



## Small-scale Farming and Access to Market: Challenges and Opportunities in South Africa

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### Abstract

*The paper has aimed to explore the effectiveness of small-scale farmers in improving household income and food security, particularly looking at the barriers to market access in rural areas. This study was undertaken in rural areas of Kanyamazane, Clau-Clau and Nyongane, South Africa, where small-scale producers depend on low-risk and low-return markets to generate household income from production, thus ensuring food security. To achieve the aim of this study, a qualitative approach was used to provide in-depth interpretation of the perspectives, experiences, and behavioural patterns of the small-scale farmers faced with market related issues. Small-scale farmers, agricultural extension officers, and municipal officials were purposefully selected to share their views, perceptions, and experiences on the effectiveness in accessing markets. The findings revealed that there was limited access to formal markets by small-scale farmers because of limited knowledge and capacity to meet market requirements. The study confirmed that a lack of marketing skills, institutional support services, and limited access to arable land, have directly negative effects on achieving livelihood outcomes. This study recommends a sustainable crop production method which reduces the costs of farming resources, such as pesticide and fertilizer, through organic methods to ensure food safety and enhanced nutrient quality. This study further encourages inclusive rural development, where small-scale producers are treated as stakeholders in agricultural policy formulation to enable access to financial resources and increase in production through the formation of cooperatives.*

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## Introduction

The agricultural sector is one industry with a tremendous opportunity for improving household income and food security in South Africa. South African agriculture is strongly dualistic, determined by a limited number of commercial agricultural activities, largely operated by existing agribusinesses and a large number of small-scale agricultural enterprises, consisting of black and poor farmers (Thindisa & Urban 2018). Small-scale farmers in sub-Saharan Africa still account for approximately 40 to 60% of total rural income, by involvement in both agricultural and non-farm activities, which shows the significance of the role of small-scale agriculture in the economy (Barret et al. 2017). However, many small-scale farmers are continuously influenced by ongoing stressors which are sometimes not predictable within regionalized and globalized market economies, putting smallholder farmers into direct competition with large-scale commercial farming sector (Donnatti et al. 2019).

Thus, Adulunle (2018) asserts that the small-scale farming sector has played a measurable role in addressing global food crisis by creating an alternative means of income and food stability for the rural population. In Mpumalanga province (South Africa) for instance, 79% of the population is engaged in the small-scale farming sector (Masuku & Mbatha 2018). This proves

that the majority of rural population in Mpumalanga grow their own food and their income is mostly agricultural centred within the small-scale farming sector.

This sector is struggling, and much of the population in the rural communities' remains poor. The sustainability of smallholder agriculture and its contribution to the economy, food security, and poverty mitigation rely on resources that are not typically accessible by smallholder farmers, such as well-functioning farming settings, including access to arable land, freshwater sources, cross-fertilization, and pest control (Adulunle, 2018). The condition of small-scale farmers in South Africa, is not unique to other developing countries like Tanzania; small-scale farmers still have primary issues, such as limited fertile land for crop development and are continuously working to improve their soil fertility. This influences the price of the products and discourages consumer growth and involvement.

Agricultural initiatives need to consider a new, modern, highly capitalized agricultural system, as well as the creation of a more competitive smallholder agricultural (Beinart and Delius 2018). There is a need to close the gap between the small-scale farming sector and market access where the seller can publicly advertise their prices and their locations rather than trading through mutual bargaining (Anbarci et al. 2018).

Small-scale farming has been coupled with persistent constraints, such as participation in the formal market, transportation, agricultural inputs, and high market requirements. Small-scale farmers play a significant role in improving rural income for most households, but there is a general assumption that their contribution towards household income is not well administered and measured in South Africa. Mango et al. (2018) argue that the increase in the number of households engaged in off-farm jobs has proven to affect the development of small-scale farming and negatively contributes further to their poor income. The small-scale farming sector is indeed a driver of rural income in developing countries. Hence, Bjornlund et al. (2019) state that agricultural incomes account for 73%, 49% and 27% of household income in Tanzania, Zimbabwe, and Mozambique, respectively.

Small-scale farming is critical to socioeconomic development in developing countries like South Africa because it is one of the most important drivers of job creation through labour-absorbing production practices (Department of Agriculture, Fisheries, & Forestry 2015). According to Statistics South Africa (2017), the agricultural industry's overall in-come in 2017 was R332,8 billion, an increase from R85,9 billion generated by cattle farm-ing, mixed farming, and horticulture in 2016. Currently, South Africa's involvement in agriculture, or rather small-scale farming, remains strong, though profits are usually un-registered or unregulated. This is because some of these farming practices are called 'backyard gardens', which may be common with other western countries (Khapayi 2016). Moreover, there are other hurdles restricting agricultural growth, the most significant of which is high transportation costs for accessing the formal markets and limited by variables impacting sufficient output.

High transport costs are a major challenge for small-scale farmers from competing in formal markets. The availability of transportation in small-scale farming impacts both profit and the quality produce. Small-scale farmers struggle financially to have reliable transportation which can cause produce to be delivered late. Typically, the position and distance of rural small-scale farmers to the formal market have an impact on the decision to sell their produce (Singh-Peterson & Iranacolaibvalu 2018). As a result, Khapayi & Celliers (2016) state that, in the case of emerging farmers who lack storage facilities, late delivery of products may result in product quality loss and render the producer untrust-worthy to buyers, promoting poor market access.

Consequently, the decision of small-scale farmers to pursue a market is threatened by the high cost of transport and the quantity and quality required. These formal consumer supply chains

are often daunting for small-scale producers, where food processors and distributors are regulated, intertwined and near impossible to infiltrate (Tidd & Bessant 2018). As a result of high transportation costs which affect the supply chain, small-scale farmers are unable provide the quality and quantity of production demanded by formal markets. Thus, the ability of the small-scale farming sector to create an immensely beneficial contribution to food security and nutritional safety is not fully realised and hinders economic growth.

Many small-scale farmers sell their production in the informal markets, only within their surrounding communities. Small farmers do not have a systematic and coordinated market connection to ensure that transactions and purchases take place. Due to a lack of management skills, smallholder farmers are excluded from many of the most profitable channels, such as direct sales to supermarkets and exports. A lack of suitable storage facilities, little value addition to their products, transportation constraints, and ineffective information dissemination compound this exclusion (Ngqangweni et al. 2016).

The reality is that many vulnerable farmers complain about meeting the quality and quantity requirements of formal market (Ncube 2017). The failure to meet quality and quantity standards at the retail and consumer levels is due to specific requirements on packaging, grading, labelling, and traceability, as well as transportation constraints (Louw & Jordaan 2016). As a result, small-scale farmers' products are frequently sold in low-value informal markets.

Another restriction to accessing the market is the lack of contract agreements, with small-scale farmers trying to obtain at least a once off-contract deal with prospective purchasers of finished goods. Ncube (2017) argues that the lack of contract agreements ex-poses small-scale farmers to market bottlenecks or unfairness, such as limited access to lending facilities, insurance, and specialized agri-inputs at above-average prices. Business experience is important in acquiring market contracts, and contract farming yields the best results for farmers when they have negotiating power over the contract's terms (Shaw and Shaw 2019). Additionally, smallholder farmers lack business expertise, including the effective selling and buying strategy that is typically based on past demand and experience to meet market access requirements. Thus, Okunlola et al. (2016) confirm that lack of business skills contributes to lack of market agreement contract for small-scale farmers

## Methods

This study was conducted in the rural areas of Kanyamazane, Nyongani and Clau-clau, located in Mpumalanga province, under Mbombela municipality, characterised as dominant region in the agricultural sector of South Africa.

The study adopted a qualitative approach to provide in-depth interpretations, perspectives, and experiences of small-scale farmers and other studied participants in their natural settings to gain insight on the dynamics of market access. The participants were purposefully selected. The rationale for the sampling method adopted was informed by their expertise and engagement in agricultural initiatives.

Table 1. Arrangements for data collection with participants

Small-scale farmers Pseudonyms	Study area/field site	No of participants per focus group	Duration of focus group discussions and interviews (minutes)	Data collection date
Small-scale farmers A	Nyongane	5	46:56	29 September 2020
Small-scale farmers B	Nyongane	4	20:42	29 September 2020
Small-scale farmers C	Clau-clau	4	35:36	30 September 2020

Small-scale farmers D	Clau-clau	4	27:47	30 September 2020
Small-scale farmers E	Kanyamazane	5	25:21	01 October 2020
Small-scale farmers F	Kanyamazane	4	21:15	01 October 2020
<b>Key informants: agricultural affairs and local municipality</b>				
Extension officers A	Agricultural affairs	1	04:31	29 September 2020
Extension officers B	Agricultural areas	1	12:00	29 September 2020
Municipal official A	Mbombela local municipality	1	21:00	04 October 2020
Municipal official B	Mbombela local municipality	1	05:00	04 October 2020

The language used in the area, IsiSwati, was used during the interviews and focus group discussions since most participants were not fluent in English. COVID-19 protocols were followed during the fieldwork; the researchers made masks and sanitizer available for the participants and a thermometer was used to check their temperature.

Data quality assurance measures were used to analyse findings, to detect missing information, errors, and remaining outliers to ensure that the participants addressed the research questions. Semi-structured interviews and focus groups discussions were re-viewed and analysed to ensure trustworthiness, credibility, comfortability, dependability, and transferability

## Results and Discussion

This section provides a comprehensive discussion on factors contributing to poor market access. Small-scale farmers, extension officers, and municipal officials have provided key insights and perspectives on the phenomenon, based on their experiences in the provision and access to extension support services.

### Extension Support Services

The findings showed that the municipality's responsibility was to provide small-scale farmers with extension services to fulfil market demands. However, the study found that the constraints impacting small-scale producers' access to market include a shortage of water, followed by a lack of irrigation systems. Thus, interventions to address small-scale farmers access to market in the study areas included improved accessibility to extension support services that promoted training of small-scale farmers on the implementation of irrigation systems, such as water harvesting techniques. Irrigated land is twice as productive as rain-fed land because of its proper nourishment of crops, but small-scale farmers are unable to implement irrigation systems owing to the lack of financial resources. Sharaunga & Mudhara (2018) maintain that access to water and irrigation remains a critical component in land production.

However, the lack of water and irrigation systems are the least of the challenges faced by some small-scale farmers; the study exposed that there is inadequate access to extension services, such as limited advisory services and trainings on crop plantation. As a result, the inability of small-scale farmers to access the market remains a limiting factor in improving production.

The extension officers indicated that inadequate farm inputs, such as fertiliser, are a fundamental limitation impacting the quality and quantity of production within the municipality, and hence the poor access to market. Sisay et al. (2017) confirm that market access can be determined by the capacity to obtain farming inputs and services necessary for small-scale farmers to increase their production revenue.

Moreover, the Department of Agriculture, Forestry and Fisheries (2014) acknowledges that South Africa's national food security policy and national development plan recognizes that emerging farmers are vulnerable because of the limited access to the market. Access to formal markets is critical for achieving livelihood outcomes such as income generation and food

security. Thus, Khapayi & Celliers (2016) suggest that South African government should develop initiatives that would enabling small-scale farmers to have equal access to the market as compared to their counterparts of established and large commercial farmers.

To address the poor access to market, the extension officers indicated that the establishment of Agri-Hub, a market for local farmers located in Mkhuhlu (Bushbuckridge), was implemented as a strategic objective of the Mpumalanga economic growth agency to support the international fresh produce market and an opportunity for market access to many small-scale famers. This intervention is one government endeavour to boost market access, but small-scale farmers indicated that high transportation cost are a persistent factor that restrict access to this market. As a result, the study found that the market strategy Agri-Hub was also inefficient in assuring market access, given that many small-scale farmers are located 80 kilometres from their producing locations nearest markets. This study recommends that extension officers and municipal officials must provide marketing financial resources, such as transport, for small-scale farmers to access the fresh produce market at low costs.

### **Formal Direct Market Contracts**

There is a lack of formal direct contracts, which in the context of this study is de-scribed as a legal agreement between a local supermarket and a small-scale farmer for the forward production of produce, with clearly established requirements, such as a model that includes product expectations such as quantity, quality, and delivery timing, and a payment contract. The study found that small-scale farmers in rural areas were unable to reach markets because of low production quantity (unit of produce required) and quality (the condition of produce). This study maintains that this is common in rural areas be-cause the majority of small-scale farmers to do not have the productive resources, such as agricultural inputs, fertilisers and irrigation systems, and marketing financial resources, such as transport, packaging, and storage facilities, to retain quality of production. As a result, Okunlola et al. (2016) confirm that many small-scale farmers do not have formal contracts with any market and rely on informal arrangements to sell their items at what-ever market price is available.

This study shows that informal arrangements for markets link small-scale farmers and low-income consumers, but the supply market decides on the price and type of produce required. As a result, this study indicates that small-scale farmers choose informal markets to sell and buy agricultural produce to secure their livelihoods and food security, despite the evolution of formal and restricted markets. In contrast, a few small-scale farmers attested that they had formal contracts with at least one local supermarket. For instance, one of the small-scale farmers in group B stated that in the past:

*“We have previously supplied one formal market but not anymore as they seem to be going through difficulties”.*

The study points out that the loss of markets in small-scale farming is common because the majority of small-scale farmers face challenges to the market usually attributed to internal factors relating to household characteristics, as well as other external factors. Some of those factors include agricultural extension expertise, illiteracy amongst small-scale farmers, distance from farm to market, where farmers sell their produce, and farmer-owned equipment value and market competition. Thus, many small-scale farmers indicated that they had once or twice supplied to a supermarket, but factors, such as high transaction costs and as the level of participation in the market, influenced their decision to not participate

Moreover, some small-scale farmers indicated that their formal contract deals with the supermarkets market were cancelled due to their failure to deliver on the demanded quality and quantity of produce. Thus, the study showed that external factors, such as competition on the

quality of the vegetables produced, have been a major constraint to market access due to availability and large dominance of small-scale farmers in local areas producing much of the same product.

Ncube (2017) indicates that there are an estimated 50 small-scale farmers in Steve Tshwete Municipality in Mpumalanga and, besides growing different crops, there is competition between these small-scale farmers. This has resulted in the development of small-scale farmers informal markets. As a result, many small-scale farmers indicated that they do not have negotiation skills to even determine prices for their bulk produce, and thus the market takes advantage and does not allow producers to raise prices on their produce, since they are terrified of losing that market.

The findings show that a lack of negotiation skills has hampered the development of small-scale producers; these negotiation skills are vital for both informal day-to-day interactions and formal transactions between producer and purchaser. As a result, the study showed that small-scale farmers' ability to achieve food security is restricted by the lack of a direct formal contract which is constrained by various factors. The study suggests that governmental organizations must develop a comprehensive plan, such as a mediation programme, to connect small-scale farmers with the markets.

### **Quality and Quantity of Fresh Produce in Small-Scale Farming Sector**

The findings show that small-scale farmers do produce fresh and appealing healthy food, but they are faced with spoilage of their produce which affects their ability to access market. Small-scale farmer B disclosed that one of the issues with market access is that the market expects producers to produce what they require, not what is available for supply.

The extension officers stated that a market is likely to require produce that they struggle to access from commercial farmers on a regular basis; however, the expectation is that small-scale farmers must deliver the best quality to encourage high market demand. As a result, due to lack of favourable storage facilities, the produce usually gets spoiled.

The study points out that small-scale farmers are advised by local formal markets on what they should produce to access the market. This has sometimes led to poor production as small-scale farmers abandon the idea of producing crops that they have experience with to meet market demands. Consequently, the decision of quantity produced is primarily driven by marketing information and output marketing services, and lower agricultural productivity has an impact on market access in that quality and quantity determine market access states (Rangoato 2018).

Moreover, the quality of produce is the most critical requirement for market access because poor quality produce affects the profit margins for the supply market; consumers buy what appeals as fresh and healthy. This study finds that small-scale farmers struggle to meet quality requirements due to poor production skills that enable quality production. Thus, the study suggests that providing extension services for agricultural inputs is crucial since it leads to higher-quality products, which allows small-scale farmers to sell on the large markets. Moreover, the study finds that quality is one of the key drivers of market access. The extension officers acknowledged that marketplaces rely solely on producers who can match their customers' quality and quantity demands.

The study suggests that agricultural input delivery should be at the heart of local development strategies, as municipalities have a role in addressing rural farmers' vulnerabilities by enforcing the strategic goals set out in the Integrated Development Plan (2019/2020) for agricultural input provision. Extension services must play a visible role by demonstrating how public policies

and commercial farming initiatives work together to make market access decisions that are inclusive to local farmers.

### **Production Capacity in Small-Scale Farming Sector**

The study findings posit that a greater production capacity (total units of output production) allows market access for a few small-scale farmers whose goal is to sell big quantities of various crops to avoid price fluctuations. The findings show that, depending on the method used by small-scale farmers, both a variety of crops and single crop production have the potential to boost output units when appropriate resources are applied in the production process. As a result, the Food and Agriculture Organization (2014) states that concentrating on a single crop increases productivity, whereas poor small-scale farmers vary their crops to assure high production output.

Furthermore, this study reveals that small-scale farmers diversify their crop production to enhance rural incomes by creating job opportunities and reducing food insecurity. Market demand drives output and increases profit, addressing the vulnerabilities of small-scale farmers by increasing market power and enhancing rural livelihoods. Some of the small-scale farmers reported that they produce a large quantity of spinach that is always sold out, resulting in a higher profit, whereas other small-scale farmers struggled to sell even half of their output due to the small quantities of diversity crops they produced. As a result, market information plays a major role in determining how much quantity to produce. In the sense that quality and quantity dictate market access, Rangoato (2018) confirms that decreased agricultural productivity has an impact on market access.

This study finds that most small-scale producers failed to identify the market before deciding on what to produce. As a result, small-scale farmers had difficulty connecting with and understanding the demand from the supply market. There is a lack of consensus between what consumers demand and what is produced by small-scale farmers. Thus, the study asserts that the equilibrium points of production where demand is equal to supply production is critical for every small-scale producer to ensure that their production return expectations are met.

### **Infrastructural Issues and Small-Scale Farming**

The findings posited that small-scale farmers in rural areas are confronted by poor infrastructure development because of a lack of service delivery. Hofisi & Shava (2019) argue that deteriorating infrastructure in poor communities had a detrimental impact on small-scale farmer's growth. Thus, this study proves that adequate rural infrastructure, according to municipal officials, is a physical asset that requires serious consideration and involvement from the Department of Rural Development through enhanced financial resources. The findings show that most small-scale farmers have low productivity due to a lack of rural infrastructure, which includes proper roadways, irrigation facilities, effective water delivery, and storage facilities. Thus, there is a relationship between enhanced rural infrastructure and production capacity. To improve production, small-scale farmers rely on rural infrastructure development to connect markets to production centres; challenges such as lack of connectivity due to rural roads seriously constrains agricultural production.

The study states that the growth in small-scale farmers cannot be achieved without increasing productivity, which necessitates the development of adequate infrastructure. According to Food and Agriculture Organisation (2015), poor infrastructure, such as roads, constrains households' access to markets and services, and increases their vulnerability to shocks, and hinders economic opportunities that could arise if trade was easily available. Thus, the findings show that South Africa has an infrastructural crisis, and small-scale farmers are frequently the first to suffer the consequences.

Some small-scale farmers confirm that the state of infrastructure has hindered their level of production, citing poor road infrastructure for transporting their goods and services to markets, a lack of storage facilities, and a lack of water supply as examples. As a result, small-scale farmers pay high transportation costs for their produce to reach the market which therefore affects their financial vitality to improve production and access the market.

Extension Officer A indicated that rural infrastructure development is critical for improving access to food for small-scale farmers and communities, as well as for enhancing rural population economic growth and human development. Thus, Mdlalosi (2016) argues that the unavailability of resources and infrastructure hinders farmers from accessing markets. The study states that infrastructure development has the potential to make a significant contribution to rural populations' ability to earn revenue because its immediate effects may include increased income due to higher yields, cropping intensity, and diversification toward higher-value crops and increased rural employment.

### **Access to Arable Land By Small-Scale Farmers**

The majority of small-scale farmers have formed working groups to gain access to limited large arable land. This study points out that arable land is the farming area that is utilized to plough and grow crops. Despite the efforts of forming working groups, the findings show that South African small-scale farmers still own less than 2 hectares of land, available to rural communities for farming purposes but it is communally owned and administered by a traditional authority (Myeni et al. 2019). The study indicate that small-scale farmers do not have ownership of farming land due to lack of financial resources and, as a result, production is mainly poor, leading to limited access to market and poor income for household food security. The lack of financial resources is a challenge to obtaining arable land. Another factor is that arable land has become a limited natural resource (Ferrando 2017). Small-scale farmers highlighted that:

*“The municipality assisted us with land instead of leaving this land area unutilised, municipality leased it to us for agricultural farming”.*

The findings show that some small-scale farmers who accessed arable land do not have land ownership rights to use the land because it was leased to them by the municipality. Thus, extension officials indicated that small-scale farmers do not have the resources to obtain greater land. The majority of the land small-scale farmers use the land leased to them by the municipality, because it is communal land, for production.

Matemilola (2019) expounds that small-scale farmer need financial resources to acquire big plots of land for agricultural activities because insufficient access to large arable land, combined with insecure land tenure, leads to unsustainable farming practices and intense competition for resources contributes to chronically low incomes and persistent food insecurity.

Extension Officer B maintained that the arable land area leased to farmers does not belong to the municipality but the local communities, and it is administered by local counsellors. This study indicates that small-scale farmers have the right to reclaim the land back from municipality control through DERDLEA cooperative registration. Poor access to vast arable land has a negative influence on enhancing food security, and income generation as small-scale farmers are restricted to the quantity of production on the limited land available. Access to rural arable land encourages the sustainable use of this natural resource and the achievement of food security as a livelihood outcome.



Small-scale farmers do not have financial capital due to their inability to access agricultural loans and grants. This study finds that many of the small-scale farmers have no assets that can be used for the purchase of land as collateral. The findings suggest that intervention measures need to be implemented by the Department of Agriculture, Land Re-form and Rural Development as an integrated development programme, for small-scale farmers must achieve equal access and sustainable land use (Masoka 2014). Financial institutions, such as the Land Bank, must be accessible to small farming households to eco-nomically empower them to generate more income and enhance the food security.

### **Irrigation Systems in Small-Scale Farming Communities**

This study finds that funding is one of the most critical financial resource small-scale farmers need to afford irrigation systems. Thus, a lack of funding to procure and implement irrigation remains a disabling factor for improved small-scale farmer production. Due to a lack of funding for small-scale farmers, the quality of production is compromised because they do not have the advantage of installing pinched drippers, irrigation hoses and lector valves, fertilizer machines, irrigation timers, and fertilizer tanks.

The municipal officials stated that to improve irrigation facilities, extension officials advise small-scale farmers to implement systems of water harvesting and tanks, to in-crease the production and quality of products. The study points out that the municipality does not have a strategic plan or policy framework on how to assist small-scale farmers with irrigation challenges. The World Bank (2016) indicates that insufficient practicable policies, significant institutional underperformance, and financing constraints restrict the potential to improve irrigation systems and water supply in agricultural sector. Municipal Official A attested that:

*“The most challenging fact is that small-scale farmers do not have enough money to work on their farming business, especially, installation of irrigation systems.”*

The findings argue that the availability of irrigation systems in small-scale farming can be heavily influenced by intervention from extension support services because their role is to assist small-scale farmers to carefully select and plan the kind of systems to implement. The municipality is unable to lessen the impact of the lack of irrigation systems in small-scale farming because there are many small-scale farmers in the area and re-sources are limited to specific needs, such as provision of seedlings as an agricultural in-put.

Extension Officer B indicated that that irrigation systems are costly and, as a result, small-scale farmers rely on rivers, dams, and boreholes for irrigation. The study points out that the role of extension officers is to try mitigating the impact of poor irrigation systems which include poor production and dying crops. However, Extension Officer B suggested that for them to provide financial support in acquiring and installing irrigation systems, small-scale farmers will need to contribute 50% of the cash needed to purchase at least one irrigation system.

The study suggests the failure to implement irrigation systems must encourage local government should pursue an integrated development strategy that will enhance water supply. Thus, extension officials suggest that building of more water collecting systems like boreholes and tanks can replace irrigation systems. Findings proved that these water collection systems have been effective the past years for some small-scale farmers, they al-low efficient and regular watering of crops which boost quality production that meets the supply market standards.

Although, Nyahunda & Tirivangasi (2019) indicate that in many developing countries, including South Africa, irrigation systems for agricultural production remain an important strategy for increasing development, mitigating the effects of erratic rainfall, and providing

food, security, and jobs to poor farmers. Currently, there are no effective intervention measures to ensure irrigation systems are available for small-scale farmers, in the study area. Thus, small-scale farmers are constantly affected by climate change accompanied by seasonal trends, such as low rainfall, which constantly influence their production. Frank & Penrose Buckely (2012) indicate that small-scale farming farmers are disproportionately vulnerable to the impacts of climate change because it leads to decreasing crop yields in most tropical and sub-tropical regions, negatively impacting agricultural sectors, access to market and reducing food security in developing countries. Therefore, Ngema et al. (2018) maintain that government and developmental organizations can assist farmers by investing in agricultural infrastructure and prioritizing irrigation support for households who rely on rain-fed systems through provision of water tanks and boreholes.

### **Storage Facilities in Small-Scale Farming Sector**

Small-scale farmers lack storage facilities, which are an important function in marketing produce, to hold and preserve goods before consumption. As a result, small-scale farmers stated that the absence of storage facilities have led to the spoilage of produce; small-scale farmers must constantly ensure they sell all produce almost immediately to preserve quality.

Mdlalosi (2016) argues that quality suffers because of a lack of suitable storage facilities, putting farmers at risk of losing the produce, the quality of the produce, and customers and hence the ability of earning a higher final consumer price. The extension officers confirmed that most large commercial farmers have market access advantage because they have storage facilities to store to preserve produce from the time of production to the time of consumption, which ensures a continuous flow of goods in the market.

The lack of storage facilities is a market constraint and as a result, Small-Scale Farmer D stated that they stored produce in their backrooms, which was not an ideal environment for preserving fresh produce quality because the temperature is not controlled (and it is usually hot) and produce is not protected from infections leading to rotten produce and sometimes food poisoning.

Masuku (2013) confirms that inadequate storage facilities, particularly in rural areas, affect small-scale farmers because produce must be sold directly from the field. Many small-scale farmers have limited profit from production due to a lack of vegetable storage facilities. According to extension officers, the lack of cold or conditioned storage facilities results in loss of income.

This calls for extension support services to provide temperature-controlled storages to maintain the freshness and quality of their produce, such as vegetable cold storage. This study proved that there is no public investment for storage facilities in the small-scale farming sector and it requires more than extension advisory services but also financial re-sources. To address this constraint and for small-scale farmers to provide a variety of crops, the study suggests the construction of home-made storage facilities that are equipped with technological features, including a fresh air ventilator, air heating, inner air circulation, and humidification. This kind of vegetable cold storage would maintain enzyme respiratory activity, lowering vegetable water loss and ensuring freshness of produce till distribution.

Adeyeye (2017) indicates that the absence of conducive storage facilities is caused by lack of financial resources. Agricultural stakeholders such as the department of land re-form and rural development in the municipality of this study should intervene to assist small-scale farmers to raise funds for vegetable cold storage facilities.

### **Marketing Skills in Small-Scale Farming**

Equipping small-scale farmers with business management skills will allow for the submission of professional business proposals to private entities interested in rural agricultural development projects.

The findings show that small-scale farmers face difficulties of selling their produce more than producing it due to a lack of marketing skills. As a result, a majority of small-scale farmers indicated that without marketing skills, it is difficult to develop new ways to sell their produce in the supply market or even compete with large-scale producers on market access. This study finds that small-scale farmers lack comparative advantage because a majority of traditional farmers are completely illiterate or semi-illiterate, resulting in poor business management skills, escalating the inability to market their final produce.

The findings indicate that small-scale farmers are in remote areas where it is difficult to identify what their competitors are doing, to better to promote their produce. As a result, small-scale farmers have no access to potential buyers because of the high cost of travelling to meet and identify potential markets. Thus, Mdlalosi (2016) argues that improving the dissemination of market information to farmers and encouraging farmers to seek markets before production, can be used as a marketing strategy to ensure market access. However, further findings reveal that there are many reasons as to why small-scale farmers lacked marketing skills, including lack of communication channels.

As a result, Khapayi & Celliers (2016) maintain that small-scale farmers must be trained in a variety of production and marketing skills to improve communication and negotiation skills that will further boost their ability to acquire formal market contract and profitability. Shiferaw et al. (2011) state that marketing strategies improve the integration of farmer's products with high-value markets by providing the necessary inputs and equipment, as well as technical and market information.

The extension officers indicated that marketing skills are crucial because they boost small-scale farmers' ability to produce new ideas through market demand analysis. This study suggests co-branding, co-advertising, and co-promotion as some of the most critical marketing strategies small-scale farmers can implement. These marketing strategies will encourage co-learning on marketing and improve co-advertising of production through collaboration.

## **Conclusion**

The study concludes that the inability of small-scale farmers to access formal markets in rural areas are due to market constraints, such as formal contracts and high market requirements, climate change, financial resources, and market information. Small-scale farmers in the rural area do not have the ability and capacity to meet market requirements because the scale of their farms make them unable to meet the demands of the formal market.

The study revealed that increasing the production of small-scale farmers will directly increase access to food for vulnerable households and improve supplies for formal markets. Thus, farming is a rural livelihood asset and a solution to the high poverty levels. The effects of the lack of access to the market were more visible in the poor households, which regarded small-scale farmers as a source of income.

To access the market, small-scale farming constraints can be addressed through sustainable productivity, access to market information, inclusive rural development, effective agricultural policies, and sustainable financial resources, thus enabling small-scale farmers to increase their production, increase their incomes and achieve food security. Small-scale farmers must work together with the agricultural extension officers in acquiring the knowledge and skills needed to enhance production. Small-scale farmers must form co-operatives to combine their produce

to meet the demand of the market. The agricultural extension service must be further provided with basic training in integrated farming methods to apply in crop and poultry farming within the small-scale farming sector.

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