Access to agricultural market: A case study of smallholder farmers in Carolina and Badplaas areas in Mpumalanga Province

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DECLARATION

I, Sibongiseni Mishack Khumalo, student number 201503061, declare that this Master's dissertation entitled: "Access to agricultural market: a case study of smallholder farmers in Carolina and Badplaas areas in Mpumalanga Province'' is my original and independent research. It has not been previously submitted for a degree at any other university. All sources have been appropriately acknowledged.

DEDICATION

This dissertation is first dedicated to Jesus Christ, my Lord and Savior, who gave me the necessary wisdom and understanding to complete this dissertation. It is also dedicated to my mother, Sponono Anna Zulu, and my fiancé, Faith Sbongiseni Msibi, for their continued support and encouragement throughout my academic life. Lastly, it is dedicated to my friends and comrades.

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LIST OF ACRONYMS

AEOs: Agricultural Extension Officers

AESs: Agricultural Extension Services

AMI: Agricultural Market Information

ASD: Agricultural Development Support

BATAT: Broadening Access to Agriculture Trust

CA: Capability Approach

CAADP: Comprehensive African Agricultural Development Programme

CAGR: Compound Annual Growth Rate

CALLM: Chief Albert Luthuli Local Municipality

CAP: Common Agricultural Policy

CASP: Comprehensive Agricultural Support

COVID-19: Coronavirus Disease

CSM: Customer Services Management

DAFF: Department of Agriculture, Forestry, and Fisheries

DBSA: Development Bank of Southern Africa

EC: European Commission

EU: European Union

FAO: Food and Agriculture Organization

FSP: Farmers' Support Programme

GDP: Gross Domestic Product

ICs: Informational Capabilities

ICT: Information and Communication Technologies

IFAD: International Fund for Agricultural Development

IMF: International Monetary Fund

NAMC: National Agricultural Marketing Council

NDA: National Department of Agriculture

NEPAD: New Partnership for Africa's Development

NFP: National Fresh Produce

SADA: South African Department of Agriculture

SADC: Southern African Development Community

SSA: Sun-Saharan Africa

US: United States

USA: United States of America

USAID: United States Agency for International Development

USD: United States Dollars

USDA: United States Department of Agriculture

WB: World Bank

WFP: World Food Programme

ABSTRACT

Most smallholder farmers produce to the best of their ability, but their produce cannot reach the market due to challenges such as farm location, the distance to the market, and transportation costs. Although these farmers contribute greatly to employment creation, household food security, and income assurance, their existence is undermined by a lack of necessary support from the government. Consequently, it hinders access to agricultural markets and other related opportunities. This study explored smallholder farmers' perceptions of access to agricultural markets. The study interviewed 25 small-holder farmers (n=25) and 7 (n=7) agricultural extension officers. An exploratory research design was employed to explore the participants' views on access to the agricultural markets. A qualitative approach using semi-structured interviews was used to gather data in this research. Thematic analysis was used to analyze data and derive themes adopted in the study. The study was framed within the capability approach, which asserts that individuals need certain capabilities and skills to achieve their goals and navigate challenges faced. Findings reveal that the small-holder farmers lack access to the agricultural market, and the main contributor to this situation is the lack of knowledge on how to effectively utilize technology-based markets to advertise their products and access the markets. It was also concluded that these farmers are not supported in any way to improve their farm operations or increase their market access. Therefore, the government must provide necessary support to the small-holder farmers as they play a crucial role in employment creation for rural communities and the local economy.

Keywords: Access; agricultural market; small-holder farmers; food security; food insecurity; agricultural extension officers; support services; and modern technology.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The agricultural industry in Sub-Saharan Africa (SSA) contributes massively to both social and economic development (Goedde et al., 2019). This is evidenced by the fact that over 60% of the population in the region is found in the small-scale sector, and that the SSA's Gross Domestic Product (GDP), which constitutes 23% is generated by the agricultural sector (Goedde, et al., 2019). Further, the sector is the pillar of the livelihoods of many households in the SSA, and it contributes significantly to the national economies in countries that rely less on mineral wealth (Thindisa & Urban, 2018). A population of over 950 people resides in this region, and it is estimated that the population will reach close to 2.1 billion by 2050 (Food and Agriculture Organization, 2015). According to(FAO, et al., 2015). 'the full potential of the agricultural sector in the region is yet to be exploited even though it accounts for approximately 23% of the region's total GDP. In 2014, the African continent saw a sharp increase, and about 250 million of the population were undernourished, and the emergence of the coronavirus pandemic exacerbated the issue of food insecurity (Larson, et al., 2014). According to FAO et al (2015), the challenge of climate change is likely to worsen the current threats to the situation of food security and agriculture-based livelihoods. The authors further argue that a handful of smallholder farmers in the region heavily depend on rainfed agriculture; thus, they are more likely to be affected by climate change conditions. Yields have significantly increased over the recent decades in other regions, except in the SSA region, where yields have remained stagnant (Scoones, 2009). International Monetary Fund (IMF) (2012) stressed that the anticipated African Union's (AU) target of 6% of yearly agricultural productivity growth will require substantial policy support and investment in agricultural technologies.

FAO, International Fund for Agricultural Development (IFAD), and World Food Programme (WFP) (2015) posit that owing to the agriculture industry's potential to profoundly contribute and as a vehicle to achieve food security, the sectors' role has been enshrined in and acknowledged as one of the priorities in the development agenda. Again, FAO et al (2015) put forward that the

Comprehensive African Agricultural Development Program (CAADP) forms a pivotal part of the New Partnership for Africa's Development (NEPAD), and the industry's importance is through its contribution toward the total GDP in the SSA, which is clearly higher than in other regions across the globe. The extent to which this sector contributes to the GDP underscores the limited diversification of many economies in the continent (FAO, et al., 2015). For example, the agricultural industry adds value of 15% to the total GDP on an average basis, but this ranges from below 3% in countries like South Africa and Botswana to over 50% in Chad. This industry is an employer to more than half of the entire labour force and offers a livelihood for multitudes of small-holder producers, especially in the rural context. (IMF, 2012). For FAO (2015), smallholder farms account for close to 80% of all farms in the SSA region, and almost 175 million people are directly employed through these farms.

In South Africa, the agricultural industry is dualistic in nature Fischer, 2019)). For Cloeter (2021), the sector is made up of a well-integrated, highly capitalized commercial sector with close to 35,000 white farmers who produce over 95% of the agricultural output on 87% of the total agricultural land. On the other hand, the small-scale sector comprises almost 4 million black farmers who farm in the former homeland areas on 13% of the agricultural land of South Africa (Zantsi 2024). The nature of the agricultural sector in the country was a result of or created by the apartheid regime, which systematically eroded historically successful land-based production systems and livelihoods in the country (Neves & Du Toit, 2013). Despite the country gaining independence, the sector continues to be characterized and confronted by issues of inequality concerning several factors, including access to market, distribution of economic assets, support services, income, and infrastructure (Noe Careme, 2024). Against this backdrop, this study sought to understand the significance of access to agricultural markets by smallholder farmers in the areas of Badplaas and Carolina under Chief Albert Luthuli Local Municipality (CALLM), Mpumalanga Province, South Africa.

1.2 Statement of the Problem

Market access opportunities are the necessary precondition for small farmers to generate profits from growth and trade through their farms. Rogatnev et al. (2021) put forward that during the apartheid era in South Africa, the white minority disposed bulk of land from the black majority for a variety of reasons, including agriculture or farming. Furthermore, this created social

contradictions, but soon after the country's democratic transition in 1994, a new government was elected to office with the task of addressing and redressing past injustices (Rogatnev, et al., 2021). The National Treasury (2019) claimed that one of the remedies and policies was to encourage black participation in the mainstream economy through various economic contributors, such as agricultural development (Beinart & Delius, 2018). This initiative made a significant contribution to the growth of the small-holder farming industry. Rapid urbanization across the African continent and rising levels of food insecurity, including urban food insecurity, make effective urban food markets even more important (Beinart & Delius, 2018). As a result, government efforts like the Broadening Access to Agriculture Thrust marketing drive (BATAT Marketing Drive) were created to help smallholder farmers take advantage of marketing opportunities (Agrawal, 2024).

Smallholder farmers' contributions range from enhanced food security to improved household income (FAO, et al., 2015). However, there are other hurdles restricting agricultural growth, the most significant of which is small-scale farming's access to formal markets, which is limited by variables impacting sufficient output (Pagare, et al., 2023). The World Bank (WB) (2016) argues that penetration and access to the market by smallholder farmers are critical for sustainable agricultural and economic growth. As a result, the focus of research and development has shifted from increasing farmers' production capacity to facilitating farmers' market access (Maina, 2015). Despite the shift in research and development priorities, some smallholder farmers may be left behind due to a lack of a competitive advantage (Dhakshana & Rajandran, 2017). As a result of high transaction costs in practically non-labour transactions, markets are typically quite competitive in terms of meeting supply and demand between small-scale and large-scale or commercial firms (Dhakshana & Rajandran, 2017). According to Maina (2015), some of the transaction costs that lead to limited access to better-paying markets for small-scale farmers are a lack of transportation, communication equipment, proper road infrastructure, and extension services. Thus, interventions must support both the existing commercial, well-capitalized farming industry and the expansion of more successful smallholder agricultural enterprises (Beinart & Delius, 2018). The democratic transition has opened global markets and resulted in economic progress, but small-scale farmers have reaped few benefits due to unfair land distribution and inadequate government support (Lantz, 2019) The competitive advantage that big commercial farmers have over small-scale farmers limits access to agricultural markets for small-scale farmers hence, small-scale farmers may struggle to enter the markets and thrive.

Access to profitable markets is a critical aspect of the success of smallholder farmers (Gouët & Van Paassen, 2012).

1.3 Aim of the study

This study aimed to explore the perceptions of small-holder farmers on access to the agricultural market in Carolina and Badplass in Mpumalanga Province.

1.4 Objectives of the study

This study pursued the following research objectives:

i. To profile the respondents in this study
ii. To explore the perceptions of smallholder farmers toward agricultural market access in the study area.
iii. To understand the influence of market access on agricultural production in the study area.
iv. To assess the challenges in accessing agricultural market access in the study area.
v. To recommend measures that can be implemented to improve access to the agricultural market for the smallholder farmers in the study area.

1.5 Research questions

This study aimed to address the following research question: How do smallholder farmers perceive access to the agricultural market in Carolina and Badplass?

i. What type of respondents are involved in the study?
ii. What are smallholder farmers' perceptions of agricultural market access in the study area?
iii. How does market access influence agricultural production in the study area?
iv. What are the challenges regarding market access in the study area?
v. What can be done to improve access to the agricultural market for smallholder farmers in the study area?

1.6 Rationale of the study

Market access remains one of the most crucial drivers of agricultural growth in South Africa and other developing countries. Many smallholder farmers complain about not being able to match the quality and quantity standards of the formal market (Ncube, 2017). As a result, smallholder farmers struggle to expand their enterprises, and most of their output is for domestic use. This strengthens the relevance of the research because it will provide detailed information on smallholder farmers' market access. In South Africa, many smallholder farmers lack market information and price information, particularly in rural and isolated locations (Gouët & Van Paassen, 2012). This study can play an essential role in supporting the government, policymakers, and other eligible stakeholders in making proper decisions about agricultural market accessibility (Qobo, 2022). This study will help to promote and adjust the policy framework that will address the current demands of smallholder farmers in rural areas. This will improve smallholder producers' comparative advantage in the formal market (Nsibande, 2025). This study will also provide all the market opportunities available to rural smallholder farmers to enhance their agricultural business interests. The knowledge and information obtained throughout this study will undoubtedly add to the gap in knowledge by enabling smallholder farmers to better comprehend market functions and operations. This information will also provide insight into agricultural market access for small-holder farmers which can be used in the formulation of policies guiding agriculture As a result, small-holder farmers can successfully run agricultural businesses, eliminate poverty, and create jobs for community members.

1.7 Definition of terms

This study defines the terms employed as follows:

Market: A market is a physical or virtual environment where buyers and sellers meet to facilitate the exchange of goods, allowing for demand and supply to establish prices (Peitz, 2019)**Access:** This refers to the ability or opportunity to use, enter the agricultural market, and actively participate (Thomson, 2018)

Agricultural market: Biswas (2019) defined agricultural market as “the study of all activities, agencies, and policies in the procurement of farm inputs by the farmers and the movement of agricultural products from the farms to consumers.”

Smallholder farmers: The South African Department of Agriculture (SADA) (2019) defined smallholder farmers as individuals who usually produce for household consumption and markets, and as a result, this enables them to generate and earn an ongoing income from farming business, which ultimately becomes a source of income for the family (Carelsen, et al., 2021)

Support services: Carelsen et al (2019) define support services as any type of help or assistance that the relevant stakeholders, such as the Agricultural Extension Officers (AEO) are expected to offer to smallholder farmers.

Technological advancement: This refers to an attempt to understand how things in the world function or operate in pursuit of furthering the development of processes, products, or services to move ahead and simplify smallholder farmers' livelihoods.

1.8 Dissertation structure

This dissertation is divided into five chapters. Chapter one is an introductory part of the dissertation, which focuses on background information regarding the agricultural market in the African continent. It also highlights the relationship between access to the agricultural market and small-scale farmers. This chapter covers the problem statement, research aim, objectives, and questions pursued by the researcher; it also contains the rationale of the study, definition of key terms, limitations of the study, and lastly, the layout of this research. The second chapter is a review of the literature, which presents an overview of the agricultural market globally, including at the national level. This chapter concluded with a theoretical framework related to the agricultural market and which also guided this research. The research methodology that drove this research was presented in Chapter three of this study. It includes the location of the study, design, and approach followed by the researcher, population of interest, sampling method, instruments used to gather data, methods utilized to analyze data, and ethical considerations. Findings and discussions emanating from the study are presented in both chapters four and five, and this is followed by chapter six, which provides a summary of the main findings, conclusions, suggestions for future research, and recommendations.

1.9 Summary of the chapter

This chapter started by providing detailed background information on the agricultural sector in the SSA region. The background information provided demonstrates that this sector is the backbone of the economic activities, including the social well-being of individuals, on the whole continent. This is supported by the key contributions the industry makes toward the economy across Africa. The second part of this chapter focused on a brief problem statement which highlights the need for this study to be conducted, and this led to the formulation of the objectives of this research, which are intended to address the questions pursued in this study. Furthermore, the rationale of the study is also presented in this chapter, followed by the limitations of the study and the definition of key terms adopted. This chapter concludes by highlighting the dissertation structure of this research. The next chapter reviews literature on the phenomenon studied and the theoretical framework adopted by the study.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Chapter Introduction

This chapter presents comprehensive existing knowledge regarding the concepts under investigation, as well as the previous literature. The first part of this chapter is an overview of agricultural markets on both international and domestic or national stages. Furthermore, the chapter explores the agricultural market, particularly in South Africa, this is followed by the factors influencing access to agricultural markets. The chapter also describes the determinants or characteristics of smallholder farmers in both developed and developing countries; how the use of modern technology can enable the smallholder farmers to better access the agricultural markets; challenges faced by the small-scale farmers; support services provided, and the role of Agricultural Extension Services (AES). The chapter closed by outlining the theoretical framework that grounded this study.

2.2 Overview of the Agricultural Market

The agricultural market is a broad industry comprising different production items such as livestock or crop products (Moloi et al., 2020). These scholars argue that there has been a serious increase in the demand for these items, and that such an occurrence led to significant growth for these markets in this industry or sector in the modern day. Factors such as urbanization, changing diets, and population growth are regarded as the main drivers of growing demand for the agricultural market. This section offers a detailed overview of the agricultural market industry at international and national or domestic levels.

2.2.1 European Context

2.2.1.1 In Ukraine

The prevailing conflicts regarding the agricultural commodities market were intensified by the war that took place in Ukraine. The process of products like vegetable oils and grains increased during late 2021, surpassing the levels of the global food price crises that occurred in the last 10 years (Nykolyuk et al., 2021). At present, these prices have been exacerbated by the Russian forces that invaded Ukraine. Those countries in sub-Saharan Africa and the Middle East and North Africa

region that depend heavily on Ukraine and Russia for wheat were affected by this invasion. In these regions, food security is destabilized by high prices and disruptions to export from the Black Sea region (Shubravska, et al., 2020). According to Nykolyuk et al. (2010), nations like the USA, Australia, and Brazil are believed to raise exports with an attempt to fill the gap left by the Russia-Ukraine war; as such, the need to meet the world's demand for wheat is necessary.

Both Russia and Ukraine are strong in various fields in terms of the commodities exported. This is evidenced by the fact that Ukraine is the main exporter of sunflower oil worldwide and one of the top exporters of corn; on the other hand, Russia remains at the top of the table as the main exporter of wheat and fertilizers. From 2015 to 2020, their combined market share for corn accounted for 15%, sunflower oil held 66%, wheat was 28%, and fertilizers constituted 16% (Nykolyuk et al., 2021). These countries nearly managed to triple their export market share for sunflower oil and wheat within the highly dynamic markets for almost 20 years, whilst their corn has increased by a factor of seven. On the other hand, fertilizer exports remained relatively stable. Shubravska & Prokopenko (2022) posit that there was an increase in terms of the number of export markets, which demonstrates a relatively high diversity of export structures. These nations managed to produce about 56 million tons of wheat and 31 million tons of corn on a yearly basis between 2018 and 2020 for over 125 countries (Shubravska & Prokopenko, 2022).

Globally, Ukraine is one of the major contributors of agricultural products and exporters and plays a crucial role in producing oilseed and grains for the global market (Prokopchuk et al., 2019). These authors put forward that over 55% of land in Ukraine is arable and that about 14% of employment comes from agriculture in this country. The country's main exports are agricultural commodities, this is evidenced in that during 2021 they totaled close to $27.8 billion, representing 41% of Ukraine's $68 billion in overall exports.

2.2.1.2 In Spain

The value of Spain's agricultural production surpassed 56 billion euros in 2021, with flagship commodities including olive oil and wine, to mention a few (Sadjadi, 2023). Sadjadi argues that grapevine was found to be a category of crops with the highest production agrarian volume during the same period, with over 37 million tons, following cereals. Cereals were also the highest imported agricultural commodity by this country in the year 2022, regardless of it being the second-highest production volume crop in 2021. In 2022, exports were dominated by products like

fruits and vegetables that other countries, such as Germany or France, received as the key destinations. In Spain, “the foreign trade in the agricultural sector generates a surplus of almost 14 billion euros” (Sadjadi, 2023).

2.2.2 American context

Globally, the United States (US) is regarded as the second biggest agricultural trader, just after the European Union (EU). Over the past 25 years, agricultural exports and imports in the US significantly increased, which was caused by the economic ascension of many emerging economies and the introduction of both domestic and foreign policies that led to growth regarding access to foreign markets in the US (Parsons, 2017). There was a shift in the geographic and product composition of the US in the same period, as increasing income and rising supply capacity of emerging economies reshaped the world’s demand and supply for agricultural and food products. The US found itself relying on export markets to sustain prices and revenues because of agricultural output that was growing faster than the domestic demand for a lot of commodities (Yatsenko et al., 2019). Parsons (2017) argued that “as a result, the US agricultural exports have grown steadily over the past 25 years, reaching $174 billion in 2023, up from $57.3 billion in 1998". Further, there is a trend that the product composition of agricultural exports shifted during that period of 25-year period, which reflects variations in the world’s demand and supply. Yatsenko et al (2019: online) pointed out that “exports of consumer-oriented products such as high-value products including meats, fruits, vegetables, and dairy products indicated a strong growth driven by increasing population and income globally, as well as growing diversification of diets”. The reliance level of such sectors on foreign markets and the size of the whole market for US agricultural products can be seen through the share of US agricultural and food production sold outside the country. This share sold in international markets has remained steady at almost 20% since the year 2013 (Yatsenko et al., 2019).

2.2.3 African Context

2.2.3.1 In Ghana

In Ghana, the agricultural market size is growing sharply because of its booming economy and significant influence of agriculture within its economic prosperity, and such growth can be expected between the years 2024 to 2029 (Karg et al., 2019). Due to the fact that Ghana is believed to be in the process of improving agricultural productivity and profitability, enhancing economic

inclusion and nutrition promoting resilience, its self-sufficiency is guaranteed. Karg et al. (2019) argue that the government in Ghana is working toward implementing mechanisms to be used to boost and support domestic production of the main food staples, such as chicken meat and rice, to minimize dependency on imports. Karg et al (2019) maintained that in this country, the agricultural development and growth are further driven by more support from agencies and friendly policies, also with initiatives intended to increase output, job creation, and encourage the participation of the private sector.

In 2024, the market size of Ghana is estimated at USD 3.40 billion and expected to reach USD 3.87 billion by 2029. Globally, the country is regarded as one of the African countries with the fastest-growing economies (Yaro & Teye, 2018). These researchers maintained that agriculture is crucial to Ghana's foreign exchange revenues and general economic prosperity. As mentioned, other ways in which Ghana can realize its self-sufficiency are by raising agricultural productivity and profitability, enhancing access to finance, optimizing economic inclusion, enhancing nutrition, promoting resilience, and advancing leadership in the country through evidence-based interventions. Such interventions include targeting food security interventions within northern Ghana districts, especially the ones with the lowest poverty and nutrition statistics, progressing the Ghanaian leadership, and promoting nutrient-dense foods. Another way that will guarantee Ghana's self-sufficiency is the fact that its agricultural sector is collaborating with commercial enterprises, more especially those belonging to this sector (Owusu et al., 2018). This is so in order to develop their operations and enhance their services to meet national and global standards.

Given the fact that agriculture contributes significantly to Ghana's export earnings and serves as the primary source of income for almost everyone in the country, rice is then deemed the major food staple (Yaro & Teye, 2018). However, because of high and increasing levels of domestic consumption that are even higher than domestic production, the country imports over 66% of the rice consumed. Owusu et al (2018) argue that the government in this country is in the process of implementing a strategy of import substitution for both chicken meat and rice. According to Yaro & Tere (2018), there are already two significant implemented programs designed with an intention to pay subsidies to individuals farming products or crops like rice, corn, broilers, sorghum, and soybeans. For Karg et al (2019), friendly policies and extended support from the relevant stakeholders assist with improving the development and growth of agriculture in Ghana. This is

evidenced by the fact that about 63,000 farmers were assisted by USAID Ghana in 2021. Half of these individuals in northern Ghana were women. Ghana is highly characterized by traditional smallholder farms, and the base of agriculture for this country's economy relies on crops like cocoa, oil palms, kola nuts, timber, yams, and grains (Karg et al., 2019).

2.2.2.3 In Nigeria

In Nigeria, the agricultural sector is categorized into crop production, fishing, livestock, and forestry (Nebo & Ejionueme, 2017). Ranking these categories, crop production tops the list, accounting for close to 87.6% of the whole sector's output. Secondly, it is the livestock industry that represents 8.1%, followed by fishing, which sits at 3.2%, and lastly, the forestry industry, representing 1.1% of the entire sector's output. In this country, agriculture is the main contributor to the nation's gross domestic product (GDP), accounting for 24% from 2013 to 2019 (Nebo & Ejionueme, 2017). This makes it the biggest industry compared to other industries in the country. Olabanji et al. (2017) indicated that over 36% of people or the country's labour force are employed under this sector, making it the largest employer of labour in Nigeria. According to Olabanji et al (2017), agriculture's role is noticed; however, its share within the country's total export earnings does not come close to crude oil exports. This is evidenced by the fact that during 2019, agriculture represented below 2% of the whole exports relative to crude oil, which sat at 76.5%. The major agricultural imports in Nigeria are fish, milk, wheat, and sugar; on the other hand, cashew nuts, cocoa beans, ginger, sesame seeds, cotton, and frozen shrimp form part of the major agricultural exports (Sertoglu et al., 2017). Sertoglu et al. (2017) noted that cocoa, cashew nuts, and sesame constitute more than half of the country's agricultural exports, whilst agricultural imports are dominated by wheat. According to Sertoglu et al (2017: 547-552), "agricultural export declined by about 11% from N302.2 billion in 2018 to N269.8 billion in 2019. Nigeria's agricultural imports rose by 12.7% from N851.6 billion to N959.5 billion during the same period, the highest value recorded in the country. The country remains a net food importer; the agricultural trade deficit has widened with imports exceeding exports by N689.9 billion in 2019 compared to N549.3 billion in 2018".

Nigeria is blessed with land that is arable; this area has 34 million hectares of land, about 28.6 million hectares on pastures and meadows, and 6.5 million hectares for permanent crops (Olabanji et al., 2017). The country is the biggest producer of different types of agricultural products, and

these include cocoa beans, pineapple, and sorghum, just to mention a few. It produces more sorghum than any other country worldwide except for the US. It is also the 5th main producer of palm oil and cocoa beans, and a big global exporter in this industry. This is followed by seeds, fruits, nuts, and oil. The country is dominated by oil then followed by agriculture. Olabanji et al. (2017) argued that most of the livelihood in Nigeria comes from agricultural activities, whilst it is not everyone who gets to enjoy the wealth generated by oil, but only a specific group of individuals. A study by Sertoglu et al (2017) found that over 70% of the households in this country are engaged in crop farming practices, whereas close to 41% raise livestock. Further, there are more people in rural areas who participate in agricultural activities than in urban areas. Only a few individuals are involved in fishing. This study by Surtoglu (2017) revealed that about 3% of households in Nigeria participated in fishing. Again, it was reported that maize and cassava crops are common in Nigeria, and these are grown by over 50% of the households.

2.2.3.3 In Kenya

Kenya's economy would collapse without the presence of the agricultural industry (Bergquist & Dinerstein, 2020). This industry contributed about 22.4% of the country's GDP in 2021, making it one of the highest in the continent, and it was also a key employer. In 2022, the agricultural sector decreased by 1.9% compared to 2021, and the main reason for this was an overall economic impact caused by the coronavirus (COVID-19) pandemic. The main agricultural commodities in this country include tea, coffee, horticulture, maize, and sugarcane (Nyoro, 2019). This author notes that coffee, horticulture, and tea are mainly grown for global markets as they make up Kenya's major exports; on the other hand, sugarcane and maize are merely grown for domestic markets. There was a strong variation in terms of the performance of these commodities at the beginning of 2020. A commodity like sugarcane saw an increase in its production of approximately 50% because of the availability of manure cane. On the other hand, a sharp decline in coffee output, which was nearly 18%, was experienced, and the cause of this was bad weather in plantation areas (Atera et al., 2018). However, Bergquist & Dinerstein (2020) found that there was growth in terms of the marketed production of livestock, and this increased by 1.1 billion US dollars, and the fishery was ranked high in its output value, especially in the modern day, and it constituted close to 221 million US dollars. In 2020, there was a correspondence between agricultural raw materials and food items regarding the country's total merchandise exports, which accounted for 60%. Kenya's main cash

crops are tea and horticulture, including fruits, cut flowers, and vegetables. In the year 2022, a combination of the two managed to generate about 2.7 billion US dollars in export earnings, and coffee significantly contributed toward agricultural trade, and its contribution amounted to 264 million US dollars. The commercial crops constituted a small share of agricultural production (Benin et al., 2017). During the early months of 2020, both tea and coffee accounted for only 2.3% of the country's total crop output, which was dominated by maize and sugarcane (Benin et al., 2017).

2.2.3.4 In South Africa

Compared to all African countries, South Africa enjoys and is blessed with the biggest agricultural land more than any other country on the continent (Bates, 2019). Suri & Udry (2022) posit that since 2020, agricultural land has constituted over 96 million hectares, which represents about 80% of the entire land area. Bates (2019) argues that close to 87% of these were classified as land under permanent pastures and meadows, whilst almost 12.5% of the agricultural land was arable land. Still, only 2.8% was the amount recorded and contributed by agriculture, and this share was one of the lowest on the continent, regardless of the economy being more service-oriented. According to Aliber and Hart (2009), the agricultural industry in the country is known to be the producer of a wide range of crops. Aliber and Hart (2022) noted that concerning agricultural production, maize and sugarcane topped the table in terms of the rankings, with sugarcane representing 16.1 million metric tons and maize, 18 million tons. In this sector of South Africa, corn is the main player, and this is evidenced by its ability to cover the largest harvested land area in the year 2024. To add, since 2023/24, South Africa has also been one of the 10 leading countries that produce corn.

Further, it was reported that South Africa had close to 179 million chickens that were alive; this was followed by cattle and sheep, with cattle accounting for 12.3 million heads, and sheep representing 21.6 million heads in 2020; these proportions were very low volumes (Suri & Udry, 2022). Again, during the same year, about 152 billion rand, amounting to 8.75 billion US dollars, was generated by animals and animal commodities. The exports of agricultural production surpassed the imports in the country during that year, and the exports continued to rise to 9.5 billion US dollars as compared to 5.3 billion US dollars in agricultural imports. In this country, horticulture crops dominate the exports of the industry, accounting for a value of 5.4 billion dollars. Other commodities such as citrus, apples, and grapes contributed significantly, followed by

cereals, which were valued at almost 1.05 billion US dollars, with maize being the main exported crop within this stream. South Africa, on the other hand, imported mainly cereals, valued at 1.2 billion US dollars, and oilseeds, valued at 915 billion US dollars (Bates, 2019).

2.2.4 Asian Context

Global, the Asia-Pacific region is considered the biggest and most diverse agricultural market (Kyaw et al., 2018). This region is characterized by a diverse range of climates, farmland, and agricultural methods of production, which lead to substantial variations in production across countries. Almost every nation within this region has a big proportion of agricultural land, including the most regarded big economies across the globe, like India, China, and Australia. Yamauchi (2021) noted that both India and China have arable land, which is one of the top five leading in the whole world. Most countries in Asia have rice as their staple crop, with other crucial crops being wheat, tea, coffee, maize, and different fruits and vegetables. In the Asia-Pacific region, both China and India are the major producers of rice, wheat, and tea leaves. India, after Brazil, produces the highest volume of sugarcane. On the other hand, countries in Southeast Asia are gifted in terms of their own specialties, for example, the Philippines, who are considered the largest producer of coconut, followed by Vietnam, known for its specialty, which is coffee, with Thailand famous for its natural rubber, and lastly, Malaysia, which specializes in palm oil. Again, under this region, Indonesia is the largest producer of crops due to occupying Southeast Asia's biggest agricultural land area (Yamauchi, 2021). In this region, cereals and oil crops are the main imports, whilst fruits are the main agricultural exports. Yamauchi (2021) posits that this region has started to acknowledge the significance of sustainable agriculture practice because of the environmental burden that can be imposed on land by some agricultural practices. For Kyaw et al (2018), "the development of organic agricultural land in Asia has doubled in size compared to a decade ago. Australia and Oceania have the highest areas of organic land, with Australia at around 10%. Over half of the organic land in Asia is used for arable land crops such as cereals, oilseeds, and textile crops.

2.3 Agricultural Market in South Africa

The agricultural market in South Africa is channeled by a growing demand for nutritional food because of population growth and variation in diet choices. The sector is highly characterized by

a range of farming practices, including crop production and horticulture. This market is expected to expand regardless of challenges confronted, such as climatic conditions and tillage knowledge; such growth would be initiated by government initiatives aimed at promoting cultivation and favorable policies. The agricultural market in the country encompasses industries such as animal husbandry, ranching, and agronomy. Bates (2019) argues that this growth is also boosted by South Africa's renowned wine industry and an increase in the consumption of fruits and vegetables among the middle-income group. According to Suri and Udry (2022), in the country, the agriculture market size is estimated at USD 16.12 billion in 2022, and it is expected to grow or reach USD 23.24 billion by 2029, growing at a CAGR of 7.60% during the forecast period. There has been a period in which the country was facing hardship, and what transpired was the piling up of stocks of products like potatoes, which resulted in a decline in prices of these products (Bates, 2019). This situation was mainly caused by the lockdown restrictions, limited buyer power of consumers, and changing consumer choices during the COVID-19 period.

Agriculture in South Africa is regarded as one of the highly diversified and market-oriented industries (Aliber & Hart, 2009). The most dominant crops in the country are grains and cereals such as soybeans, barley, rice, and wheat. According to Bates (2019: online), "the area under grains and cereals production was 2,660.4 thousand hectares in 2016, which increased by 13.1% and reached 3.062.8 thousand hectares in 2019". This implies a growth in the South African Agricultural market. The country's farmers' income went up by 4.3% in 2019, and the prices paid by farmers increased by 5%. Suri and Udry (2022) and Bates (2019) assert that such a decline might contribute to farmers not being willing to invest or utilize various modern agricultural technologies, which ultimately will hamper the agricultural production in the country. A rising demand for cereals has been exacerbated by an increase in the level of population of the country. The country's staple food is maize, and it is consumed in its direct form; also, it is used for commodities like cornmeal, bread, and sweeteners. In this country, wheat is also considered a staple food, and it is highly imported because it is more beneficial to import it instead of producing it for domestic purposes. Research by Aliber and Hart (2009) found that the most consumed fruits in South Africa are pears, plums, mangoes, apples, peaches, apricots, grapefruit, avocados, lemons, and pineapples. Their research also showed that there is a growing demand for commodities made from fruits, and these include fruit juices and jams, which highly drive the market in the country. Additionally, over 1.5 million metric tons of grapes are domestically used annually in the country's

renowned wine industry (Dillon & Barrett, 2017). Again, researchers like Dillion and Barrett (2017) discovered that vegetables like chicory, pumpkins, tomatoes, lettuce, and carrots are in high demand in the country. However, exclusive of these vegetables, leafy vegetables such as blackjack, cleome, amaranth, and jews mallow are consumed in the country, and these are produced locally. The local production of oilseed has the potential to meet the demand in the country, but it is acknowledged that the country imports palm oil from countries like Indonesia and Malaysia. Bates (2019) posits that the country must limit imports to some extent in order for it to be independent in terms of the production of oilseed soon.

The agricultural sector in the countries continues to face rapid demand due to factors such as increasing economic growth and rapid population growth (Dillon & Barrett, 2017). According to Aliber and Hart (2009), the population of South Africa is estimated to be at 82 million by 2035; as such, the demand for food is projected to double in the coming years. As argued by Dillion and Barrett (2017), factors like increasing income, urbanization, and a shift in consumers' diet choices toward nutritional food are the main drivers of the demand for fruits and vegetables in the country. Bates (2019) and Aliber and Hart (2009) argue that the food consumption rates or levels are increasing 5-6 times faster than the local production in the country. In South Africa, both fruits and vegetables accounted for 16% of the whole food commodities consumed in 2018, and the demand for off-season produce in the country is usually met by increasing imports. Due to individuals realizing the importance of eating healthily, there is an emerging trend of increasing consumption of vegetables like potatoes, particularly amongst the middle-income group in the country, and this is primarily addressed within the agricultural sector (Suri & Udry, 2022). The growth of the agricultural industry in South Africa is mainly driven by the rising need for food security within a booming population and greater demand from a rising middle-class population for food. Researchers like Bates (2019) conducted a study wherein they found that an increase in the demand for different food commodities, especially fresh fruits and vegetables, is due to enhanced awareness across various social media platforms that are associated with health and well-being. Further, in their research, it was reported that given the increasing health consciousness, there is also a rising consumption trend towards varieties of off-season fruits, which are usually achieved by increasing imports. Vegetables like potatoes are also contributing to this trend of growing consumption, especially in the middle-income group in the country. A growing demand for both fruits and vegetables was reflected by a rise in the imports of these commodities. As such, a report

by FAO (2014) predicts that the market for fruits and vegetables will be driven by the increasing demand for crops due to the growing population in the country.

2.4 Brief overview of the need for access to the agricultural market

To get a fair price for produce, farmers have been on their feet for a long time to get better access to markets across the globe. For Adams (2023), market access in agriculture "refers to the ability of farmers to sell their products in national and international markets". This implies the removal of quotas, tariffs, and related trade barriers that make it difficult for farmers to get a fair price for their products. Access to the agricultural market is a serious problem for farmers in general because it has a significant influence on their practices and income (Adams, 2023). The challenge of access to the agricultural market has gained momentum in the 21st century on the global agricultural agenda. This is evidenced by the fact that many countries in the world have established support systems for their farmers, especially those operating on small farms or plots (Ndlovu & Masuku, 2021). According to Ndlovu and Masuku (2021), another way of enhancing farmers' livelihoods and realizing household food security, as well as sustainability in the future, is through access to markets.

The United States Department of Agriculture (USDA) defines access to the agricultural market as the process by which farmers can sell their produce at any level, including domestic, national, or international markets (Adams, 2023). This also includes having the capability or means to transport these goods to the expected destination and having the required equipment to aid in marketing products related to agriculture. Adams (2023) and Ndlovu and Masuku (2021) argue that to boost productivity, increase income, and enhance food security, access to markets should be prioritized by the relevant stakeholders. Again, access to markets, if taken as a vital factor, especially by ensuring equity regarding market power, can greatly contribute to minimizing the high level of poverty and hunger. Farmers stand a great chance of selling their produce at a higher price if they can get access to agricultural markets, and this access has the potential to enhance productivity as it offers farmers access to modern technology and inputs (Adams, 2023).

2.5 Factors influencing access to the agricultural market

In most of the developing countries, including South Africa, Ghana, Kenya, and Nigeria, accessing agricultural markets is perceived as a complex exercise, as most of the smallholder farmers in these

countries lack appropriate and adequate knowledge about the market. According to the National Department of Agriculture (NDA) (2000), gaining access to the market is crucial in allowing emerging farmers into the mainstream, as this is seen as the most vital determinant of their success. On the other hand, it is noted that without an effective marketing system employed to promote their commodities and inputs, smallholder farmers remain with no opportunity or incentive that would enable them to be productive (Van Schalkwyk et al., 2003). Integrating new farmers should be viewed in a broader standpoint that permits access to resources in an inclusive economic framework comprising access to credit, markets, and extension, instead of viewing it in a narrow framework of only allocating land and water (Van Schalkwyk, et al., 2003). These authors further argued that the smallholder farmers are usually at a huge disadvantage in their dealings with the market. The implication behind this is that most of them are not aware of what the market entails; in essence, they have limited knowledge and information regarding market conditions, and they lack the necessary experience to operate or function in the market. In South Africa, particularly, smallholder farmers are confronted with several marketing problems, among which constraints regarding necessary information are broadly acknowledged but are not well researched (Killick et al., 2000). These farmers are associated with opportune access to relevant and accurate information regarding prices, ideal quality characteristics of horticultural produce, or other marketing channels, and locations of effective demand. In other developing nations like Nigeria, producers find themselves in a disadvantageous position due to a lack of experience in bargaining, and even information obtained by rural communities may not be spread equally, thus smallholder farmers and those far from the markets are at a compromising or disadvantage.

The International Fund for Agricultural Development (IFAD) (2003) put forward that the market access saga can be categorized in three dimensions, namely, physical access to markets, example being the costs, distance, secondly, the structure of the markets which simply speaks to the link between farmers, market intermediaries and consumers, and lastly, smallholder producers lack of skills, organization, and information, this implies their knowledge, experience, and skills regarding daily operations of the market. Killick et al (2000: online) noted that “market access is the processes by which people access markets and the nature, efficiency and costs of these processes”. According to these authors, access to the market is first determined by information regarding commodity availability, attributes, and prices, which include the frequency, quality, and cost of this information. Secondly, the information regarding counterparties to transactions, as

trustworthiness is vital if payment is not immediate, and thirdly, the degree of confidence in market conduct, for instance, the way in which markets are regulated. Lastly, though not least, the physical costs of accessing the market are the core function of the quality of infrastructure and the organization of the transport sector, and the real prices found in the markets in which individuals transact (IFAD, 2003). In addition, there is a commonality amongst scholars such as Kherallah et al (2000) and Makhura and Mokoena (2003) in that other determinants or factors include availability of extension services, level of organization, relevant training, access to credit, and farmers' socio-economic conditions.

For Van Schalkwyk et al (2003: online), "the established commercial sector and the areas in which commercial agriculture is prevalent are served by a sophisticated agricultural marketing system with infrastructure supporting agricultural production and marketing". Generally, those who are involved in small-scale agriculture face issues of limited access to factors of production, information, and credit, and markets are usually hindered by inadequate property rights and transaction costs (Kherallah et al., 2000). Transactions are activities that enable or constrain transformational activities as well as transaction costs, as the costs linked to transactions that are required for transformation to occur (Morrison et al., 2000). Although other issues that determine and limit farmers' access to commodity markets, especially in South Africa, are closely linked to policy, the majority are farmer-specific, location-specific, and others are pertinent to some provinces more than others (Makhura & Mokoena, 2003). According to Makhura and Mokeana (2003), other challenges faced by smallholder farmers in this country include farmer discrimination and a lack of institutional responsibility. They believe this occurs when some farmers experience discrimination through their products being operated last, and this disturbs their prices. Further, no responsibility in terms of ensuring smallholder farmers' access to the market affects the farmers.

With relevance to the South African context, a survey report was conducted by the National Agricultural Marketing Council (NAMC) (1999), which gives relevant information regarding the marketing problems for smallholder farmers. The purpose of this report is centered on *'the investigation into market access for disadvantaged market participants, with the ultimate goal being a commercialized, efficient agricultural system'.* According to this report, the following are

major problems confronting smallholder farmers in the country, of which most are like other developing countries like Ghana, Kenya, and Nigeria (Magingxa et al., 2009):

- Most of the smallholder farmers do not have their own means of transport; as such, they tend to be reliant on public transport such as taxis, contractors, neighbors, or hired transport, which is usually expensive in their conditions, mainly due to relatively small quantities of produce. Consequently, they find it difficult to be active and participate in the markets due to the poor road network within most rural areas.
- Distance is a challenge as producers must travel long distances to get to the National Fresh Produce (NFP) markets network.
- Provinces like KwaZulu-Natal and the Eastern Cape are associated with poor roads; in some areas, there are no roads at all.
- Information regarding the market is inadequate, and there is no means to spread or publicize it. This is more important for these farmers' survival in the increasingly competitive marketing environment.
- Most of the assembly and storage points for these farmers' produce are nonexistent or unsuitable.

2.6 Determinants and characteristics of smallholder farmers

2.6.1 In Europe and Asia

For Davidova et al (2012), Food and Agriculture Organization (2014), and Guiomar et al (2018), in the global south, small farms are typical of the rural landscape, but there is persistence of small-scale farming within the global north, including Europe. Global food security would be at risk without the existence of small farms; globally, these small farms produce close to 50% and 75% of food calories consumed (Ricciardi et al., 2018). These farms contribute highly to the creation of jobs and livelihoods; they are vital for rural communities and landscapes and play a serious role in environmental sustainability and supporting agricultural biodiversity (Lowder et al., 2016). These authors argue that the commonality in the characteristic among small farms, which is size, does not imply that all these farms are similar. They further note that there is considerable diversity across countries and regions in relation to the backgrounds of their farmers, their histories, and their environments. Moreover, factors including biophysical, institutional, social, and economic

drivers vary based on contexts, leading to various responses from farmers and their communities (Alvarez et al., 2014). Some of the most successful commercial entrepreneurs were born into small-scale practices, whilst for others this practice is undertaken for household consumption (Mello & Malik, 2017). According to CSM (2018: online), "the conceptualization of small farms in theory and policy has typically used this dichotomy between market orientation and subsistence, but the reality is richer". The small farms have the capability of expanding or growing, and they are not farming to produce for household consumption but as a lifestyle preference (Davidova et al., 2012).

According to the EC, small farms can be classified based on their main source of income and the extent to which their income is specialized or diversified, and even their economic size (Guiomar et al., 2018). Small farms in this continent can be categorized as peasantry, entrepreneurial, and capitalist farms (van de Ploeg, 2010). Peasantry is seen as a typical old-style of farming, based on an agrarian lifestyle, small size, and little reliance on the market for both commercialization and inputs (CSM, 2018). On the other hand, entrepreneurial farming is policy-oriented, especially by the European Common Agricultural Policy (CAP), and features a larger size, higher market dependency, more risk-taking, and profit maximization. Lastly, the capitalist farm is way above purely economic classification, recognizing that farms are multidimensional and multifunctional, and importantly, that classification is enriched by a deep understanding of farmers' trajectories and preferences (van de Ploeg, 2010). In Asia, the smallholder farmers produce almost 80% of the food supply, including in sub-Saharan Africa. These farmers not only support their families but also their neighbors and ultimately the entire world. This continent holds about 74% of the world's 570 million farms, with the most run by smallholder farmers. They have limited land, although they work on 85% of the region's farming land. To give an example, in a country like India, about 47% of farms are less than half a hectare in size (FAO, 2014).

2.6.2 In Africa

In the African Continent, agriculture is the engine that drives economic activity, and this is evidenced by the fact that it contributes approximately 15% of the GDP, which differs from country to country, for example, from 2.5% in South Africa to 56% in Sierra Leone (World Bank, 2015b). Significantly, this sector created jobs for more than 65% of the workforce and is the mainstream for income and livelihood for many (World Bank, 2015b). Based on these statistics, one is justified

in alluding that agriculture in Africa has the potential to assist in curbing hunger and poverty, and this can be achieved by boosting agricultural trade and investment, creation of employment-enhancing livelihood strategies (NEPAD, 2013). In this continent, small-scale farmers typically have no more than 5 hectares and are diverse, but they vary (Eastwood et al, 2010). According to the Department of Agriculture, Forestry and Fisheries (DAFF) (2012), most of the smallholder farmers, particularly in sub-Saharan Africa, still produce agricultural systems that are characterized by low input and low outputs. Across Africa, the smallholder farmers' competitiveness and profitability are mostly influenced by low yields, and most of these farmers are not prepared to meet the complex demands of agricultural business. The reason for this situation can be attributed to poor or a lack of necessary skills and resources to participate in commercialized agriculture (DAFF, 2012). DAFF (2012) indicated that more than 80% of these farmers are still producing at the subsistence level.

South Africa has a complete dualistic agricultural sector (Kirsten & Van Zyl, 1998). This sector is made up of a well-integrated, strongly capitalized commercial sector comprising 35,000 white farmers, whose produce amounts to 95% of the agricultural output on 87% of the entire agrarian land (Aliber & Hart, 2009). On the other hand, the smallholder sector holds about 4 million farmers practicing within the former or old homeland areas on 13% of the agricultural land of South Africa. Aliber & Hart (2009) stress that the reason for this dualism is a legacy of apartheid, which systematically wiped out the historically successful land-based production systems and livelihoods in the country (Neves et al, 2009). Regardless of being a free, democratic country, the industry is still characterized by the disparities related to the distribution of economic assets, support services, market access, income, and infrastructure (Ortmann & King, 2007). Even in the modern day, the smallholder industry is famous for its small farms that still utilize the old production techniques, labor-intensive, and in terms it lacks institutional capacity and support (Lowder, et al., 2016). Further, Groenewald and Nieywoudt (2003) and Lahif and Cousins (2005) complemented each other in that many of these farmers are still positioned in the previous homeland areas as stipulated by the 1913 and 1936 Native Land Acts.

Moreover, Tshuma (2014) maintained that those households involved in small-scale farming and whose main source of income is government grants, are practicing farming mainly by doing so to supplement diets and minimize spending by buying less from outlets. This author further argued

that such farmers are not a homogeneous group of farmers that practice in the same fashion; rather, they are diverse, and the farming requirements differ based on their livelihood needs. Such farmers are mostly associated with low levels of education and limited access to land, with some of these individuals possessing not more than one hectare of land for agricultural purposes (Tshuma, 2014).

2.7 Technological advancements toward enhancing access to the agricultural market by smallholder farmers

In the modern day, almost everything is driven using technology; in some instances, this can include social media platforms where information is shared, spread, and publicized to the intended target. Even Gigler (2014) alluded to the fact that access to skills, resources, knowledge, and services is among the opportunities presented by Information and Communication Technologies (ICT). Further, most people regard ICT as a tool that can be utilized to develop their capabilities in finding, evaluating, and using strategic and tactical information. The potential of one can be seen through accessing, evaluating, and using information for coordinating their daily activities (Avilés et al., 2016). These researchers maintain that having this ability leads to the concept of Informational Capabilities (ICs), which have a connection with the role playing by information in developing an individual's capacity to use information for making appropriate and informed decisions. It is argued that an individual's ICs refer to the ability of a person to make use of ICT in an appropriate manner, like finding, processing, evaluating, and utilizing the information obtained, as well as producing and sharing local content with other people through the network (Gigler, 2014). On the other hand, scholars such as Aviles, Larghi, and Aguayo (2016) argued that ICs concept has to do with the role of information, with the ability to find, process, and classify information, looking at a certain socio-economic context of a person. Additionally, Ismail et al (2012) believe that ICs can be seen from the perspectives of knowledge, skills, and ability. Hence, enhanced ICs result in enhanced social aspects, skills, and knowledge of persons, which are linked to improved or better competition, businesses, and performance gains (Ismail et al., 2012).

Notably, given the current trends regarding the performance of smallholder farmers in the agricultural market, and for the sake of their growth, it is highly advised and ideal for these farmers to make use of an instrument called ICT. Adoption of ICT is known for its role in ensuring that individuals are always informed about current affairs worldwide. For smallholder farmers, this tool will assist them with learning better and proper farming techniques for optimized agricultural

production (Pamungkas, 2018). They will also be able to be aware of the weather and climate information appropriate for their respective practices using this tool. Importantly, farmers will gain information regarding markets, buyers, and traders whilst marketing and selling their produce using ICT, particularly social media platforms. According to Pumangkas (2018), this can be achieved by the efforts of smallholder farmers to develop, gain, and improve their ICT capabilities. Consequently, this will enable the farmers to be more vibrant and active participants in the agricultural markets.

The role of connecting farmers to markets and buyers in the agricultural value chain is played by the middlemen in some of the African countries, such as Tanzania (Ismail et al. 2012). It is argued that these middlemen are knowledgeable regarding market operations and have direct access to markets and Agricultural Market Information (AMI) and have connections with both traders and buyers of agricultural produce (Ismail et al., 2012). The implication behind this is that as farmers sell their produce, these middlemen benefit more. These small-holder farmers are less knowledgeable about the operations of the market because they usually get to the markets during or while selling their crops. A study by Gigler (2014) revealed that small-scale farmers benefit less while selling their agricultural produce; they remain stuck in their daily practice with no progress, and agriculture keeps failing to improve their livelihoods, poverty levels remain high, and the agricultural industry does not grow or develop further. Hence, as researchers like Ismail et al (2012) acknowledged that smallholder farmers have poor or lack access to AMI, it is essential to develop the capabilities of these farmers in agricultural marketing to enable them to be more active and vibrant participants in the market. Another study by Pamungkas (2018) suggested that there should be the development of ICs as they play an influential role in assessing the distribution of information and can guarantee a high concentration of participation of these farmers in the agricultural market. On the other hand, Aviles et al (2016) in their research revealed that there tend to be changes regarding the pattern of information seeking when one adopts ICT, and it also improves one's ICs and prevalent assets of low-income communities.

2.8 Challenges faced by smallholder farmers

Small-scale farming is known to be the cornerstone of the well-being of many people across the globe; however, it is also associated with several challenges or barriers that could hinder its progression, growth, and survival. Chen et al (2021) put forward that no country is spared from

the challenges faced in the US, implying that even countries in Europe, such as Ukraine, countries in Asia, including India, and a few other nations from Africa, such as South Africa, Nigeria, to mention a few, are also confronted by these barriers. The challenges confronting the global small-scale farming include, firstly, the economic challenges. Such are considered key or main challenges that are experienced by smallholder farmers, and this tends to delay them in having a successful farming venture. These challenges range from labour costs, lower income, and high crop-input, just to name a few (Chen et al., 2021). These authors believe that labour limits the smallholder farmers from starting their ventures and their capability to scale their businesses. Research by Gebremedhin and Christy (1996) revealed that economic challenges were the main factor and that the shifting structure of agricultural production bore significant implications for the survival of small farms. In South Africa, it was reported that some farmers had difficulties with urban farming, given the increase of large-scale farming, whereas small-scale farming possesses low incomes, and many of these fall under the poverty line (Bisaga et al., 2019). Provinces like Limpopo, in this country, are experiencing rising transportation costs and crop-input costs, which derail the agricultural development, not only in this respective Province but also in other parts of the country, particularly where poverty is the enemy (Mpandeli & Maponya, 2014). Research by Bisaga et al (2019) claims that the economy of towns like Durban, in South Africa, does not allow farmers to successfully pursue urban farming and that they fail to manage or afford costs with their low incomes. An economic challenge faced includes poor or a lack of access by smallholders to proper funding and inflation, as they cannot cope with increasing prices given their status quo (Goodwin & Gouldthorpe, 2013). Small-scale farmers are also faced with challenges such as climate change, which was found to be more destructive for those individuals with economic issues (Yaro, 2013).

Secondly, small-scale farmers experience more marketing challenges. Globally, farmers face difficulties selling their produce at the right price to increase the profitability of their practices, and exactly at the right time before crop quality drops. Due to costs related to advertising and the fact that this process is not cheap, it limits the time required to market farm commodities (Gebremedhin & Christy, 1996). In the US, poor infrastructure, insurance, price and payment terms, and certification requirements were found to be major barriers to those who farm fruits and vegetables (Boys & Fraser, 2019). This is supported by a study carried out in this country, which revealed that marketing was the main challenge faced because of a lack of funds for advertising. According to Boys & Fraser (2019), small-scale farmers have little access, whilst the larger ones have more

access to resources. Access to markets prevents these farmers from accessing markets either locally or internationally, especially those who farm sunflowers (Ugulumu & Inanga, 2014). In the US, it was reported that military conflict resulted in small-scale farmers losing their trade links, forcing them to emerge from new markets and make changes within their existing marketing strategies (Bezus & Samofal, 2019).

Thirdly, small-scale farmers' concern is the effect of climate change on their production. This is due to heavy reliance on crop-friendly weather for production and rainfall for irrigation. Drought or flood situations are prevalent due to the annual increase in temperatures and fluctuating levels of precipitation. Globally, small-scale sugarcane production is considered crucial; however, several challenges have led to a decline in smallholder sugarcane production (Hoffmann, 2023). Research by Hoffman (2023) revealed that climate change usually damages natural resources, particularly those that agricultural activities rely on. A drop in the production of sugarcane is mainly caused by drought stress because of climate change (Thibane et al., 2023). In Kenya, it was found that climate change is the main factor that led to a decline in the production of maize (Cairns et al., 2021). In South Africa, an irregular climate has become the norm, which disrupts the growing of sugarcane, and those who are involved in the growing of this crop were found to be lacking access to climate information (Ncoyini et al., 2022). Another study by Muema et al (2018) found that it is usually the small and socially deprived farmers who do not have adequate access to climate information that is directly relevant to their crops. The main reason for this situation includes the age of those engaged in farming, gender, or no access to communication devices (Muema et al., 2018). Bisaga et al (2019) conducted a study in South Africa, Durban, wherein they discovered that unreliable sources of water, not only for farming, but daily use, occurred as a challenge to these farmers. As such, the farmers stopped relying on this source of water for their practices; on the other hand, other barriers were found to be poor soil quality and land availability (Bisaga et al., 2019). India has seen a decline in crop yield, regardless of its employing chemical products, the pesticides and fertilizers causing more harm to the agricultural industry, whereas an option should be organic farming as it bears less danger to the environment (Barik, 2017).

Furthermore, small-scale farmers are confronted with issues of lack of awareness and education. It is argued that these farmers have developed an interest in value-added food production, but it was reported that smallholders in the US lack food safety awareness (Chen et al., 2022). These

farmers possess no skills that are required for the evolving environment (Afenyo, 2012). In a study conducted by Afenyo (2012), it was found that key challenges faced during the implementation of food safety measures were a lack of proper facilities, equipment, and materials, such as safety rules on farmers' markets. In Nigeria, it was reported that those who grow crops like tomatoes, bell peppers, and hot peppers have experienced a decline in their harvest due to poor management and limited knowledge about farming (Olayemi et al., 2010). Other major challenges include a lack of knowledge about soil nutrient management, certification, and market restrictions, lower yield, and a lack of smallholder-focused research and extension programs. In South Africa, Limpopo province, it was revealed that due to an inappropriate manner of using water and poor management, it led to shortages despite about 30% farmers being able to access irrigation water. To add, even accessing the market was difficult, and this resulted in their produce being wasted (Mpandeli & Maponya, 2014). In their research, Mpandeli and Maponya (2014) discovered that most of these farmers cannot utilize the available or modern technology effectively. Misaki et al (2016) argued that the small-scale farmers fail to utilize technology because of low education level and lack of training.

Finally, in the US, research by Chen et al (2022) found that small-scale farmers are having hardships concerning adequate access to land, a lack of research, insufficient infrastructure, and a lack of skills in modern agriculture. Other challenges faced were accessing new information and issues related to the level of agricultural knowledge. This is a necessity as it enables one to be more familiar with domestic commodities, food production, and inputs required for the operation of the farm (Mpandeli & Maponya, 2014). In South Africa, a study was pursued by Ortmann and King (2007), who revealed that farmers are exposed to heavy transaction costs due to a lack of education, market information, road and communication infrastructure, and long distances travelled to reach markets. In Tanzania, farmers are exposed to poor transport infrastructure, a lack of access to credit and services, and food insecurity. The agriculture industry in this country has not improved, regardless of many initiatives (Misaki et al., 2016). It was also found that over 78% of these farmers in the country had access to cellphones, but they cannot use them effectively to benefit their ventures (Misaki et al., 2016). In countries like Ghana, major challenges faced by small-scale farmers are limited availability of land and scarce natural resources, to mention a few (Elijah et al., 2018).

2.9 Support services rendered, and the importance of the Agricultural Extension Services

Most of the developing countries have concerned themselves with offering or ensuring Agricultural Development Support ADS) to improve the livelihood of farmers, in particular, the small-scale farmers (Ortiz-Miranda et al., 2022). The focus of many governments in these countries has been on enhancing food production, higher rural income, and food security (Moreda et al., 2022). Importantly, the effectiveness of ADS can be seen in the implementation of the green revolution, which significantly resulted in poverty reduction, enhanced food security, agricultural income, and the transformation of the economy of many countries in both Asia and Latin America in the 1960s and 1970s (Pinstrup-Andersen, 1993). In these countries, the green revolution initiative was successful, but this was not the case in Africa because of factors such as environmental, political, and economic differences (Aloyce et al., 2014). There was an agreement at a regional level by members of the Southern African Development Community (SADC) that the agricultural sector plays a pivotal role in poverty eradication, growth, and sustainable food security of this community (SADC, 2011). According to SADC (2011), about 70% of the SADC region was employed, and created livelihoods like income and food through this sector. South Africa is also a member of SADC. The smallholder farmers in South Africa started to receive support from the Development Bank of Southern Africa (DBSA) in 1980. This was intended to address the limitations or challenges experienced by farmers in the homeland areas (Kirsten & Van Zyl, 1998). Again, the government in the country developed an instrument called the Farmers Support Programme (FSP) with a clear objective of aiding these farmers to enhance their agricultural production, income, and food security through comprehensive agricultural support (Peach, 2015). The farmers, through the FSP, received support in the form of production inputs through credit, agricultural infrastructure, mechanization services, extension and research services, training, and marketing. This effort by FSP worked as those who took part in this program benefited by gaining enhanced access to inputs, extension services, increased production, and mechanization (Vink, 2012). Vink (2012) further argued that both market development and institutional capacity-building received little attention.

The government in South Africa, after gaining independence, identified agriculture as one of the industries to be industrialized through land reform programmes, with an objective to mainly support the small-scale farmers. Even though the ADS was designed to deal with and advance various initiatives, land reform and the Comprehensive Agricultural Support Programme (CASP)

consumed the largest portion, the impact has been little, with few farmers benefiting (Zantsi et al., 2021). Generally, there are three dimensions that land reform programmes can be categorized into, and these are land tenure, redistribution, and restitution. Zantsi et al. (2021:119-144) pointed out that "land tenure involves addressing the challenges associated with the administration of land in the communal areas of the former homelands, which have the highest concentrations of poverty in the country. Land redistribution is aimed at providing previously disadvantaged black South Africans with land for settlement and small-scale farming purposes. Land restitution was meant to redress historical injustices perpetrated through dispossession". In essence, land redistribution offers the capability to enhance the livelihoods of poor people and propel economic development (Mtero et al., 2021). The FSP was mainly established by the government for the land reform beneficiaries, but not for land reform farmers, considering that not every small-scale farmer is a beneficiary. On-and off-farm infrastructure, training and capacity building, technical advice and assistance, marketing and business development, information and knowledge management, financing mechanisms, free inputs and vaccination, and agricultural production loans are forms of expected or intended support (Mtero et al., 2021).

In South Africa, the commitment of the government toward supporting farmers was seen in its efforts to give extensive support by providing Agricultural Extension Services (AES). Agricultural extension is deemed a chain of fixed communicative facilitations that occur to enhance and aid solutions to resolve and address the challenges experienced by farmers (Rahman & Uddin, 2009). In the country, agricultural extension officers are known as officials of the government who work closely with farmers to help them gain AES, as well as relevant information and capabilities to assist farmers in increasing their agricultural production (Makapela, 2015). The primary roles of these officials are to spread knowledge and agricultural information, help farmers connect with other economic sectors, and give technical skills (Davis & Terblanche, 2016). Makapela (2015) posits that the unfortunate part is that the extension officers do not have adequate access to extension services; consequently, the farmers' ability to adjust to evolving technological advancements is impeded. Further, this author believes that extension officers should support small-scale farmers by training them, providing resources and information flow, and ensuring proper networking between the main role players in rural agriculture. According to Raidimi and Kabiti (2017), the Agricultural Extension Officers (AEOs) are confronted by challenges regarding learning new skills to maintain their proficiency and becoming more qualified for advancements.

Significantly, the AEOs ought to be properly trained to be equipped in a manner that will enable them to offer proper practical knowledge to the farmers (Rahman & Uddin, 2009). The AEO in South Africa is characterized by low levels of extension personnel education as compared with education from other sectors in relation to research knowledge (Raidimi & Kabiti, 2017). In the country, agriculture is highly associated with skyrocketing levels of illiteracy and unstable agricultural projects. Also, Makapela (2015) in their study found that most of the illiterate farmers were the elderly, which makes it hard for the AEO to help them in an effective manner.

2.10 Theoretical framework for the study

This section focuses on the theoretical framework that was applied to this study, and in this case, the adopted theory was the Capability Approach (CA). The theoretical framework is important in that it lays the foundation for the research to be undertaken and channels or guides it throughout the course of the study.

2.10.1 Capability Approach (CA)

CA was formulated by Sen (1998) and further developed by Martha Nussbaum as an approach for a human-centered normative framework to evaluate the individual and group well-being, social justice, and quality of life (Kuhumba, 2018). According to Kuhumba (2018), CA is one of the theories that are influential in modern political philosophy, social justice, development studies, studies on poverty and inequality, public policy, and others. The capability concept was defined by Sen (1998) as "that which reflects the alternative combinations of functionings the person achieves and from which they can choose one collection". A unique trait of CA is the focus it has on what people are effectively able to do and to be, which means their capabilities. This results in two significant themes for human development as developed by Sen (1998), which are capabilities and functionings. These themes are briefly discussed below:

2.10.1.1 Capabilities to achieve personal goals

Kuhumba (2018) notes that what is referred to as capability by Sen (1998) depends on various lifestyles that a person can pursue. Capability can be described as an individual's ability to perform valuable acts or attain a valuable state of being. It represents or stands for the alternative combinations of things an individual can do or be (Frediani, 2010). Sen (1995:40) asserts that "capability is also a set of vectors of functionings, reflecting a person's freedom to lead one type

of life or another". Such capabilities simply imply the freedom to do some of the key things needed to survive or stay out of poverty (Palatty, 2009:27). According to Sen (1998), a person's abilities to afford basic needs, such as affording one's nutritional requirements and the ability to move and appear in public with pride, determine what capabilities are. For Palatty (2009:27), "the relevance of a person's capability, according to Sen (1998), arises from two distinct but interrelated considerations". Firstly, the capability to achieve functioning will constitute an individual's freedom, meaning real opportunities, to achieve well-being only if the achieved functionings constitute an individual's well-being (Sen, 1995:40). Simply put, the capabilities are the ideas of freedom and reflect the real opportunities people have to achieve or live a certain type of life. For the capabilities to be effective, the socio-cultural aspects that restrict the flourishing of humanity within society. Secondly, it involves the dependency of a direct form of production, achieved well-being on the capability to function. Palatty (2009:28) argues that "in this, the act of choosing may itself be a valuable part of living and a life of genuine choice with serious options may seem to be, for that reason, richer". In essence, capabilities should improve functioning in society and reflect the freedom of a person to achieve functioning. According to Sen (1995), personal characteristics and social arrangements are what determine the capabilities of a person. This means that capabilities as real opportunities overwhelm individuals' abilities and societal opportunities, such as safety nets, economic opportunities, and social facilities. The result of this would be a capability set that speaks to different available functions, whereby individuals can choose freely.

2.10.1.2 Functioning of people in the attempt to achieve their desires

It is imperative that both functioning and capabilities are narrated and applied in this research as they complement one another, although they are distinct in nature. The word 'functionings' derives from the verb function, which generally implies being active in an activity (Sen, 1999). For Sen (1999), this concept refers to the achievement of people, especially when they manage or succeed in doing or being. Its definition simply explains that functioning refers to an individual's ability to perform something or become somebody. Thus, Sen (1995:110) argued that "functioning can either be physical states, meaning beings, or mental states, meaning doings, which enable individuals to be part of many activities in their societies. Functionings can be in the form of elementary physical states, such as well-nourished, being in good health, clothed and sheltered, gaining or becoming literate, to the most complex social achievements like being happy, participating in community,

social and political spaces, and living with dignity (Sen, 2000). What usually makes life valuable are the so referred to as 'beings' and 'doings. Both the concepts of capabilities and functionings are usually used interchangeably, but these are two different concepts. A capability is the ability to achieve, whereas functioning is an achievement. In other words, functionings are closely linked to the living conditions because they are different aspects of living conditions. In contrast, capabilities refer to notions of freedom, in a positive sense, in that the real opportunities one has in life (Sen, 1999). In addition, capabilities are considered as the real notions of freedom and opportunities must lead or achieve a certain type of life; on the other hand, functionings are elements of the living conditions or various achievements in living a particular type of life. In an attempt to differentiate between the two concepts, Sen (2000:75) gave an example of the fasting person and the starving person, while both encounter a similar level of functioning, for example, nutritional deficiency, the fasting person can be adequately nourished, meaning that he or she chooses to do so, while the starving one does not have the capacity. Again, this model to some extent suggests that there can be individuals who are not enjoying economic privileges and benefits due to socio-economic, market, and political conditions.

The CA assisted in explaining and understanding the need to have access to the market by small-scale farmers, as this will enable them to sell their produce, consequently making them able to afford other expenses, except for household food consumption. CA helped to identify the existing gaps and how this affects the smallholder farmers in the Carolina and Badplaas area. Utilization of this approach will help the relevant stakeholders, such as the AES, in terms of where they need to improve to create a conducive environment for the farmers. Through the CA, individuals or small-scale farmers can suggest strategies that could be adopted to improve or permit easy access to the agricultural markets. It was also noted that small-scale farmers do not have the capabilities that enable them to be free in terms of participating in the available markets.

2.11 Summary of the chapter

This chapter reviewed existing and past literature on the historical background of agricultural markets in various parts of the world. it further explored agricultural markets in South Africa; factors that influence access to agricultural markets by the small-scale farmers; and characteristics of smallholder farmers in different regions globally. As literature was reviewed, a gap of knowledge was identified to be the appropriate policy interventions that can make it simpler for

small scale farmers to access the agricultural market. The chapter demonstrates how beneficial the adoption of modern technology by these farmers can be in improving access to agricultural markets. Importantly, it examined the support services rendered and the role played by AEO to support farmers. Finally, the chapter presented the theory relevant to the study. The subsequent chapter describes the methodology used to execute this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Chapter Introduction

This chapter presents the research design and methodology adopted in the study by the researcher to conduct his research and collect data. The chapter highlights the location of the study where the data was collected. Secondly, it outlines the research design and approach employed in the study to answer the research questions and achieve the study's objectives. This is followed by the methodological approach followed by the researcher, which includes the sampling methods and sample size; the data collection tools utilized; data control measures, including validity and reliability of data, and techniques used to analyze data. Finally, it describes elements considered during the collection of data for ethical purposes.

3.2 Study Area

This study was conducted in the Badplaas and Carolina areas located under the Chief Albert Luthuli Local Municipality (CALLM), Mpumalanga Province. According to the Integrated Development Plan (IDP) (2023/24), this municipality comprises close to 53,480 households, with a growth rate of 2.3%. Carolina's services are mainly from agriculture, forestry, and mining **Invalid source specified.**. Concerning age profile, in this municipality, the active-labour force aged 15-64 accounts for 56% of the employable population, whereas, close to 67% of the population aged 0-14, 15-25, and over 65 years are considered economically dependent burden in that they are non-productive members of the society and due to their reliance on the economically active labour force and government grants for survival (IDP, 2023/24). Regarding gender composition, this municipality is dominated by females, representing 52% of the population, whilst males account for only 48%. Most people in this municipality are literate, holding 81%; however, the majority lack tertiary education. These individuals account for 78%, whereas those with tertiary education represent only 5%. On the other hand, close to 15% of the population does not hold any form of education.

The economic drivers for the municipality include community services, which is the dominating sector with a contribution of 37.1% to the economy in the area, followed by the retail sector sitting

at 13.6%, the agriculture and forestry sector representing 11.2%, the mining sector with 7.9% and lastly, the construction sector holding only 2.9% (IDP, 2023/24). However, for this study, ***"access to agricultural market by smallholder farmers,"*** the focus is only on the agriculture and forestry sector. In the CALLM, the so-called established farmers, of which most are from the white population group, largely practice commercial farming. This group is located within the Carolina-Emanzana grassland area. According to the IDP (2023/24), the key activities are grain farming, which includes yellow and white maize, varieties of legumes (sunflower), followed by potatoes, and lastly, cattle feed. Further, livestock farmers, those who mainly deal with cattle and sheep, are also found in the area, and there has been a growth in game farming. Significantly, IDP (2023/24:37) points out that "forestry companies such as Komatiland forests and York Timber operate the timber and plantations operation, which stretches from Diepdale to Carolina, covering all the plantations along N17 from Oshoek, Lochiel, The Brook and Milliken."

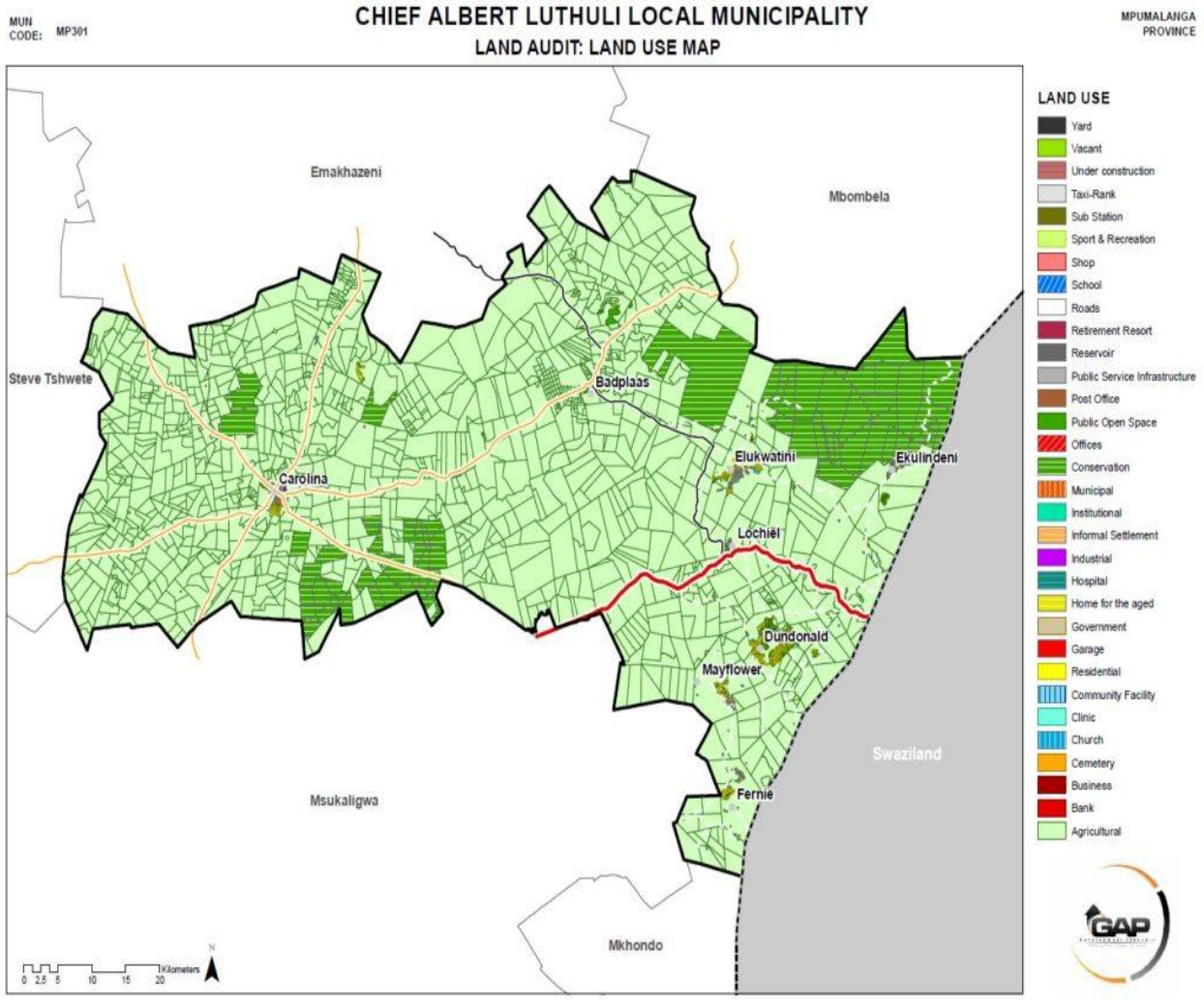

Figure 3.1: Map of CALLM, illustrating the location of the study, namely Carolina and Badplaas

Source: Online.

3.3 Research Design

For Thakur (2021:55), "research design refers to the overall strategy that you choose to integrate the different components of the study coherently and logically, thereby ensuring that you will effectively address the research problem; it constitutes the blueprint for the collection, measurement, and analysis of data". It is basically the plan followed by the researcher to conduct his or her own research. Additionally, it is a strategy that specifies which approach should be undertaken to collect and analyze data. This study employed an exploratory research design. According to Thakur (2021), this type of research design is usually considered by researchers when they seek to explore a phenomenon that is less researched or one about which little is known. In this current research, an exploratory research design was used to explore the perceptions of small-holder farmers on access to the agricultural market. The researcher was also able to explore the experiences of the AEOs regarding the type of support offered to small-holder farmers in CALLM. Further, employing this design allowed the researcher to understand the stance and opinions of AEOs about access to the agricultural market in the study area.

3.4 Research Approach

In research, this is considered the channel or path followed by the researcher to gather information on the topic of interest. There are many different types of research approaches undertaken by researchers, including quantitative, qualitative, and a combination of the two, which is known as a mixed-method approach (Alharahsheh & Puis, 2020). However, to achieve the objectives of the current research, a qualitative research approach was used. Davidavičienė (2018) put forward that a qualitative research approach is the one that enables the researchers to get a deeper understanding of the topic studied. Employing this approach enabled the researcher to understand the experiences and perceptions of the participants regarding access to the agricultural market by small-holder farmers. This approach is complex in nature, which made it possible for an interaction between the interviewer and interviewee, thus enabling a comprehensive and detailed understanding of the topic under investigation (Davidavičienė, 2018).

3.5 Research Philosophy

A research philosophy is defined as "a set of beliefs or assumptions about the nature of a reality" (Myers, et al., 2013: online). This component has the potential to influence how an individual perceives, thinks, or observes events in the world (Dannels, 2018). Usually, there are different approaches involved in research, including positivism, pragmatism, and interpretivism. However, for this study, interpretivist research philosophy was used. According to Alharahsheh and Puis (2020), this type of philosophy emphasizes the significance of understanding people's beliefs, reasoning, and motivation in a social context; thus, it is important for the interpretation of the data gathered. Interpretivism was used to interpret the perceptions, opinions, views, thoughts, and ideas of the participants on access to the agricultural market by small-holder farmers in the study area. This philosophy enabled the researcher to understand how people, small-holder farmers and AEOs, view the reality of the phenomenon investigated in their own immediate environment. Participants were able to clearly express their experiences as they are the ones affected, and such situations are part of their daily lives. Again, the employment of interpretivism enabled the researcher to deeply understand how the lack of access to the agricultural market affects the small-holder farmers, more particularly, the agricultural production in the study area.

3.4 Sampling Procedure and Sample Size

The study's target population includes small-scale farmers and the AOEs. The sample size was estimated to use statistical package for the Social Sciences, while it was also informed by the budget, time constraints and the feasibility of the study. Small-scale farmers were targeted because they are directly involved in the daily operation of their livelihood practices, and they are more knowledgeable or informed about it than any other person. The AOEs formed part of this research because they are tasked with the role of exploring or linking farmers with the support system required. Also, since they are more aware of the issues confronting farmers in their settings. The current study employed both purposive and convenience sampling methods to select the study's participants. Purposive sampling is a type of non-probability sampling that requires the researcher to choose the participants based on the characteristics that match the objectives of the study (Berndt, 2020).

Initially, about 25 small-holder farmers were targeted from the study area; however, data saturation was reached at the 15th interview, but the researcher further conducted another 4 interviews to ensure that new or emerging information would be shared or not. Importantly, the researcher ensured that everyone who was interviewed had more than five years of farming experience, which was an assurance that the participants had the necessary information required by the study. Again, the convenience sampling method was used to choose the AOEs from the Ehlanzeni District. According to Berndt (2020), this type of sampling is mainly employed to select participants based on their accessibility, availability, and willingness to share the intended information with the researcher. So, those who formed part of this study were for these reasons.

Table 3.1: Sampling procedure for small-holder farmers

Location	**Participants**
Badplass and Carolina	8
	11
Total	**19**

Table 3.2 Sampling Procedure for Agricultural Extension Officers

Location	**Convenience Sampling / Participants**
Cooperative A	1
Cooperative B	1
Cooperative C	1
Cooperative D	1
Cooperative E	1
Cooperative F	1
Cooperative G	1
Total	7

Source: Author's computation, 2024.

3.5 Data Collection

This includes methods or instruments employed by the researcher to collect data in their research. The study employed both a structured questionnaire and semi-structured interviews, which are briefly explained below.

3.5.1 Data Collection Instruments

Data collection is defined by Palinkas et al (2015) as the process by which the researcher gathers data that will adequately answer the research problem. Since the study is qualitative in nature and to adequately collect relevant data, the researcher employed semi-structured interviews in the form of face-to-face interviews (refer to Annexure A) to gather data. A semi-structured interview is "a qualitative research method that combines a pre-determined set of open questions with the opportunity for the interviewer to explore particular themes or responses further." (Berndt, 2020). This type of interview technique allows the participants to expand and express their opinions on the topic discussed. The purpose of these interviews was to determine whether the small-scale farmers have access to the agricultural market or not, and what they think should be done regarding the situation. Again, the interviews were held with the AEOs to understand their role towards improving the conditions of small-scale farmers' livelihoods and what kind of support is rendered to farmers in Badplaas and Carolina.

3.6 Data Analysis

This is a key process undertaken by the researcher to analyze data that was collected from the participants. The process of analyzing data enables researchers to provide explanations, understand, and interpret data for the sake of understanding other people (Friese, 2019). In this research, qualitative data were gathered, and narrative analysis was applied. The thematic analysis technique was used to analyze data, and several steps were followed by the researcher during this process (Cualifild, 2023). The steps involved, according to Caulfield (2023), are as follows:

i. **Familiarization:** The researcher familiarized himself with the data collected. The data collected was on the perceptions of small-scale farmers, the influence of access to markets on agricultural products and to assess the challenges in accessing agricultural markets. It is crucial to go through the gathered data before it can be analyzed. In this case, it was

achieved by listening to audio recordings taken during the interviews, which were followed by transcribing those audios into a Word document.

ii. **Coding:** This step entails taking notes of key words emerging from data collected, which can be in the form of phrases. The identified key work helped the researcher to gain a summarized overview of the main points or similarities from the gathered data.

iii. **Generating themes:** Here, the emergence of various patterns among codes or phrases is identified, this is followed by deriving themes. This was performed by the researcher in this study.

iv. **Reviewing themes:** This step involves the process of ensuring whether the themes derived are useful and accurate representations of the data. In essence, this is where data gets to be checked again and compared against themes derived. The researcher underwent this process in the study.

v. **Defining and naming themes:** This step required the researcher to make sense out of the themes derived and give an appropriate heading or name to each of them. This process makes it easy for the reader to understand the data presented.

vi. **Writing up:** this step is all about discussions or analysis of data, which was done by the researcher.

3.7 Ethical considerations

More importantly, before this study was conducted, the researcher had to obtain ethical clearance from the University of Mpumalanga. Again, permission was sought from the CALLM before the small-scale farmers and AEOs were engaged. A consent form was given to the participants by the researcher to declare that their participation in this study was voluntary and that they were aware of what the study entailed. Protection, dignity, and privacy of the participants were guaranteed by the researcher, and this was achieved by not mentioning or revealing their identity; information shared was kept confidential. The researcher did not deceive participants by offering them any form of incentive or reward to form part of this study; they were also made aware that they would not be rewarded for participating and that they could withdraw from participating in this research at any time should they feel uncomfortable and uneasy. Additionally, protection from any kind of harm, be it physical, mental, or emotional, was ensured, and the researcher achieved this by avoiding asking sensitive questions during the interviews. Further, a local language was used to

guide and permit free flow of information sharing, as English at times can be a hindrance regarding this process, as most people in rural areas prefer their mother tongue or native language. Using the native language during interviews was advantageous as the participants were more comfortable and freer to share information.

3.8 Summary of the Chapter

This chapter described the research design and methodology followed by the researcher to carry out his study and gather data from the study area. It started by highlighting the area where the study took place, this is followed by the designs and approaches employed in this research. Further, this chapter covered aspects such as sampling procedures and sample size; data collection procedures; data control measures; and data analysis techniques. Lastly, it concluded by briefly discussing the ethical principles considered in this study. The next chapter presents data collected from CALLM, particularly in the Badplaas and Carolina areas.

CHAPTER FOUR

FINDINGS

4.1 Chapter Introduction

This chapter presents the findings from the study area. It commences with the farming experience of the participants, which was the key variable in the study. This is followed by a highlight of the themes adopted in this study. The presentation of findings of the study was guided by the themes that emerged. Themes include the reason for farming; influence of access to the agricultural market on farming projects; and methods used to advertise products, with sub-themes labelled instruments utilized and influence of modern technology on improving access to the agricultural market. Further, the key theme of the study presented is the perception of access to the agricultural market and small-holder farmers, with sub-themes on the benefits of farming and the importance of gaining access to the agricultural market. Another important theme presented includes the challenges faced by small-holder farmers and support rendered, with sub-themes labelled the role of AEOs and perceived support for small-holder farmers to enhance access to the agricultural markets and daily operations of the projects.

4.2 Farming experience

Although this study is qualitative in nature, it included a demographic characteristic of the participants, such as the number of experience or years spent farming. The reason for doing this was to ensure that the participants had the necessary and adequate information to share, answer the research questions, and achieve the objectives of the study. Table 4.1 below demonstrates that most (68%) of the participants in the study area have been involved in farming projects for more than 10 years, including livestock, crop farming, and both. On the other hand, a few (21%) of the participants indicated that they have been farming for not more than 10 years, while the least (11%) of the participants indicated that they have not been farming for more than 5 years in the study area. The years spent by the participants farming in the study area were significant as they enabled them to answer the questions asked. Statistical Package for Social Sscience was used to do the calculation in terms of the percentage mentioned above.

Table 4.1: The results of the number of years spent farming

Duration	Frequency	Percentage
0 - 5	**2**	**11%**
6 – 10	**4**	**21%**
Over 10	**13**	**68%**
Total	**19**	**100**

Source: Author, 2024.

4.3 Themes emerging from the study

This section highlights the themes that were derived from thematic analysis for writing up the findings from the study. Interpretation of data in this chapter emanates from the six main themes and the incorporation of the sub-themes as well. Table 4.2 below demonstrates the themes adopted in the study.

Table 4.2: Themes derived for analysis of the study's findings

Objectives	Themes and sub-themes
To explore the perceptions of small-holder farmers toward agricultural market access	i. Perceptions on access to the agricultural market and small-holder farmers o Benefits of access to market o Importance of gaining access to the agricultural market o Perceived support for small-holder farmers to enhance access to the agricultural market ii. Support rendered to access the market.

To understand the influence of market access on agricultural production	iii. Improve cashflow iv. Profitability of the farming enterprise v. Continuity in production
To determine the challenges in accessing agricultural market access	vi. Challenges facing small-holder farmers

4.4 The reason for farming

During the semi-structured interviews, the researcher was interested in knowing and understanding why the participants got involved in various farming projects, including livestock, crop, and mixed, which is both crop and livestock farming. Most of the participants shared the same sentiment in terms of why they are involved in these projects. Findings from this research suggest that the main reasons for participation of small-holder farmers in the agricultural projects include household consumption, which implies ensuring food security for every member of the household, and another reason includes the need to generate or earn income due to state of being unemployed. On the other hand, some of the participants complemented each other in that farming for them was mainly for passion and the retention of land. In support, this is what the participants had to say:

Participant N alluded that:

> *"Lack of finding a job made me consider farming. As a person who ended up in grade 9, I am very unfortunate in finding a job; therefore, going farming was the only option I had."*

This point was supported by the AEOs in arguing that:

"Most of our communities are frustrated by a lack of employment opportunities; as a result, most of them end up focusing on starting their own livelihood activities such as selling vegetables and fruits."

Participant D argued that:

"*As a single parent, who is not working and earning any source of income except grants from the government, which are not sufficient, I have a duty to ensure that my family goes to bed with a full stomach or at least not an empty one. So, I found myself engaged in growing chickens for me to generate income to support my family."*

This point was also echoed by participant Q, who stated that:

"*For us individuals who depend on grants for survival, it is not easy to go through the whole month with that income; therefore, one should come up with other means of survival, which is why I grow vegetables in my backyard. I do this with the hope of meeting the needs of my household."*

Participant L mentioned that:

"Due to lack of employment and need to survive, I cannot sit back and wait for someone to come and rescue me. So, I decided to start something small, such as planting crops and growing chickens, so I can sell eggs and chickens at the same time. Even though the income generated might not be enough, one can afford the household's needs."

Participant R asserts that:

"As a household that relies only on the grants provided by the government, this means that my family would starve at some point during the course of the month, since this money is not enough to push us throughout until we receive the next one. Given this, engaging in farming activities such as growing vegetables and fruits to be sold appeared to be an alternative to ensure the food security of my family."

To support this assertion, the key informants in this study believed that

"These small-holder farmers can curb the challenges related to low household income and food insecurity as long as they engage in these projects."

Participant H maintained that:

> *"Unemployment challenges push many women and men to be involved in agricultural projects, it does not matter whether one likes it or not, but as long as one can be able to put bread on the table for the survival of the households. Therefore, for us, we are involved in survival and producing food for our families."*

Participant O strongly argued that:

> *"The interest in farming stems from the availability of land. The land used was unutilized, as such it appeared ideal for one to do something out of it, ultimately, with a hope and belief that this might be beneficial in terms of realizing household needs. Although there were no skills or any knowledge about farming but seeing what other farmers around the area are doing, it was easy to start, and more was learned along the way.*

The participants' argument was reinforced by the key informants in stating that:

> *"In all honesty, there are few individuals in the area who are involved in farming because they have a huge land that is not occupied and have no other purpose. As such, those who have adequate capacity in terms of human labour, which could include the number of household members, find themselves engaged in agricultural projects. However, this does not imply that these individuals are food secure or earn enough income elsewhere, but these households can go through the month without any struggle, hence they do not heavily depend on such livelihood practices."*

Participant G claimed that:

> *"The cause for other people to engage in farming is inheriting the spirit of farming from their elders from a younger age, and that they end up developing a passion for farming and continues with the practice regardless of the involvement of their elders or not."*

It came into light during the interviews in the case of the Ehlanzeni district that most of the small farmers in the area are engaged in various farming activities for different reasons. Engaging in such initiatives by these individuals serves as an indicator that the challenges related to household food insecurity can be curtailed if the necessary support is provided to the affected. Such indicators call for urgent reactions or action by the relevant stakeholders to come to the party to address the

challenges confronting the small-holder farmers. As such, the reasons for individuals to participate in different agricultural activities should be closely observed with the intention of enhancing their livelihoods.

4.5 The influence of access to the agricultural market on farming projects

Inability to access the agricultural market influences most of the farming activities in a negative manner, and this hinders the growth and development of small-holder farmers at a grassroots level. The findings of this study suggest that the lack of access to the agricultural markets, in some instances, has discouraged the small-scale farmers from expanding their farms because their products cannot be sold anywhere except in the local communities. The following are assertions made by some of the participants:

Participant P indicated that:

> *"I am not in this business for selling because there is no access to markets for individuals like us, so I focus more on producing for myself, household needs, and relatives."*

Participant M alluded that:

> *"Having no access to market kills my spirit at times because I don't see a point in expanding my farm if I will not be able to sell it to the markets. At the same time, I believe that if market access is provided, I would be famous for not producing only crops but even livestock, as it is my dream to see myself engaging in that type of farming."*

Participant I mentioned that:

> *"Since I am involved in farming out of passion, I believe that if there were access to the agricultural market, I would be producing to sell, as this would improve my standard of living to some extent."*

Participant H expressed that:

> *"Not having access to agricultural markets negatively affects them because they are unable to sell their products on a large scale. It is not easy for us to survive with what we sell to our community members; it would be better for us if our goods were sold even out of the villages."*

The findings of the study denote that access to the market has the potential to positively influence the farming projects of the participants. Participants stressed that they have a desire to grow and expand their businesses, but this is not possible because access to the agricultural markets is not provided.

4.6 Methods used to advertise products

This section presents the findings from the study area on strategies employed by small-holder farmers to advertise their products. Also, the impact of emerging technology on enhancing access to the agricultural market.

4.6.1 Instruments utilized

Modern technology can play an impactful role in promoting and advertising the products, goods, or services offered by the small-holder farmers in the 21st century. Importantly, the way these technological instruments are used has the potential to determine the future, success, or failure of the farming enterprises of the small-holder farmers. Due to a lack of knowledge regarding the use of technology in an effective manner, the study revealed that most of the participants employed no means of advertising their products to the agricultural market. This could be one of the main reasons why they are not participating in the markets. The participants shared that in some instances, they must walk to reach the relevant markets in pursuit of trying to market their products, but this process is labor-intensive. This ends up leaving them with no choice but to abandon the whole mission, as they cannot afford to pay for transport to markets daily. To support the above statement, a few of the participants shared some insights regarding the tools used to advertise their goods.

The key informants strongly shared the same notion and argued that:

> *"It is possible that the small-holder farmers in the study area are not even aware of any means of promoting or advertising their products because of ignorance. Also, illiteracy and lack of knowledge regarding the use of modern technology might be the major contributors to this situation. One might not blame these individuals, given the fact that they are not favored by geographic location, implying that there might be poor network coverage, which always disturbs the process. But this is not to say that it is the reason they are not using any form or tool to promote their products.*

The claims by the key informants are supported by participants C and Q, who argued that:

> *"Some of us do have smartphones with improved technology, but the problem is not knowing how to utilize them effectively. I am sure if we did, our products would be exposed to the agricultural markets".*

Further, participant A said that:

> *"The problem here is not having the tools or what, but how to use them."*

Also, participant O strongly argued that:

> *"Lack of information on agricultural marketing tools is what holds us back. I think the relevant platforms meant for such purposes should be considered by the relevant stakeholders in the municipality. This will really help us expose our products to better markets."*

The findings of this study imply that small-holder farmers in the area have no means of advertising their products to potential buyers and investors. This could be one of the key reasons why they never grow in their practices.

4.6.2 Influence of modern technology on improving access to the agricultural market

During the interview process, the interviewer prompted the views of small-holder farmers on whether the use of modern technology can improve access to the agricultural market or not. The participants answered differently, and the following are the claims made:

Participant S stressed that:

> *"The availability of technology is very powerful, and it is very influential, especially in the business sector. With the 4IR, many sectors are moving to adapt to it, and that makes them able to quickly communicate, be updated, and notify of what is needed in the market. Even though we are not well established or recognized as big enterprises, it appears ideal that the adoption of modern technology on our small farms can help to expose our products to the agricultural markets in an effective way."*

The point above complements what the key informants mentioned in:

"These small-holder farmers must consider and adopt a new way of doing things, especially in their context. Modern technology, as one of the fastest mechanisms to do almost everything these days, has the potential to successfully promote the livelihoods of these individuals, together with their products. Again, this type of technology can also help them in their practice in terms of adapting to new ways of farming, as this would even increase productivity and their produce, enabling them to outcompete their competitors."

Participant E was of the view that:

"It can be influential. Many businesses are using the likes of social media to make their products known, and, in that way, targeted people get attracted to whatever is advertised online. As such, in the case of those who are farming in small plots like mine, technology can help promote my products in the same way, consequently leading to the growth of the farm. This might help in terms of increasing production, meaning that the plots used have to be expanded."

Participants R and M believe that:

"Considering the way business is conducted in the modern day, clearly technology-based strategies are the way forward, especially if one's survival depends on business-related activities. In fact, it's undeniable that almost everything to this date requires technology to function properly."

Participant J posited that:

"I am not sure if it can or cannot because I am an older person. If I knew the types of equipment available to help with market access, I would be able to say yes."

This point was also echoed by participant C in that:

"For old people who cannot really familiarize themselves with modern technology due to illiteracy, it would really be difficult to use such equipment; hence, it's really hard to say if these technology-based strategies can assist in terms of advertising products, especially because some of us are merely in this farming business to produce for consumption."

Participant H articulated that:

"Obviously, this is the most proven effective way of advertising products all over the world, so if I adopt related strategies, this will enable me to easily access the agricultural market."

Participant L uttered that:

"Of course, if such a facility is trusted or used by big companies, then it means it is effective in many ways, including promoting and advertising the business and products. I believe it could be the right platform for me to grow and produce even globally."

Participant Q argued that:

"The agricultural markets in the modern day can easily be accessed by being active in social media platforms, which implies using the technological tools effectively. There is no doubt that the new technology can enable people like us to easily compete and thrive in the industry."

Participants G strongly supported the above statement by articulating that:

"New technology is the heart of success for almost every industry or sector, regardless of how big or small. Therefore, effective use of these technology-related devices is key for us, small-scale farmers."

Participant S

"Truly speaking, at this moment I do not see any way out except adopting the new technology, so I believe this new way of doing things would be best for my farming project in terms of ensuring better access to the agricultural market."

Based on the findings of this research, it is undeniable that modern technology plays a role in determining the success or failure of many establishments. In the case of the small-holder farmers in the study area, this technology can determine whether they grow in terms of planting, rearing, or growing animals in the same spaces, or they remain the same.

4.7 Perceptions on access to the agricultural market and small-holder farmers

Findings on the opinions, experiences, and opinions of the participants and key informants are presented in the following sub-themes.

4.7.1 Benefits of farming

To understand the importance of accessing the agricultural market, the researcher sought to find out why individuals get involved in agricultural activities in the first place. Regarding this, the participants and key informants reported various benefits of farming. The following quote is an example of the different roles played by the small-holder farmers in the study area.

Every participant complemented each other in that:

> *"The primary objective for many of the small-holder farmers is to produce food for household consumption. As small-holder farmers, we mainly get involved in the agricultural activities to ensure that our families do not go to bed with empty stomachs. For us, this is the simplest way in which we can address the issues of household food insecurity, as it does not require a lot to start. For example, little experience, financial resources, skills, and knowledge are required in this type of work. Further, engaging in farming relieves stress related to financial issues but does not eliminate them. In essence, being this type of farmer assists in generating some income from the products sold, although this might not be enough, it helps with both personal and household needs. So, household income is guaranteed but is not sufficient as it does not cover the expenses of every member of the household at once. Also, through farming, we can improve the economic status of our villages by reducing the high levels of unemployment. Sometimes the products we produce are bought from us by our community members to start their own small businesses, where they sell to others in the community. In that way, employment is created, though it might not be much."*

The key informants supported the participants by arguing that:

> *"The situation of household food insecurity and income is a disturbing challenge for most of our local communities. However, the proven way to address this challenge is to engage in the farming projects by our local communities because this does not require a lot for one to begin. Even though this may be a temporary solution, our communities can survive with the little they make. So, this should be the focus point of these individuals, as it keeps them going. The projects also contribute greatly to the well-being of the local economy in some other parts of the study area. We see this in that the community members can access some*

products from their communities, for example, in this case, the ones who benefit greatly are those who deal with poultry farming."

Engaging in the agricultural projects, in the case of Ehlanzeni District, bears positive fruits. This is evidenced by the fact that the findings revealed that issues of household food insecurity and income tend to be addressed, though it's not a long-term solution. Again, findings demonstrate that the local economy does not entirely depend on the external provision of products and services; the community can achieve this from those who practice farming in their areas. However, this is not sustainable because not every smallholder farmer contributes to the local economy. The participants indicated that their contribution varies.

4.7.2 Importance of gaining access to the agricultural market

There are various opinions by the participants in this study regarding the significance of gaining access to the agricultural market. The perceptions of the participants on this aspect are recorded as follows:

Participant R alluded to that:

"Gaining access to markets can really improve anyone's farming project because the primary objective of farming is to ensure that the produce reaches the end user, and that can be through finding a market. With the market, small-holder farmers can be able to secure a contract to supply them with the produce they specialize in. Having access to the market ensures that revenue is guaranteed, minimizes loss in terms of produce, poverty alleviation, and employment for the local people."

The key informants reinforced this statement by stating that:

"Small-holder farmers can generate sufficient and sustainable income for both personal and household needs if they have access to the agricultural market."

Participant C stressed that:

"The painful thing is seeing your produce getting rotten in the field simply because there is no market to purchase the produce. So, if markets are accessible, most of the projects can be improved as they will be having revenue to extend the farm or increase the inputs for high yields."

The key informants strongly expressed that:

> *"Small-holder farmers who have access to agricultural markets are more likely to experience growth in terms of income generated, and this might encourage them to expand their livelihood activities."*

Participant S is of the view that:

> *"Accessing the agricultural market is a dream for almost every small-holder farmer as it exposes us to better opportunities, so realizing this dream would really improve our ability to produce as we will be producing not only for our local communities but other regions apart from ours, thereby expanding our farm produce, which will ensure the creation of employment."*

Participant G echoed that:

> *"I remember when I was taught the importance of having a market before planting to avoid spoilage and loss of yield. This was vital because when you produce, you already know where to take the produce. Therefore, access to markets can improve my project; surely, I can even hire people to work for me to obtain a high quantity to meet the standards of the market. So, I can safely say that the benefits of accessing markets include maximized or increased profit, guaranteed revenue, and loss prevention."*

The key informants, in support of the participants, uttered that:

> *"Small-holder farmers who can compete in the markets usually become independent and stop relying on other stakeholders because they are now able to generate enough income to run their livelihood activities. This situation is also deemed positive because these individuals end up employing other members of their communities to increase their productivity, to match or meet the demands of those they are producing for. Therefore, access to the agricultural market by small-holder farmers is key in the context of Ehlanzeni District."*

In the case of the Ehlanzeni District, there are different opinions and thoughts regarding the significance of gaining access to the agricultural market.

4.8 Challenges facing small-holder farmers

Findings of the current study revealed that there are several challenges encountered by the small-holder farmers in relation to access to the agricultural market. These challenges emerged to be what is derailing the growth, sustainability, and success of the small-scale farmers in the study area. Participants argued that if it were not for the challenges experienced, their lives would be better and their livelihood activities would be thriving, thereby ensuring household food security and income, to mention a few. Below are the examples of challenges confronting the small-holder farmers in the Ehlanzeni District.

For participant N, challenges faced include:

> *"Lack of access to adequate water, for example, when one must irrigate, they have to transport water using buckets to where their plots are situated. This is not effective at all and consumes a lot of time. It only gets better during rainy days."*

Participant H agreed that:

> *"Pests and diseases are the biggest challenge in this field, given the little knowledge one has regarding how to identify and treat them. They are a problem because they affect the quality of the produce, causing it to fail in meeting the market standards."*

Participant J outlined their challenges as follows:

> *"The main problem in our field is the lack of input resources is my daily challenge. Resources such as fertilizers, pest control, and water. On the issue of access to market, the challenge faced is knowledge on how to make use of available tools to advertise, that is, if there are available"*

Participant A strongly alluded that:

> *"My main challenge is access to adequate water, but as for other things, I do not really suffer because of the experience I gained from my grandfather, who is now late."*

Participant P firmly mentioned that:

> *"Obviously, given the fact that we are based in rural areas, resources such as access to water would be the number one issue. The major reason for such is the lack of proper*

infrastructure utilized; without this, not much can really be achieved, especially with no support from our local municipality."

Participant K argued that:

"Climate change is something that is beyond all of us, and it contributes negatively to my livelihood activity as I do not have the means to address its effects. This situation tends to put my crops at risk."

Overall, almost all the participants agreed when it comes to challenges faced in accessing the agricultural market, and this is what they had to say:

"It is really difficult for us to access the market because of our geographic location, the distance is very long and given the fact that we do not have means of transportation, this really makes our lives difficult in that regard."

Another point raised by the participants is that:

"There are no means provided to educate and inform us about how issues related to accessing the market, for example, how to access the market and how that would improve or benefit us in the future. This is the issue most of us are finding ourselves in. No channel or way is available to inform us about matters related to marketing."

The responses from the small-holder farmers suggest that there are a couple of issues faced in the study area in relation to both access to market and the daily operations of the farming projects. Further, findings demonstrate that these farmers are not uniformly affected by the challenges mentioned. This could be due to the type of farming one is engaged in and the level of experience or skills possessed.

4.9 Support rendered

It is a common belief that every problem or challenge encountered must have its own solution and be addressed accordingly. This section presents the findings in the case of Ehlanzeni District on the type of services or support provided to small-holder farmers to enhance their farming projects.

4.9.1 The role of AEOs

AEOs are expected to play various roles to always support the well-being of the small-holder farmers. During the semi-structured interviews, the researcher prompted the role of the AEOs, and this is what they uttered in their response:

The key informants shared the same sentiment in that:

> *"The primary role of any agricultural extension officer is to provide support to the local farmers by advising them on production practices that improve yield and support them with inputs."*

Another point made:

> *"As the agricultural extension officers, we are expected to train farmers where they need training because, as a department, we understand that many farmers do not know everything. It is also our responsibility to provide them with guidance on how to produce crops, how to control pests and diseases."*

From the responses, the key informants are aware of the roles or responsibilities that they are expected to execute. This is evidenced by the fact that there were no contradictions in the responses the provided during the interviews.

4.9.2 Perceived support for small-holder farmers to enhance access to the agricultural market

As the participants are the ones familiar with challenges faced and directly affected, they know more as compared to people who are not engaged in the same domain. As such, the researcher was interested in knowing what they think should be done to enhance access to the agricultural market and the well-being of their projects. In response, this is what the participants answered:

Participant Q stated that:

> *"What can be done, especially by the first supporters of farmers, who are the extension officers, is to time to time educate us through training on how to look for market, give us the common requirements needed so that when planting, one keeps in mind the requirements needed to be achieved."*

Participant H mentioned that:

> *"The government should send people who can look for farmers, then directly link them with a market based on what the farmer has. In this way, many farmers will have access to the market."*

The above points are reinforced by the assertions made by the key informants who argued that:

> *"The only plans would be to suggest or propose to the superiors to develop programs that will assist the farmers in terms of accessing the market. Also, it important that farmers should not plant crops that are not in demand by the market. Meaning they should start by finding a market first before planting"*

Participant P firmly agreed that:

> *"Since many farmers in this area have small plots which do not produce the quantity required, it would be ideal for small-holder farmers to approach a retail market (Boxer), then ask to supply them with spinach, upon receiving the quantity they will need and its quality. As farmers, we all produce spinach, practice the same practices, then combine our produce for the Boxer store."*

This point is supported by the key informants in that:

> *"Since it's small-holder farmers, the department should encourage them to combine the produce that they planted in common, which will help them to increase the quantity to meet the requirements. Farmers should normalize coming together with their crops to increase the quantity, meeting the market requirement."*

Participant O strongly believes that:

> *"The extension officers need to be pressured to support us both with input resources and linking us to a market."*

Participant G argued that:

> *"To effectively produce and stay motivated, we need to be visited by the extension officers and be trained on the modern ways of producing crops."*

Participants A and B alluded that:

"Even we, as the farmers, must create our own clubs where we would have monthly contributions made to a single account. This should be treated as plan B for rainy days, especially when our products would need care, for example, these savings would come in handy."

Participants S maintained that:

"The government needs to make means to check if the servants of the public (AOEs) are doing their job accordingly. This would help and ensure that they are always on their toes."

Finding of the study clearly demonstrates that there is a lot that needs to be done to improve the conditions of small-holder farmers in the study area.

4.10 Summary of the Chapter

The chapter presented findings from the study area. It focused on aspects such as the farming experience of the participants. A presentation or outline of the themes adopted in this study was given in this chapter. The main themes included the reason for farming; the influence of access to the agricultural market on farming projects; methods used to advertise products; the perceptions on access to the agricultural market and small-holder farmers; the challenges faced by the small-holder farmers; and support rendered. The sub-themes informed by some of the main themes include instruments utilized; influence of modern technology on improving access to the agricultural market; benefits of farming; importance of gaining access to the agricultural market, role of AEOs; and perceived support for small-holder farmers to improve access to the agricultural markets and daily operations of the projects. The subsequent chapter discusses the findings of the study.

CHAPTER FIVE

EMPIRICAL FINDINGS AND DISCUSSIONS

5.1 Chapter Introduction

This chapter presents the empirical findings and discussions of this study. As guided by the objectives of the study, the themes of focus in the chapter include the participants' involvement in farming projects; the impact of access to the agricultural market on farming projects; and technology-based strategies adopted by the small-holder farmers and their role in improving access to the agricultural market. This is followed by the perceptions of the small-holder farmers and access to the agricultural market, and challenges experienced by these farmers in their daily operations and in accessing the agricultural market. Finally, the theme presented is the support rendered to the small-holder farmers by the relevant stakeholders.

5.2 Participants' involvement in farming

Issues related to household food insecurity and income are among the factors that compel most individuals in rural communities to engage in farming projects. The participants emphasized that they are involved in agricultural activities not because they like it but for household consumption and other needs, such as financial security. These findings are in line with research conducted by Dillion and Barrett (2017), who found that factors like rising income, urbanization, and a shift in consumers' diet choices toward nutritional food are key drivers of the demand for fruits and vegetables in South Africa. The demand has seen many South Africans engaging in various farming projects. Even Bates (2019) and Aliber and Hart (2009) concur with the findings of this study by arguing that food consumption rates are increasing faster than local production in the country. Many people at the grassroots level are found practicing farming for these reasons.

Further, the case of Ehlanzeni District revealed that most small-holder farmers are actively participating in this sector due to challenges of unemployment and lack of sources of income. The current study noted that these individuals depend on sources of income such as government grants; however, these grants are not sufficient and unreliable as they fail to carry them out throughout the whole month. Researchers like Lowder et al (2016) argued that people engage in farming projects as they contribute greatly toward the creation of jobs and livelihoods; also, these farms are crucial

for rural communities. On the other hand, the World Bank (WB) (205b) also argued that small farms in Africa created jobs for over 65% of the workforce and they serve as the mainstream for livelihoods and income. Tshuma also concurs with the findings of the study by stating that households that depend on government grants as the main source of income are involved in farming to supplement their diets.

Mello and Malik (2017) argue that there are people who were born and raised by the small-scale practices, whilst for others, it was meant for household consumption. The point supplements the findings of this study in that there was a firm agreement amongst the participants and key informants that there are individuals who engage in farming out of passion or love. Such passion is usually developed from a younger age; for example, the study noted that some of these individuals grew up farming with their elders and that it was the only thing they were exposed to. It was also revealed that there are people who farm because they have plenty of land that is not occupied or utilized.

5.3 Impact of access to the agricultural market on farming projects

In the case of Ehlanzeni, the participants agreed that gaining access to the agricultural market could change their projects in many positive ways. However, due to a lack of access to the market, the study noted that most of the small-holder farmers have lost hope that one day they will compete or actively participate in the markets. Access to the agricultural market has the potential to expand these small farms into bigger ones, thereby creating jobs for others. Research by Davidova et al (2012) also found that small farms have the capability of growing as they not only farm to produce for household consumption but also as a lifestyle preference. But this is not the case, as these individuals have shifted their focus to only providing for household consumption and the generation of income. Even NEPAD (2013) believes that those within the agricultural industry have the potential to help reduce high levels of hunger and poverty. This justifies why the small-holder farmers in the study area mainly focus on farming to produce food for household needs, as well as the fact that they do not have access to markets. Undoubtedly, the points raised by the participants imply that access to the agricultural markets has the potential to influence the small farms in a good way, but this can only be possible if these individuals are supported by the relevant stakeholders in terms of informing and educating them on marketing matters.

5.4 Technology-based strategies adopted and their role in improving access to the agricultural market

Technology has become the cornerstone of almost every establishment in the modern day. This is so because almost every activity across the globe, either formal or informal setting, requires a reliable means of communication or sharing information. The success or failure of many institutions, households, establishments, or organizations can be determined by the way these technologies are utilized. Findings by Gigler (2014) support this point in that many people consider ICT as an instrument that can be used to develop their capabilities in finding, evaluating, and utilizing strategic and tactical information. Research by Aviles et al (2016) argued that the capabilities of an individual can be seen through accessing, evaluating, and using information for coordinating their daily operations. This is not the case in the current study, as it was revealed that the participants have no technology-based strategies in place.

The case of Ehlanzeni District exposed that the participants are not active in the markets because they lack knowledge and skills, and they believe that this role is not solely theirs to perform. It was also noted that having to walk to the markets carrying products discourages them from exploring ways to know markets, and their financial state is considered a key contributor to the situation. Findings of the study are in line with those of Ismail et al (2012), who found that those referred to as the middleman are responsible for connecting farmers and buyers in the agricultural value chain. This is so because these middlemen have experience in the field of marketing and small-scale farming. As such, one could argue that small-scale farmers tend to gain a little in this whole process. Gigler (2014) is also of the same idea that during this process of connecting farmers to the market, small-scale farmers benefit less, making them stagnant in their practices. This situation can increase the chances of high levels of hunger and poverty for these farmers.

Further, emerging technologies are key to improving access to the agricultural market. Participants and key informants in this study emphasize the significance of adopting the new way or style of conducting business, especially in the 21st century. The study noted that the success of small farms depends heavily on the use of technology in an effective way and that failure is also due to the inability to utilize the tool appropriately. This finding is in line with the NDA (2000), which reported that the ability to gain access to the market is vital as it is considered a significant factor of their success. On the other hand, researchers like Pamungkas (2018) are of the belief that

adopting ICT strategies has the potential to keep the small-holder farmers informed about the current affairs regarding their practices, and not only in relation to marketing but also in terms of proper use of farming techniques for optimized agricultural production.

5.5 Perceptions of small-holder farmers on access to the agricultural market

Most of the smallholder farmers in the area are active in agricultural projects or activities to provide or ensure the food security of their households. Ricciardi et al (2018) are also of the notion that in the absence of small-holder farmers, the state of food security would be at risk across the world. The participants are involved in this sector because it is easy to start, requires little or no experience, no advanced skills are required, and it is cheaper. This point is supported by FADD (2012), which argued that small-holder farmers are characterized by low inputs and outputs. Again, this situation is caused by a lack of necessary skills and resources; also, these farmers produce at a subsistence level. Further, another benefit of engaging in farming projects includes the fact that household income tends to improve. For instance, Tshuma (2014) alluded to the fact that the small-holder farmers are involved in farming projects with the purpose of supplementing their income, particularly those who are unemployed and rely on social grants as the main source of income. The small farms also contribute greatly to the well-being of the local economy if they are well supported and promoted. This is so because if they are provided with the necessary support, the chances of them growing or expanding are imminent, which will ultimately create employment for other individuals in the community. A study by Lowder et al (2016) revealed that a significant portion of jobs and livelihood strategies come from these small farms.

Authors like Adams (2023) argue that having access to the agricultural market is vital as it has the potential to boost productivity and ensure household food and income security. It also provides an opportunity for the small-holder farmers to sell their products at a higher price. The points by Adams (2023) are in line with the findings of the study, which revealed that there is a firm belief that the ability to access the agricultural markets has the potential to contribute greatly to the growth, sustainability, and success of the small farms. In this regard, the small-holder farmers will be guaranteed a constant or floating income, which ultimately helps to fight hunger and poverty. In addition, access to the agricultural market is a ticket to improving the standard of living for most of the small-holder farmers, together with community members, because the growth of these small farms implies that more labour is required, which means more jobs for the locals.

5.6 Challenges faced by small-holder farmers

The daily operation challenges experienced by the small-holder farmers include a lack of access to adequate water. Lack of adequate water is mainly due to poor or the unavailability of proper infrastructure in place. This finding is reinforced by Bisaga et al (2019), who in their study revealed that unreliable sources of water not only affect the farming project but also other purposes, such as household daily use. A key contributor to the lack of access to adequate water is the lack of financial resources to erect or install efficient water tanks. Pests and diseases are also a huge challenge for small-scale farmers because they do not have the necessary experience and skills to deal with them, and they lack the financial means to afford the required services. In support of this finding, researchers like Chen et al (2021) argued that small-holder farmers are more likely to be exposed to threats or issues related to labour costs, lower income, and high crop input in their practices. On the other hand, it was argued that these farmers are associated with or exposed to a lack of access to proper funding (Goodwin & Gouldthorpe, 2013). Further, climate change is also another inevitable challenge that compromises the livelihoods of smallholder farmers. This finding is consistent with Hoffman (2023), who maintains that climate change contributes negatively to farming activities and that it damages natural resources, compromising those on which their agricultural activities depend.

For Mpandeli and Maponya (2014), most rural communities in South Africa are exposed to increasing transportation costs, crop input costs, and accessing new information in relation to marketing. Additionally, Gebremendhin and Christy (1996) argued that marketing the farm outputs is hindered by the costs of advertising and the fact that this process is expensive. Farmers are experiencing heavy transaction costs because of factors such as lack of education, market information, road and communication infrastructure, and long distances travelled to reach the markets (Ortmann and King, 2007). These findings are complemented by the findings of the study in that small-holder farmers are unable to access the agricultural market due to issues like the location of their farms and the distance they must travel to transport their products. These are considered major challenges that prevent these farmers from actively participating in the markets. Consequently, it hampered the farms' growth, success, and sustainability. This occurrence results in increased household food insecurity, instability in income, and issues of unemployment for the locals. Also, the study noted that there are no means of educating small-holder farmers about the

ways to access the agricultural markets. This poses a great threat to the farmers' livelihoods in terms of expanding or growing, especially considering that the study area is rural.

5.7 Support rendered

The AEOs are tasked with the role of providing the necessary support and training to farmers to ensure that their practices survive and succeed. This point is further validated by Makapela (2015), who argued that the AEOs must support small-scale farmers by training them, giving them resources, and ensuring information flow. The growth and success of these farmers' practices not only help achieve household food and income security but also boost the local economy and contribute a certain portion toward the GDP of a country. Generally, Chen et al (2022) emphasized that small-holder farmers are not equipped with skills and are not well educated with regard to how to effectively manage the daily operations of their farms, and this is a serious matter. Further, Ortiz-Miranda et al (2023) revealed that many countries are putting measures in place by ensuring that structures like ADS are well equipped to improve the livelihood of farmers, especially small-holder farmers. This is necessary as the findings of the study demonstrate that small-holder farmers need to be educated and trained not only about ways to improve their productivity in terms of their produce but also on ways of exploring the markets. Programmes regarding training and education on access to markets and other agricultural activities must be developed. These farmers must come together and form clubs that would enable them to collectively farm a certain type of crop and approach a potential funder. Ideally, this initiative is feasible as it would save them finances and make their voices or presence felt and recognized.

5.8 Summary of the chapter

The chapter presented the analysis of the findings and discussions using empirical evidence. It started with the participants' involvement in farming; the impact of access to the agricultural market on farming projects; and technology-based strategies adopted, and their role in improving access to the agricultural market. Further, the chapter focused on the perceptions of small-holder farmers and on access to the agricultural market, and challenges faced by small-holder farmers. Lastly, it focused on the support rendered to smallholder farmers in their practices. The next chapter provides conclusions, recommendations, and limitations of the study.

CHAPTER SIX

CONCLUSION, RECOMMENDATIONS, AND LIMITATIONS

6.1 Chapter Introduction

This chapter provides conclusions and recommendations based on the findings of this study. It also outlines the limitations and challenges that the researcher encountered when conducting this study. The chapter also provides recommendations for future research that potential researchers may undertake.

6.2 Conclusion

The purpose of this research was to explore the perceptions of small-holder farmers on access to the agricultural market in Badplaas and Carolina under the Gert Sibande District. Data was obtained from about 19 small-holder farmers and 7 AEOs, and the findings were analyzed using thematic analysis. The researcher only interviewed individuals who had more than 5 years' experience in the farming sector, which served as a significant determinant as to whether the participants had the relevant data sought by the study.

The main question that the study sought to answer was how small-holder farmers perceive access to the agricultural market in the study area. So, to answer this question, the following objectives were achieved:

i. To explore the perceptions of smallholder farmers toward agricultural market access in the study area.
ii. To understand the influence of market access on agricultural production in the study area.
iii. To determine the challenges in accessing agricultural market access in the study area.
iv. To recommend measures that can be implemented to improve access to the agricultural market for the smallholder farmers in the study area.

As guided by the primary objective of the study, there is a correlation between the existing literature and the findings of the current study in that small-holder farmers lack access to the agricultural market in the case of the Ehlanzeni District. The primary contributor to this was found

to be a lack of knowledge about access to the agricultural market by the small-holder farmers. Further, it was also revealed that the small-holder farmers are not supported in any way; in other words, one is justified in concluding that these individuals are on their own. This is so because even the AEOs are well-resourced or supported by the government. Significantly, the inability of the small-holder farmers to utilize technology-based strategies appears to be a huge barrier to accessing the agricultural markets. Given this, small-holder farmers need to be properly trained and educated to effectively and appropriately utilize the means of modern technology.

6.3 Recommendations

Generally, the findings are used to formulate recommendations for the relevant stakeholders for consideration. As the aim was to explore the perceptions of small-holder farmers about access to the agricultural market, it was revealed that there are many barriers to realizing this dream. The study therefore recommends that:

- Stakeholders such as the AESs must provide necessary support to the AEOs to enable these officials to execute their role accordingly, which is to properly equip small-holder farmers with the relevant skills and knowledge required for them to operate a farm for maximized productivity and outputs.
- The government needs to create relevant platforms and awareness campaigns that will inform small-holder farmers about opportunities related to access to markets.
- The government needs to consider means of educating and training the small-holder farmers about effectively using modern technology.
- As literature demonstrates that the small-holder farmers contribute greatly to the creation of jobs, reducing household food insecurity, and improving income supplements, the government must prioritize the farmers by offering them the necessary support, including financial resources, relevant equipment, and regular training.

6.4 Limitations

The researcher encountered several challenges during the process of collecting data. This includes difficulties in getting the participants to take part in the study, as some of them thought that the

researcher was a government official who was employed to perform tasks other than collecting data for academic purposes; thus, the participants were reluctant to share data with the researcher. However, most of the participants ended up agreeing to share information as the researcher thoroughly explained the purpose or intention of this study. In the case of the key informant, they willingly agreed to participate in this study as they understood the nature of this work. More importantly, due to financial and time constraints, only a selected group of individuals formed part of this study, meaning that this research was limited to only small-scale farmers in Carolina and Badplass under CALLM, whereas it could have been ideal to involve all the farmers within the entire municipality, but due to the aforementioned reasons, this was not possible. As such, findings from this research cannot afford to generalize and conclude on behalf of the smallholder farmers in the district. The information gathered may be beneficial and useful toward understanding the importance of access to the agricultural market by smallholder farmers, but the findings may only apply to those farmers from the two areas, meaning this might not be the case with the whole municipality.

6.5 Suggestions for future research

Since the study was qualitative in nature, future studies should include quantitative data to ensure an accurate representation of the entire population (smallholder farmers) in Badplaas and Carolina. It would also be interesting to conduct a study that focuses on exploring access to and availability of opportunities that enable smallholder farmers to access markets. Finally, future research should focus on the impediments limiting access to the agricultural market for smallholder farmers.

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APPENDICES

APPENDIX A: INTERVIEW GUIDE FOR SMALLHOLDER FARMERS IN CAROLINA AND BADPLAAS AREAS.

University of Mpumalanga

Research Title: Access to Agricultural Market: A case study of smallholder farmers in Carolina and Badplaas Areas, Mpumalanga Province. This guide is mainly designed to gather information about access to the agricultural market by smallholder farmers. This research paper is registered with the Department of Agriculture in the Faculty of Agriculture and Natural Resources at the University of Mpumalanga, Mbombela Campus. The results of the interview are intended for only academic purposes. Responses from participants will be treated confidentially, privacy and identity are guaranteed, and participation is voluntary. Your participation will be highly appreciated.

Thank you for your participation!

Interview Guide for Smallholder Farmers in Carolina and Badplaas Areas.

The Guide consists of the following questions.

1. How many years have you been involved in your farming project?
2. Can you please tell me more about what got you involved in your farming project?
3. Do you have any access to the agricultural market? Please explain.
4. Can you please tell me more about the methods you use to advertise your products?
5. What role does your farming project play in your well-being? Please elaborate.
6. Do you think access to the agricultural market can improve your farming project? Please tell me more.
7. Can you please share with me what you think are the benefits of having access to the agricultural market? Please elaborate.
8. Can you please tell me more about the role or support rendered by relevant stakeholders, such as agricultural extension officers, toward enhancing access to the agricultural market?
9. What challenges are you confronted with in your daily practice? Please elaborate?
10. Do you think modern technology can be influential toward improving access to the agricultural market? Please tell me more.
11. What do you think can be done to enable access to the agricultural market? Please tell me more.
12. Do you have any additional input that you would like to make? If yes, please share.

APPENDIX B: INTERVIEW GUIDE FOR AGRICULTURAL EXTENSION OFFICERS IN CAROLINA AND BADPLAAS AREAS.

University of Mpumalanga.

This guide is designed to gather information regarding support or services rendered to smallholder farmers. This research paper is registered with the Department of Agriculture in the Faculty of Agriculture and Natural Resources at the University of Mpumalanga, Mbombela Campus. The results of the interview are intended for only academic purposes. Responses from participants will be treated confidentially, privacy and identity are guaranteed, and participation is voluntary. Your participation will be highly appreciated.

Thank you for your participation!

Interview Guide for agricultural extension officers in Carolina and Badplaas areas.

The guide consists of the following questions.

1. Can you please tell me about your role in improving farming projects in your local municipality?
2. How would you describe smallholder farmers, especially in your local municipality? Please tell me more.
3. What is the role played by smallholder farmers in your local municipality? Please tell me more.
4. What is your perception in terms of why individuals engage in farming? Please elaborate.
5. According to your understanding, why should smallholder farmers have access to agricultural markets?
6. To what extent are the smallholder farmers supported regarding access to the agricultural market? Please elaborate.
7. Are there any services rendered to smallholder farmers to enable access to the agricultural market effectively? Please elaborate.
8. Are there any plans for further intervention to enhance access to the agricultural market? Please tell me more.
9. Would you like to make any final contribution or comments regarding smallholder farmers and access to the agricultural market? Please share.

APPEBDIX C: CONSENT FORM

Research study: **Access to Agricultural Market: A Case Study of Smallholder Farmers in Carolina and Badplaas Areas in Mpumalanga Province.**

I, _____ (participant), have been asked to participate in a research project titled, Access to Agricultural Market: A Case Study of Smallholder Farmers in Carolina and Badplaas Areas in Mpumalanga Province. The purpose is to assess possible intervention measures to improve access for the small-scale sector to the market.

The researcher (Sibongiseni Khumalo) is a master's degree student under Agricultural Extension & Rural Resource Management, School of Agriculture and Natural Sciences, University of Mpumalanga. He is required to subscribe to a code of ethics that respects participants' rights. The researcher will make every effort to safeguard the confidentiality of the information provided by the participants. I understand that any information obtained from this study that can be identified with me will remain confidential and will not be given to anyone without my permission.

I have been requested to take part in a semi-structured interview conducted by the researcher and have been assured that there will be no risks or anticipated discomforts suffered for participating in this research study. I understand that the researcher will neither offer any benefits nor incentives for my participation. I am aware that it is anticipated that, through my participation, this study will enhance my understanding of access to the agricultural market in smallholder farming.

I understand that I have the right to refuse to participate in this. I also understand that if I do agree to participate, I have the right to change my mind at any time and terminate my participation. My signature below indicates that I have given my informed consent to participate in the above-described project and further indicates that:

- I have been allowed to ask questions about the described project, and my participation and my questions have been answered to my satisfaction.
- I have been permitted to read this document and have been given a signed copy of it.
- My participation in this study does not require me to give up any legal rights.

I understand that if at any time I would like additional information about this project, I can contact the researcher at the following contact numbers or e-mail address:

Cell: 072106730

E-mail: 201503061 @ump.ac.za

_____ _____

Signature of participant Date

_____ _____

Signature of researcher Date

APPENDIX D: ETHICAL CLEARANCE

UNIVERSITY OF MPUMALANGA

Creating Opportunities

MEK Ngcobo

School of Agricultural Sciences

Mbombela Campus.

Dear Sibongiseni M Khumalo (201503061)

Protocol Reference Number: UMP/KHUMAL0201503061/MAgric/SAS/2025/01

Project Title: Access to Agricultural Market: A Case Study of Smallholder Farmers in Carolina and Badplaas Areas in Mpumalanga Province.

In response to your application received on 31/08/2025, The Research Ethics Committee: Faculty Research Ethics Committee has considered the above mentioned application and the protocol has been granted FULL APPROVAL.

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

PLEASE NOTE: Research data should be stored securely in the School/ division for a period of 5 years. The Ethical Clearance certificate is only valid for a period of 3 years from date of issue. Thereafter, Recertification must be applied for on an annual basis.

Wishing you the best with your study.

Yours faithfully,

.....

MEK Ngcobo (Chair)

.....

Cc: Faculty Research and Innovation Committee Chair:

DECLARATION OF INVESTGATOR(S)

I/We fully understand the conditions under which I am/we are authorised to carry out the abovementioned research and guarantee to ensure compliance with these conditions. I agree to completion of a yearly progress report.

....

Signature Date

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

ANNEXURE E: TURN-IT-IN REPORT

ORIGINALITY REPORT

SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS
8%	7%	6%	1%

PRIMARY SOURCES

1	hdl.handle.net Internet Source	1%
2	researchspace.ukzn.ac.za Internet Source	<1%
3	www.tandfonline.com Internet Source	<1%
4	www.researchandmarkets.com Internet Source	<1%
5	uir.unisa.ac.za Internet Source	<1%
6	www.researchgate.net Internet Source	<1%
7	vital.seals.ac.za:8080 Internet Source	<1%

8	www.mdpi.com Internet Source	<1 %
9	ulspace.ul.ac.za Internet Source	<1 %
10	scholar.ufs.ac.za Internet Source	<1 %
11	univendspace.univen.ac.za Internet Source	<1 %
12	Submitted to University of Mpumalanga Student Paper	<1 %