agreeing with what is reported in the table, even if it means standing alone in opposing an idea that is raised. The results show that a large proportion of the youth (68.7%) indicated that they would oppose the leader's opinion if it does not align with their beliefs. About 15.6% of the youth indicated they would rather agree with leaders to avoid conflict, and 20% highlighted that they would rather agree with the leader to show respect.

Table 9.15: Self-confidence of the rural youth (%)

Scenario	Actively participating	Assisting at home	Not participating	All sampled youth
<i>Suppose you are part of a Stokvel/sports club, and they are nominating leadership for 2019 and you are nominated by one of your friends to be the chairperson of the club. To what extent do you agree to the following options:</i>				
Accept the nominations	69	66	67	67.4
Ask them to find someone else	26.7	33.9	36	32.5
Ask them to wait because you still want to think about it	16.9	20.7	25	21.4
<i>Suppose you are a member of a youth Stokvel/ sports club in your area, and you attend the monthly meeting. In these meetings, you do not always agree with some of the decisions taken by the leadership. You are in one such meeting and wish to oppose some ideas raised by the leaders, to what extent do you agree to the following options:</i>				
Oppose the leaders' opinions	78.8	62.2	65	68.7
Agree with the leaders to avoid conflict	16.9	17	14	15.6
Agree with the leaders to show respect for their position	11.2	24.5	24	20.0

Note: a. The table only included the results of 'agree' and 'strongly agree' responses.

b. The frequencies are above 100% because the questions were asked separately.

Source: Survey data, 2019

(vii) Entrepreneurial attributes of the youth

O'Planick (2016) has stated that the opportunities in AVAEAs require one to be entrepreneurial. Kahan (2012) has also highlighted the need for farming enterprises to be operated as entrepreneurial activities. The impact of entrepreneurial spirit and managerial capabilities of the rural youth on their potential participation in AVAEAs was examined by using the fractional logit model described in an MSc study (Baloyi, 2020), which was undertaken as part of this project. The empirical results indicated that endowment in business management skills, gender, positive psychological capital, and positive agricultural perception positively affects the potential participation of rural youth in AVAEAs. However, entrepreneurial spirit and household wealth are negatively associated with potential

participation. The relatively wealthy and more entrepreneurial rural youth are less likely to participate in AVAEAs, i.e. these are the youth who are tempted to abandon agriculture and migrate to urban areas and/or look for other off-farm jobs. That is why there is an urgent need to change their attitude towards agriculture and value-adding economic activities along the value chain.

This part of the report provides the descriptive results for entrepreneurship characteristics, namely risk-taking, tolerance for failure, identifying and seizing an opportunity, determination, and a problem-solving attitude. Other characteristics include proactiveness and a strong drive to achieve, innovativeness, creativity, embracing change, efficiency, profitability, and competitive business ideas. Each scenario presented to the respondents contains several statements, and the youth were required to rank the extent to which they would be likely or unlikely to do what is highlighted in each statement, using the Likert scale of 1-5 (1 = very unlikely; 2 = unlikely; 3 = neutral; 4 = likely; 5 = very likely).

a. Risk-taking attitude

Risk-taking is one of the most important characteristics of defining successful entrepreneurs (Maluleke, 2016). It comprises any deliberate behaviour (with calculated costs and benefits) followed, with uncertainty about its outcomes but with the hope of the desired outcome (Trimpop, 1994). The scenario described below is meant to measure risk-taking behaviour, with the first statement capturing risk-taking individuals, while the second statement captures the risk-averse individuals. The findings show that most of the youth (60.6%) would choose an investment with a 100% guarantee that their money would generate a 15% return on the investment, thereby indicating that were risk-averse individuals. Approximately 23.2% of the youth indicated that they would choose an investment with a 50% chance of losing everything, but a 50% chance that their money would be doubled, indicating these youth as being risk-takers. Individuals who own businesses are perceived as risk-takers, when compared with those who do not own businesses (Macko and Tyszka, 2009). About 30% of the youth who are actively participating in rain-fed smallholder agriculture demonstrate risk-taking attitudes. The smallholder farming sector is faced with several challenges, and it takes a risk-taking individual to be in the sector.

Table 9.16: Risk-taking attitude of the rural youth (%)

Scenario	Actively participating	Assisting at home	Not participating	All sampled youth
<i>Financial constraint is one of the major challenges facing young entrepreneurs. Suppose there is an investment introduced to you with two options, to what extent are you most likely to:</i>				
choose an investment with a 50% chance of losing everything and a 50% chance that your money will be doubled	29.6	13.2	24	23.2
choose an investment with a 100% guarantee that your money will generate a 15% return on investment	69	50	60	60.6
choose none of the investment options and save your money in a normal savings account	24	45.3	35.1	34

Note: a. The table only included the results of ‘likely’ and ‘very likely’ responses.

b. The frequencies are above 100% because the questions were asked separately.

Source: Survey data, 2019

Most of the results were not as expected and do not conform to the neoclassical economic thinking of rational behaviour. However, they are a true reflection of the risk preferences of the youth. The literature indicates that the behaviours of smallholder farmers, in general, are boundedly rational and optimally imperfect (Boahene, 1996; Wale, 2012). That is why their behaviour and decision making is better explained by using concepts from positive psychology and behavioural economics. This study aimed to justify the choices of the youth. For example, the youth who chose the first investment option were willing to take the risk because there was an equal chance that they would make twice the money. Those who did not select the second option with a risk-free 15% rate of return felt that the return was low, compared with what they would gain if they took some risk in option 1. The youth who selected the last option were those who are satisfied with normal savings in commercial banks, where there is a guarantee that their money is safe and there is no ‘hustle’. Such youth are risk-averse, having seen some negative experiences in their community (with Ponzi schemes, mashonisas and stokvels), where they were promised a return on their investment, but then ended up losing money.

b. Identifying and seizing an opportunity

Entrepreneurial behaviour involves identifying, exploiting and seizing opportunities. Ellis and Williams (2011) describe opportunity identification as the way by which individuals recognise opportunities. It represents choosing a business opportunity, despite the option of receiving income through employment opportunities during the time when considering starting a new business. The findings show that about half of the sampled youth would quit their jobs and pursue a business opportunity. These are individuals who would rather be their own bosses instead of working under someone else. A high proportion of the youth who are actively participating in rain-fed smallholder farming (53.5%), as compared with the other groups of youth, indicated that they would quit their jobs and take the business opportunity. Approximately 46.4% of the youth indicated that they would continue with their jobs and ignore the opportunity.

Table 9.17: Identifying and seizing an opportunity by the rural youth (%)

Scenario	Actively participating	Assisting at home	Not participating	All sampled youth
<i>Suppose you have a job and realize a business opportunity in your community that will generate you the same remuneration you get from your job, to what extent are you most likely to:</i>				
a. quit the job and pursue the business opportunity	53.5	41.5	51	49.5
b. continues with your job and ignore the opportunity	38.1	54.7	48	46.4

Note: a. The table only included the results of ‘likely’ and ‘very likely’ responses.

b. The frequencies are above 100% because the questions were asked separately

Source: Survey data, 2019

c. Problem-solving attitude

According to Frederick *et al.* (2010), “entrepreneurs are determined and are not intimidated by difficult/challenging situations.” They strive to be part of the solution. The scenario described in Table 9.18 below was created to ascertain whether the youth exhibit a problem-solving attitude as one of the important traits of successful entrepreneurs. To tackle the problem of

youth unemployment in South Africa, the findings show that most of the youth would pursue their studies (51.8%) or initiate a business (51%).

Table 9.18: Problem-solving attitude of the rural youth (%)

Scenario	Actively participating	Assisting at home	Not participating	All sampled youth
<i>As a person who has been affected by unemployment, to resolve the problem, to what extent are you most likely to:</i>				
do nothing while waiting for opportunities to come up	9.8	18.9	18.2	15.7
decide to pursue your studies	64.8	45.3	57	56.7
initiate an income generating adventure (farming, other businesses)	53.6	69.8	41	51.8

Note: a. The table only included the results of ‘likely’ and ‘very likely’ responses.

b. The frequencies are above 100% because the questions were asked separately

Source: Survey data, 2019

Only 53.6% of the youth who are already participating in rain-fed smallholder farming reported that they would start a business. This can be explained by the various challenges faced by the youth in smallholder farming. A small proportion of the youth (15.7%) indicated that they would do nothing and wait for opportunities to come by.

d. Proactive and hardworking, with a strong drive to achieve

Entrepreneurs are proactive and internally driven by a strong desire to compete and to excel against self-imposed standards to pursue their goals (Frederick *et al.*, 2010). The descriptive results suggest that most of the youth in the sample (83.5%) see themselves as being proactive and hard-working, with a strong drive to achieve (Table 9.19).

Table 9.19: The extent to which rural youth are proactive/hard-working with a strong drive to achieve (%)

Scenario	Actively participating	Assisting at home	Not participating	All sampled youth
<i>Suppose you have a baking business, and on a normal day, you usually bake 20 cakes. On a particular day, you receive 30 cake orders that are all due the same day, to what extent are you most likely to:</i>				
work longer hours than usual including in the evening	84.5	92.4	78	83.5
cancel the additional 10 and bake only the usual 20	0	0	2	0.9
contract neighbour businesses to make up the extra quantity	33.9	9.5	30	26.3

Note: a. The table only included the results of ‘likely’ and ‘very likely’ responses.

b. The frequencies are above 100% because the questions were asked separately.

Source: Survey data, 2019

e. Innovation/embracing change

According to Schumpeter (1934), innovation is a process involving carrying out something new and destroying the old, also known as ‘creative destruction’. It can be a product, process, method of production, market, or it can be a new organisation or a new business. It is all about embracing change. As shown in Table 9.20 below, most of the youth embrace change. For instance, most of the youth (77.7%) indicated that they would rebrand the packaging of their products to render them attractive to their customers.

Table 9.20: The extent to which rural youth are innovative and embrace change (%)

Scenario	Actively participating	Assisting at home	Not participating	All sampled youth
<i>Suppose you own a business and want to increase your profits by attracting more customers, to what extent are you most likely to:</i>				
search for a new market/location to sell your products	54.9	58.5	50	53.6
rebrand the packing of the products and make them more attractive	80.3	77.3	76	77.7

Note: a. The table only included the results of ‘likely’ and ‘very likely’ responses.

b. The frequencies are above 100% because the questions were asked separately

Source: Survey data, 2019

f. Efficiency and profitability

The findings show that most of the youth who are participating in rain-fed smallholder farming (77.5%) would adopt new technology to minimise costs and increase profits in the long run. Approximately 29.4% of the youth indicated that they would not buy the new equipment, as they do not want to forego their short-term profits. The findings show that the majority of the rural youth would adopt new technology. It is often argued in rural development policy and practice that the rural youth are innovative and quick to adopt new technology (Sumberg and Hunt, 2019). This shows some hope for entrepreneurship development in rural areas.

Table 9.21: The extent to which rural youth are efficient and profitable (%)

Scenario	Actively participating	Assisting at home	Not participating	All sampled youth
<i>Suppose you are running a business and realize new equipment or technology that will minimize costs and increase your profit in the long run. However, buying this equipment/technology will result in you forgoing your short-run profits. To what extent are you most likely to:</i>				
buy the new technology	77.5	52.9	76	71
not to buy the new technology	28.2	47.2	21	29.4

Note: a. The table only included the results of ‘likely’ and ‘very likely’ responses.

b. The frequencies are above 100% because the questions were asked separately

Source: Survey data, 2019

g. Competitive business ideas

Entrepreneurs are individuals who are confident in their business ideas, particularly in a competitive environment. The findings show that about 74.1% of the youth reported that they would enter into competition because they believe they have a profitable business idea, and they would be viable. These are the youth who are confident about their business ideas and who would rather be their own bosses, instead of working for another organisation or individual. Most of them (85.9%) are actively participating in rain-fed smallholder farming. In sum, the majority of the youth are confident about their business ideas, suggesting a potential for greater entrepreneurship development among the rural youth. Therefore, there is a need for an enabling institutional environment to be developed to realise rural youth entrepreneurial development.

Table 9.22: The extent to which rural youth have competitive business ideas (%)

Scenario	Actively participating	Assisting at home	Not participating	All sampled youth
<i>Suppose the government /private company has a bid for the rural youth to compete for profitable business ideas, to what extent do you agree with the following statements.</i>				
I will definitely enter the competition because I have a profitable business idea, and I believe it will be viable.	85.9	62.3	72	74.1
I do not have any business idea and I will not enter the competition.	8.4	26.4	22	18.7
I have a business idea, but I do not think it will be viable for a competition.	7	15.1	14.2	12.1

Note: a. The table only included the results of ‘likely’ and ‘very likely’ responses.

b. The frequencies are above 100% because the questions were asked separately

Source: Survey data, 2019

(viii). Perceptions, attitudes and the social norm regarding agriculture

According to the theory of reasoned behaviour, the perceptions and attitudes of people affect their reactions towards a particular activity. Table 9.23 below shows that most of the youth in both groups perceive agriculture as a sector that can create employment opportunities for the youth, and also as a sector that could produce profitable businesses. An interesting finding in the study is that only 52.8 percent of the youth engaged in agriculture believe that they could become wealthy from their engagement in the sector, as compared with the 84.2 percent of those not engaged. About 53 percent of the youth who are engaged in agriculture do not believe that agriculture has the potential to make them wealthy. This could be attributed to the demonstration effect, i.e. the youth have witnessed people known to them (parents, grandparents, and neighbours) who are engaged in agriculture, but are not becoming wealthy through smallholder farming. Figure 9.6 above has also shown that agriculture is the lowest source of income among the youth engaged. This, of course, does not mean that there is no potential for smallholder agriculture to be sector that hosts a profitable business, although there are structural challenges to realising this.

Table 9.23: Youth perceptions about agriculture

	Not engaged (n = 152)	Engaged (n = 72)
Perceptions of agriculture		
Agriculture can provide employment opportunities for the youth.	84.2	88.9
Agricultural enterprises can be run as a profitable business.	80.9	88.9
One can be wealthy through engagement in agricultural activities	84.2	52.8
Agriculture is not for old and uneducated people only	55.9	52.8

Source: Survey data (April 2019)

9.2.4 Constraints to engaging youth in rain-fed smallholder farming

Table 9.24 below reflects the constraints to engaging in rain-fed smallholder farming as identified by the youth in both Dannhauser and Nquthu municipalities. About 82% of them ranked a lack of funding opportunities as a major constraint. These findings are in line with Yunusa and Giroh (2017). This is exacerbated by poor access to credit from the banks (Yunusa and Giroh, 2017). The banks and other financial institutions do not pay attention to funding youth farming businesses (Douglas *et al.*, 2017). During the focus group discussions, some of the sampled rural youth indicated that they do not meet the requirements to access finance, making it difficult to access necessary capital. This is consistent with Vargas-Lundius and Suttie (2013) who indicated that youth mostly lack access to financial capital from the banks owing to lack of security, expertise in drafting a bankable business plan, and poor general business experience.

Table 9.24: Constraints to engagement in rain-fed smallholder farming

Major challenges	Percentage (%) of youth
Lack of funding opportunities	82.2
Limited exposure to relevant opportunities in rural areas	76.8
Lack of knowledge and skills	79.4
Lack of access to relevant and adequate information	78.1
Poor access to markets	65.5
Lack of access to land	67.2
High cost of data bundle	60.7
Poor infrastructure	58.0
Poor network connectivity	47.8

Source: Survey data, 2019

Rural youth are faced with several challenges that reduce their incentives to engage in smallholder farming (Table 9.24 above). This explains the poverty of their participation in farming. This, in turn, supports the need for the government to look into these challenges. There is a need to take advantage of their positive perceptions and engage the rural youth in smallholder farming. Both the government and private sector stakeholders should facilitate the access by the youth to start-up capital and mentorship in order to assist them in managing their businesses.

9.3 Summary

This chapter has aimed to examine youth aspirations and goals to participate in rain-fed crop farming and related businesses. Having described the demographics of the youth, it presents the current engagement of the youth in agriculture. This is followed by an assessment of the resource endowments of the rural youth, their interests in primary agriculture, and the prevailing constraints in rain-fed smallholder farming. The last part of this chapter deals with the prevailing constraints to engaging youth in rain-fed smallholder farming.

10 DEVELOPMENT PATHWAYS FOR ESTABLISHING SMALL-SCALE RAIN-FED CROP FARMING BUSINESSES BY AND FOR THE RURAL YOUTH

Drawing from the empirical findings, this chapter suggests development pathways for establishing small-scale, rain-fed crop farming businesses by and for the rural youth. In doing so, it accounts for responses by rural youth to South African rural development interventions in the past. It also accounts for their endowments with positive psychological capital, mentorship, training and access to ICTs.

10.1 Background

Youth unemployment in South Africa is ten times higher than in its neighbouring countries such as Mozambique (Geest, 2010). Youth unemployment in the country increased from 32.7% to 36% between 2008 and 2014, and since then, youth unemployment has been higher than that of adults by more than 20% (StatsSA, 2014).

StatsSA (2019) estimated that youth accounted for 68.4% of the total unemployed in the country for the period reported. The same report shows that the rate of youth unemployment was at 39.6% in the first quarter of 2019. According to the ILO 2020 estimates, there has been an increase in youth unemployment in South Africa over the last twelve years. According to StatsSA (2020), youth (ages 15-24) unemployment has been persistently escalating over time. This age group is the most vulnerable to unemployment, with a 59% unemployment rate, and unemployment continued to increase, from 59% to 63% during the first quarter of 2021 (StatsSA, 2021).

Although the rate at which young people with a university education are graduating has doubled since 1994 (Statistics South Africa, 2016), this has not been matched by adequate increases in job creation in the economy. There is a general lack of employment opportunities for the increasingly educated youth in the country. This means that the lack of education and lack of skills as an explanation for the prominent level of unemployment is not relevant in the South African context, as more and more graduates remain unemployed.

The inability of the economy to absorb the growing number of people entering the labour market has created a huge challenge for the South African economy. This has, among other things, resulted in an exodus of young people to urban areas in search of better employment opportunities. Young people are impelled to migrate from the rural to urban areas because of a

lack of rural incentives and profitable opportunities, and an unattractive rural environment (Khué *et al.*, 2016). This rural-to-urban migration has created pressure on basic service delivery in the urban areas, resulting in youth delinquency and drug abuse.

In South Africa, youth unemployment is not evenly spread in terms of gender, education, location and ethnic identity. According to StatsSA (2018c), in the first quarter of 2018, the unemployment rates among graduates aged 15-24 and 25-34 were 33.5% and 10%, respectively. More numbers of young females are unemployed, relative to young males. According to Kwenda *et al.* (2020), unemployment in South Africa is higher in rural than in urban areas. Provinces that have a larger portion of the former homelands within their areas suffer from higher unemployment rates (StatsSA, 2019).

The issue of rural youth unemployment is rising and it has been exacerbated by the recent COVID-19 pandemic. It is mainly the outcome of the failure of the economy to keep pace with the growth of the youth. When the country's economic activities slow down, the number of youths without jobs increases, and they are the people who disproportionately suffer the consequences. The youth of South Africa are the most vulnerable to unemployment, given their lack of working experience, relevant skills, and education required to obtain a job in the formal sector. During any economic recession, employers usually discontinue recruitment and layoff the less-experienced youth (Mlatsheni and Rospabe, 2002). According to the GEM South Africa reports (2019/2020), "underperformance of the economy" and "failure of the education system to adequately prepare the youth for the labour market" are the two major reasons for the higher youth unemployment in South Africa (Bowmaker-Falconer and Herrington, 2019).

Youth unemployment is a complex and multi-dimensional socio-economic problem. It has social, economic and psychological dimensions – unemployed people become depressed, socially degraded, lose morale, and become discouraged and hopeless, leading in most cases to youth delinquency, substance abuse, and crime. The socio-economic outcomes of unemployment include poverty (Burns *et al.*, 2010), social exclusion (Kingdon and Knight, 2004), as well as crime and loss of hope (Levinsohn, 2008). Furthermore, psychological problems associated with unemployment are depression, anxiety, stress, anger and fear (De Witte *et al.*, 2012). The majority of the young people in the country have given up looking for work, particularly in rural areas.

Nevertheless, the country's formal labour market continues to be saturated. Given the prolonged poor economic growth rate, job creation that would absorb all active employment

seekers is unlikely, even in the long run. For this reason, policymakers, scholars, and government officials have identified self-employment as a potential strategy to assist in alleviating unemployment, especially among the youth. The involvement of the rural youth in entrepreneurial activities would not only reduce the burden of government dependency, but would also help to improve the economic status of rural residents. According to the National Planning Commission (2012), the agricultural sector has the potential to create one million jobs by 2030, with the majority of the jobs being in self-employment. Given that most of the youth in this study have had exposure to the sector, either through own experience or observation, the potential livelihood strategies that could be derived from their involvement is the focus of this study.

The creation of an environment that enables the rural youth to actively participate in the agricultural value chain should be prioritised, not only for the revitalisation of the sector, but also for the development of rural people. This is because the potential benefits of their engagement in these activities will not be limited to them alone (creation of self-employment opportunities and income). There are various benefits to the broader community through the backward and forward linkages, with multiple spill-over effects like job creation opportunities and skills development. Through the backward linkages, there are multiple potential investment opportunities that could be initiated, including the increased demand for raw materials (farm produce) and for technical skills critical for businesses along the agricultural value chain. Through the forward linkages, value-adding activities would result in convenient access to food for rural households. These linkages will create a beneficial environment conducive for agricultural activities. Farmers will realise increased gross margins from their operations, as value-adding in remote areas would reduce the number of people involved in the production processes, thus reducing the price depression caused by middlemen (Ngore, 2010). Furthermore, it would provide smallholder farmers with the advantage of price stability, as they will not have to bulk sell their products immediately after harvest.

A research study that examines the challenges and opportunities in pursuing entrepreneurial development pathways in rain-fed agriculture in South Africa, linking the youth to profitable food value chains and exploring avenues for establishing small farming businesses, will contribute to reducing rural poverty and food insecurity. It would also contribute to the empowerment of the rural youth, youth employment creation in the rural areas, reducing rural-urban migration, ensuring succession planning within the sector, and informing policy on the relevant and priority intervention areas in this sector. Knowledge-based actions in these areas

would create opportunities for the unemployed rural youth to venture into entrepreneurship programmes, thereby creating job opportunities (for themselves and others) and raising incomes.

The main purpose of this chapter is to show the avenues for formulating and testing appropriate development paths and farming models for establishing sustainable, small-scale, rain-fed crop farming businesses by the youth. This is intended to increase food security, profitability and employment opportunities and livelihoods in rural areas. This will, in turn, inform policies and programmes that aim to address rural youth unemployment in South Africa.

10.2 Rural development community responses to youth unemployment in South Africa

Over the past years, the South African government has invested many funds in learnership, internship/graduate, and training programmes that are aimed to provide knowledge, skills, and information for youth who are participating, as well as those that are not participating, in agriculture (AgriSETA, 2016). To this end, government and various stakeholders have initiated various policies, programmes and projects to both address the challenges and encourage aspiring youth to participate in agriculture. Programmes initiated include: ‘Youth in Agriculture and Rural development (YARD)’, ‘Comprehensive Agricultural Support Programme (CASP)’, ‘Comprehensive Rural Development Programme (CRDP)’, ‘Reconstruction and Development Programme (RDP)’, ‘Growth, Employment and Redistribution Policy (GEAR)’, ‘National Small Business Act, 1996’, ‘National Youth Economic Empowerment Strategy and Implementation Framework (NYEESIF)’, ‘Reconstruction and Development Programme (RDP)’, ‘Accelerated and Shared Growth Initiative’, ‘National Rural Youth Service Corps’ and ‘LandCare Programme’. In promoting agriculture, government prioritised youth entrepreneurial development (Herrington et al., 2010; Herrington et al., 2017), noting that small farms operated as businesses can turn into being more profitable.

The other policies and strategies put in place include the ‘New Growth Path (NGP)’, ‘National Development Plan (NDP) – 2030’, ‘Department Strategic Plans’, ‘National Youth Policy (NYP) – 2015 to 2020’, ‘Youth Employment Accord’, ‘Revised National Curriculum Policy’, ‘Accelerated and Shared Growth Initiative for South Africa (ASGISA)’, the ‘New Growth Plan (NGP)’, ‘Agricultural Broad-Based Black Economic Empowerment Fund (AgriBBBEEF)’, ‘Micro Agricultural Financial Institutions of South Africa (MAFISA)’, and the ‘Employment

Tax Incentives Bill’ (also known as the ‘Youth Wage Subsidy’) (Hendriks, 2016). It is now timely to evaluate the impacts of these programmes and strategies so that the lessons learnt can be gathered together to inform future interventions.

Other private organisations that have been formed to enhance youth entrepreneurial development include the ‘Voice of Young Entrepreneurs in South Africa’, ‘Youth Leadership Development (YLD)’, and the ‘Bronson School of Entrepreneurship’ (Virgin United, 2011). There are also NGO initiatives, such as the ‘Junior Achievers South Africa’, funded by private initiatives, including ABSA, Transnet, and Investec. ‘LIMA Rural Development Foundation’ also runs farmer support programmes.

Despite the implementation of all these programmes, policies and strategies, as noted in Chapter 1, youth unemployment in South Africa is still one of the highest in SSA. The escalating rate of unemployment in the rural areas is evidence that these initiatives are not having the anticipated outcomes. Generally, going by the prevailing youth unemployment statistics, the youth development initiatives/organisations/policies have not been effective to address the rising level of youth unemployment. The initiatives did not reach most of the rural youth in need. Development agencies have mainly been targeting urban areas, and little attention has been given to rural youth. Most of the above programmes/initiatives do not exist at the district and municipality levels; their offices and operations are at the national and provincial levels. There are limited nationwide initiatives that are tailored for youth, especially in agriculture. However, the few that exist, such as the LandCare programme and YARD, seem to be either not accessible to the rural youth or non-functional. According to the National Commission’s Diagnostic Report (2011), failure to implement policies is one of main reasons for slow progress.

Some potential entrepreneurs lack information about the government programmes that designed to support them (Fatoki and Chindoga, 2011). According to the GEM report of 2017/2018, several young people were not then aware of the available government initiatives to enable them to venture into business activities (Herrington and Kew, 2017). The rural development practitioners who were interviewed also noted that there is no tailor-made policy that relates to youth and agriculture in the country. Hence, the absence of such a framework makes it difficult to work with young people.

10.3 Small-scale rain-fed farming and entrepreneurial development

The topic of entrepreneurship has attracted the attention of scholars in the agricultural sector only in recent years (see Vesala *et al.*, 2007; McElwee, 2008). Traditionally, entrepreneurship research has primarily been concerned with the start-up of new firms or the growth and success of existing businesses (Schendel, 1990; Cooper *et al.*, 2000). Within the field of agriculture, little is known about on-farm entrepreneurship in smallholder agriculture from a business perspective. Most of the empirical findings are relevant, if at all, to commercial agriculture. Entrepreneurship is poorly contextualised in agriculture, especially in smallholder agriculture. The WRC has recognised this gap and it has initiated several research and development projects on entrepreneurial development pathways in the agricultural sector (e.g. Jordaan and Grove, 2012; Muchara *et al.* 2015; Denison *et al.*, 2016; Wale and Chipfupa, 2018). Stimulating an entrepreneurship mindset among the youth has been one of the South African government's major focus areas ever since the establishment of the Umsobomvu Youth Fund (UYF) in 2001 (Nieman and Nieuwenhuizen, 2009).

Entrepreneurship can hardly be realised in an environment where producers have no access to input and product markets (Kahan, 2012). The international influence of supermarkets and the high standards of their value chains are making market access for young rural farmers more difficult to attain (Food and Agriculture Organization, 2014). A sizable portion of the youth who sell their crop produce do so at the farm gate (36.4%), directly to consumers. Other common market outlets include van traders (22.7%), shops in the nearest town, i.e. Ladysmith (22.7%), and local shops (20.5%). None of the sampled youth participates directly in the National Fresh Produce Markets or the local grain markets. Hence, there is always an intermediary who retains most of the value of the crop (Wale and Chipfupa, 2018). No value-adding activities were reported by the producers themselves, and the prices received by them were quite low.

Endowment in entrepreneurial spirit and business skills is essential when seeking to attract the youth into sustainable and profitable entrepreneurial agricultural value-adding economic activities. Understanding the entrepreneurial behaviour of the youth and their positive psychological capital endowment is a key to developing interventions and to identify the avenues for changing their mindsets.

The Global Entrepreneurship Monitor (GEM) studies have consistently found that the lack of appropriate education is a limiting factor to the development of entrepreneurship in South

Africa (Herrington *et al.*, 2010; Herrington and Kew, 2016; Herrington *et al.*, 2017). Entrepreneurship education in rural schools is still lacking. There is low entrepreneurial activity in rural areas, as compared with urban areas, in South Africa (Malebana, 2014). Most entrepreneurship programmes in the country target the youth in both rural and urban areas (see, for example, FANRPAN, 2012 and DTI, 2013).

The entrepreneurial attitudes and perceptions of a society influence the entrepreneurial culture of that society. Various unsubstantiated claims have been made in the policy discourse about the youth. They are said to have a greater capacity for innovation, creativity and entrepreneurship than older adults do (IFAD, 2011; FAO *et al.*, 2009; AGRA, 2015). Another claim about the youth is the notion that they are flexible to new ideas (Akosa, 2011). However, there is little or no empirical evidence to support such essentialist claims (Sumberg and Hunt, 2019).

The engagement of rural youth in entrepreneurship is among the main strategies that the governments of several developing countries have adopted (Som *et al.*, 2018). However, the Global Entrepreneurship Monitor (GEM) reports have repeatedly shown that the “Total Early-stage Entrepreneurial Activity” in South Africa is below the average, as compared with that of other African countries (Turton and Herrington, 2013). Accordingly, the youth in South Africa generally have little interest in starting their own businesses. South African youth lag in entrepreneurship (Fatoki and Chindoga, 2011) in terms of their willingness and ability to go through what it takes to succeed. There are various historical, socio-cultural, institutional, economic, and political factors behind this. These factors include lack of start-up and expansion capital, shortage of skills, lack of access to market, and lack of information about available entrepreneurial support programmes (Atieno, 2009; Herrington, 2010; Nieman and Nieuwenhuizen, 2009; Pretorius and Shaw, 2004; Van Dijk, 2008; Western Cape Youth Report, 2008). For those young entrepreneurs who are already in business, the unwillingness of individuals to take risk and the fear of failure/embarrassment has been reported as key hindrances to the success of enterprises (Fatoki, 2010; Fatoki and Chindoga, 2011).

Moreover, the mentality of “*I can’t because I am poor, or I have no money*” and the “lack of entrepreneurship culture” are additional compounding factors (Atkinson, 2014). Moreover, many young people in South Africa believe that becoming a successful young entrepreneur depends on your background or race. For black African and coloured youth, there is lack of entrepreneurial role models. They lack mentors in agripreneurship and role models in their communities, which contributes to the disincentive to engage in smallholder farming

businesses. This is very important because personally knowing an entrepreneur has been shown to have a positive impact on the view of entrepreneurship as a career choice (Herrington *et al.*, 2010). Having entrepreneurs in the communities who give mentorship to young people who are aspiring potential entrepreneurs could be an appropriate way to achieve this end.

Herrington *et al.* (2009), in the Global Entrepreneurship Monitor South African Reports, argue that, given the low absorption rate in the formal and public sector, focus has to be placed on entrepreneurship and self-employment. The literature suggests that inspiring entrepreneurship in the smallholder agricultural sector paves the way towards the achievement of rural development goals (Bruton *et al.*, 2013; Díaz-Pichardo *et al.*, 2012; Sinyolo and Mudhara, 2018). In this project, the development of rural youth entrepreneurship is taken as a pathway to achieve these objectives through improving the contribution of agriculture.

Ultimately, entrepreneurship in agriculture in the context of South African youth is a question of the ability to take calculated risks, internal locus of control/self-reliance, motivation, ability to develop competitive business ideas in response to identified gaps in the market, proactive character/attitude, capacity to embrace change, problem-solving attitude, efficiency, profitability, and capacity to identify and seize opportunities when they arise.

10.3.1 The role of youth endowment with positive psychological capital to entrepreneurial development

About 41% of the sampled youth indicated that challenges of unemployment, lack of access to capital, lack of access to information, and poverty have been in existence for far too long, such that they do not see how they might be resolved. Others of the youth said that the government, specifically the National Youth Development Agency (NYDA), is corrupt and full of empty promises, and has failed to solve the unemployment issue in the country.

A total of 86.6% of the youth indicated that they were likely to choose a portfolio in the posited scenario that guarantees them a 15% return on their initial investment. They were clear that they were not willing to take the risk. Others felt that a 15% return was too much money, and hence there was no need to take what they called an “unnecessary risk”. Only 24.5% were willing to take a higher risk to double their initial investment. Most of these youth recognise that business is about taking calculated risks, and if they do not do so, the chances of being a successful entrepreneur are limited. A high proportion of the youth partially into farming were risk averse and had a high tolerance for failure.

Most of the youth (78%) indicate that they are ready to take advantage of the opportunities that come their way, regardless of their current situation. Given their financial constraints and their immediate needs, almost 90% of the youth were most likely to look for work and earn some money for themselves. They said that, since they are adults (i.e. over 18 years of age), they want to be independent and they cannot continue to look to their family for financial support, especially given the level of poverty in the rural areas.

The results show that most of the youth are determined and persistent, and would not allow a temporary setback to affect their focus on their business. Given the fact that they do not meet the minimum commercial bank requirements to access a loan, 66.3% of the youth said that they would likely look for other options (e.g. family and friends) to finance their businesses. They are willing to explore all avenues to start their businesses. However, informal sources of finance were not a likely option for most of the youth because of the high interest rates charged.

Most of the youth are proactive and have a strong drive to achieve 'big', despite the immediate challenges. About 86.6% indicated that they would work longer hours than usual or hire someone to ensure that they would meet their business and family commitments. Given an opportunity to improve the efficiency and profitability of their business operations, most of the youth (64.1%) indicated that they would adopt new technology that would replace their labour-intensive operations with more efficient methods.

The results show that most of the youth are not self-reliant, and still perceive that their success depends on the actions of government and other stakeholders. Not only do they externalise their success, they also do the same for their failures. They indicated that they need the help and mentorship that is a key for them to be successful. Compared with the other youth, those who are farming as cooperatives have a significantly lower percentage of the youth who are not self-reliant.

A high proportion of the youth indicated that they do set goals in both their personal and business lives. They understand that, for one to succeed, he or she should plan, set goals, and place pressure on themselves to work hard and achieve those goals.

The youth appreciate and recognise the value of membership with youth clubs/groups. The youth who are members of youth clubs felt that their membership has helped them in the following areas:

- Increased access to agricultural inputs and animal health products;
- Gain knowledge and experience – life skills, agriculture and business;

- Access to information;
- Save money;
- Access credit from stokvels and government sources;
- Access to business, job and academic opportunities;
- Learn good behaviour (stay away from drugs) and improve communication with others;
and
- Fitness and health.

10.3.2 The role of mentorship and tailor-made training in entrepreneurial development

Access to agriculture-related skills training among rural youth is very limited. Only 32% of the sampled rural youth have access to training related to agriculture. Most of the training was related to crop production. There is limited available training related to livestock production. The findings suggest that young people typically have a special interest in livestock farming. However, less training has been provided on other important aspects, such as livestock farming, climate change and water management, agricultural value chains, commodity marketing, and financial management. These are critical skills that are important for improving the entrepreneurial spirit and management capabilities of the rural youth, enabling them to operate their small agriculture-related businesses.

It was reported that the private sector usually provides training when they engage youth as contract farmers to produce a specific product. These types of engagements are aimed to ensure that the youth would produce high-quality crops that meet the market standards or expectations of the private sector involved. This paves the way for their access to markets. It is also important to acknowledge and recognise the indigenous knowledge that the rural youth acquire from their parents on a variety of challenges that they frequently face and the ways in which they address them.

What can be done to address the skills, knowledge and experience gaps? Agricultural extension and mentorship are the two possible avenues to explore. The challenges of agricultural extension in South Africa (e.g. extension officers lack professionalism and hands-on farming experience; their lack of indigenous and contextual knowledge; their lack of engagement; poor attitude towards work – mindset – poor self-reliance; and having to serve too many farmers) are well documented (Koch and Terblanche, 2013; Terblanche, 2007b). Thus, mentorship, which should serve as a complement to agricultural extension, and not a substitute, could help

to narrow the skills and experience gaps and integrate the new farmers into farming support and service networks. This is why the South African government instituted the programme as one of the ways of addressing the inherent skill gaps and integrating new entrant farmers into commercial agriculture.

Anderson and Shannon (1988) defined mentoring as “A nurturing process in which a more skilled or more experienced person, serving as a role model, teaches, encourages, counsels, and befriends a less experienced person for the purpose of promoting the latter’s professional and/or personal development.” It is a process whereby a more experienced and successful person with wisdom helps a less experienced person to learn something that the mentee would otherwise have learnt less well, more slowly, or not at all (De Beer, 2005). It is an integrated approach to advising, coaching and nurturing, focused on creating a viable relationship to enhance individual growth and development avenues of success (Adams, 1998). Mentorship is about helping to empower less-experienced farmers (PAETA, 2004) and that is why it should have a special role in establishing small farming businesses by the rural youth in South Africa. The mentor has to be successful, so that the mentee would trust, listen to, and practise the mentor’s advice.

For the rural youth engaged in agriculture, working in collaboration with successful and experienced commercial farmers in agribusiness would enhance their capacities and willingness to undertake entrepreneurial activities. Mentorship of early-stage agricultural entrepreneurs ought to be among the entrepreneurial development strategies in South Africa, especially in agricultural entrepreneurship development. In the future, establishing mentorship relationships between the youth and experienced farmers should be informed by the competencies, expectations and plans of the participants. This provides an opportunity to further investigate the specific skills and traits required for each mentorship stage.

10.3.3 The role of information and communication technologies in entrepreneurial development

Reliable, up-to-date and relevant information is key to an entrepreneur for penetrating new markets, launching a new product, or developing novel market strategies (Miles and Arnold, 1991). In pursuit of any of these objectives, Garri and Konstantopoulos (2013) found that the information generally required by farm entrepreneurs is related to the product’s characteristics, the consumption behaviour of the market, competitive product(s), and the social, political, cultural dimensions of the markets. The rural youth have several sources of information

available to them, including print and electronic media, DARD extension officers, community meetings, and short message services (SMS). The source of the information and the channel used are more likely to influence the perceptions of farmers of the content and, therefore, the ultimate business decisions they are likely to make (Khoshnodifar *et al.*, 2016).

In the modern day, ICT services have made it easier to access and retrieve local, regional and global information. ICT services have the potential to reduce transaction costs for farmers (Nakasone and Torero, 2016).

The use of ICT services in the farming business can influence the livelihoods of households (Maumbe and Okello, 2013; Nakasone *et al.*, 2014). ICTs are expected to play a role in: *“improving the timeliness of on-farm operations, facilitating input procurement transactions, overcoming rural agricultural production and market information asymmetries, transfer of rural financial remittances, and providing key agricultural data and market information”* Maumbe and Okello (2013;3). Through the use of ICTs, farmers are able to identify trade opportunities and other innovative practices (Nakasone *et al.*, 2014). Valuable information with regard to emergencies (pest outbreaks, wild fires and weather conditions) can also be communicated and distributed quickly (Maumbe and Okello, 2013).

However, access to ICT services remains limited (Nakasone *et al.*, 2014), especially in the rural areas of South Africa. Even if the infrastructure or access is sufficient, some individuals are not able to navigate through the technology. In South Africa, the supply-side constraints in relation to ICTs include dilapidated rural infrastructure and the lack of development of locally and culturally relevant e-agricultural content, and the policy and institutional development to support their widespread use. On the other hand, the issues relating to the usage side of ICTs include lack of awareness, low literacy, lack of supplementary infrastructure to use ICT services (e.g. electricity), language, and cultural barriers (Maumbe and Okello, 2013; 21).

A wide gap still exists in relation to gaining access to ICT services when the rural infrastructure is compared with urban areas (Nakasone *et al.*, 2014). Rural firms are lagging behind in taking up and using ICT services, as compared with their urban counterparts. Thus, not only is the provision of infrastructure important, but so is the hands-on training in its use. ICTs can be used by farmers to obtain or maintain a competitive advantage over their competitors. In Malaysia, ICT services have been recognised to inspire the youth to consider self-employment (Zaremohzzabieh *et al.*, 2016).

ICTs have a role to play in improving human and social capital. For instance, Zaremohzzabieh *et al.* (2016) found that ICT services have allowed the rural youth of Malaysia to become more like their urbanised counterparts, without actually moving to cities. Effective ICT infrastructure can be used to counter the migration away from rural areas, without limiting the training and employment opportunities of the youth. As the technology is also used as a means of communication, it will also play an important role in networking (Smallbone *et al.*, 2002).

The rural youth in South Africa are quite active on social media platforms, with about 78.5% using at least one of the various platforms, such as Facebook, WhatsApp, Twitter, YouTube, and Instagram. As noted earlier, about 69% of the youth own a smartphone. Discussions reveal that the ICT infrastructure in the surveyed communities is getting better and fewer challenges are being experienced regarding access to mobile networks. However, the affordability of internet data bundles is a challenge, especially among the unemployed youth.

About 93% of the interviewed youth own smart phones. The youth spend much of their time (on average, 3.2 hours per day for the surveyed youth) on the internet as well as social media. On average, they spend R84.18 on airtime/data per month. This creates an opportunity to attract youth in the agricultural sector. Applying and integrating ICTs into agriculture is a potential strategy for attracting youth into the sector (Irungu *et al.*, 2015; AGRA, 2017).

The key gap is the lack of agricultural content on the social media platforms and sparse agricultural content in the information that the rural youth access through social media. Currently, the direct use of the different platforms for agricultural purposes is limited. Going forward, given that the youth spend much time on social media, the challenge is how government and other stakeholders could tap into this and disseminate agriculture-related information relevant to the youth. Only about 17% of the sampled youth access information on farming techniques/technologies and markets/prices. Other types of information accessed by the youth through social media include: updates on friends, updates on celebrities, job opportunities, education/life skills, business opportunities, general news, social events, religion, and politics.

The youth indicated that social media could prompt members of the youth to start discussing farming through sharing agricultural information and advice. For this to happen, most think that there is a need to create a page/group on Facebook or WhatsApp for sharing information on agricultural inputs and output markets, commodity prices, government programmes, and

agricultural job and business opportunities. Some also think that a platform could be developed where youth could market their produce.

The limited access to farming information among the rural youth has affected their participation in both primary agriculture and AVAEAs and the success of their enterprises. The following are the main constraints that require attention in order to improve youth access to information relevant to the agricultural sector:

- Poor ICT infrastructure and poor connectivity in remote rural areas;
- Data affordability;
- The relevance and utility of information on the internet and social media platforms to attract rural youth to farming;
- Revisiting agricultural extension services, training and advisory services to adapt them for the interests of the rural youth.

Youth exposure to ICTs (particularly the internet) is a double-edged sword. While it informs the youth and enriches their capacity, if it is used the right way, their exposure to ICTs, particularly social media, often puts them under constant peer pressure. According to Bahaman *et al.* (2010), the youth want to do what is considered to be “cool” by their peers, and this often means aspiring to luxurious lifestyles (Eddy *et al.*, 2010b). This explains why Bahaman *et al.* (2010) refer to the youth as the seekers of instant gratification, which often leads to unrealistic expectations in life, including in the workplace (Eddy *et al.*, 2010b). They aspire to a luxurious working environment, with high remuneration. This results in them preferring “white collar” employment, which partly explains their lack of interest in primary agriculture.

10.4 Rain-fed small-scale farming for the rural youth: options and constraints

10.4.1 Current involvement of youth in rain-fed small-scale farming and the constraints

The agricultural sector is well placed to create job opportunities, particularly in the rural areas. Recent reports have identified an estimated area of 3 million hectares of underutilised land in rain-fed farming areas across South Africa. There is underutilised potential for the productive use of rain-fed land for food production and beneficiation in the food value chain. To realise this potential and include the youth as part of the rural economy, the attitudes of young people towards farming need to be changed, and the policy of the government should purposefully create conditions that encourage young people to become involved in farming, not only as

workers, but also as owners of farming businesses. The long-term focus should be placed on identifying ways and means of developing agribusiness entrepreneurial spirit from early ages, so that the youth are enabled to participate in profitable farm enterprises and agricultural value chains.

Koohafkan and Stewart (2008) have indicated that the development of additional irrigation infrastructure is becoming increasingly difficult and costly, while in semi-arid regions, irrigation alone will not be sufficient to feed the rising population. They reiterate that, on poverty and environmental grounds, much attention should now also be given to rain-fed farming.

According to the Alliance for a Green Revolution in Africa (AGRA), only a 2% proportion of South African youth were reported as engaging in new job opportunities in the agricultural sector, contrasted with a target of 30% proposed by African countries (AGRA, 2018). The 2016 Community Survey conducted by StatsSA shows that participation in agriculture is decreasing, and that more and more individuals in the rural households are leaving the sector.

The surveyed youth indicated that they keep livestock for consumption, sales (income), cultural reasons, and wealth, as well as for draught power. The reasons given for engagement in crop production include own consumption, income, and employment creation. Most of the youth are engaged in livestock and crop production for their own consumption and income generation. This is in line with other studies conducted in the past (Andrew *et al.*, 2003; Lahiff and Cousins, 2005).

During the study interviews, the youth indicated that they have access to land through their parents. This affects youth decision making, investments, and sustainability, as they cannot easily decide on what to do with the land. To make land-use changes, they need permission from their parents, which, in turn, affects their participation in farming. A study conducted by Hosaena and Helder (2018) found that security of land tenure is positively associated with on-farm employment opportunities among the youth.

About 92% of the sampled youth were not married, and thus would not qualify to receive land from the traditional leaders. This situation still exists, despite recent reports that have identified an estimated 3 million hectares of underutilised land in rain-fed farming areas across the country. The existence of this underutilised potential for productive use of rain-fed land presents an opportunity for increasing youth participation in farming. Most of the youth interviewed do not actually own the land themselves, which instead belongs to their parents or

family, and they only have the right of use. Much of the land that the youth have access to is held on a Permission to Occupy (PTO) basis – only for those who are married – and only a few are leasing/borrowing land.

In South Africa, land in remote areas belongs to the chiefs and its use rights belong to adults. The promotion of financial packages specifically catering for the youth, mentoring, and training programmes, together with start-up funding opportunities, could help to reduce the magnitude of the challenge. Only 64.2% of the youth have access to productive land for farming. The challenge is worse among young people not currently engaged in farming, confirming why many youths do not participate in farming. The lack of access to productive land negatively affects their involvement in farming, regardless of their interests to do so. Those currently farming have access to larger land holdings than the youth partially or not farming at all do. Some of the youth received the land on a temporary basis from the chief, which means that the land can be reclaimed at any time.

There are various opportunities for engaging youth in rain-fed farming. These include the growing of feedstocks for biofuels, and crop and livestock integration systems. Maize and sugarcane are already popular dryland crops in most parts of South Africa's rural areas. However, the proportion of the youth actively participating in the agricultural sector is low, compared with adults, but in terms of actual or absolute numbers, there are more young people participating in the agricultural sector, as compared with the older people (Swarts and Aliber, 2013). What also serves as a hurdle is the culture of youthful aspiration to move away from the farms (Jayne *et al.*, 2010; Maepa *et al.*, 2014).

Increasing youth unemployment, ageing farmers, and declining crop yields under traditional farming systems are some of the factors that justify the engaging of youth in agriculture (Wordpress, 2014). The sustainability of farming depends on young people; they should be seen as the agricultural sector's future, as they will replace the ageing population (Kinseng *et al.*, 2019). To attract and keep the youth in farming, the agricultural sector, including smallholder farming, ought to be intellectually stimulating and economically profitable (Swaminathan, 2001).

The rural youth engaged in farming also bear the brunt of climate change, with adverse impacts on production enterprises. The descriptive results show that, for more than half of the sampled rural youth (56%), the rainfall patterns over the past four years in their areas have largely been

unreliable. Farming in such conditions is very difficult, and strategies are needed for adapting to and reducing the negative effects of the changing rainfall patterns on farming.

About 82% of the youth ranked the lack of funding opportunities as a major constraint. These findings are in line with those of Yunusa and Giroh (2017). The banks and other financial institutions are not keen on funding farming businesses of the youth (Douglas *et al.*, 2017). During the focus group discussions, some of the sampled rural youth indicated that they are not able to meet the requirements to access finance (e.g. lack of security, poor general business practice, and lack of a bankable business plan), making it difficult to access capital. This is consistent with Vargas-Lundius and Suttie (2013). Both the government and private sector stakeholders should work towards facilitating access by the youth to start-up capital and mentorship to assist them in managing their businesses.

10.4.2 Factors affecting youth engagement in rain-fed small-scale farming

Lack of access to land, finance and markets are the key constraints against engaging the rural youth in primary rain-fed agriculture. Lack of experience of how markets function affects the participation of young farmers along the agricultural value chains (IFAD and FAO, 2014). Other challenges faced by the youth in trying to access the markets is their lack of organisation and representation, which restricts their ability to negotiate prices (Vargas-Lundius and Suttie, 2013; IFAD and FAO, 2014). Rural youth, particularly in developing countries, often fail to meet the prescribed market standards (quality and safety), and this affects their participation in agriculture. The poverty of infrastructure in the rural areas and location disadvantages are also inherent challenges.

A lower level of education attained has a negative influence on youth participation in agriculture (Akpan *et al.*, 2015). The higher the level of education the youth attain, the less likely they are to engage in agriculture, leading to rural-urban migration, as they look for attractive opportunities. In terms of content, the lack of practical agricultural training in schools and universities is still an inherent challenge. Moreover, there are challenges in the areas of perception/attitude/mindset, the poverty of entrepreneurial culture, and lack of access to information/markets.

The empirical results show that marital status, experience, and time spent on social media increase the probability that rural youth would prefer to not participate in rain-fed farming activities, relative to assisting at home. The factors that increase the probability of rural youth

to actively participate in rain-fed farming activities, relative to assisting at home, include the dependency ratio, access to agricultural training, access to land, cooperative membership, and self-confidence. An increase in the dependency ratio increases the likelihood (by 7%) of rural youth actively participating in rain-fed farming, rather than assisting with farming activities at home, *ceteris paribus*. The higher the economic burden is in youth households, or the greater the number of dependents in the households is, the more likely the youth are to actively participate in rain-fed smallholder farming activities. In this regard, farming is taken as a source of income, which gives youth the ability to contribute (both in terms of food and income) to the welfare of their own families. The challenges at home impel them into farming as a way out of poverty (IFAD, 2013; Nwanze, 2014; IFPRI, 2016).

On the other hand, the youth who are single are more likely to not participate in rain-fed farming activities, relative to assisting at home, *ceteris paribus*. This means that single youth are more inclined to make the decision to not engage in any agricultural activities, as they have freedom and are more independent. This result is consistent with other studies (Nnadi and Akwiwu, 2008; Kimaro and Towo, 2015). The most plausible reason for this finding is that most single youth still reside with their parents, and thus have fewer responsibilities (Nnadi and Akwiwu, 2008). Marriage brings responsibilities with it, e.g. providing basic necessities such as foods, healthcare, education and shelter (Douglas *et al.*, 2017; Yunusa and Giroh, 2017). In addition, the youth who are single are more mobile. Hence, they are in a better position to take advantage of job and business opportunities situated away from their homes. This flexibility in their movements increases their probability of not participating in rain-fed smallholder farming activities.

The results show that the experience of the rural youth in farming decreases the probability of them not engaging in rain-fed smallholder farming activities, relative to assisting at home, *ceteris paribus*. This means that experience increases the probability of youth engaging in smallholder farming activities. However, the coefficient for the square of experience shows that the relationship is non-linear, and that further increases in experience then increase the likelihood of youth not participating in smallholder farming activities, relative to assisting at home. Participation in smallholder rain-fed farming activities is more likely to increase with farming experience, up to a certain point where further experience reduces this likelihood. This suggests that, with more experience and exposure to the sector, youth might realise that farming is not an easy sector, especially given the hard work and frequent challenges. Coupled with the fact that smallholder agriculture is not a sector that generates ‘fast money’, this prompts them

turn away from agriculture and look for opportunities elsewhere. Rural youth face various challenges that negatively affect the profitability of smallholder farming businesses, and thus also negatively affect youth participation in smallholder farming. Consequently, this turns most youth away from farming. Therefore, this reinforces the need for the government and other stakeholders to take into account and deal with factors that negatively affect youth participation in farming to ensure their continued participation and succession planning in the sector.

Furthermore, the rural youth with a member participating in rain-fed farming activities in their households are 38% more likely to participate in rain-fed farming, relative to assisting at home, *ceteris paribus*. This reiterates the value of early exposure to youth engagement in rain-fed smallholder farming activities. The findings are in line with a study conducted by Nnadi and Akwiwu (2008). Having a household member engaged in farming activities, especially those who perform better, influences or stimulates desire, interest and engagement of the youth in farming.

Access to agricultural training significantly increases the probability of rural youth to actively participate in rain-fed smallholder farming activities by 14%, relative to assisting with farming activities at home, *ceteris paribus*. This is in line with several studies that have been done (Mutandwa *et al.*, 2008; Mapila *et al.*, 2012; Sinyolo and Mudhara, 2018). As noted above, most of the youth interviewed have received training in the areas of crop production, agricultural commodity marketing, packaging fresh produce, business planning, pricing, and financial management. However, few have received training in livestock production and business start-up.

Having access to land increases the likelihood of youth participating in rain-fed smallholder farming activities, relative to assisting at home, *ceteris paribus*. These findings are consistent with several studies (Ghebru *et al.*, 2018; Maritim *et al.*, 2019; Twumasi *et al.*, 2019). Improved land accessibility among youth would encourage young people to think positively about farming activities, thus increasing their propensity to participate in these activities (Douglas *et al.*, 2017).

The results further show that the youth who are members of a farming cooperative are 57% more likely to actively engage in rain-fed farming activities, relative to assisting at home, *ceteris paribus*. Farming cooperatives help to improve production through facilitating access to resources and information through viable and strong connections with extension agencies (Msimango and Oladele, 2013). There is also potential to utilise the cooperatives as institutions

for accessing both input and output markets. However, the functionality of farming cooperatives in South Africa is constrained by several challenges, such as lack of training, finance, and governance skills among the leaders, as well as conflict among members (Van der Walt, 2005). Therefore, this should be taken into account by the government and other stakeholders when promoting collective action through cooperative development among the youth. If these governance issues are addressed, collective action institutions, such as cooperatives, could play key roles in reducing transaction costs for smallholder farmers and improving their access to markets and finance, as well as enhancing their bargaining power.

The results also show that spending more time on social media decreases the probability of the youth participating in rain-fed farming activities, relative to assisting in farming activities at home, *ceteris paribus*. Most of the youth spend much their time talking to friends online, making new acquaintances, and following celebrities. The youth are also exposed to luxurious lifestyles and attractive professions on social media, which affect the way in which they view farming, negatively affecting their mindset and participation in farming activities. Despite their lack of skills and resource endowments to pursue those careers, they nevertheless aspire to other businesses outside farming, leave the rural areas, and abandon rural areas and agriculture.

Their negative perceptions related to farming decrease the probability of those youth to engage in rain-fed smallholder farming activities, relative to assisting at home, *ceteris paribus*. This is supported by other studies that have been conducted in the past (Outley, 2008; Auta *et al.*, 2010; Kimaro and Towo, 2015; Cheteni, 2016; Douglas K *et al.*, 2017).

However, self-confidence increases the likelihood of youth actively engaging in rain-fed smallholder farming activities, relative to assisting with farming activities at home, *ceteris paribus*. This means that the youth who are self-confident are more likely to actively engage in rain-fed smallholder farming activities. The results show that psychological capital is an important resource that youth should have in order to participate in the smallholder sector. Smallholder farming is a sector that faces several challenges; therefore, it needs the youth with a mindset that says 'I can do it' and 'I am prepared to face the challenges therein' (Chipfupa, 2017). Several studies (Cele and Wale, 2018; Chipfupa and Wale, 2018b; Chipfupa and Wale, 2018a; Phakathi and Wale, 2018) have demonstrated that psychological capital is an important factor for the aspirations and entrepreneurial development of smallholder farmers, as well as for the productive use of irrigation water.

10.5 Agricultural value-adding economic activities for the rural youth: options and constraints

10.5.1 Youth interest in agricultural value-adding activities

According to Haggblade et al. (2012), the only major role that people in rural areas currently play within the agricultural value chain is in primary agriculture. The active involvement of the youth in value-adding economic activities could result in food security and wealth creation, and address the dilemma of youth unemployment (Som *et al.*, 2018).

The empirical findings of an MSc study by Baloyi (2020), undertaken as part of this project, indicated similarities in the factors affecting the interest of the rural youth to engage in different agricultural activities along the value chain, relative to not engaging in any agriculture-related activity. Access to formal education was found to decrease their interest to engage in all agricultural activities along the value chain, while having at least one household member already engaged in agriculture (demonstration effect) increases their interest. Youth who are better educated aspire to take on other opportunities in government or the private sector.

Access to credit was found to decrease their interest to engage in all agricultural activities along the value chain (Baloyi, 2020). This is mainly because credit for the poor people in the rural areas of South Africa is mostly used by them to provide for own consumption. In times of emergency (e.g. funerals) and when households are short of finance to meet basic household needs (food, clothing, and education), they often seek gap-filling credit and financial services. They only have access to the informal financial sources, as they are regarded as risky borrowers and are avoided by the formal credit markets (Okurut, 2006). They mainly depend on the financial services of micro-lenders, popularly known as ‘mashonisas’ (Mashigo, 2012) and ‘stokvels’ or ‘umgalelo’ (CSSR, 2005). A ‘mashonisa’ is a moneylender who lends out his or her own money for profit (CSSR, 2005), often at exorbitant interest rates (30-60% per month) (Mashigo, 2012). A ‘stokvel’ or ‘umgalelo’ loan is a loan given to an individual by an informal savings group (CSSR, 2005).

Furthermore, the results from Baloyi (2020) show that the interest of a youth to engage only in primary agriculture increased as the youth ages, possibly because their propensity to migrate declined and decreased on gaining access to social media (Twitter, Facebook, Instagram, etc.). Similarly, their interest to engage only in AVAEAs decreased with access to social media, and increased if the youth received some agriculture-related training, are endowed with positive

psychological capital, and had access to ICT facilities. Their interest to engage in the “whole value chain”, that is, to incorporate both primary agriculture and AVAEAs, increased if the youth received agriculture-related training, had access to agricultural land, and were endowed with positive psychological capital. The propensity decreased, however, with an increase in the dependency ratio and household wealth. The youth residing in households with many dependents believe that they are unlikely to obtain access to land. On the other hand, those youth who are members of a relatively wealthy family typically aspire to being in non-agricultural businesses.

The major challenges that the rural youth identified in their pursuit to engage in agricultural value-adding economic activities include insufficient initial finance, lack of skills, and lack of equipment. Ngore (2010) identified finance as the main constraint that limits youth engagement in agribusiness. Mitchell and Coles (2011) and Adekunle *et al.* (2009) also found lack of skills and/or knowledge to be limiting factors affecting youth participation in agricultural entrepreneurial activities.

Youth currently engaged in agriculture

The results show that 78% of the rural youth who are already in primary agriculture had interest to participate in the whole value chain, meaning they aspired to incorporate AVAEAs into their existing primary agricultural activities. On the same note, only 18% of the youth already engaged had no aspirations of switching to or adding AVAEAs to their primary agricultural activities. In general, the results show that the majority of the rural youth are willing to learn about and incorporate AVAEAs into their already existing primary agricultural activities. However, only a few are willing to completely switch to AVAEAs. This is reasonable, given that, compared with maintaining the status quo, switching would require a major change in the activities they are already comfortable and familiar with. Thus, the expansion of AVAEAs engagements among the rural youth practising primary agriculture should be encouraged as an additional diversification strategy to their already existing agricultural activities, and not as a solitary option.

Youth currently not engaged in agriculture

The youth who are not currently engaged in any agricultural activities were asked about their interest to engage in farming. The results indicate that more than half of youth not currently part of any agricultural activities do have an interest to engage in agricultural activities. The majority of the youth prefer to engage in the whole value chain (incorporating primary and

AVAEAs), rather than engaging in primary agriculture per se. Only 18% of the youth are interested to engage in primary agriculture. These results are in line with findings by Bezu and Holden (2014), who found that rural youth do not prefer primary agriculture to be their main livelihood strategy. In general, the results suggest that there is potential to engage the rural youth in agricultural activities, especially along the value chain.

The buying and selling of animals, together with the selling of animal products, were the AVAEAs that the rural youth least aspired to engage in. The main challenge with these activities is that there are high rates of livestock theft in the rural areas. Furthermore, the youth indicated that their families would utilise the livestock of the youth for family consumption, if the livestock were kept within the household yard. Lack of capital for initial investment, lack of skills, and lack of equipment are the leading constraints that hinder the rural youth from engaging in AVAEAs. These results are in line with findings by Ngore (2010) who identified finance as the main constraint limiting youth engagement in agribusiness. Furthermore, the results of this study are in line with those of Mitchell and Coles (2011) and Adekunle *et al.* (2009), who also found lack of skills and/or knowledge to be the limiting factors affecting youth participation in agricultural entrepreneurial activities.

10.5.2 Towards attracting the rural youth to small businesses in rain-fed crop farming

Rural youth engagement in agricultural value chains is vital for both rural development and the revitalisation of the agricultural sector. This is because the potential benefits of their engagement in these activities would not be limited to them alone (creation of self-employment opportunities and income). The benefits derived would include various benefits that have multiple spillover effects, such as job-creation opportunities and skills development through the backward and forward linkages, which would benefit the whole community.

Given their lack of skills, the involvement of young people in agriculture along the value chain (input provision, engineering, production, marketing, research, transport and processing) offers better options for employment. Agricultural value chains consist of two constructs, namely horizontal and vertical chains. The horizontal chain includes the relationships between actors on the same level: producers, processors, and retailers. The vertical dimension refers to the chain itself, which deals with all value-adding activities, from the input supplier to the end consumer.

The complexity of agricultural value chains is one of the challenges in this endeavour. According to Muchara *et al.* (2015), smallholder farmers in developing countries participate in shorter value chains, i.e. there is very limited to no value addition to primary agricultural products. Given the interest of youth in AVAEAs, this study sought to ascertain what kind of AVAEAs the youth would be interested and able to engage in, without major external support. Considering the structure of the South African rural areas, the value-adding activities that youth identified include the buying and reselling of livestock, milling of grains, operating an abattoir or butchery, and the transformation of animal skins into traditional clothes. There are also other opportunities within the agricultural value chain that have great potential to generate sustainable livelihoods for young people in the rural areas, including:

- Farm service agent
- Transportation services
- Retailing farm inputs and agricultural products (livestock and fresh crop produce)
- Farm business service facilitator
- Agro-processing.

Unlike primary smallholder agriculture, agricultural value chains have the potential to attract people, especially the youth, into agriculture and create various income-generating opportunities. Such activities are relatively perceived to not entail “dirty” groundwork like primary agriculture does. At present, there is very limited involvement, if any, in value-adding activities in the remote areas. Most of the value-adding activities in rural areas are presently undertaken by large commercial companies (South African Cities Network (SACN), 2015). In the reasoning of the youth, their choices of value-adding activities identified above require limited financial investments and relatively manageable skills endowment; thus, they are easy to initiate. However, the transportation of agricultural produce is deemed less sustainable, as it is periodic and less rewarding, as compared with the transportation of passengers (O'Planick, 2016).

According to the youth, these activities are easy to initiate, as they require lower financial investments and relatively manageable skills endowment. The major reasons for interest in the identified value-adding activities were that most of the youth believed that such economic activities add value to agricultural produce, and thus increase the opportunities for earning higher profit margins. The youth also saw opportunities for diversifying their incomes by engaging in agricultural value-adding activities, while others believe that such activities create

more job opportunities. Some of the youth specifically singled out the transportation of agricultural produce as a lucrative business opportunity, given the limited service providers in their areas, especially the remote areas.

Given the challenges that the rural youth experience in accessing financial capital, engagement in secondary processing (e.g. mixing, depositing, layering, extruding, drying, fortifying, fermentation, pasteurisation, clarification and heating) would be a challenge, although primary processing (activities such as washing, peeling, chopping, ageing, milling of grains, and processing of sugarcane) would be relatively easy.

Trienekens (2011), Lee *et al.* (2012), and Baloyi (2010) found that the lack of access to land for expansion, limited water for irrigation, lack of modern irrigation systems, mechanisation, transport logistics, and market information were the key constraints hindering smallholder farmers from participation in high-value markets.

There are several opportunities for developing small business operations along the agricultural value chain. It is for this reason that attention should be given to the formulation of effective strategies to involve the rural youth in value-adding economic activities.

The National Growth Path and other policies recognise agro-processing as a sector that bears a critical role in promoting manufacturing-based value addition, employment, and increased industrialisation. Furthermore, it has the potential to assist South Africa to break away from the commodity dependency trap. Agro-processing can be clustered into two clusters, namely primary and secondary processing.

Primary processing includes the simplest processes, such as the milling of grains and the processing of sugarcane, and the washing, peeling, chopping and aging of fresh produce. Secondary agro-processing entails transforming primary processed products into complex products and adding value through complex procedures, like mixing, depositing, layering, extruding, drying, fortifying, fermentation, pasteurisation, clarification and heating. Given the challenges that the rural youth experience in accessing financial capital, their engagement in secondary processing would be low, without interventional strategies from government and other stakeholders.

Considering the setting of the rural areas in South Africa, involving the rural youth in common value chains might be considered far-fetched. Introducing and maintaining the engagement of rural youth in agricultural value chains will be a long-term process (Trienekens, 2011). This is because such changes and engagements will require a holistic approach in terms of changes

and /or improvements to present policies, creative platforms to disseminate information, skills development, better rural infrastructure, and improved access to markets/finance.

10.6 Summary

This chapter aimed to suggest development pathways for establishing small-scale, rain-fed crop-farming businesses by and for the rural youth. It drew from the empirical findings of the previous empirical chapters. To this end, it assessed the responses of the youth to rural development interventions to address youth unemployment in South Africa. This was followed by an assessment on the role of youth endowment with positive psychological capital, mentorship, training and access to ICTs in entrepreneurial development. Based on the findings in the previous empirical chapters, the section that followed then discussed the ways and means of enhancing youth engagement in rain-fed small-scale farming. The last part has dealt with the ways and means of engaging the rural youth in agricultural value-adding economic activities and small businesses in rain-fed crop farming.

11 CONCLUSIONS, POLICY RECOMMENDATIONS AND FUTURE RESEARCH DIRECTIONS

This chapter concludes the study. It presents the conclusions, policy recommendations, guidelines, and directions for future research. The chapter presents the suggestions that are intended to guide relevant stakeholders and partners in the short to medium term, and the long term. It identifies the required interventions (regarding policy, curriculum, institutions, attitudes, entrepreneurial spirit, psychological capital, technology, etc.) to realise rural youth employment in small-scale, rain-fed crop farming and related businesses.

Before making recommendations to policymakers and stakeholders alike, it was found necessary to refine the suggestions (drawn from the empirical results) through a verification and validation process by engaging the study participants and key stakeholders. Such a process (reported in detail in Appendix 2) can validate the recommendations and show the extent to which the empirical evidence resonates from the engagement of the research team, young farmers, young people who are not currently farming, and the relevant stakeholders. This study is intended to inform the relevant stakeholders and partners on the priority areas of intervention.

Validating the proposed pathways is important to avoid the gap between research recommendations, the capacity of implementers, the political-economy factors, and the expectations of young people in the rural areas. To test the validity of the proposed interventions, the research team has already examined, and will continue to pursue, participatory validation avenues (focus group discussions, workshops, interviews with rural development practitioners, etc.). This describes how the following guidelines have been developed.

11.1 Changing youth mindsets through enhancing the profitability of smallholder farming

The blanket conclusion that the youth are not interested in agriculture is not a true reflection of what is possible. It is true that the incomes derived from smallholder farming do not offer much incentive to attract those youth not yet farming to explore this sector as a business and livelihood option. The income-poverty of their parents, grandparents and rural community members practising smallholder agriculture, as well as the poor performance of the sector, has negatively influenced their perceptions towards farming. However, a transformed and profitable agricultural sector could open up and present opportunities for employing young

people. The rising global population and the trend in urbanisation suggest that the demand for food in the future will increase. This presents opportunities for youth along the agricultural value chain.

To address climate change related challenges (such as drought), there is a need to invest in rainwater harvesting and conservation agriculture technologies that are designed to preserve water and soil moisture over longer periods of time, thereby improving water use efficiency. Disaster risk management mechanisms should have efficient and effective early warning mechanisms incorporated that allow farmers to adequately prepare for disasters before they happen. If farmers were to receive information in advance that the following season would be shorter than normal, they would be able to plan to grow short season varieties that will mature early.

Young people can play a significant role along the value chains in areas such as input provision, production, marketing, transport, and processing. The provision of market information to young farmers in remote areas, together with mentoring and training programmes and start-up funding opportunities, could help to reduce the magnitude of the challenge of rural youth unemployment. Training programmes should facilitate on-farm placement for practical instruction to train the youth and enable them to practise what they have been taught. Workshops, learnerships and training sessions, which would equip the youth with agriculture-related skills and knowledge, are important.

There is a need to increase youth incentives and opportunities in the rural areas, make agriculture profitable and worthwhile, and to improve the rural environment through better roads, communication networks and other services. To this end, there is a need to invest in productive rain-fed farming practices to improve the economic performance of the sector. The improved availability of affordable land preparation services and transport services would greatly improve the performance of young farmers. A strategy for supporting the youth in farming to acquire key agricultural equipment is needed. This could be done on a cost-recovery basis. Cost-benefit analyses should be undertaken to ensure that those services are profitable, and that the beneficiaries are able to pay back the service charges incurred.

To engage the rural youth in food production/beneficiation in the food value chain and include them as part of the rural economy, their attitudes towards farming need to be changed (long-term agenda) and the policy of the government should purposefully create conditions that encourage young people to become involved in farming, not only as workers but also as owners

of small farming businesses. To this end, the young people themselves have to practise and experience profitable smallholder farming. In this regard, they have to realise that they are able to make a decent living from farming and related businesses. That is the best way to change their mindset, and all stakeholders should work towards making this a reality.

The Provincial Department of Agriculture and Rural Development should develop a programme to support a few model smallholder farmers in rural communities, similar to the Master Farmer Programme that has been successfully implemented in other African countries. The success of these model farmers would be instructive for alerting young people to see the potential in farming. In addition, field events could also assist in demonstrating the performance of these model farmers.

It remains critically important to change the way in which smallholder farming is perceived by the youth. This endeavour should be integrated into policies and strategies that aim to enhance youth participation in agriculture. Overall, the creation and implementation of the various recommended strategies would not be of much assistance without, first, transforming the mentality and negative attitudes of the youth themselves concerning agriculture. They have to align their ambitions and mindsets to the realistic opportunities on the ground, and in accordance with their individual endowments. For the active and sustainable engagement of youth in the agricultural sector, a mindset shift among the youth themselves regarding the sector is vital, i.e. to view agriculture as a sector that will be able to provide sustainable, income-generating opportunities for them. Mindset and attitude changes among the youth would not only attract the youth to agriculture, but would also assist in reducing rural-urban migration and facilitate succession planning within the sector. Making agriculture profitable is the best way to change the typical mindset of the rural youth. To achieve this, the costs of farming and doing business have to be reduced, while productivity has to be enhanced at the same time.

It is imperative to recognise the role played by psychological capital and to identify those endowed with this asset so that they could be helped to develop as model farmers. Participation in smallholder farming not only requires access to resources (such as land, finance and skills in farming), but also endowment with a positive mindset to do what one can do with what is available. Programmes can then be developed to capacitate these young model farmers so that their successes will demonstrate to other young people that there is potential in farming and thereby change their perceptions/attitudes. Such initiatives could be replicated and scaled up through:

- Field events / short-term training programmes on primary agriculture and AVAEAs;
- Mentorship programmes to link youth with successful and experienced farmers; and
- Workshops and seminars that allow the interaction of rural youth with successful farmers.

11.2 Taking advantage of the 4IR

The experiences gained from ICT platforms in other African countries, such as the Agro Market Day (Uganda), iCow (Kenya), Esoko (16 Sub-Saharan African countries) and WeFarm (Kenya, Tanzania, Peru, and the Dominican Republic), have demonstrated the potential of ICT solutions to address the market access challenges in smallholder farming. Given that young people are technology ‘savvy’, ICTs will play a critical role in popularising agriculture. Government and non-government entities working in agriculture should take advantage of the opportunities offered by ICTs. Linking ICTs with agriculture would improve the adoption of agricultural technology, entrepreneurship, and profitability in the sector, encouraging the youth to take part in smallholder farming. Information about the profitability of agriculture should be made available on social media platforms and packaged in such a way that it is appealing and exciting to young people in rural areas. To ensure that more of the youth are attracted to the sector, agricultural success stories should be shared on social media platforms. There is a need to add agricultural content to such platforms to improve the image of agriculture. Furthermore, there is a need for the creation of more TV and radio programmes that promote agriculture.

Providing access to relevant, tailor-made, and adequate information is the key to unlocking rural youth entrepreneurship in farming. To this end, there is a need to reduce the transaction costs of locating and accessing the information. Youth development agencies should design specific information packages that can be used by youth with interests in farming and value-adding activities. The packages have to be tailor-made to cater to the information needs of youth, including blogs where youth can discuss and share information, such as on agricultural input and output markets, government programmes, and business opportunities in agriculture.

It is critically important to take agricultural information to social media platforms. This can be done by sharing publications (media and policy briefs) that break down the step-by-step processes required to initiate small-scale agricultural businesses. Agriculture should be marketed and promoted in the same way that other sectors market and promote their businesses on these platforms. Media interventions that demonstrate the positive impacts of primary

agriculture to the livelihoods of rural youth are important. Not only can ICTs be used to educate and inform the youth, they can also be used as a tool to help young people to spread knowledge, build networks, and find employment. There are several farming groups on various media platforms that the youth could use to access information that could increase entrepreneurship development in the sector. Through the use of ICTs, the youth could also explore opportunities, as well as niche markets where they might be able to sell their products. Catering to a technologically savvy generation will require technological solutions to be implemented to reduce the costs of business transactions in agriculture and to improve profitability.

There is a need to develop interactive and exciting ICT-based platforms for providing agricultural information. Government should invest in rural ICT infrastructure to make the services accessible and affordable to young people in the rural areas. There is a need to take advantage of traditional (radio and television) and modern ICTs (smartphones, social media) to facilitate the provision of information to the youth interested in farming. Platforms can be created, both on internet and social media, which are specifically tailor-made to cater to information needs of the youth already in farming and of those aspiring to join the sector. The platforms could be presented in various forms, starting from blogs where youth can discuss and share information, experiences and ideas, to web pages or social media groups for sharing information on agricultural inputs and output markets, commodity prices, government programmes, and agricultural job and business opportunities. Such platforms could be linked to access them. There is a need to design specific information packages that can be used by youth on how they could start their enterprises, what they need, and where to get it. This will reduce the transaction costs of locating and accessing the information. Moreover, a change should be made to the ways in which smallholder farming can be practised through the introduction of, for instance, ICTs and machinery. This could change the perceptions of the youth towards farming, and influence their participation in rain-fed smallholder farming.

11.3 Guidelines for establishing small rain-fed crop farming businesses for and by the youth

Towards attracting the rural youth to small businesses in the agricultural value chains

Given the challenges that the rural youth experience in accessing financial capital, the engagement by them in secondary processing (e.g. mixing, depositing, layering, extruding,

drying, fortifying, fermentation, pasteurisation, clarification, and heating) would be a challenge. However, primary processing (activities such as washing, peeling, chopping, ageing, milling of grains, and processing of sugarcane) would be relatively easy for them. Primary processing includes simpler processes, such as the milling of grains and the processing of sugarcane, and the washing, peeling, chopping, and aging of fresh produce. Secondary agro-processing entails transforming primary processed products into complex products and adding value through complex procedures like mixing, depositing, layering, extruding, drying, fortifying, fermentation, pasteurisation, clarification, and heating. Given the challenges that rural youth have in accessing financial capital, their engagement in secondary processing would be low, without the interventional strategies from government and other stakeholders.

There are several opportunities for developing, small businesses along the agricultural value chain. Attention should be given to the formulation of effective strategies to involve rural youth in value-adding economic activities. The National Growth Path and other policies recognise agro-processing as a sector that bears a critical role in promoting manufacturing-based value addition, employment, and increased industrialisation. Furthermore, it has the potential to assist South Africa to break away from the commodity dependency trap. Agro-processing can be clustered into two clusters, namely primary and secondary processing.

Considering the contextual setting of the rural areas in South Africa, involving rural youth in common value chains might be considered as far-fetched. Introducing and maintaining the engagement of rural youth in agricultural value chains will be a long-term process (Trienekens, 2011). This is because such changes and engagements would require a holistic approach to be taken in terms of changes and /or improvements in present policies, creative platforms to disseminate information, skills development, better rural infrastructure, and improved access to markets/finance.

The formulation of development paths and strategies should, therefore, be thought of as a standalone process. This activity would be more effective if it is integrated into the community's provincial and national strategies. By aligning the roles expected to be played by the youth in the national economy with their desired competencies, key experiences, and development pathways, the study has identified the ways and means for enhancing the contribution of the rural youth to the national economy.

Enhancing the development outcomes of interventions by youth agencies

Over the past years, the South African government has invested much funding in learnership, and internship/graduate and training programs that are aimed to provide knowledge, skills, and information for the youth who are participating, as well as those who are not participating, in agriculture (AgriSETA, 2016). To this end, government and various stakeholders have initiated various policies, programmes and projects to both address the challenges and encourage aspiring youth to participate in agriculture. The programmes initiated include: 'Youth in Agriculture and Rural development (YARD)', 'Comprehensive Agricultural Support Programme (CASP)', 'Comprehensive Rural Development Programme (CRDP)', 'Reconstruction and Development Programme (RDP)', 'Growth, Employment and Redistribution Policy (GEAR)', 'National Small Business Act, 1996', 'National Youth Economic Empowerment Strategy and Implementation Framework (NYEESIF)', 'Reconstruction and Development Programme (RDP)', 'Accelerated and Shared Growth Initiative', 'National Rural Youth Service Corps', and 'LandCare Program'. In promoting agriculture, government has prioritised youth entrepreneurial development (Herrington et al., 2010; Herrington et al., 2017).

Despite the existence of these initiatives, the focus placed on youth as farmers has been piecemeal and rudimental, at best. Most of the above programmes/initiatives do not exist at the local level. Their offices and operations are mostly located at the national and provincial levels. The lack of a clear policy is evident in the way in which rural development practitioners attempt to engage the youth in agriculture. Each government or non-government agency is operating differently, with its own *modus operandi*. This negatively affects the efforts to increase the participation of young people in farming and beyond.

The escalating rate of unemployment in the rural areas is evidence that these initiatives have not been having the anticipated outcomes, and their impacts have been marginal. Generally, going by the prevailing youth unemployment statistics, the youth development initiatives / organisations / policies have not been effective in addressing the rising level of youth unemployment. The initiatives did not reach most of the rural youth in need. In South Africa, much of the focus and most of the investment is given to smallholder irrigation farming. Rain-fed farming is generally overlooked by development practitioners, researchers and policymakers (Wani *et al.*, 2009).

The impacts of various interventions (by government and non-government entities) and programmes on youth and agriculture have remained marginal owing to:

- poverty of implementation/accessibility,
- urban bias,
- lack of coordination, with their activities being fragmented/uncoordinated,
- piecemeal/fragmented nature of the interventions,
- reactive rather than pro-active nature of the interventions,
- lack of monitoring and evaluation frameworks, and
- lack of capacity to manage the programmes, facing design issues.

11.3.1 Guidelines on the required policy and institutional changes

Government needs to prioritise youth participation in agriculture. Youth policy/strategy should be developed such that it gives strategic direction on how local government departments should programme their efforts regarding youth and agriculture. The government and its stakeholders should develop a policy framework for supporting youth in agriculture. There is a need for a National Youth Agricultural Policy to be developed to guide interventions that specifically aim to attract young people to farming. This will give direction in terms of youth programmes and will form the basis for mobilising resources meant for supporting young people to farm successfully. Specific programs need to be targeted to the youth.

The government and its stakeholders should develop strategies for enabling the youth to participate in agriculture. To this end, strategies have to unlock entrepreneurial development pathways in smallholder agriculture. Those strategies have been gathered into two groups in this section: short- to medium-term and long-term interventions.

11.3.2 Interventions in the short to medium term

These interventions revolve around improving communication and engagement between the rural youth and the development agencies providing services on the ground. There seems to be some type of ongoing blame game among the rural youth, the Department of Agriculture and Rural Development, and locally based agencies servicing the rural youth. This has to be addressed as immediately as possible. Independent consultants/NGOs could serve as mediators.

There are various opportunities that have been identified by this study through key informant interviews and focus group discussions. Given the right incentives and enabling institutions, the rural youth in remote areas could easily engage in these activities. The opportunities that could serve as stepping stones for rural youth to engage in agriculture include:

- retailing of agricultural inputs and products (livestock and crop);
- serving as farm agents;
- buying and reselling livestock and other agricultural products;
- buying and reselling of farm inputs;
- Farm business service facilitator;
- transportation of both inputs and outputs to different locations; and
- small-scale agro-processing (milling of grains, operating an abattoir/butchery, processing of animal skins into traditional clothes, etc.).

There is a need to improve the access to land for the rural youth, regardless of their age, gender and marital status. This was one of the issues that the respondent youth raised in one of our recent workshops with traditional leaders. Access to agricultural land should be integrated into the land reform programme and land policy debates. It needs to be linked to services and resources, such as agricultural input and output markets, training, information, and credit (micro-finance institutions).

Traditionally, agricultural extension services are designed to work with adults, who constitute most of the smallholder farmers in the rural communities. The youth are a unique group of people who respond, react and think differently to the adults. Their mindset, demands, tastes and preferences are different. The content and methods in agricultural extension have to account for those unique features of the youth. That is why tailor-made services need to be developed for them as a key intervention, which would require the training or re-training of agricultural extension agents. A transformation is thus required in conceptualising and practising agricultural extension so that it would also be able to properly service young farmers or young people interested in farming. There is also a need for the training of extension agents on the practical approaches and methodologies to adopt for engaging the youth along the food value chain.

Reducing transaction costs through empowering youth clubs/groups and cooperatives

The youth appreciate and recognise the value of membership in youth clubs/groups. The youth who are members of youth clubs felt that their membership has helped them in the following areas:

- Increased access to agricultural inputs and animal health products;
- Gain knowledge and experience – life skills, agriculture and business;
- Access information;
- Save money;
- Access credit from stokvels and government sources;
- Access to business, job and academic opportunities;
- Learn good behaviour (stay away from drugs) and improve communication with others; and
- Fitness and health.

The results further show that the youth who are members of a farming cooperative are 57% more likely to actively engage in rain-fed farming activities, relative to assisting at home, *ceteris paribus*. Farming cooperatives help to improve production through facilitating access to resources and information through viable and strong connections with extension agencies (Msimango and Oladele, 2013). There is also potential to utilise cooperatives as institutions for accessing both input and output markets. However, the functionality of farming cooperatives in South Africa is constrained by several challenges, such as a lack of training, finance, and governance skills among the leaders, as well as conflict among members (Van der Walt, 2005). Therefore, this should be taken into account by the government and other stakeholders when promoting collective action through cooperative development among the youth. If these issues are addressed, collective action institutions, such as cooperatives, could play key roles in reducing transaction costs for smallholder farmers and improving their access to markets and finance, as well as enhancing their bargaining power.

Improving the social capital of the youth should, in principle, be the responsibility of the youth themselves. However, interactive initiatives (such as seminars, indabas, and workshops) that include attendance by successful people in agriculture would contribute significantly to the social capital of the youth, particularly for those with no family members currently engaged in the sector. The development of programmes that will link the youth with successful

farmers/mentors in the agricultural sector, particularly for youth from households where no one is engaged in agriculture, is vital.

Collective action and cooperative promotion among young people should be enhanced through education and training. However, in doing so, it is important to realise that the youth are mobile, meaning that some cannot become members of local cooperatives. A different strategy for supporting such youth is required. Government programmes intended for the benefit of the youth should support both individuals and cooperatives. In addition, the government and other stakeholders should provide support to cooperatives, especially in the areas of governance, management, trust and accountability. The youth should be provided with proper skills so they are enabled to manage the cooperatives efficiently.

Tailor-made training and mentorship for the youth

Agricultural training and mentorship programmes should be placed at the centre of youth participation in smallholder farming. Relevant and tailor-made training programmes should be offered through the mentorship programmes, specifically for emerging smallholder young farmers, to enhance their knowledge and practical skills in farming. This could also build up their endowment with positive psychological capital. Going forward, the government should provide more technical support to the youth who are already in the agricultural sector. If the current young farmers succeed, and if their farms become profitable, this would serve as an incentive to attract those who are not yet participating in agricultural activities. If this information is shared among the rural youth through the media they regularly access, it would positively change their perceptions of agriculture.

There is a strong likelihood that enhanced capacity building efforts to develop the skills of youth in farming or agricultural value-chain processes would increase their participation and ability to successfully run small farming businesses. More skills training is required in areas such as livestock farming, value-adding economic activities in agriculture, water management especially rainwater harvesting, commodity marketing, and financial management. The youth should also be empowered to demand the skills that they want through improved access to information and communication channels with key government departments and stakeholders.

To take advantage of the opportunities presented by livestock farming, there is a need to explore stall-feeding management as an alternative to rangeland grazing. The youth could also focus on farming with small ruminant livestock (especially goats and sheep) that have a ready local

market. Tailor-made training programmes should prioritise training on livestock production, AVAEAs (such as processing, and proper procedures for drying and storing fresh fruits and vegetables), and business start-ups. The focus of such interventions should not only be on the youth already engaged, but also on the youth who are currently not engaged, in agriculture. For the latter, this would serve as an incentive to attract them to engage in agricultural activities.

Regarding entrepreneurial skills, there is a need for the promotion and inculcation of business management principles among the youth operating their small farming enterprises. To this end, proper record keeping and the separation of family and business operations should be attended to. It will be critical to recognise that some of the areas of limitation on entrepreneur characteristics are internal and could be entrenched, and thus very difficult to address. However, training and mentoring are possible strategies for improving the entrepreneurial spirit of the youth.

Although engagements in most activities within the value chain (such as processing) require specific, advanced skills, there are other less-advanced activities that the youth in remote areas could easily engage in within the chain. These activities could serve as stepping stones for the rural youth to engage in agriculture and give them the opportunity to initiate and run their own businesses.

School/university curriculum revision and training

The South African National Youth Policy (2020) has pointed out the need to review the national curriculum to promote employability, entrepreneurship and adaptation to the 4IR (DWYPD, 2020). It will be critical to revise high school and university curricula so that they integrate entrepreneurship, self-employment, and small-scale farming as a business, as well as business opportunities along the agricultural value chain. The curricula should aim to cultivate and develop indigenous, knowledge-based entrepreneurial mindsets, and awareness of business opportunities in agriculture and self-employment, rather than simply letting scholars expect to find jobs after completing their studies.

Education should remain a priority for all stakeholders working in rural youth development. This has to be complemented by short-term and tailor-made training. There is a need to introduce skills development programmes to equip rural youth with the necessary agricultural skills, both non-cognitive and practical. Such programmes should include practical agricultural training, business/farm shadowing initiatives, and on-site mentoring programmes.

Rural youth and smallholders need to receive training on the importance of record keeping, financial management, and separating family and business operations. The value-adding activities could entail small-scale processing, drying and storing fresh fruits and vegetables, rainwater harvesting, etc. Empowerment initiatives that seek to equip the rural youth with the necessary managerial and entrepreneurial capabilities are necessary, particularly for the youth with an interest to engage in agriculture-related businesses. In addition to the technical skills development initiatives, there is a need for the development of entrepreneurial and managerial skills, as these are essential inputs for long-term self-employment in primary and AVAEAs.

Agricultural training should be placed at the centre of youth participation in smallholder farming incentives. It is also recommended that the training offered through mentorship programmes should be tailored specifically for emerging smallholder young farmers to enhance their knowledge and skills in various aspects of farming, which might also build up their endowment with positive psychological capital.

11.3.3 Long-term interventions

Regarding markets, policymakers should be engaged with to explore developing appropriate pricing systems that would benefit the smallholder farmers and protect them from commercial farmers who produce in large quantities and sell at lower prices. Issues to be considered include the following questions. How will the Agri-parks work? Can price subsidies work? Is there any potential for warehouse receipts and contract farming?

Given that entrepreneurship and the challenges therein are complex and multi-dimensional, the policies, strategies, and programmes to attract young people to agricultural businesses and agripreneurship have to be holistic in focus, coordinated in action, and participatory in engagement, from start to finish. Any agripreneurship programme or strategy has to recognise that the most important elements of the strategy including fostering an entrepreneurial culture or mindset, instilling entrepreneurial skills, incentivising entrepreneurial attributes, and ensuring an enabling entrepreneurial environment.

The National Youth Policy (2020) identifies poorly coordinated services as constituting one of the reasons for the poverty of the outcomes of positive youth development efforts in South Africa (DWYPD, 2020). There is a need to harmonise and coordinate the various fragmented/uncoordinated efforts by various organisations, programmes, policies and projects.

The programmes implemented should be monitored/reviewed/evaluated regularly (before, during and after implementation) to ensure that:

- they still meet the needs of the youth,
- they are impacting on the youth in a positive way, and
- the aspects that need to be revisited are acted upon.

The attitudes and perceptions of the youth about smallholder farming need to change, which constitutes a long-term agenda item. This change will become a reality when the profitability of the sector changes. If the current young farmers succeed and their farms become profitable, their success would serve as an incentive to attract those of the youth who are not yet participating. Identifying successful model farmers in the rural areas would create a demonstration effect that would permeate through the cohort of young people and create enthusiasm as well as interest among them to engage in the sector. Success stories of profitable small-scale farming should be made available on social media and other platforms, and be packaged in such a way that they are appealing, convincing, and exciting to young people in the rural areas.

Mentorship programmes, workshops, and seminars that allow for the interaction of rural youth with successful farmers could also assist in attracting these youth into primary agriculture/AVAEAs, and change their perceptions and expectations positively. Mentorship programmes that would link rural youth with well-established people in downstream agricultural activities will remain necessary. As with primary agriculture, the development of programmes that will link the youth with mentors/successful AVAEAs business owners are vital. Short-term training programmes that would expose the youth with the different business opportunities along the agricultural value chain are necessary, particularly since there are very limited, if any, AVAEAs currently operating in the rural areas.

Land reform, rural youth and smallholder farming

The lack of land tenure security is still an issue for the rural youth in South Africa. Given the prevailing insecurity, they cannot be expected to make any long-term investment decisions on the land. For the youth to invest their time and resources on the land, there is a need for land tenure security to be facilitated. There is a need to engage with the traditional leadership on this issue and also to investigate the willingness of farmers to relocate to farms redistributed under land reform mechanisms.

Land tenure security for the youth should be integrated into the land policy debates and land reform programmes in South Africa, particularly taking into account the prevailing cultural practices concerning land allocations. The youth, regardless of marital status and gender, should be allowed the same opportunity to inherit, borrow, lease, and where possible, purchase agricultural land, without any restrictions. Differences in youth marital and dependency statuses should also be considered in designing future youth programmes.

Young people in the rural areas should be able own land to increase their participation in rain-fed smallholder farming activities. There is a need to engage with traditional leaders so that those of the youth who have demonstrated their willingness and capacity to engage in farming will also be allocated land. Once this has been addressed, this information should be shared with young people in rural communities so that they become aware of this opportunity. There is a need to include provisions for productive land allocation to youth within the country's land redistribution programme.

The creation of a vibrant land market that would enable the rural youth to borrow, lease, and where possible, purchase agricultural land is necessary when attempting to attract them to primary agriculture.

Addressing the rural-urban divide

A concerted effort has to be made to address rural-to-urban migration. This includes investment in rural infrastructure, rain-fed agricultural value-adding economic activities, and interventions that improve the profitability of smallholder farming businesses, as well as interventions that improve the profitability of agricultural and other businesses in the rural areas. There is a need to invest in rain-fed agricultural value-adding economic activities that offer tremendous opportunities through backward and forward linkages. Linking the youth to profitable food value chains and exploring avenues for establishing small farming businesses would contribute to sustainable rural development, the empowerment of the rural youth, and youth employment creation in the rural areas. Policies and strategies will have to deal with both pull (better working and living environment in the urban areas) and push (population pressure, land scarcity, lack of alternative livelihoods, poverty of infrastructure, and drought) factors.

The engagement of the rural youth in agricultural value chains should be considered vital for both rural development and the revitalisation of the agricultural sector. This is because the potential benefits of their engagement in these activities will not be limited to them alone (creation of self-employment opportunities and income). There are various other benefits with

multiple spill-over effects, such as job creation opportunities and skills development through the backward and forward linkages, which would benefit the whole community. Through the backward linkages, multiple investment opportunities could result from the requirements that would be needed for value-adding activities to succeed, such as increased demand for farm produce and technical skills to operate the necessary machinery. Through the forward linkages, engagements in value-adding would result in a convenient supply of agricultural food for rural households, while creating employment. Combined, these linkages would create a beneficial environment conducive for agricultural activities, not only in the rural areas, but also in townships and urban areas.

Developing public-private partnerships

There is room to explore areas for public-private partnerships between government/non-government, civil society and private entities, such as financial service providers, retailers and other agro-industry role players. These partnerships could produce better outcomes than what each agency could do on its own. Such partnerships could be established to enable farmers and support rain-fed farming. Such partnerships, with various avenues for synergy, would include support at production levels to value chain mentoring and business development. It should be the social responsibility of private companies (such as Shoprite, Spar and other agricultural industry role players) to support youth participation in profitable AVAEAs.

There is also a need to develop public-private partnerships to address the challenges regarding the inability of rural youth to meet the loan requirements of commercial banks. A mindset change is needed in the banking sector regarding its risk-averse attitudes towards advancing credit to the youth. This partnership could, among other things, facilitate access to new niche markets (local and export). To this end, short-term and long-term strategies need to be designed. The short-term strategies could be in the form of training and the provision of market information to young farmers in the rural areas. The long-term strategy has to focus on investment in infrastructure and working on the sustainability of the partnership. Government, in partnership with the private sector, should introduce further programmes that are specifically designed for the youth, considering the heterogeneity that exists among them.

Regarding access to credit, there is a need for constructive debate among key stakeholders as to what solution would work for both the private sector and small-scale farmers. This is needed because farming is risky, with no insurance, the income flow is not consistent, and farmers typically do not meet the currently required collateral conditions. The question is as to what

other models could be used to finance small-scale farmers. Is microfinance a solution for rural smallholder farmers in South Africa? Is there any potential for stokvels?

Gender empowerment

Men are more likely to be entrepreneurial, as women are constrained by their reproductive roles of being wives and mothers, and are restricted to their homestead duties. That is why women mostly cannot engage in any economic activities other than farming. Married youth and those with greater numbers of dependents in their households have a higher propensity for participating in rain-fed smallholder farming, owing to their responsibilities and limited scope for mobility.

Concerning gender, empowering young female farmers would increase their entrepreneurial engagement in smallholder farming. Young women should be empowered in terms of access to services and resources, such as land with security of tenure, agricultural input and output markets, training, information, and credit.

There is a need for cultural transformation in the value systems that have long existed and are held by the traditional leaders in rural areas. These changes should be able to eliminate the norms and gender- and age-based stereotypes, and improve land access for rural youth, regardless of their age, gender and marital status.

Enhancing youth participation in agriculture

The creation of an enabling environment for the rural youth to actively participate in the agricultural value chain should be prioritised. This is because the potential benefits of their engagement in these activities will not be limited to them alone (creation of self-employment opportunities and income). There are various other benefits to the broader community, through the backward and forward linkages, with multiple spill-over effects, like job creation opportunities and skills development. Through the backward linkages, there are multiple potential investment opportunities that could be initiated, including the increased demand for raw materials (farm produce) and for the technical skills that are critical for businesses along the agricultural value chain. Through the forward linkages, value-adding activities would result in the provision of convenient access to food for rural households. These linkages would create a beneficial environment conducive for agricultural activities.

During a recent focus group discussion, a group of rural youth noted that rain-fed smallholder farming could provide employment opportunities for them, but only if there is a change in the

way in which it is practised. A transformed small-scale farming sector, which responds to the market, presents opportunities for employing youth, the expanding townships, and urban population growth. If South Africa is to view agriculture as a sector to help to alleviate youth unemployment, challenges have to be addressed, such as lack of information / knowledge / education, inadequate access to financial services, limited access to markets, and limited involvement of the relevant stakeholders in policy dialogue. Programmes introduced/implemented must take a comprehensive look at the needs and the resources available for the youth in their areas, so that they can address those needs. Programme structures should be established at the national, provincial and local levels, and more specifically in rural areas, for easing the accessibility to them by the youth. The programmes implemented should be monitored/reviewed/evaluated regularly to check if they still meet the needs of the youth, if they are impacting positively upon youth livelihoods, and if there is a need to change their operational plans. For future interventions, such an exercise would enable decision makers to draw from the lessons learnt so that they could be packaged to inform future interventions. Government should implement programmes/interventions that seek to provide a wide range of opportunities, not only in primary agriculture, but also along the agricultural value chains. Interventions, which are tailored for the rural youth to provide them with the essential entrepreneurial skills and access to necessary resources, are vital.

Improving the resource base of the rural youth should be the starting point for strategies that seek to address the challenge of limited youth participation in the agricultural sector. If South Africa is to take agriculture as a sector to help to alleviate youth unemployment, young people should have access to tailor-made credit services and to the markets. In terms of access to credit among the rural youth, it is recommended that government and private stakeholders should support credit institutions so that they could provide rural youth with affordable credit, without having to provide collateral for the credit granted. However, the youth should be mentored so that they would use the funds for the purposes stipulated in their applications. There is a need to initiate tailor-made programmes (including micro-finance) that would offer production credit packages (including for processing and storage facilities) with requirements that can be met by a typical rural youth and payment arrangements that are in line with their income structure, repayment capacity and the sensitivity of agricultural production to natural calamities. This would, in turn, serve as a motivation for enhancing youth participation and performance in rain-fed smallholder farming.

Pathways for youth entrepreneurship development and boosting positive psychological capital

There is a need to recognise and cultivate the psychological capital of the rural youth to enhance their propensity to participate in farming. Support for the youth already engaged in the sector should continue, with incentives regarding tenure security and collective action being introduced to attract others into farming. Endowment in entrepreneurial spirit, entrepreneurial skills and entrepreneurial qualities, together with ensuring a good entrepreneurial environment, are critical for attracting and retaining youth in rain-fed smallholder agriculture. Improvement in the promotion of youth development agencies (through social media and other mechanisms) could improve entrepreneurship. Equipping rural youth with entrepreneurial knowledge and skills ought to be among the major objectives of youth development agencies.

Political and traditional leaders should demonstrate a political will by putting in place a 'National Agricultural Youth Development Policy' that would guide youth entrepreneurial development pathways in smallholder agriculture. This policy, among other things, should develop tailor-made strategies for the rural youth and facilitate entrepreneurial development pathways in smallholder agriculture.

It is important to enable young entrepreneurs and encourage them to identify the business opportunities in smallholder farming. To this end, the NDP 2030 and the National Youth Policy (2020) provide a broad framework, through which sector-specific programmes and interventions (e.g. in education, agricultural value adding, manufacturing and service industries) can be developed. There is a need to harmonise and coordinate the various fragmented and uncoordinated efforts by various organisations, programmes, policies and projects.

11.4 Future research directions

Future research could be expanded to other provinces. This would assist in identifying and understanding whether the factors affecting the interest and potential participation of the rural youth in agricultural value chains throughout South Africa might differ and be location-specific. This is essential for assisting policymakers to understand whether strategies aiming to attract South African rural youth into agricultural value chains require to be tailor-made and location-specific, or generic.

The study did not analyse the impact of ICTs on the performance of smallholder farming. Therefore, future research could concentrate on ICTs and their role in the performance of

smallholder farming, and determine how this might influence the participation of youth in rain-fed farming, and the creation of small businesses in the sector. Future studies could seek to be product-specific. Furthermore, future research might investigate the extent to which the expectations of rural youth to find jobs in other sectors affect their participation in agricultural activities. There is also a need to understand the factors that influence the dynamics involved in the willingness of the youth to remain in primary agriculture, or to switch to AVAEAs, or to incorporate AVAEAs into their already existing primary agricultural enterprises.

Furthermore, future research could adopt a revealed-preference approach to capturing the attitudes of the youth toward agricultural activities. This is particularly relevant for variables/questions that seek to capture the psychological capital, perceptions and entrepreneurial spirit of the youth. Future studies could compare and contrast the perceptions of the youth regarding primary agriculture and AVAEAs for a specific product(s). Within primary agriculture/AVAEAs, one can distinguish crop/livestock, cash/food crops, fruits and vegetables/cereals, etc. In addition to this, there is a need to explore the impact of pull factors on the potential participation of youth in agriculture. Furthermore, for the youth already engaged in agriculture, future studies should seek to investigate the factors that affect their willingness to incorporate AVAEAs into their current primary agricultural activities.

To examine the entrepreneurial competencies of youth outside agriculture, and to better understand the broader entrepreneurial endowment of the rural youth, future research could focus on youth entrepreneurship in other businesses. Understanding their entrepreneurial qualities (both present and lacking) would inform policymakers and all related stakeholders on the state of youth entrepreneurial qualities in South Africa. Since this study has used the ex-ante approach to investigate interest, future studies could use an ex-post approach and examine the factors that affect the participation of the rural youth in AVAEAs, from the perspective of those who are actually practising farming.

11.5 Summary

This chapter concludes the study, highlighting the conclusions, policy recommendations, guidelines, and future research directions. The section following the conclusions recommends enhancing the profitability of smallholder farming to change the mindset of the youth. This is intended to address the negative attitude of the youth about smallholder farming as a livelihood strategy. The section that followed presented the ways and means for taking advantage of the 4th industrial revolution, to the benefit of the rural youth. The second half of this chapter

presented the guidelines for establishing small, rain-fed crop farming businesses for and by the youth. To this end, the chapter presented the suggestions that would guide relevant stakeholders and partners on the short- to medium-term, and long-term changes (policy, curricula, institutions, attitudes, entrepreneurial spirit, psychological capital, technology, etc.) that need to occur regarding the youth and small-scale, rain-fed crop farming. Finally, the last section has presented potential questions for future research, drawing from the analyses performed and the field work experiences of the team.

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APPENDICES

APPENDIX – 1 PROJECT OUTPUTS: UKZN

The following are scientific articles published, scientific articles submitted to journals, MSc dissertations completed, MSc study ongoing, and popular article published in Water Wheel magazine.

A.1.1. Journal Articles: Published

- i. Baloyi, R.J., E. Wale & U. Chipfupa. 2022. Rural youth interest in economic activities along the agricultural value chain: Empirical evidence from South Africa. *International Food and Agribusiness Management Review* (DOI: 10.22434/IFAMR2021.0036)
- ii. Mkuna, E. & E. Wale. Explaining farmers' income via market orientation and participation: evidence from Kwazulu-Natal (South Africa). *Sustainability*, 14, 14197. (<https://doi.org/10.3390/su142114197>)
- iii. Chipfupa, U., A. Maiwashe & E. Wale. 2021. Psychological capital and climate change adaptation: Empirical evidence from smallholders in South Africa. *Journal of Disaster Risk Studies* 13(1), a1061. <https://doi.org/10.4102/jamba.v13i1.1061>
- iv. Wale, E. & U. Chipfupa. 2021. Entrepreneurship concepts/theories and smallholder agriculture: insights from the literature with empirical evidence from KwaZulu-Natal, South Africa. *Transactions of the Royal Society of South Africa* 76(1): 67-79
- v. Wale, E., U. Chipfupa & N. Hadebe. 2021. Towards identifying enablers and inhibitors to on-farm entrepreneurship: Evidence from smallholders in KwaZulu-Natal. *Heliyon* 7(1) pages e05660
- vi. Mkuna, E. & E. Wale. 2023. Explaining smallholder farmers' choice of irrigation systems: empirical evidence from KwaZulu-Natal (South Africa) and implications. *Scientific African* e01688 (<https://doi.org/10.1016/j.sciaf>)

A.1.2. Journal Article Accepted for Publication:

- vii. Rambuda, H., E. Wale & U. Chipfupa. The propensity of rural youth to take rain-fed smallholder farming as their livelihood strategy in KwaZulu-Natal (South Africa): a multinomial logit analysis. *Poverty & Public Policy*, under revision to be resubmitted.

A.1.3. Conference Contributions:

- i. R. Baloyi, E. Wale & U. Chipfupa. The impact of entrepreneurial spirit on rural youth participation in agribusinesses: Evidence from KwaZulu-Natal, South Africa. **Paper presented at the 10th Annual Conference of the International Farm Management Association (IFAMA) Conference, 16-20 November 2023, Lincoln University, New Zealand.**
- ii. E. Wale and E. Mkuna. 2022. On smallholder crop productivity and on-farm entrepreneurship: empirical evidence from Ndumo-B and Makhathini Irrigation Schemes, KwaZulu-Natal, South Africa. **Contributed paper presented at the 59th Annual Conference of the Agricultural Economists Association of South Africa (AEASA), 02-05 October 2022, Strand Hotel Swakopmund, Namibia.**
- iii. E. Wale. 2019. Incentives and challenges for smallholders to be entrepreneurial: empirical evidence from selected irrigation schemes in KwaZulu-Natal, South Africa. **Contributed paper presented at the ECONALYA: 3rd International Conference on Economic Research, 24-25 October 2019, Alanya, Turkey**
- iv. E. Mkuna and E. Wale. 2022. Explaining farmers' income via market orientation and participation: evidence from Kwazulu-Natal, South Africa. Poster presented at Tropentag conference, September 14-16, 2022, Prague, Czech Republic.

A.1.4. Postgrad Studies

A.1.4.1. MSc Dissertations Completed: UKZN

- i. Raesetse Johanna Baloyi. Value chains in rain-fed agriculture and rural youth entrepreneurial development in South Africa.
- ii. Humbulani P Rambuda. Entrepreneurial attributes and the propensity of rural youth to take rain-fed smallholder farming as their livelihood strategy in KwaZulu-Natal Province.
- iii. Banele Silver Masango. Entrepreneurial qualities of the rural youth and the role of youth development agencies to agriprenurship development: Empirical evidence from KwaZulu-Natal, South Africa.

A.1.4.2. Ongoing MSc Study at UKZN: Progress and Future Plans

Amkelwa Malgas

WORKING TITLE: Rural youth and agriculture: the role of mentorship in stimulating successful agripreneurship in rain-fed agriculture. **Supervisors:** E.W. Zegeye and Stuart Ferrer

Two more MSc students will register – Sem. II, 2023. **Supervisors:** E.W. Zegeye and R.J. Baloyi

A.1.5. Popular Article – Newsletter

Wale, E. 2022. Understanding the challenges first: the rural youth and rainfed smallholder farming. The Water Wheel. January/February 2022 Vol. 21(1): 22-25.

Table A.1.1. A summary of project outputs and contributions

Item	UKZN	UFS
Number of journal papers published	7	2
Newsletter articles published	1	2
PhD studies ongoing	-	1
MSc studies completed	3	3
MSc studies ongoing	3	-
Number of conference contributions	4	1

APPENDIX – 2 STAKEHOLDER WORKSHOPS AS VEHICLES TO CONNECT SCIENTIFIC KNOWLEDGE WITH POLICY PRACTICE

1. Background

Two stakeholder feedback workshops were held with young participants and other stakeholders in Okhahlamba – Section 9 (Beville) and Alfred Duma Local Office (Ladysmith). The workshops were held on the 1st of February 2022. The purpose was to give farmers and other stakeholders feedback on the research findings and to engage with stakeholders on the feasibility of the recommendations proposed by the team. A total of 47 young farmers and 10 stakeholder representatives attended the two feedback sessions. Stakeholders in attendance were mainly young farmers, unemployed youth, traditional leaders and representatives from the Department of Agriculture and Rural Development (DARD). Many of the other stakeholders and partners invited could not make it.

In the welcome address, the traditional leaders appreciated the team's effort to give feedback to farmers and that it was the first time such an event was happening. They expressed that those who have previously conducted research with farmers hardly came back with a feedback on the research results.

The workshops were part of the project's effort to connect research knowledge with policy action. This is critically important for research to have impact on policy processes. To this end, all relevant stakeholders have to buy in the research objectives and expected outcomes of the project.

The other principles are:

- local community engagement and integrating inputs of the target beneficiaries,
- taking the farming system holistically,
- accounting for heterogeneity and establishing youth typologies, and
- adapting the sustainable livelihoods framework and integrating psychological capital.

Accordingly, the two main purposes of the workshop are:

- to share the findings of the research with farmers and relevant stakeholders
- to get feedback and inputs from farmers/relevant stakeholders so that the team can use them as inputs for revising the project report and future engagements with other stakeholders.

2. Issues raised during the Q&A session

The participants raised some important issues after the presentations.

One of the questions has to do with land allocation, i.e. the traditions and culture do not allow unmarried youth to be allocated land. This has been an inherent challenge which the survey respondents reported as one of the key challenges of engaging the rural youth in agriculture. In both Africa and Asia, customary law takes precedence in governance of rural populations and resources (Toulmin, 2009). Part of the tradition that complicates the solution, according to the perception of local community members, is the unquestionable and multi-faceted authority of traditional leaders. It will require some serious engagement and negotiations with the traditional leaders. The outcome of these engagements and negotiations have to feed into the land policy reform processes.

The increasingly frequent occurrence of drought and scarcity of irrigation water have made rain-fed crop farming questionable to many. That is why the workshop participants questioned the focus of the project on rain-fed agriculture. This could be the reason for many young survey respondents to have better preference to livestock farming compared to crop farming.

The presentations by the team were translated to Isi-Zulu for the benefit of those who could not understand English.

3. Challenges encountered

Whenever workshops are held, there is some form of blame game between local community members (farmers) and their service providers. According to one of the workshop participants, this could be one of the reasons for the lack of attendance of some of the stakeholders. Poor attendance of invited stakeholders has been a challenge both to the smooth running of workshops and implementation of project recommendations.

Covid-19 has obviously made gathering all stakeholders in one venue an inherent challenge. It has made it so difficult to plan and run the workshops. The workshops were initially planned for 2021. They had to be postponed due to Covid-19 and the contract had to be amended accordingly.

The other challenge which is not unique to this research project is lack of a clear mechanism and commitment to get the research findings implemented. Overall, the farmers appreciated the fact that researchers came back to report on their findings. The research team was also able to clarify to some farmers that the project makes recommendations for adoption by all relevant

stakeholders including government. However, the researchers have neither mandate nor authority on implementation strategies that will eventually be adopted. Prof Wale also explained to the farmers that there will be additional engagements at provincial and national levels to discuss the findings of the study. Farmers are keen to get informed about the outcome of those discussions because, ultimately, they want to know how the project recommendations are going to be implemented.

4. Recommendations for similar workshops in the future

There is a need to rethink some aspects of the workshop format to better engage with young farmers and other relevant stakeholders. It was clear that some farmers could not speak freely in the presence of the DARD officials. This was confirmed after the workshop when some farmers told the research team that they did not want to respond to some of the issues discussed although they have their view which is different from that of DARD. Maybe separate meetings with farmers and other stakeholders could be an option. However, the challenge remains on what platform would these different groups meet because their engagement is important in addressing key challenges affecting young farmers and young people in the rural areas not currently farming but who could potentially be farming in the future.

To ensure the participation of other stakeholders in future workshops, there is a need to involve all relevant stakeholders at the start of the research project and engagements should continue even after the project officially ends. Instead of inviting them at the end of the project, the project team will have to identify its core stakeholders in the beginning and start the engagement earlier on. This is a plan for future R&D projects by the team.

To address the issue of the blame game, and to enable farmers/community members engage with the research team without fear or favour, having the workshops separately for the different stakeholders (NGOs, DARD, youth development agencies such as NYDA, etc.) might be the way to go. This will have its own *cons* and *pros*.

Planning under covid-19 was a challenge. Flexibility on the methodology and adaptation was necessary at the different stages. An attempt was made to conduct a virtual workshop with stakeholders that have not been covered. Internet coverage was the most important challenge to pursue this.

APPENDIX 3 WORKSHOP PROGRAMME



Entrepreneurial development for establishing small farming businesses and employment by youth in rain-fed crop farming (K5/2789//4)

Stakeholder Workshop and Feedback Session

Date: 01 February 2022

Venue: Okhahlamba – Section 9 (Beville) and Alfred Duma Local Office (Ladysmith)

Time: 10am-12 pm (Okhahlamba) and 14:00-16:00 (Alfred Duma)

Table A.3.1. Tentative Programme

10:00-10:05	Opening prayer	One of the elders
10:05-10:10	Welcome	Traditional leader
10:10-10:15	Introduction	DARD
10:15-10:25	Purpose and overview of the project	Prof E Wale
10:25-11:00	Presentation of key findings and recommendations	Prof E Wale
11:00-11:30	Presentation of findings and recommendations, based on his MSc study	Banale Masango
11:30-12:00	Discussion: Q&A	DARD
12:00-12:05	Closing	One of the elders
12:10-13:10	LUNCH	

APPENDIX 4 THE STAKEHOLDER WORKSHOPS IN PICTURES

Appendix 4.1 Alfred Duma Workshop Pictures













Appendix 4.2 Okhahlamba workshop pictures













APPENDIX – 5 REGRESSION RESULTS

Table A.5.1. Engagement in farming – multinomial logistic model results

Variables	Not participating in rain-fed farming activities (Category 1)			Actively participating in rain-fed farming activities (Category 3)		
	Coefficient	Robust standard error	Marginal effects (dy/dx)	Coefficient	Robust standard error	Marginal effects (dy/dx)
Intercept	3.220	2.325		0.045	2.180	
Dependency ratio	0.163	0.200	-0.018	0.447**	0.213	0.072
Marital status	3.812**	1.866	1.029	-0.706	1.198	-0.642
Education	-0.090	0.108	-0.029	0.054	0.103	0.023
Experience	-0.753***	0.176	-0.196	0.081	0.132	0.115
Experience squared	0.025***	0.009	0.007	-0.008	0.007	-0.005
Other household member engaged	-1.924***	0.649	-0.381	-0.714	0.586	0.100
Access to agricultural training	0.318	0.541	-0.037	0.886**	0.452	0.144
Access to land	-1.544**	0.661	-0.549	1.302*	0.762	0.472
Access to credit	-1.903	0.859	-0.456	-0.096	0.609	0.227
Coop membership	1.846	1.225	-0.051	3.892***	0.963	0.574
Time spend on social media	0.028**	0.015	0.012	-0.039	0.027	-0.012
Negative perception	0.635	0.564	0.267	-0.854*	0.469	-0.261
Log ICTs assets	-0.172	0.131	-0.033	-0.070	0.123	0.008
Resilience	-0.219	0.298	-0.104	0.388	0.250	0.109
Self-confidence	0.256	0.293	-0.017	0.616***	0.235	0.095
Multicollinearity test	Mean VIF=2.47					
Log pseudolikelihood	-124.84251					
Deviance χ^2 =249.689 (significance level=0.999 i.e .>0.05)						
Likelihood ratio test χ^2 =227.547 (significance level=0.000 i.e. <0.05)						
Classification accuracy:						
% of rural youth who are not participating in rain-fed farming activities that were correctly predicted=91%						
% of rural youth who are assisting in rain-fed farming activities at home that were correctly predicted=56.6%						
% of rural youth who are participating in rain-fed smallholder farming activities in their own capacity were correctly predicted=71.8%						
Overall % of rural youth that were correctly predicted =76.8%						

Note: ***, ** and * indicate level of significance at 1%, 5% and 10% levels, respectively

Source: Survey data, 2019

Table A.5.2. Interest in farming – multinomial logistics regression results

Category 1 (n = 27)			Category 2 (n = 40)		Category 3 (n = 55)	
Primary agriculture only			AVAEAs Only		Whole value chain	
<i>Independent Variables</i>	<i>B</i>	<i>dy/dx</i>	<i>B</i>	<i>dy/dx</i>	<i>B</i>	<i>dy/dx</i>
Location	0.502	0.072	2.509***	0.287	0.389	0.113
Age	-0.133	-0.007	-0.140	-0.012	-0.013	0.012
Age ²	3.23e-15**	2.40e-16	1.40e-15	5.71e-18	1.01e-15	6.78e-17
Education	-0.459**	-0.011	-0.650***	-0.036	-0.516**	-0.016
Gender	-0.554	-0.044	0.041	0.54	-0.5422	-0.040
Dependency ratio	-0.012	0.043	-0.310	0.005	-0.772**	-0.090
Household Agric	4.526***	0.152	4.583***	0.220	3.207***	0.020
Credit	-2.951*	-0.100	-2.875**	-0.122	-2.199*	0.112
Training	0.861	0.157	2.876***	0.162	3.090**	0.230
Land	-0.488	-0.089	0.297	0.025	0.607*	0.090
Perception Agric	-0.176	-0.015	-0.167	-0.020	0.100	0.031
Pos_Psych	0.658	0.039	0.490*	0.025	0.623**	0.056
Social group	1.031	0.088	0.397	0.013	0.104	0.050
Social media	-1.670*	-0.113	-1.792**	-0.186	0.375	0.224
Prior Know	0.132	0.027	0.064	0.026	-0.398	-0.065
LogHhldWealth	-0.320	-0.005	-0.179	-0.037	-790***	-0.088
LogICT	0.312	0.016	0.639*	0.039	0.541	0.026
Number of Observations = 152						
Likelihood ratio test: Chi-square = 152.250			df=48	p-value= 0.000		
Log likelihood = -128.522						
Overall % youth correctly classified = 78.200%						

Note: *, ** and *** denotes statistical significance levels at 10, 5 and 1%, respectively. The base category is category 4 = youth not interested to participate in any agricultural activity.

Source: Survey data (April 2019).