



SUPPORTING SMALLHOLDER AGRICULTURE

BUILDING LOCAL ECONOMIES: HOW SMALLHOLDER FARMERS MAKE MARKETS WORK FOR THEM

& FOOD SAFETY, ETHICAL, AND ENVIRONMENTAL STANDARDS

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*** PLEASE NOTE THAT THIS IS NOT THE FINAL DRAFT OF THE DOCUMENT. CURRENTLY GRAIN FIGURES IN THE BLE STUDY INCLUDE GREEN MAIZE, WHICH SHOULD BE CONSIDERED A VEGETABLE. RECALCULATIONS ARE UNDERWAY AND THE FINAL DRAFT WILL BE AVAILABLE ON THE FOOD LAB WEBSITE BEFORE THEN END OF 2016.**

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ABBREVIATIONS

ARC	Agricultural Research Council
B2B	business-to-business
B2C	business-to-consumer
BLE	building local economies
CGCSA	Consumer Goods Council of South Africa
DAFF	Department of Agriculture, Forestry and Fisheries
ETI	Ethical Trading Initiative
F	formal markets
FBSA	FoodBank South Africa
GFDA	Grain Farmer Development Association
GFSI	Global Food Safety Initiative
I	informal markets
IDP	integrated development plan
KFPM	Kei Fresh Produce Market
LEDA	local economic development agency
LFPM	local farm produce market
NAMC	National Agricultural Marketing Council
NFPM	national farm produce market
NGO	non-governmental organisation
PGS	participatory guarantee system
PPP	public private partnership
RRC	rural retail centres
SAI	Social Accountability International
SAFL	Southern African Food Lab
SIZA	Sustainability Initiative of South Africa
SSA	Supporting Smallholder Agriculture
SSCA	Supporting Smallholder Farmers into Commercial Agriculture
STA	Food Safety, Ethical, and Environmental Standards
ZRWEO	Zimele Rural Women's Empowerment Organisation

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1. INTRODUCTION

This research report contains an overview of two innovations that form part of a project called *Supporting Smallholder Agriculture (SSA)*¹ conducted by the Southern Africa Food Lab (SAFL). The project looks at market-oriented smallholder farmers in loose and tight value chains, drawing on the definition by Cousins and Chikazunga (2013):

Aiming to sell at least half of their produce, the objectives of farming operations for these farmers include household consumption and cash income. The contribution to income from sales typically varies from household to household. These farmers employ some hired labour but also use family members. Mechanisation on these farms is typically low, as is capital intensity. Farmers have some access to finance. This group of farmers make up between 200 000 to 250 000 households in South Africa.

The two innovations documented in this report simultaneously investigated market segmentation and standards - related challenges among smallholder farmers in two parts of the country. The innovations were called *Building Local Economies: How farmers make markets work for them* (see section 2) and *Food Safety, Ethical, and Environmental Standards* (see section 3), and were located in the provinces of KwaZulu-Natal and Limpopo respectively.

The report is split into two parts giving brief overviews of the motivation, purpose, and scope of each research innovation, their related literature reviews, and methodologies. The two parts also contain research findings answering the research questions for each innovation. Sections 2 and 3 can thus be read as separate reports.

2. BUILDING LOCAL ECONOMIES: HOW FARMERS MAKE MARKETS WORK FOR THEM

2.1 Introduction

The *Building Local Economies: How farmers make markets work for them* (BLE) project was based in the Umkhanyakude District in KwaZulu-Natal and took place over seven months from October 2014 to April 2015. Through the study, SAFL aimed to map smallholder farmers' market segments and identify the challenges they experienced in attempting to access new markets. This section contains the motivation, purpose, significance, and scope of the study and outlines the research questions. The next section contains a literature review, followed by a final section presenting and discussing the research findings.

2.1.1 Motivation for the project

A deeper understanding of the reality of market access, barriers, and access points at the time of the study was required in order to design interventions that could be scaled-up successfully. While there is a wealth of academic and other material dissecting the market barriers that keep most smallholder farmers out of major food retailers or supermarkets (see literature review in 2.2), there is a dearth of research and reporting on the size, saturation, and characteristics of other, alternative markets that may be more appropriate for many market-oriented smallholder farmers in loose and tight value chains. Consequently the starting point of the BLE project was a cross-sectional view of the current market access of market-

¹ The original project name was Supporting Smallholder Farmers into Commercial Agriculture (SSCA). For more on this project, visit the website: <http://www.southernafricafoodlab.org/supporting-smallholder-agriculture.html>. The smallholder project is one of many food system related projects run by the Southern Africa Food Lab (SAFL).

oriented smallholder farmers in the Umkhanyakude District in KwaZulu-Natal. Some of the characteristics of local markets, barriers to entering these markets, and potential access points were explored.

2.1.2 Purpose and significance of the project

While the BLE study was limited in scope and depth, it was a first step to uncovering the reality of smallholder farmers' current market access, the relative attractiveness of various market segments, and actions that could be undertaken to increase market access in KwaZulu-Natal.

These initial findings from the project might be of use to involved smallholder farmers; academic researchers; private extension organisations, such as TechnoServe and Lima Rural Development Foundation (from here on referred to as Lima); as well as the national Department of Agriculture, Forestry and Fisheries (DAFF), provincial departments of agriculture and other related government agencies; and the National Agricultural Marketing Council (NAMC). It should be noted that representatives from all these organisations have participated in some parts of both research innovations and could be reached with the findings.

As foundational knowledge was established through the BLE innovation, and the data collection and analysis methods were refined to fit the specific smallholder context, future iterations of the BLE study should be up-scaled and the findings should be used to create and test interventions to affect change in smallholder farmers' market access. The logical framework in figure 1, adapted from the original project proposal, illustrates the planned activities in the short-term, and proposed future repetitions or expansion of the BLE study. The inputs, activities, and outputs to the left of the red line in the framework represent what was accomplished with the research process documented in this report. The outcomes and ultimate goal to the right of the red line represent what SAFL hopes later iterations of this study will include.

2.1.3 Scope and research questions

As the overall project took an exploratory approach, it was deliberately constrained in depth and scope. This allowed the initial iteration of the research to be done relatively quickly so that it could be reviewed in order to refine the method and focus on future related studies. During the research process, The SAFL team developed and refined a set of questionnaires and databanks that could be used for future rollouts of the project. Therefore, the findings of this research should not to be taken as conclusive or definitive, but rather as a first step to be built on and scaled up over time.

The BLE study was limited to 161 market-oriented farmers in loose or tight value chains, 24 market representatives, and 5 government representatives in the Umkhanyakude District of KwaZulu-Natal. As the criteria for meeting the expectations of various markets differed across agricultural products, the study initially focused on farmers that primarily sold vegetables and/or fruit and excluded meat, dairy, fish, and legume farmers.

Research questions for the BLE innovation were formulated during the funding application process, and later refined to include:

- What markets do smallholder farmers currently serve and in what proportion?
- Are there other appropriate markets that smallholder farmers could supply that have been previously underserved?
 - What is the saturation of the markets that smallholder farmers currently supply as well as of other potentially appropriate markets?
- What are the major barriers that prevent smallholder farmers from entering or increasing interaction with various market segments?
- Are there access points which attention should be focused on to increase smallholder farmers' market access, and which stakeholder(s) is/are in a position to best affect this?

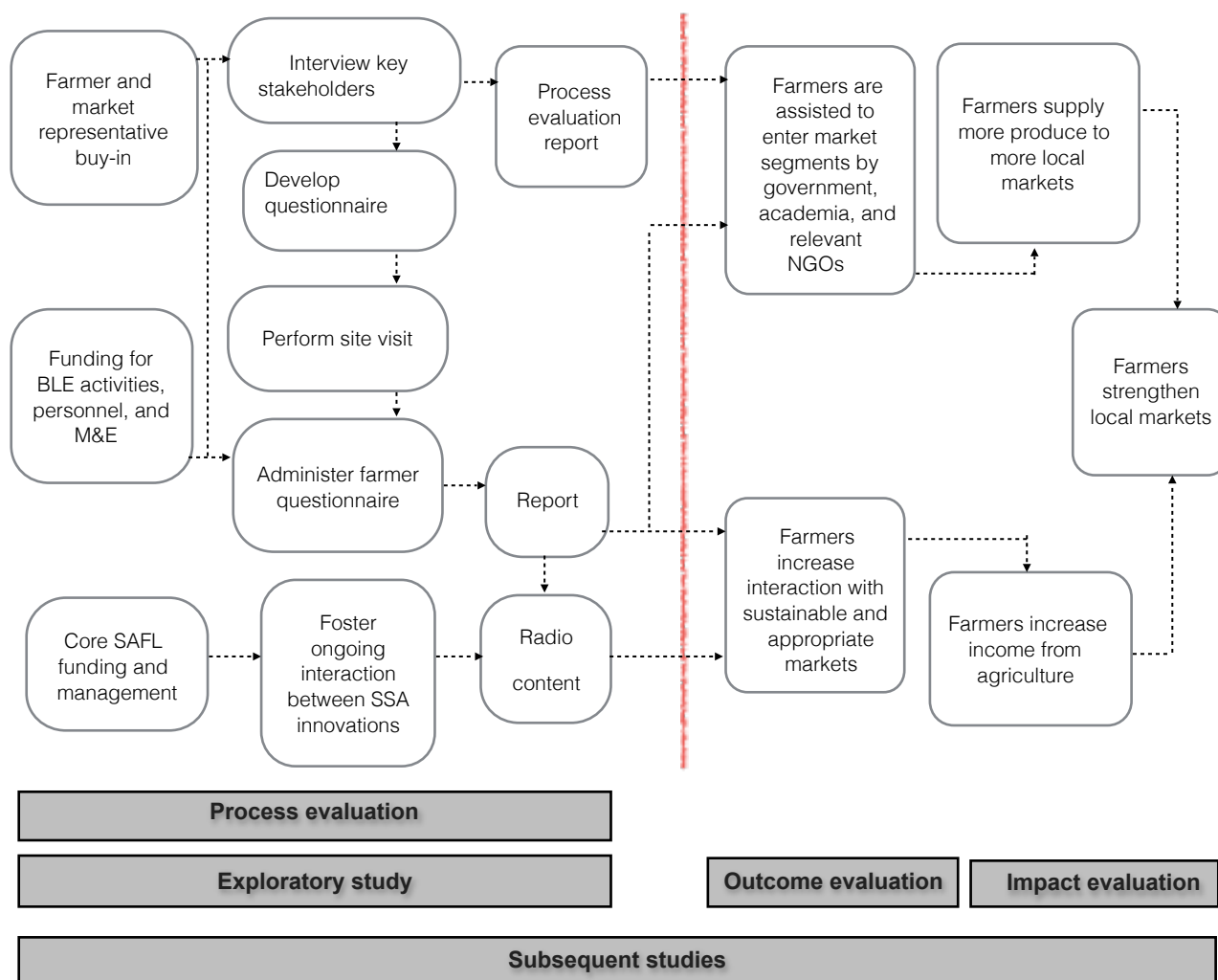


Figure 1: BLE conceptual framework

2.2 Literature review

This literature review provides an overview of recent texts from South Africa, pertaining to the research scope and questions of the BLE innovation. As the empirical case study for the BLE innovation was located in the northern parts of KwaZulu-Natal, the literature reviewed here also focuses as much as possible on this province. The review is organised according to the key research questions.

2.2.1 What markets do smallholder farmers currently serve and in what proportion?

Literature exists on how smallholder farmers in southern Africa should be able to successfully participate in food supply chains. Ortmann and King (2010) maintain that this research has become so topical in South Africa as a result of government activities. Through DAFF; the various provincial departments of agriculture; and the Agricultural Research Council (ARC) government has begun paying greater attention to smallholder farms and the growth of emerging smallholder enterprises through research and extension efforts relating to the promotion of food security. Non-governmental organisations (NGOs) and researchers at universities have also invested considerable resources in investigating practical ways of linking smallholder farmers to mainstream agri-food supply chains such as supermarkets (Ortmann & King 2010).

According to Louw, Kirsten and Madevu (2005) food retailing in South Africa consists of formal and informal sectors. The informal sector consists of hawkers or street markets, tuck shops, spaza shops,² street vendors, and flea markets (Louw, Kirsten & Madevu 2005). The formal sector is made up of supermarkets, convenience stores, restaurants, and food service sectors (Louw, Kirsten & Madevu 2005).

The informal sector

Most African farmers involved in food production practice peasant farming for consumption and for retail sale in the informal market, local communities, and at street corners in the cities (Lewu & Assefa 2009).

A short term market segmentation and sustainability study undertaken with the Zimele Rural Women's Empowerment Organisation (ZRWEO) in Mtubatuba, and the Impisethunjini Project in Pongola, to determine the relative volume and value of sales to the informal local market and the formal domestic retail market, and of produce consumed in households, revealed the percentages shown in table 1.

Table 1: Distribution of yields over formal and informal markets, and household consumption

	ZRWEO (%)	Impisethunjini (%)
Formal	53	11
Informal	28	64
Home consumption	19	25

There is a dearth of information on the role and importance of bakkie traders and hawkers in the informal sector in the Mtubatuba and Jozini areas, although it is suspected that they account for most smallholder farm gate sales. Indeed, as Barlow and Van Dijk (2013:5) indicate: "There are a number of avenues through which a producer can market and sell their produce..." yet informal markets did not form part of their analysis.

The formal sector

- Retailers

As urbanisation continues in South Africa, consumers who would previously have shopped at rural, informal markets are increasingly buying produce at urban retailers. Ntloedibe (2012) posits that retail chains now represent 70% of all food retailing in South Africa with informal markets making up the other 30%. According to an analysis that was done on data from the Statistics South Africa Income and Expenditure Survey of 2010/2011, provided to SAFL by Michael Aliber³, 69% of KwaZulu-Natal residents' expenditure on food goes to retail chains. In rural areas of KwaZulu-Natal, this statistic decreases somewhat, but is still a significant at 60%. As a result of the dominance of large retailers a lot of attention has focused on smallholder farmers accessing these formal markets.

In South Africa the formal retail sector is dominated by four large domestic retail chains, namely Shoprite/Checkers, Pick n Pay, SPAR and Woolworths. Both SPAR and Pick n Pay operate independent retail or

² A spaza shop is an informal convenience store, usually located in informal or isolated rural settlements in South Africa. The shops generally sell everyday household items such as soap in single units after buying them in bulk from supermarkets in larger towns or cities. These shops started as a result of the growth of townships on the outskirts of cities, from where formal shopping places are difficult and expensive to reach.

³ Michael Aliber works on agricultural economics and extension at the University of Fort Hare. His profile is available at this link: <http://ufh.academia.edu/MichaelAliber>.

franchise operations and have a large number of rural stores. These retailers therefore have an incentive to procure more produce locally, outside the centralised distribution model that otherwise dominates. Biénabe and Vermeulen (2007) analyse the smallholder farmer local procurement scheme of SPAR in Limpopo and study the procurement patterns of two large rural SPAR stores in Thohoyandou and Giyani. The Thohoyandou SPAR in Limpopo was sourcing from approximately 14 smallholder farmers, and the Giyani SPAR from approximately 12 smallholder farmers. These storeowners explained that at that time they were sourcing from smallholder farmers due to their remoteness and felt that doing so served the broader community (Louw et al. 2008). One of the case studies presented by PLAAS researchers during the SAFL SSA First Innovation Lab in September 2013 noted that a total of 50 SPAR stores were procuring fresh produce from smallholders. Most were procuring fruit and vegetables in no set quantity and with no formal agreement (SAFL & PLAAS 2013:9).

SPAR are now planning to both increase and formalise the sourcing of produce from smallholder farmers through the development of rural hubs which will be set up to enable produce from local smallholder farmers to be consolidated for supply to local retail stores (SPAR 2015).

Other retailers are also engaged in projects to source from smallholder farmers. The relatively high percentage of produce supplied to the formal market by ZRWEO in table 1 is a result of their ongoing relationship with the local Pick n Pay. Furthermore, Massmart is mandated by the competition tribunal to diversify its supplier base to include smallholder farmers. Another retailer, Woolworths, also claims to be committed to building the capacity of smallholder producers so that they can contribute towards a secure and sustainable supply of high quality fresh produce in the future.

- Processors

According to Louw, et al. (2008) Tiger Brands and Giant Foods, two of the largest processors in the Limpopo and Mpumalanga provinces, have also begun to procure from local smallholder farmers. They indicate that in 2005, Giant Foods processed around 15 000 tons of tomatoes, of which 9 000 tons were supplied by emerging smallholder farmers, and that in 2010 there were 121 producers that supplied approximately 25 000 tons of fresh tomatoes (about R15 million) annually to Tiger Brand's processing facility in Musina, Limpopo (Louw et al. 2008).

Other markets being served by smallholder farmers include:

- E-Fresh Markets

TechnoServe have established two E-Fresh markets in Tonga, Limpopo and eLukwatini, Mpumalanga. The design of the E-Fresh model involves a tiered process of selling to local traders, distributing produce for local farmers, and packaging local produce for retailers and national distribution entities (Karombo 2014).

- Cooperatives

Two registered Cooperatives in the Hibiscus Coast and Umdoni municipalities in KwaZuluNatal, supported by the Siyavuna Abalimi Development Centre, provide a market for 380 rural smallholder farmers. For more information, see below under innovative marketing strategies (p19).

The twelve members of the Dulumbe Vegetables Cooperative (Kranskop, KwaZulu-Natal Midlands) are supplying cabbages, potatoes and butternuts to supermarkets in Greytown and Kranskop. Local schools in the Ilembe district have also approached the cooperative to supply produce under the current school nutrition programme (SAFL & PLAAS 2013).

- Commodity associations

Two of the PLAAS case studies presented during the SSA First Innovation Lab (2013) included examples of local commodity associations operating farmer development programmes: AFGRI together with Grain SA and the Grain Farmer Development Association are promoting the establishment and development of

developing grain farmers in South Africa, and Potato SA is managing a programme, which supports small capitalist farmers with finance, mentorship, training on production, packaging and market facilitation.

- RSA Market Agents

RSA Market Agents in Johannesburg embarked on an innovative emerging farmers project in February 2007, aimed at empowering smallholder farmers with the knowledge to market their goods effectively. According to Barlow and van Dijk (2013) they are currently working with 700 emerging farmers in the Limpopo, North West, and Mpumalanga regions.

- Kei Fresh Produce Market

The Kei Fresh Produce Market (KFPM) is run by the Local Economic Development Agency (LEDA) of the OR Tambo District in the Eastern Cape. The market is specifically geared to the needs of the local producers around it, and has special facilities for smaller farmers. Approximately 80 local smallholders supply the market, 30 of them on a regular basis (SAFL & PLAAS 2013).

- FoodBank

FoodBank South Africa (FBSA) paid R50 000 for a consignment of produce from the Makhathini Flats farmers in KwaZulu Natal in January 2011 (15 tons of butternut, 5 tons of sweet potato and 6 tons of cabbage). The then KwaZulu-Natal DAFF also helped FBSA to engage with smallholder farmers in Jozini, KwaZulu-Natal, to hopefully also procure from smallholder farmers in the province in the future.

2.2.2 Are there other appropriate markets that smallholder farmers could supply that have been previously underserved?

Drawing on the literature, the following markets present potential opportunities for smallholder farmers:

Local government procurement

Local government procurement policies present opportunities for smallholder farmers to supply hospitals and prisons. Sale of fresh produce to schools is also a potential market. However, the requirements include being registered as a legal entity and demonstrating compliance in terms of financial records and accounting.

Alternative food networks

Ortmann and King (2010) point out that in the past decade or so, alternative food networks have evolved in developed countries. They include farmers' markets, farm shops, box schemes, community supported agriculture and home deliveries. Although this is more of an urban phenomenon, the same could develop in bigger towns in rural areas, and thus provide a market opportunity for smallholder farmers.

The hospitality sector

With the number of private and public resorts and lodges in the Umkhanyakude District, these provide a potential market for direct sales from smallholder farmers if they can access the appropriate person responsible for procurement. It is possible that the Phinda Private Game Reserve, for example, have a local procurement policy (Lawrence Mkhalihi, personal communication). Relationships with AgriParks⁴ (also agri-parks, see below p19) and commercial farmers may also provide potential opportunities for

⁴ The AgriParks idea was included in the 2015 State of the Nation address, although the provincial initiative on p19 seem to predate this. According to this report: <http://www.bdlive.co.za/business/agriculture/2015/06/25/agri-park-project-set-to-take-root>, AgriParks is now a national policy. The concept has also been mentioned in urban contexts: <http://www.timeslive.co.za/politics/2015/02/23/full-text-of-gauteng-premier-david-makhura-s-state-of-the-province-speech-2015>.

smallholder farmers to increase their market access (DEDEA nd). For more information, see below (p19) under innovative marketing strategies and new relationships (DEDEA nd).

2.2.3 What are the major barriers that prevent smallholder farmers from entering or increasing interaction with various market segments?

As research on informal and government procurement is sparse, the following barriers relate directly to the retail, fresh produce, processing, and hospitality markets on which literature was obtained. However, many of these barriers may have implications for smallholder farmers who wish to supply informal markets as well. For instance, in interviews with representatives of a fresh produce market (Barlow & van Dijk 2013) and representatives of hotels in KwaZulu-Natal (Rogerson 2012), the respondents mentioned many of the same challenges in sourcing from smallholder farmers that researchers cite when discussing interaction between retailers and smallholder farmers.

High volumes and low margins

Smallholder farmers often find it difficult to adhere to the “high-volume, low-margin” arrangements retailers, processors, and fresh produce markets expect (Mkhabela 2010). Having to meet the necessary volumes, at a specific delivery time on a specified day, is a major barrier that prevents more markets from interacting with smallholder farmers and vice versa (Dannenberg 2013; Louw et al. 2008; Barlow & van Dijk 2013). While Mkhabela (2010) argues that smallholder farmers overall do not suffer from an inability to produce high quality products, but rather from a lack of links to markets, many researchers point to low quality as a barrier to formal market entrance (Barlow & van Dijk 2013; Dannenberg 2013; Louw et al. 2008). In addition, the low margins and, in the case of retailers, long payment terms, negatively compound the limited working capital many smallholder farmers have to reinvest in farming activities or pay workers (Barlow & van Dijk 2013).

Age

In a study conducted across all nine South African provinces, Moloi (2010) found that, of a host of variables studied, the advancing age of a farmer mattered most and had an inverse relationship with the income of both livestock and horticultural farms. As the average age of farmers in the Umkhanyakude District is 55.1 years (Lewu & Assefa 2009), if a younger generation does not step in to take over farms from the aging, farmers may have an increasingly difficult time earning income from farming and maintaining cash flow for investment.

Limited access to finance and business acumen

Limited capital and access to financing hinder smallholder farmers’ ability to invest in critical things such as inputs, transport, and equipment and puts them in a vulnerable position should crop prices decline or if they experience a crop failure (Dannenberg 2013; Essa & Nieuwoudt 2003; Lewu & Assefa 2009; Mkhabela 2010; Obi, Pote & Chianu 2011).

In addition lack of business acumen and marketing skills also limit smallholder farmers’ ability to efficiently plan and execute production, research new markets, and negotiate prices and contracts (Barlow & van Dijk 2013; Dannenberg 2013; Essa & Nieuwoudt 2003). Inadequate knowledge of urban consumers’ changing preferences acts as a stumbling block to rural smallholder farmers’ ability to compete with larger producers for market share with processors, retailers, and fresh produce markets (Mkhabela 2010). According to Barlow and van Dijk (2013:20), representatives from RSA Market Agents, South Africa’s largest market agency, “highlighted the lack of technical, financial and business management skills as well as the lack of access to information and markets as the most significant challenges” to working with smallholder farmers.

Standards

Retailers, exporters, some processors, and increasingly, fresh produce markets and the hospitality sector require specific proof of compliance with food safety standards (Barlow & van Dijk 2013; Mkhabela 2010; Rogerson 2013). These standards present multiple challenges for smallholder farmers who often cannot afford the costly audits, nor meet the stringent criteria set by these standards (Barlow & van Dijk 2013; Dannenberg 2013; Louw et al. 2008). Furthermore, illiteracy, common to many smallholder farmers in South Africa, acts as a stumbling block to maintaining the records and completing the documentation required to conform to these standards (Barlow & van Dijk 2013).

Transaction costs

Retailers, processors, and institutions in hospitality lower costs, mitigate risk, and limit administration tasks and time by sourcing from a limited number of larger suppliers or in the case of hospitality, using a market intermediary to source produce (Mkhabela 2010; Louw et al. 2008). Due to increased transaction costs and less efficient production and transport systems, smallholder farmers' produce can actually cost more per unit than that of their commercial counterparts (Louw et al. 2008).

Infrastructure, inputs, support, and market information

Essa and Niewoudt (2003:67) contend that smallholder farmers "lack support infrastructure, water supplies, transport and communication networks, financial support, extension and research". This argument is echoed and expanded on by Obi, Pote, and Chianu (2011:1166), who state that smallholder farmers' "access to publicly provided infrastructure such as good road network, water, and electricity is also limited and many farmers do not have access to the right amount of information and technical support that would make a difference in their farming business", such as improving yields, production practices, receipt and use of inputs, and delivery of produce to markets.

Researchers highlight the lack of inputs such as farming equipment and modern fertilisers as a constraint to effective production and, in turn, market competition (Barlow & van Dijk 2013; Lewu & Assefa 2009). In a study of smallholder farmers in Umkhanyakude District, over 50% of farmers ranked inaccessibility of inputs as a major production constraint (Lewu & Assefa 2009). Fewer than 20% of farmers owned a plough or knapsack sprayer, while only 40% owned a rake (Lewu & Assefa 2009).

In a study conducted in the Eastern Cape, Obi et al. (2011) rank the impact various factors had on affecting market access for the farmers involved:

The results show that access to information, asset ownership, and level of output of farm produce, as proxied by the gross value of agricultural production, had the most chance of influencing the extent to which the smallholder could sell marketable surplus during the year. When modelled separately, ownership of farm equipment, access to physical infrastructure such as good roads, water, and electricity, and distance to the market did not seem to have had much influence. However, when these are combined with other assets of the household, regardless of whether they are used for the home or farm, the results showed very high statistical significance.

(Obi 2011:1166).

While this is interesting in itself, Obi et al. (2011) then go further to unpack the interconnectedness and complexity of these seemingly distinct variables:

These results probably reflect the complex interactions that take place within the smallholder environment. Of course, this does not mean that, in and of themselves, infrastructure and equipment are not crucial to both the production and the marketing aspects of smallholder economic life. Rather, the result probably only highlights the relative strength of access to information and asset ownership vis-à-vis infrastructure and equipment taken separately. The result equally provides insights about the complex intra-household processes with respect to decision making about resource use. It is also crucial to appreciate the fact that a factor such

as infrastructure and distance to market can only be critical when a farmer knows about profitable marketing opportunities beyond the farm gate and has the means to transfer produce to take advantage of such opportunities. Even with the best infrastructures, a farmer may still be unable to sell if there is insufficient information about profitable opportunities. Similarly, the physical distance between the farm and market is irrelevant to situations where the farmer does not have anything to sell.

(Obi 2011:1166).

Transportation and logistics

Given the perishability of fresh produce and consistency of supply required by markets such as retail and hospitality, frequent, reliable transport is needed to reach markets. However, many smallholder farmers lack access to transport or struggle to afford the related costs of petrol and maintenance (Barlow & van Dijk 2013; Dannenberg 2013; Essa & Niewoudt 2003). Barlow and van Dijk (2013) posit that rural smallholder farmers are especially challenged when trying to supply manufacturers and processors, which are usually located in urban areas. Maintaining the conditions needed to meet retailers' cold chain practices can be difficult for smallholder farmers moving produce to retailers' distribution centres (Dannenberg 2013).

A study conducted by Schnurr (2012,786) in the Makhathini Flats in KwaZulu-Natal found that of the Bt cotton⁵ farmers interviewed, "many were adamant that they would prefer cultivating crops they were more familiar with, such as maize, beans, pumpkin, [and] tomatoes, but turned away from these crops, because there was no place to sell them." The area is remote and bounded on three sides by ocean, mountains and Mozambique with the only urban market, Jozini, over 70 km to the south and requiring private transport to get there (Schnurr 2012).

Land

The variety of land holding arrangements and the varying quality of the land farmed by smallholder farmers present many challenges to consistent production and effective marketing (Essa & Nieuwoudt 2003; Sikwela & Mushunje 2013). According to Lewu and Assefa (2009:1152), while roughly 50% of farmers in Umkhanyakude District own their land, the other farmers in the district "still have to hire land for production and this could only increase production cost and make it difficult for farmers to compete for low market prices that large volume producers can offer." In addition, the high level of rented land or farms with fragmented rights inhibits smallholder farmers' ability to access financing (Moloi 2010).

While South Africa's post-1994 land reform policy was meant to help open up agriculture to more smallholder farmers through the reallocation of farmland, Aliber and Cousins (2013) argue that the government's commitment to inappropriately modelling these new farms on "large scale commercial farms" has led to the ineffectiveness of this programme. Sikwela and Mushunje (2013), who interviewed farmers in the Amathole and OR Tambo districts in the Eastern Cape and in Umkhanyakude District in KwaZulu-Natal, posit that:

... the majority of the land settlement programs, especially those operated by the smallholder and emerging farmers, have failed to get off the ground for various reasons, including lack of technical know-how, poor business skills on the part of the principal, conflict among and within groups, loss of interest from some of the beneficiaries, lack of adequate infrastructure and insufficient farm income.

(Sikwela & Mushunje 2013:2504).

⁵ Bt cotton is a genetically modified variety of cotton that produces an insecticide developed by Monsanto.

While group production and marketing can decrease costs and increase bargaining power, without proper support, farmers understandably lack the experience and skills to run an operation collectively (Mkhabela 2010).

2.2.4 Are there access points that attention should be focused on to increase smallholder farmers' market access and which stakeholder(s) is/are in a position to best affect this?

The literature cites several activities that may assist smallholder farmers' efforts to increase their access to markets. Themes of support, participatory approaches, and innovative marketing strategies run through many of the suggested actions.

Support

Collective action through public private partnerships (PPP) was more frequently cited than any one stakeholder group as the most effective way of driving change. Many authors cite a need for strong participation from smallholder farmers in the development and implementation of these PPP projects in order to improve relevance and ownership of the programmes by the farmers involved (Aliber & Hall 2010; Karaan & Kirsten 2008; Louw et al. 2008; Mkhabela 2010). This being said, government was the stakeholder most often nominated to take the lead on many of the activities below.

- Capacity building

Many researchers argued that capacity training for farmers with a focus on production, marketing, agro-processing, knowledge of standards, and business skills can help farmers improve their ability to run farms efficiently and reach markets more easily (Aliber & Hall 2010; Karaan & Kirsten 2008; Louw et al. 2008; Mkhabela 2010). Post-settlement support is a specialised form of capacity building for those farmers securing new land through land reform. Sikwela and Mushunje (2013:2504) argue that although this support is crucial to overcome production, management and marketing challenges it has been "either completely absent or so badly structured that it was irrelevant". Buthelezi (2009) cites a case study in Umkhanyakude District that suffered from decreased productivity without the necessary farming equipment, and recommends the national Department of Agriculture and the Department of Land Affairs coordinate to ensure success through proper support – a view also supported by Moloji (2010).

- Alignment and policy reform

A number of authors saw the need for increased synchronisation between relevant government departments. This needs to reach beyond post-settlement support into all government programmes and activities that affect smallholder farmers. Without this continued synchronised support, various isolated initiatives can leave smallholder farmers trying to piece together the assistance they need without much clarity on how to access different elements (Karaan & Kirsten 2008). Capacity support and strategy development within government that includes provincial and district representatives was also cited as a way to provide more effective support to help smallholder farmers reach their goals (Moloji 2010; Aliber & Hall 2010).

Aliber and Hall (2010) and Karaan and Kirsten (2008) suggest that government incentivise retailers and other formal markets to interact with smallholder farmers through a variety of funding initiatives, including tax concessions for companies that incur transaction costs procuring from smallholder farmers and "funds for specialised training [of smallholder farmers] in aspects related to contracting ... legal assistance with contract formulations ... [and] introduction to contracting" (Karaan & Kirsten 2008:7). In this way private industry could be recruited to free government from having to spend time and money investing in the services private companies already routinely provide.

- Improved extension services concentrated in relevant areas

Moloji (2010:62) listed "access to extension services" as one of the factors that mattered most to the success of the farms he studied. Improving the capabilities of, and service provided by, government

extension workers was often cited in the literature as a potential way to help increase smallholder farmers' market access (Mkhabela 2010; Obi et al. 2011). In speaking on a case study, Louw et al. (2008:297) presented a holistic view of support: "Correcting marketing constraints alone was not effective in linking the small farmers to modern markets. It was found that the marketing strategies of small producers were more strongly dependent on access to land, labour and the ability to mitigate risk, than on the characteristics of the markets". Louw et al (2008) agreed with Mkhabela (2010) and Obi et al. (2011) on the importance of increased access to general farming and market information, and the potential it could hold for smallholder farmers. As Obi et al. (2011) state:

Much of the problems that smallholders confront have to do with knowledge. These issues can be easily addressed by putting at the disposal of the farmer easily accessible information. The gap created by the dismantling of technical services to smallholders as part of the agricultural restructuring program following multi-party elections is now beginning to hurt and the time has come to reinstate these services and align the agricultural extension services to the needs of smallholders.

(Obi et al. 2011:1166).

Aliber and Hall (2010) proposed in a report that a smallholder farmer strategy should focus on the provision of generic support and infrastructure in regions where these farmers are concentrated. In South Africa, smallholder farmers are overwhelmingly concentrated in a few districts of Limpopo, the Eastern Cape, and KwaZulu-Natal. Aliber and Hall (2010) argue that such a strategy could create generalised conditions for success, adaptation and diversification. They thus propose a sectorally generic, but geographically targeted strategy.

Innovative marketing strategies

A number of marketing intermediaries are testing new ways of bringing smallholder farmers' produce to customers. Similarly to existing intermediaries, these new initiatives capitalise on the convenience buyers enjoy sourcing from one supplier, yet actively focus on working with smallholder farmers to overcome the barriers that often preclude them from such marketing arrangements. While small in number, the case studies below represent new ways of thinking that may hold potential for other smallholder communities.

- Fresh Organics

Fresh Organics operates out of Durban and focuses on selling organic produce sourced from smallholder farmers to members of the local community. Farmers do not need to undergo or pay for audits, as Fresh Organics performs soil testing to ensure that farmers are in fact applying organic methods. Farmers dictate the price that Fresh Organics pays them for their produce. This increases the bargaining power of the farmers and also allows them to learn more about business and marketing. If they set the price too high, their stock will not sell and they consequently learn how to adjust their prices. In order to get started, Fresh Organics initially takes whatever the farmer is already growing. After the relationship is established, Fresh Organics will ask the farmers to grow specific crops to meet the demands of customers. This allows the farmers to increase their working capital before investing in new crops. Farmers who do not have access to a vehicle or who are unable to afford petrol for deliveries are not excluded, as Fresh Organics collects produce from farmers free of charge.

In an interview, owner Grant Ambrosio (2014) cited time consuming administrative tasks, meeting increasing demand from consumers, farmers not wanting to grow a variety of produce, and working with cooperatives as Fresh Organics' greatest challenges. At the time of the interview, Fresh Organics had 26 suppliers, 10 of whom supplied fresh produce. Ambrosio saw weather related and labour issues as the biggest challenges for his suppliers.

- Siyavuna

Siyavuna, located in the Ugu District of KwaZulu-Natal, sells organic produce from around 180 smallholder farmers "to local retailers, restaurants or the local market, such as the Ugu district market" (Barlow & van

Dijk 2013: 9). Siyavuna offers training to farmers in production and business skills. The farmers are organised into farmers' associations, which are responsible for organisational decisions and offer further training to farmers. Siyavuna pays farmers directly for their produce and uses "packing and cooling facilities to improve the market linkages" (Barlow & van Dijk 2013:9). Siyavuna farmers use a participatory guarantee system (PGS) – a structure that allows farmer-to-farmer audits of organic requirements to reduce costs and increase ownership of the process and learning.

- KwaZulu-Natal Government agri-parks

The provincial government in KwaZulu Natal has proposed the creation of agri-parks for smallholder farmers in each municipal district. Each park would include a 20 ha plot complete with food processing plant and training and marketing services to help centralise production and increase smallholder farmers' marketing power (Dardagan 2014). The Department of Co-operative Governance and Traditional Affairs and the provincial Department of Agriculture are to provide funding for the parks (Dardagan 2014). While still at an early stage, if successful, these parks could help smallholder farmers with value adding activities, the dissemination and sharing of information between each other, and increase their collective bargaining power.

New relationships

Access points to markets such as processors, retailers and fresh produce markets can be realised through the identification or rethinking of benefits for both parties.

- Processors

Agricultural processing plants can offer smallholder farmers a market for quality produce that fails to meet the stringent requirements of retailers. Barlow and van Dijk (2013) give the example of a processor called Just Veggies in Vryheid. It has created a joint venture with the local smallholder farmers whereby the farmers supply the produce and Just Veggies takes care of the processing, paper work, and sale to retailers. Barlow and van Dijk explain that the company:

... has employed agronomists who will mentor, train, and develop the skills of the emerging farmers. Aside from job creation, this joint venture will help the rural communities to better utilise their land that has been unproductive for many years. In addition, through Just Veggies these emerging farmers will have a guaranteed market for their produce, which will ensure their sustainability.

(Barlow & van Dijk 2013:8).

- Relationships with commercial farmers

Commercial farmers offer an excellent source of training and mentoring for smallholder farmers, a primary market for their produce, and sometimes even a packhouse for value adding activities. In turn, smallholder farmers can act as a second supplier to help bolster a commercial farmers' stock for retailers and fresh produce markets, and secure a commercial farmers' position with retailers who are increasingly concerned with supplier development (Barlow & van Dijk 2013).

- Local or franchised retailers

Autonomous retail owners, able to select their own suppliers, offer an opportunity for smallholder farmers to enter the retail market (Barlow & van Dijk 2013; Louw et al. 2005). In South Africa, the retailer, SPAR, is particularly suited to smallholder farmers, given its franchise model and numerous rural locations offering closer proximity to many smallholder farmers. SPAR benefits from fresh produce delivered straight to the store, while supporting members of the local community who in turn spend money at the store. The farmers have fewer volume and transport hurdles to overcome than when supplying a large distribution centre and often benefit from training and sometimes even interest free loans (Louw et al. 2005).

- *Cooperatives and farmers' associations*

Cooperatives and marketing associations may help mitigate production, marketing and transaction costs, improve bargaining positions, and collectively overcome the barrier created by markets that require larger quantities (Karaan & Kirsten 2008; Louw et al. 2008; Mkhabela 2010; Sikwela & Mushunje 2013). Sikwela and Mushunje (2013:2509) quantify the importance of these organisations in marketing activities: "For members of marketing cooperatives and individual farmers, however, the degree of market access is between 12 and 28 per cent higher than that of farmers who do not belong to a cooperative or have no access to these services." However, the researchers qualify this by stating that this improvement will only apply to smallholder farmers who have reached a level of production and quality that may be marketable (Sikwela & Mushunje 2013). While Moloi (2010:67) recognises the value of associations by saying that: "... farmer organisations such as [the] National African Farmers Union provide a wide range of services such as financial services, training, advisory services, skill development, and represent their members' interest in expressing demand for service." Given their low levels of membership, Moloi also advises that the associations first invest time and effort into marketing their own organisations to new farmer members.

2.3 Research methodology

This section documents the research approach and strategy used for the Umkhanyakude District BLE innovation. It also briefly outlines the research design, methods used for data collection, and the actual research instruments. The sampling of stakeholders is justified, and the methods of analysis are discussed.

2.3.1 Research approach and strategy

Given the lack of previous studies on this issue and its complexity, the BLE project was conceived as a cross-sectional exploratory study and thus followed an exploratory sequential design employing a mixed methods approach. Originally it was proposed that the study would take on a grounded theory approach, but this was abandoned during the process due to contextual, time, and funding constraints. Instead, the exploratory approach allowed for the assessment of unknown variables that were brought to the surface and categorised through qualitative inquiry. Analysis of qualitative data captured in a trial phase enabled the research team to create an instrument that could correctly capture relevant qualitative data in an implementation phase. It also allowed research participants to contribute to the design of more contextualised and appropriate research tools. A final iteration of the research instruments using the data captured during the implementation phase forms part of the key outputs of this study.

2.3.2 Research design, data collection method, and research instruments

In order to answer the research questions for the BLE innovation, three sets of questionnaires and databanks were developed to collect information from three stakeholder groups: smallholder farmers, government officials, and market representatives. Each set was tested and refined before its final implementation. The final implementation enabled the research team to make further revisions to the sets of questionnaires and databanks to produce a collection of final research instruments which are available to be applied by government units, academics, and other interested groups in the rest of South Africa.

The first trial farmer questionnaire and databank was developed in collaboration with the NAMC and focused on what markets the farmers served and in what proportion, what level of income farmers received from agriculture and from which markets, and what they perceived to be the largest barriers to entering new markets. It also contained basic questions about farmer households, and production activities. One of the goals of the trial phase was also to identify the correct categories and metrics for the subsequent questionnaires. The SAFL team also developed questionnaires and databanks specifically for government officials and market representatives, to collect a variety of perspectives on smallholder market segmentation and challenges, and to possibly triangulate findings collected from smallholder farmers.

The main researcher from Lima Rural Development Foundation conducted the data collection in the trial

phase. This provided the SAFL team with sufficient data to refine the questionnaires and databanks to use in the implementation phase. The Lima researcher then conducted training sessions with a team of enumerators before they administered the final questionnaires in the implementation phase. With the Lima researcher, the SAFL team also conducted site visits before the final questionnaires were administered to confirm that the method and metrics of data collection were understood and easy to use.

Most of the questions in the final questionnaires asked participants to select from pre-determined categories to standardise data for analysis. However, participants were also given an opportunity to add additional content through an “other” option if they felt they could not answer within those given. The data collected in these open ended questions, together with data collection experiences shared by the Lima researcher and enumerators, informed a final revision of the questionnaires and databanks, which were a key output of this research.

2.3.3 Sampling

A non-random, theoretical sampling process was employed to ensure the most relevant stakeholders were contacted for interviews in the trial phase (Leedy & Ormrod 2005). An effort was made to include a diverse set of participants in order to build an accurate and holistic view of the issues of concern. Working with Lima, the KwaZulu-Natal Department of Agriculture and local NGOs, willing participants in the research field were selected across three categories namely smallholder farmers, market representatives and government officials. More participants were added to the list of interviewees in the sample as the project continued. During the trial phase, the Lima researcher completed questionnaires with eight out of ten targeted farmers, five market representatives, and two government officials.

During the implementation phase, a stratified sampling method was used to ensure only farmers who met the specifications of Cousins and Chikazunga’s (2013) market-oriented in loose and tight value chains category were chosen to complete the questionnaire. Appropriate questions were asked at the beginning of administering each questionnaire to ensure the correct sampling. A strict application of Cousins and Chikazunga’s definition of market-orientated smallholder farmers in loose and tight value chains resulted in too few participants. The sampling criteria were thus relaxed to allow farmers who fitted the criteria in the 36 months prior to the research to also participate. While the SAFL team aimed to make the participant selection process as unbiased and representative as possible, the team was limited to the contacts it had in the area and was dependent on farmers willing to participate. The SAFL team in collaboration with Lima’s main researcher tried to overcome this initial selection bias by warranting a participant pool large enough to ensure diversity, and then randomly sampling farmers on arrival in specific farming areas. The Lima team also made sure to cover both dry land and irrigated areas. The estimated reach was 150 smallholder farmers, yet the Lima researcher and his team successfully interviewed 161 farmers, 24 market representatives, and five government officials during the implementation phase.

2.3.4 Data analysis methods

The data analysis of the trial phase started after the main Lima researcher populated the initial databases with information from the trial questionnaires. Databases were set up in accordance with the questions posed in the questionnaires. Thereafter, a constant comparative method was employed, which allowed the data collection to continually influence and revise the categories chosen for the questionnaires and identify the relationships between them. Using this method helped to mitigate research bias, as the categories came from patterns repeatedly found in real life rather than prematurely set categories and assumptions which all further information had to be fitted into, or else be discarded, or undervalued. The purpose of the trial analysis was to refine the final questionnaires and databanks. To hone in on relevant themes, coding moved from open, to axial, to selective coding as the research progressed.

Data analysis in the implementation phase began as soon as the researcher populated the databases with data from the final questionnaires. After the databases were populated with the responses, the research

team probed the data for any errors while maintaining relevant outliers. An initial round of analysis summarised the main themes in the findings according to sections in the questionnaire in order to ultimately answer the research question. Subsequent rounds of analysis then started probing deeper into the data to find suggested explanations for certain findings, and gain a deeper understanding of the challenges smallholder farmers face when attempting to enter new markets.

2.3.5 Limitations of the study

This research employed qualitative enquiry in order to understand a specific, complex social phenomenon in a specific location. The geographical research area was chosen, because of SAFL's existing relationships with Lima, and their wide reach to smallholder farmers in the area. The research findings are thus limited to the specific group of smallholder farmers in KwaZulu-Natal, and cannot be generalised to a larger population. Nevertheless, some of our findings in Umkhanyakude corresponded with those in the literature, suggesting that smallholder farmers across South Africa may well experience similar production and market segmentation challenges, and the findings reported here could be useful to other regions in the country.

As qualitative research necessitates understanding complex social phenomena, the research team members were instrumental to the research process, as they analysed and assigned value to the collected data (Leedy & Ormrod 2005). Biases were avoided as far as possible by continuously discussing and challenging key decisions during the research process.

2.4. Research findings and analysis for the BLE innovation

Although the main purpose of this section is to answer the research questions, other valuable background information to better understand smallholder farmer market segmentation in Umkhanyakude District, KwaZulu-Natal, is also presented. The section is structured to first offer a description of the samples of participating smallholder farmers, market representatives, and government officials. Therefore, when the report refers to comments from these three different groups the reader will know who is being referred to. As contributions from these different stakeholder groups were not relevant to every sub-section, various combinations of findings from each group inform the different sub-sections below.

Based on farmer reports, the next few sub-sections delve into farmer profiles and their households including farm infrastructure and production, labour, financial arrangements, and organisational membership and other forms of external support. An overview of these realities of smallholder farmers' lives offers a deeper understanding into some of the key challenges faced by smallholder farmers. Each section opens with the most significant findings followed by supporting data collected from smallholder farmers.

Various combinations of statements by farmers, market representatives and government officials then inform discussions on formal and informal market sectors with their market arrangements. Following on the literature review, and wherever possible, the rest of the findings in this section of the report are structured according to formal and informal market sectors. Farmers' marketing strategies and current market support are also presented as part of the contextual overview of smallholder farmers in Umkhanyakude District, starting with key findings that are supported by the data collected.

With these findings as contextual background, section 2.4 draws to a conclusion by combining reports from all three participating groups to answer the research questions in 2.4.8. The research answers are organised into key findings, supported by claims from the three participating groups. Where relevant, these key statements are then related back to the literature review.

2.4.1 An overview of participating stakeholders: smallholder farmers, market representatives, and government officials

A total of 161 isiZulu farmers from Jozini and Mtubatuba in the Umkhanyakude District in KwaZulu-Natal in South Africa consented to participate in the study by completing a questionnaire with enumerators from Lima. These fruit and/or vegetable farmers were sampled according to Cousins and Chikazunga's market-oriented in loose and tight value chains category, and were thus all:

- Farming at the time, or had farmed with fruits and/or vegetables in the 36 months preceding the interview.
- Selling or aiming to sell more than half of their produce, or had done so in the 36 months preceding the interview.
- Using labour on their farms, including, but not limited to paid temporary or permanent labour, or cooperative members, during or outside harvesting time.

Twenty-four market representatives (or buyers) of fruits and vegetables were interviewed in the Ingwavuma, Jozini, Mkuze, and Mtubatuba local municipalities in Umkhanyakude District. Figure 2 is a sample distribution of market representatives by market segment, divided into informal (I) and formal (F) sectors. The sample is made up of 11 national retailers, four representatives from the hospitality industry, two bakkie traders, one feeding scheme tender holder, four hawkers, one government supply chain officer, and one government representative who used to be responsible for procuring produce for a food parcel scheme,⁶ which came to an end in February 2014.⁷ Seven of these market representatives did not source produce from smallholder farmers. The questionnaire could thus not be applied to them, and instead they were asked to discuss why they did not source from smallholder farmers.

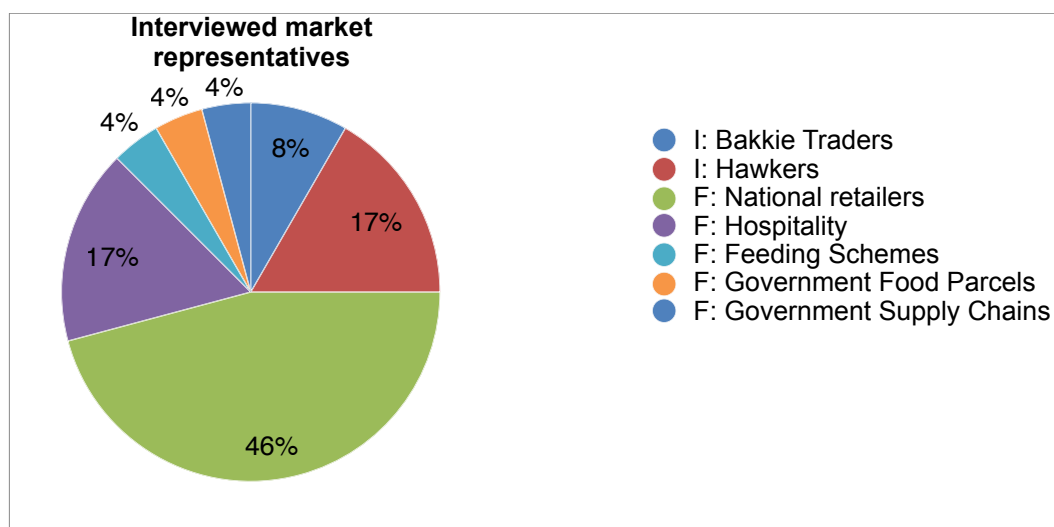


Figure 2: Distribution of interviewed market representatives by market segment

Figure 3 illustrates the distribution of market representatives by market segment of those who actually sourced from smallholder farmers and were thus assisted to complete the questionnaire. The final sample

⁶ The two suppliers who won tenders for the food parcel scheme run by the South African Social Security Agency (SASSA) under the Department of Social Development were mandated to source fresh produce from local smallholder farmers. These arrangements were entered into with assistance from the provincial Departments of Agriculture and Social Development in Jozini.

⁷ Although it came to an end more than a year before the questionnaire was completed, the data was nevertheless included as the scheme presented a valuable alternative market for smallholder farmers.

size of 17 market representatives consisted of eight national retailer representatives, two representatives from the hospitality industry, two bakkie traders, one feeding scheme tender holder, three hawkers, and one government representative responsible for food parcel distribution. These segments are divided into informal (I) and formal (F) sectors. Except for the reasons market representatives gave for not buying from smallholder farmers, the analysis is based on the sample of 17 market representatives who completed questionnaires.

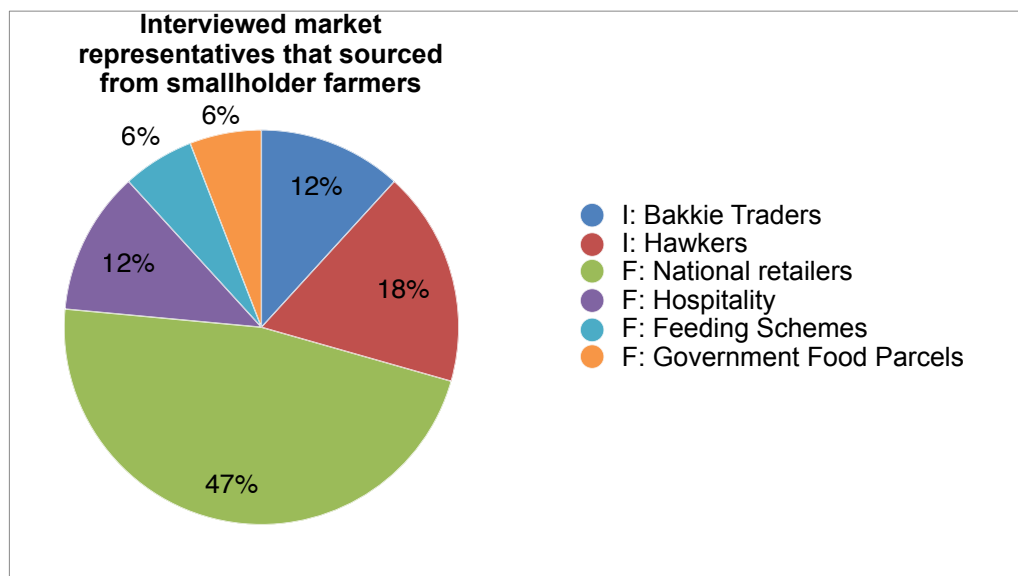


Figure 3: The distribution of market representatives who sourced from smallholder farmers

Five government representatives agreed to participate in the study, including two assistant extension officers from Mtubatuba, two extension officers from Jozini (all from the provincial Department of Agriculture and Rural Development) and one local economic development manager from Jozini Local Municipality.

2.4.2 Farmer profiles and households

This section draws on reports from smallholder farmers. Judging from the main findings in this section, the typical profile of a smallholder farmer in Umkhanyakude is someone who is:

- female
- between the ages of 40 and 59
- the breadwinner of a household of approximately 10 people, of whom four are under the age of 18 years old

and has:

- most likely completed at least primary school
- one to five years of experience as a farmer.

Most of the smallholder farmers interviewed (76%) were from Jozini, with 55% female and 21% male. Of the remaining 24% from Mtubatuba 23% were female, and 1% was male. Of the total 161 farmers, 78% were thus female and 22% were male. Figure 4 illustrates the distribution of gender across the sample. This is a significant finding, which should guide future market access interventions.

The education level of the sampled smallholder farmers should also guide future interventions. Thirty-nine per cent of farmers from the sample had completed primary school, with another 35% also having completed secondary school. Only 2% continued with tertiary education. Of the 12% of farmers who had

never attended school, 9% were illiterate. Eleven per cent of the farmers had completed Adult Basic Education and Training (ABET). Figure 5 illustrates the farmers' level of education.

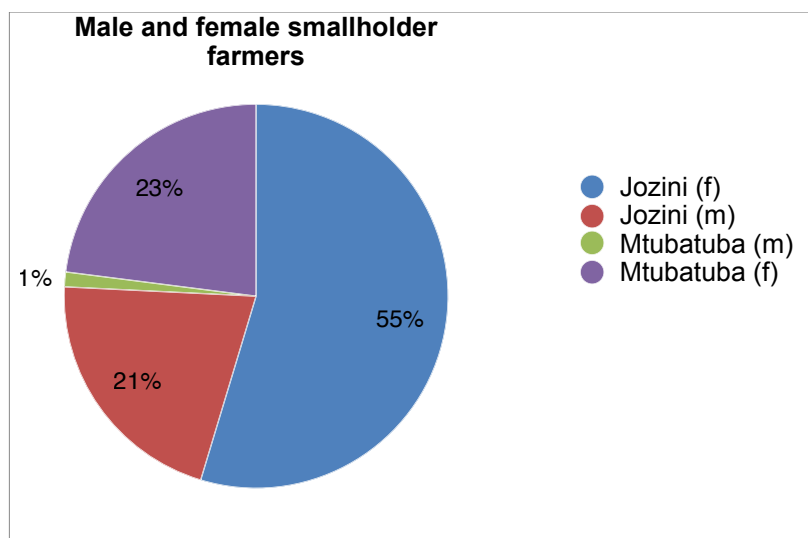


Figure 4: The distribution of male and female farmers in Jozini and Mtubatuba in Umkhanyakude

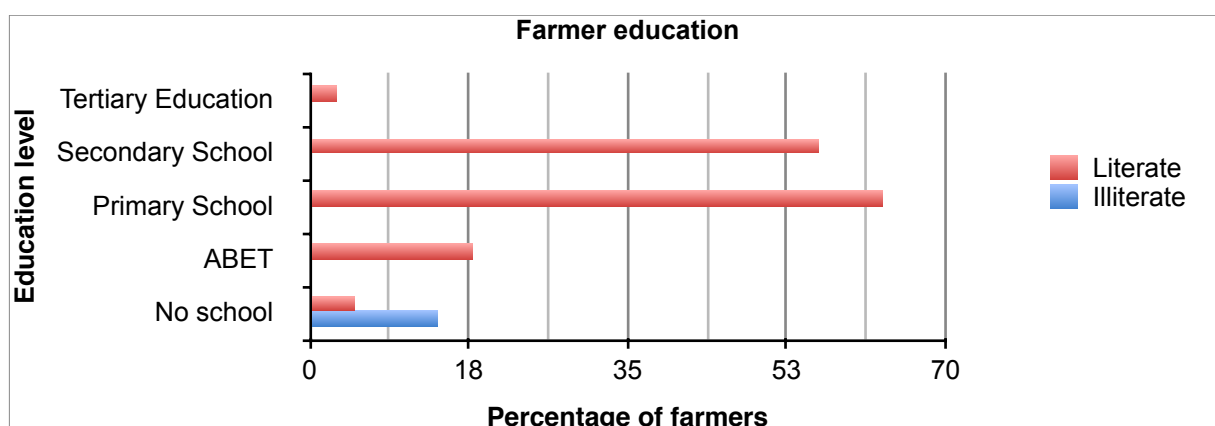


Figure 5: Farmers' level of education against the percentage of farmers on that level

Most farmers were experienced in farming operations, with the smallest group of 4% farming less than a year, and the largest group of 27% farming between a year and five years (see figure 6). It is also interesting to note that the second largest group of 22% had been farming for more than 20 years. This clearly relates to the average age of current farmers, as also discussed in the literature review.

As one farmer did not know his age, the age analysis was based on the remaining 160 farmers. The youngest farmer in the group was 20 and the oldest was 84. The average age of the farmers was 50 years, similar to the average of 51 years reported in the literature. Table 2 and figure 7 indicate that the largest group of farmers (71%) were between the ages of 40 and 69 years, with only 22% between the ages of 20 and 39 years entering the farming sector. These findings confirm concerns in the literature review that too few new farmers are entering the sector to ensure future food production.

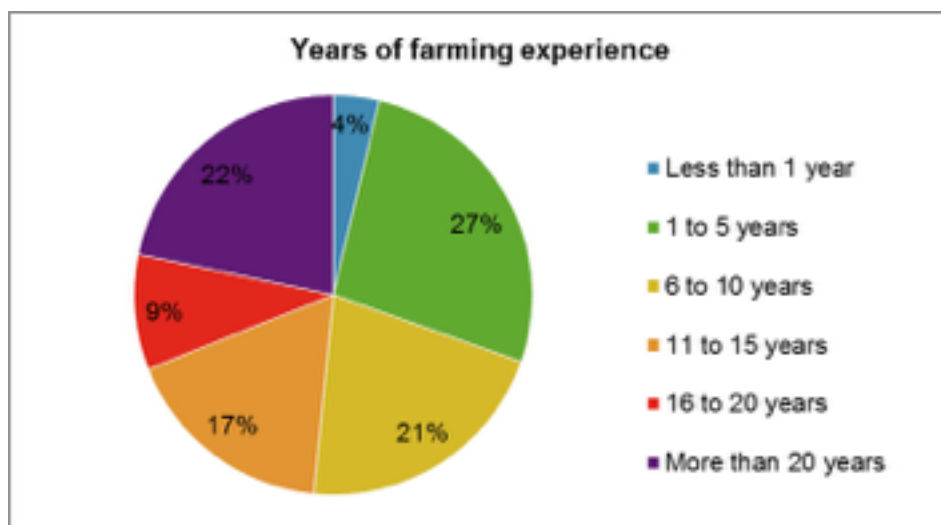


Figure 6: Farmers' level of farming experience

The smallest of the 161 farmer households consisted of 2 people and the largest of 60 people. Most households (57%) consisted of less than 10 people, whilst 40% of households ranged in size from 10 to 19 people. The average household size was 10 people. The smallholder farmer households had an average of four children younger than 18 per household, with 15% of households having exactly four children younger than 18 years old, 38% of households having more than four children, and 48% had less than four children. Three per cent of households had no children. The largest number of children under 18 in a household was the 30 children who formed part of the largest household of 60 people.

Table 2: Number of farmers' in each age category

Age category	Number of farmers
20 to 29 years	13
30 to 39 years	22
40 to 49 years	40
50 to 59 years	45
60 to 69 years	30
70 to 79 years	8
80 to 89 years	2

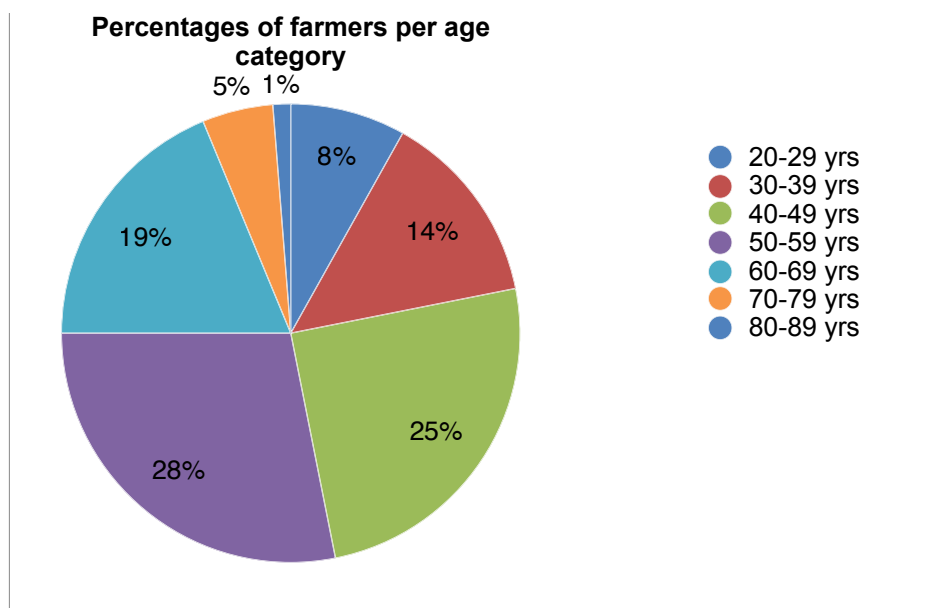


Figure 7: Percentages of farmers per age category

In the smallholder farmer households, 74% of the interviewed farmers considered themselves breadwinners, whilst 26% did not. Of the 74% of breadwinners, 76% were female, while of the 26% of non-breadwinners, 74% were female. As indicated in figure 6, the breadwinners across households were thus predominantly female, which correlates with the fact that most interviewees were female.

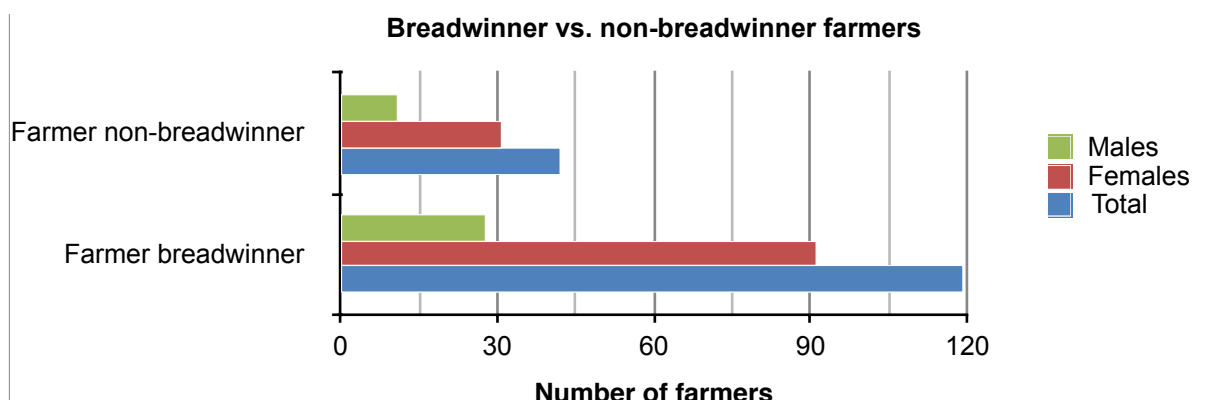


Figure 8: The number of female and male farmer and non-farmer breadwinners

In the 26% of households where the farmer was not the breadwinner, the largest category of breadwinners consisted of the husbands of the farmers, at 10%. Other breadwinners in the households of interviewed farmers included mothers and fathers, each at 3%, daughters and grandmothers at 2% with brothers, sons and wives each making up 1%.

2.4.3 Farm infrastructure and production

This section draws on reports from smallholder farmers. Judging from the main findings in this section, the typical profile of a smallholder plot in Umkhanyakude:

- forms part of tribal land, on which the farmer has permission to farm
- is 0,5 ha or smaller in size
- is primarily used for farming on a full-time basis

- is run for cash income first, and then to provide supplementary food to the household it supports
- most likely grows vegetables for commercial purposes, followed by grains for commercial purposes
- accesses water from a river without an irrigation system (including pumps), yet is more likely to have an irrigation system if accessing water from a dam
- experiences crop losses due to insect, irrigation and weather challenges, in that order.

All 161 farmers said that they farmed for cash income and to provide some food for the family. They thus did not farm mainly for food with only some cash income, or for any other reasons. Of these farmers 89% farmed fulltime, whilst only 11% farmed part time.

Farm sizes varied from 0,02 to 22 ha. The average farm size was 1,14 ha (excluding outliers of 15 and 22 ha). Only 23% of farmers worked on farms larger than the average size of 1,14 ha, and 77% of farmers cultivated smaller farms. Most farmers (65%) had farms smaller than 0,5 ha. See table 3 for a distribution of farm sizes. From table 3 one can observe that 88% of the interviewed farmers were working on plots of 2,9 ha or smaller.

Most (89%) of farmers had permission to occupy their farms on tribal land, with significantly less leasing land (7%), having permission to occupy non-tribal land (2%) and farming on municipal land (1%).

Of the total number of farms, 88% were used only for farming purposes. Five per cent of farmers were leasing land out to others, and in 6% of cases parts of the farmland were left uncultivated. The reason given for not using the entire farm for cultivation (weather letting it lie fallow or leasing it out) was a lack of available capital to procure resources to farm the whole farming area and lack of water for irrigation.

Table 3: Distribution of farm sizes across the sample

Farm size	Percentage of farms (number of farms)
> 0,5 ha	65% (105)
0,5 to 2,9 ha	23% (37)
3 to 9,9 ha	7% (12)
10 to 22 ha	4% (7)

Only 32% of farmers reported implemented irrigation systems. At 55%, most farmers accessed water from a river, with 11% using irrigation infrastructure. Of the 33% of farmers who accessed water from dams, 57% had an irrigation system. Twenty-two per cent of the 6% of farmers who accessed water from boreholes had irrigation infrastructure. Seventeen farmers also reported other sources of water including pits dug to create dams to harvest rainwater, tap water, and water delivered by water trucks.

The water challenge reported by most (81%) of farmers was lack of irrigation infrastructure including pumps. A general lack of water was the second most reported challenge from 42% of farmers, with distances from water sources (namely too far to carry) the third most reported challenge by 34% of farmers.

Irregular water supply (namely water running intermittently due to cable theft and/or electricity cuts) (25%) and poor water quality (19%) were also significant challenges. Only five farmers mentioned other reasons including having no capital to finance fuel, repairs, and maintenance for irrigation equipment, and irregular availability of tap water and supply of water trucks. Figure seven illustrates the percentage of farmers from the sample that reported these different water challenges.

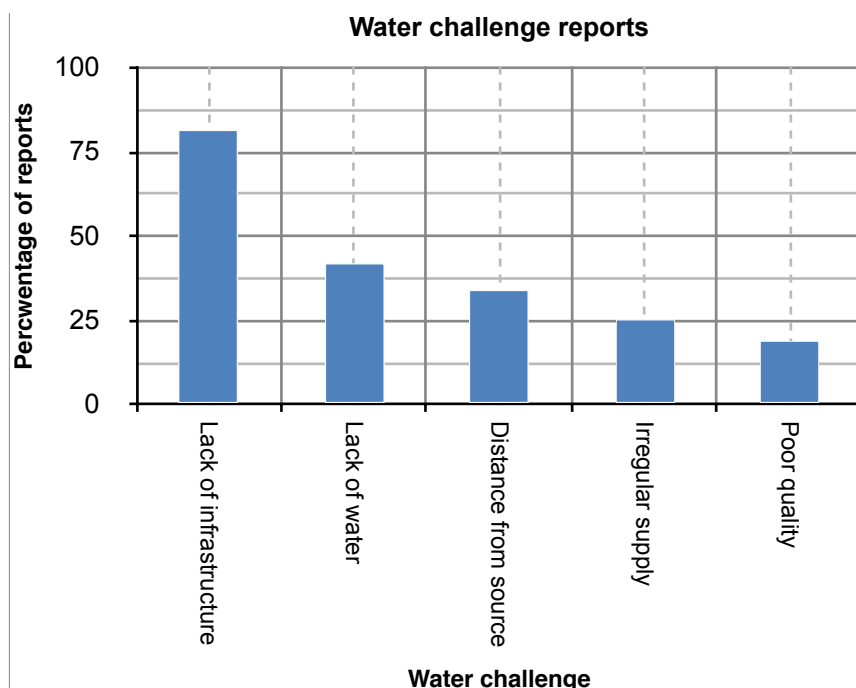


Figure 9: Water challenges against percentage of farmer reports

Table 4 indicates the crops grown by smallholder farmers, as well as the distribution of the yields from these crops to commercial and household use. The percentages indicated are the proportions of smallholder farmers from the sample that grow these crops.

Vegetables for commercial purposes are thus the most common farming enterprise, followed by grains and fruits. Although only one farmer indicated that she grew vegetables mainly for household consumption this does not exclude the other 160 predominantly commercial farmers from also growing some vegetables for household consumption. Grain and livestock were the crops most commonly farmed for household consumption, followed by fruits. Only one farmer indicated the cultivation of cotton for commercial purposes.

Table 4: Distribution of crop yields to commercial and household use

	Vegetables	Fruits	Grains	Sugarcane	Livestock	Cotton
Commercially	99% (160)	14% (23)	52% (83)	8% (13)	9% (15)	1% (1)
Household consumption	1% (1)	11% (17)	36% (58)	3% (5)	30% (49)	-

The questionnaire only explored crop losses for vegetables and fruit in the previous season. For fruit, only 11% of farmers experienced losses, which brought the average fruit loss down to 5% over the entire group. Considering that only 14% of farmers farmed fruit commercially, this is still a significant loss. Furthermore, those that experienced fruit losses never lost less than 10% of the crop, and could lose up to 90%. Vegetable crop losses were more common, with only 1% (2) of farmers *not* experiencing losses. The average vegetable crop loss was 51%, with the lowest losses being 10%, and the highest a total crop loss. Two farmers experienced a total vegetable crop loss in the previous season. Farmers also specified reasons for losses across fruit and vegetable crops. Most (74%) of farmers reported insects as the main

culprit for losses. Irrigation challenges were reported by 73% of farmers as the reason for crop losses and weather by 72% of farmers.

A lack of market demand was reported by 54% farmers and a lack of facilities (for example, storage) by 47% of farmers. Management problems were mentioned the least, but remain a significant contributor (reported in 22% of cases). Arguably this would be a difficult challenge to report on, as farmers are essentially responsible for the management of their farms. It could thus be a larger contributor to crop losses than was reported.

Farmers also identified other problems not listed on the questionnaires in 30% of cases. Other factors that contributed to production losses were drought, stray livestock, theft by community members, limited capital to buy inputs to ensure proper crop management, wild animals such as rabbits and rodents, floods for farms near a river, heavy rain, storms, damage caused by labour, limited farming knowledge, produce handling, oversupply of the same crop, limited knowledge of how to use chemicals, water supply and strong winds. These reasons are now integrated as categories in the final farmer questionnaire and databank.

2.4.4 Labour

This section draws on reports from smallholder farmers. With regard to labour, farmers in Umkhanyakude District seem to generally employ:

- temporary female labour
- family members, including children when they are not in school.

From the farmer sample, 61% employed male *temporary* labour, with the largest number being 40 temporary male labourers on one farm. Of the total 161 farmers, 72% employed female temporary labour, with 60 women being the largest number employed on one farm. Nine per cent of farmers employed *permanent* male labour with five being the most on one farm. In most cases only two permanent male labourers were employed on the farm. Nine per cent of farmers also employed female permanent labourers, with eight being the most employed on one farm, but with most farmers employing one, two or three permanent women. Overall, farmers seem to employ larger numbers of temporary labour compared to permanent labour. More female temporary labourers are employed, whilst among farmers employing permanent labour there is an equal split between male and female labour (see figure 10).

Most (95%) of farmers employed family members on their farms. The roles of family members mostly included general labour (in 73% of cases) and labour during harvesting season (in 36% of cases), with management roles (in 17% of cases) being less prominent. Ten other reasons were also given for using family labour, including that their children sometimes assist on the farms during weekends and school holidays. Farmers were adamant that children only helped out when they were not in school or doing homework.

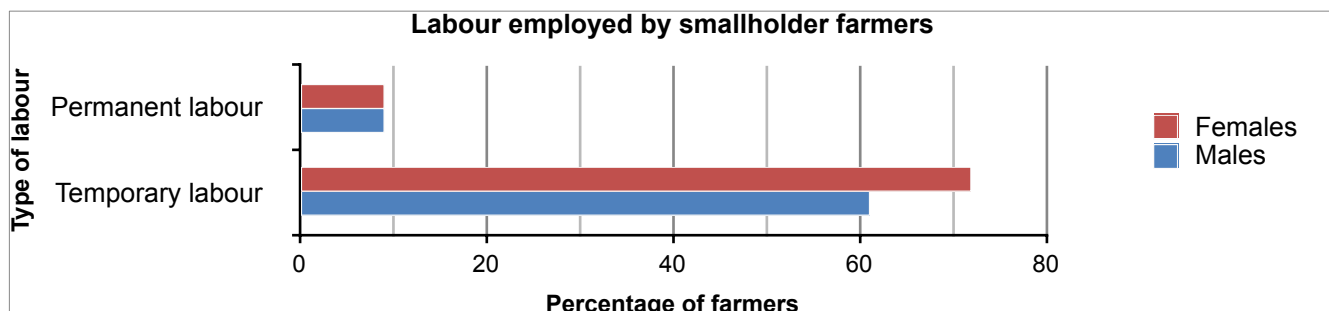


Figure 10: The number of female and male permanent and temporary labourers employed by smallholder farmers

2.4.5 Financial arrangements

This section draws on reports from smallholder farmers. General financially related characteristics of smallholder farmers in Umkhanyakude include that:

- they earn less than R30 000 annually
- they have informal loans, including using their own savings and receiving financial support through government grants.

With regard to income, 91% of farmers earned less than R30 000 annually, 4% earned up to R50 000, 3% up to R100 000 and 2% up to R500 000 (see figure 11).

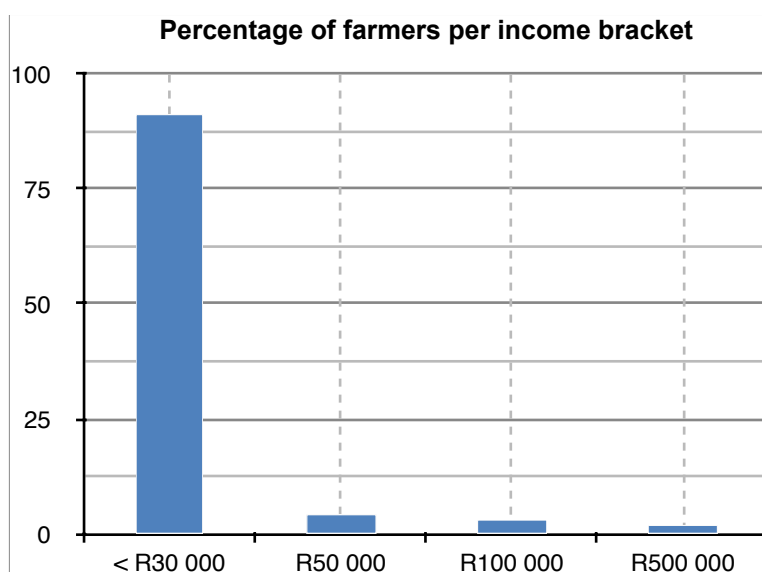


Figure 11: Percentage of farmer sample per income bracket

Only 13% of the sampled farmers reported formal loans from the Land Bank, Ithala, First National Bank (FNB), Nedbank, TechnoServe, Massmart, Mafisa, Farmwise, the African Bank, OK Furniture, WDB Finance and PEP stores. Formal loans were described to participants as loans that were obtained after an application procedure and credit check. Eighty-seven per cent of farmers did not have formal loans. Informal sources of funding for this latter group included their own savings (81%), government support (59%), profit from the previous year (40%), borrowing from friends or family members (37%), borrowing from other farmers (25%), and other sources (27%). Other sources of finance included loan sharks, cooperative savings, profit from other businesses, leasing land to others, and selling livestock. The fact that smallholder farmers are willing to get loans from loan sharks at higher interest rates in comparison to borrowing from formal institutions indicates a desperate situation. These categories now form part of the final farmer questionnaire.

2.4.5 Organisational membership and other sources of external support

This section draws on reports from smallholder farmers and government representatives where indicated. The majority of smallholder farmers in Umkhanyakude:

- Do not belong to commodity producer's organisations
- Belong to primary co-operatives, which provide them with opportunities to share information, market and sell collectively, and buy inputs in bulk
- Receive support in the form of inputs and advice if they really need it
- Receive support from government extension officers, although the quality of this support was not determined.

Only 7% of farmers belonged to commodity associations such as CANEGROWERS and GrainSA. Significantly more farmers at 93% reported belonging to primary co-operatives. Primary cooperatives were mostly formed to share information (91%) followed by collective marketing and selling (62%) and combined input purchases (61%). Some primary cooperatives were formed to work together as labour on the farms (50%) (see figure 12). In 29% of cases other reasons were identified including that through primary cooperatives smallholder farmers can ease the process of getting assistance from the government, participate in collective saving, and apply for more land from tribal authorities.

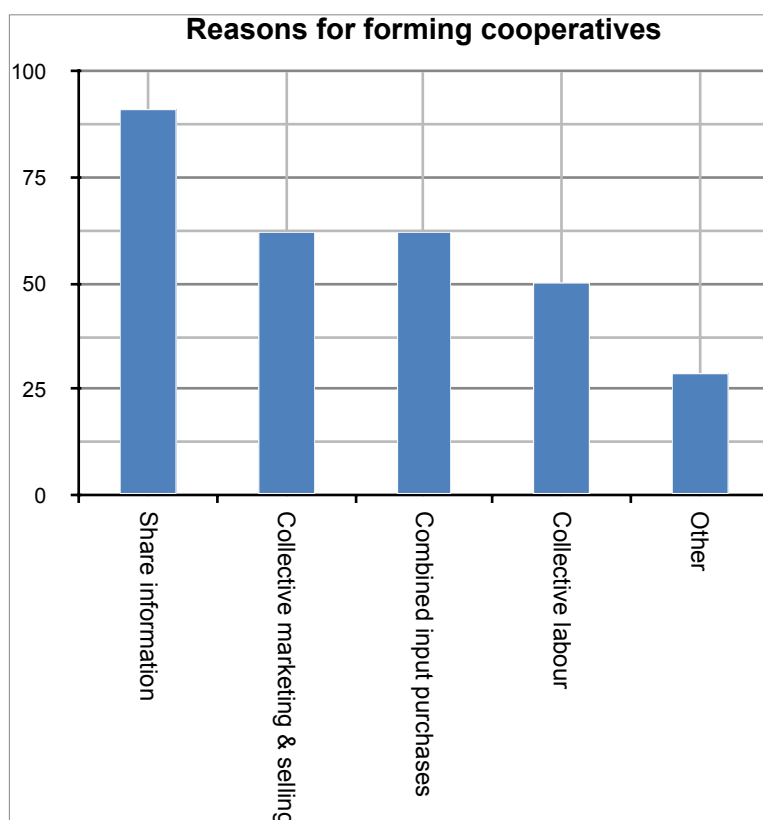


Figure 12: Reasons for forming cooperatives as reported by percentage of farmers

A group of 81% farmers from the sample reported receiving external technical support. Most farmers received support from government extension officers (85%). Significantly less received support from NGOs (17%) and other farmers (12%), whilst very few relied on mentors/consultants (3%) and input suppliers (1%). Some farmers (9%) also reported other sources of support including the Department of Economic Development and AgriSeta, private companies such as Phinda Game Reserve, Massmart and SPAR, and institutions contracted by the government to provide training. Some farmers had also acquired technical farming abilities through working experience on other farms. This study did not determine the quality of support, which may weaken the results, as less support may be received from NGOs and other farmers than from government extension officers, but farmers may rely more heavily on this support.⁸ The final questionnaire now contains additional questions to rate the quality of support farmers receive.

Two of the government officials who completed questionnaires stated that there were criteria for farmers to obtain assistance. One assistant extension officer mentioned that only those who needed resources, mostly inputs and free advice, would be assisted. Arguably the neediest farmers would thus be supported.

⁸ One farmer made this comment whilst completing the questionnaire with a Lima representative.

The municipal representative stated that farmers are identified through annual Integrated Development Plan (IDP) roadshows.

The estimated number of farmers supported by extension officers ranged from 250 to 750. The Jozini local municipality confirmed that they provided assistance to exactly 480 farmers at the time of completing the questionnaire. The percentage of farmers receiving assistance from government, who were also selling produce, ranged from 20% to 83%. Officials said that approximately 70% of the farmers assisted by the local municipality were selling produce.

According to all the extension officers in the sample, they provided all of the support types listed on the questionnaire, except one who stated that transport assistance was not provided. The support list included support with market linkages, quality control, production plan coordination, supply of inputs, technical assistance for production and transport. The one municipal representative in the sample mentioned that they only provided support with market linkages and transport. Other types of support provided, which were not listed on the questionnaire, included assistance with value adding during processing and advice on market demand.

2.4.6 Formal and informal sectors, and market arrangements

Before delving into the various marketing arrangements reported by smallholder farmers, market representatives, and government officials, it is important to categorise the various markets into formal and informal sectors⁹, as was done in the literature reviewed in section 2.2.

Although not formally defined in the literature review, the empirical study followed the general understanding of this split and thus regarded markets as part of the formal sector if they paid taxes and thus formed part of the country's gross domestic product (GDP). Table 5 gives an overview of the split of markets between formal and informal sectors as reported in the literature review and applied in the empirical research (namely in the questionnaires).

Table 5: The split between formal and informal market segments in the literature and empirical research

Formal sector		Informal sector	
Literature	Empirical research	Literature	Empirical research
Retailers	Directly to local retailers	Directly to neighbours & community	Directly to neighbours & community
-	Direct to national retailers	-	Community functions
-	To retailer distribution centres	Hawkers	Hawkers
Processors	Agro-processors or value-adding centres	Bakkie traders	Bakkie traders
	Pack houses	-	-
E-markets	-	-	-

⁹ According to Louw, Kirsten and Madevu (2005) food retailing in South Africa consists of formal and informal sectors. The informal sector consists of hawkers or street markets, tuck shops, *spaza* (informal) shops, street vendors, and flea markets (Louw, Kirsten, & Madevu 2005). The formal sector is made up of supermarkets, convenience stores, restaurants, and food service sectors (Louw, Kirsten, & Madevu 2005).

Formal sector		Informal sector	
Literature	Empirical research	Literature	Empirical research
Cooperatives	-	-	-
Commodity associations	-	-	-
Market agents	-	-	-
Local fresh produce markets	Local Fresh Produce Markets (LFPM)	-	-
-	National Fresh Produce Markets (NFPM)	-	-
Alternative food networks	-	-	-
Government	Government procurement	-	-
Schools	Schools	-	-
-	School Feeding Programme	-	-
Food banks	-	-	-
The hospitality sector	Hospitality	-	-
-	Events	-	-

For the informal sector the table shows that the literature review and the empirical study mostly correspond, except that the empirical study lists community events as separate from selling directly to community members. Hence informal markets include bakkie traders, hawkers, and direct sales to neighbours or the community. For the formal sector there are greater differences between the literature review and the empirical research. Whereas the literature only lists retailers, the empirical study subdivided this category into national and franchised retailers, their distribution centres, and local, non-franchised retailers. Similarly the literature review only lists processors, whereas the empirical case study lists processors and packhouses. Again, whereas the literature review only lists local fresh produce markets, the empirical case study adds national fresh produce markets. However, although the literature review also lists market agents, e-markets, alternative food networks, commodity associations, and cooperatives, the empirical research does not. Both list government procurement and schools, but the literature adds food banks, whilst the empirical study adds school feeding programmes as separate to schools. Both also include the hospitality sector, but the empirical research also used an events category.

Whether with formal or informal market segments, the market arrangements smallholder farmers in Umkhanyakude had with markets:

- Were mostly driven by flexibility, distances from markets, and having established relationships with specific markets (as reported by farmers);
- Were generally informal (as reported by farmers and market representatives), including a variety of transport methods (as reported by farmers), because of small and inconsistent quantities of produce of limited variety (as reported by market representatives);
- Were supported by marketing efforts from farmers, including producing better quality produce and convincing buyers to buy from them using selling strategies;
- Involved cash on delivery as the main payment method (as reported by market representatives).

- If formal, were most likely have been through a mediator such as an extension officer (as reported by farmers and government officials), as these officers facilitate linkages between markets and smallholder farmers.

Ninety-three per cent of the smallholder farmers reported having informal selling arrangements with buyers. Informal arrangements included those where buyers had no pre-arranged or set agreements with smallholder farmers, but instead bought produce as and when needed for a negotiated price. This statistic correlates with the fact that most produce is supplied to neighbours or local communities, as will be discussed in the next section.

Formal arrangements were considered to be those which required farmers to deliver a specific amount of produce on a specific date, usually at a pre-arranged price, although the latter would not always be the case. When grouping the more formal agreements as listed in the questionnaire, including those involving mediators, arrangements based on a planting schedule or quality and demand, and government tenders, into a broader category of formal arrangements, these formal arrangements still only include 63% of the farmers in comparison to the 93% using informal market arrangements.

The most prominent formal arrangement was through mediators such as extension officers, who had links with market representatives, as 34% of smallholder farmers reported such agreements. The second most prominent formal arrangement was based on product quality and market demand (for example, through agents at national fresh produce markets or directly with retailers), with 25% of farmers reporting such agreements. The categories of formal arrangements reported by the lowest percentages of farmers were contracts with retailers according to a planting schedule (4% of smallholder farmers) and government tender agreements (1% of smallholder farmers). One per cent of farmers also reported other types of arrangements not listed in the questionnaire, without explaining what they were. Figure 13 divides agreements into informal arrangements (I) and the various categories of formal arrangements (F) including mediators, arrangements based on quality and demand, and on planting schedules, and government tenders.

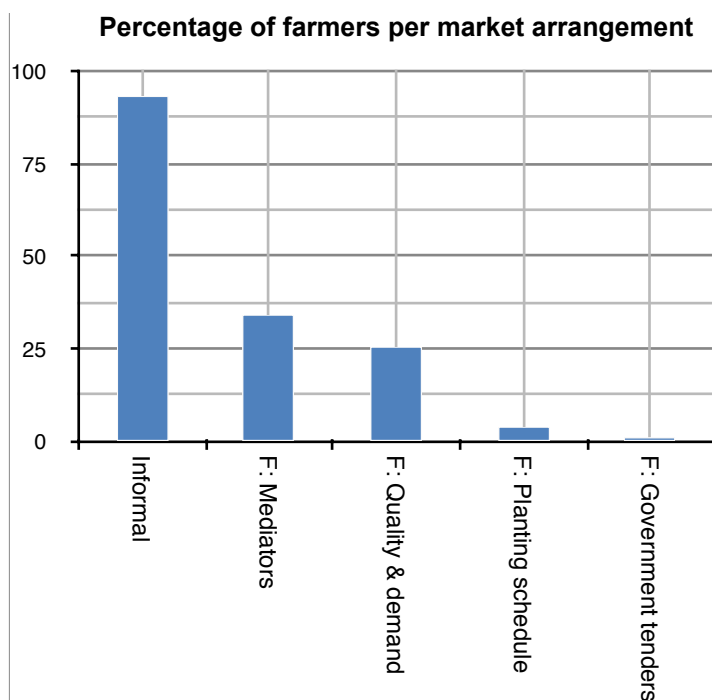


Figure 13: Percentage of farmers per market arrangement

With regard to transport to markets, most farmers used a variety of methods that were not included as options in the questionnaire (73%). Depending on distance, farmers delivered their produce on foot, used public transport, government and other organisations' (LIMA and Community Work Programme (CWP)) transport, and some customers collected their produce from the producers. Almost half of the farmers hired transport (43%, 69 farmers), whilst fewer used buyer's (22%) or their own transport (8%).

Flexibility was the main reason for choosing market arrangements, reported by 76% of farmers. Two other major reasons were distance from markets, reported by 73% of farmers, and having established relationships with market representative or mediators, reported by 65% of farmers. Interestingly one of the other reasons farmers gave for having informal market arrangements was that they trusted their buyers and did not need formal agreements. Negative reasons were less common, including lack of quantity and quality of products (21%) and lack of commitment from preferred markets or buyers (17%). Twenty-five per cent of farmers also provided other reasons (see figure 14). These included a lack of alternative markets, transport to reach other markets, and a lack of markets in which to sell their own produce. Farmers also hesitated to engage with larger markets as they were unsure whether they would be able to honour their commitments consistently. In addition, farmers admitted that they had limited knowledge of how to set up formal arrangements with their markets and how to search for new markets. These reasons are now reflected as additional options in the questionnaire. Judging from these reasons, it may well be that farmers avoid more complicated market channels.

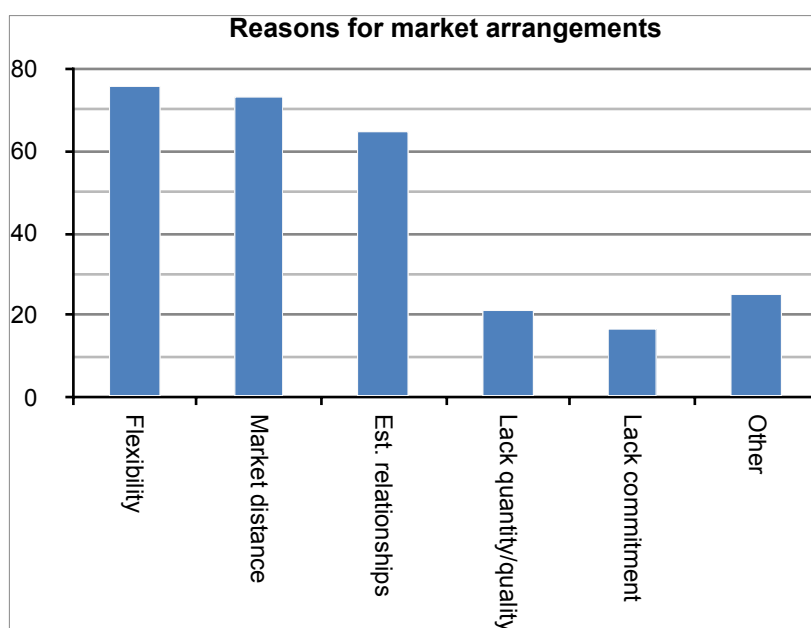


Figure 14: Reasons for market arrangements as reported by percentage of farmers

Most or 94% of farmers reported that they marketed their produce. The most common form of marketing was producing better quality produce, with 78% of farmers reporting this strategy. Of the smallholder farmers, 70% also applied selling strategies to convince buyers to purchase from them rather than other producers. Some farmers also formed groups to enable them to meet the market demand for larger quantities (55%). Fewer used special packaging (24%) and included the cost of transport to the market (19%) in the selling price. Farmers also reported other marketing strategies (14%) such as grading according to buyers' specifications, asking buyers to tell other buyers about their produce, displaying produce during community events, giving buyers reliable service, and taking samples of produce to buyers. Market representatives were also asked about their arrangements with smallholder farmers. Table 6 compares business arrangements applied by market representatives when doing business dealings with

smallholder farmers to arrangements applied to other suppliers. Six of the 17 market representatives only bought supplies from smallholders. They included hawkers, bakkie traders, and government representatives responsible for food supply. Consequently only 11 representatives could compare their arrangements between other suppliers and smallholder farmers.

Table 6: A comparison of other suppliers and smallholder farmers' contractual arrangements with markets

Other Suppliers		Smallholder Farmers	
Informal arrangements	3	Informal arrangements	15
Formal arrangements	8	Formal arrangements	2
Total	11	Total	17

One national retailer representative and one representative from the hospitality industry applied the same business arrangement across all suppliers. However, table 6 reflects that most market representatives still conduct business dealings informally with smallholder farmers relative to other suppliers who have formal business arrangements. Those practising different business arrangements with smallholder farmers and other suppliers cited reasons such as inconsistent supply, small quantities and limited variety.

In line with informal business arrangements, table 7 illustrates the comparison of payment methods used by market representatives when doing business with smallholder farmers and other suppliers. Most of the smallholder farmers were paid cash on delivery. Thirteen market representatives preferred this method, with three of these market representatives using electronic transfers to a bank account on delivery. Some representatives also reported using mixed payment methods with smallholder farmers on a case-by-case basis.

Table 7: A comparison of markets' payment methods to other suppliers and smallholder farmers

Other Suppliers		Smallholder Farmers	
Cash on delivery	2	Cash on delivery	13
Account	9	Account	5
Other	1	Other	2
Total	12	Total	20

Most markets use cash on delivery when making payments to smallholder farmers, while they pay other suppliers on account. Eight market representatives and one lodge used different payment arrangements for small farmers and other suppliers. Market representatives who do this cite the main reason for the difference being the structure of the businesses of smallholder farmers – they run informal operations without a business name and a business bank account facility for electronic payment and they supply small quantities of produce. This makes cash on delivery an appropriate or reasonable option to simplify business transactions. Other suppliers allow representatives to buy on credit or on account and pay after 30 days, which they believe is not suitable for smallholder farmers. One market representative indicated that buying produce on credit from smallholder farmers would strain their cash flow and destroy their businesses, as they might not be able to buy farming requisites on time. However, some of the market representatives indicated that if smallholder farmers were able to ensure consistent supply and structure their businesses they might consider formalising their business arrangement and using more formal payment methods when doing business with them.

Government officials also commented on smallholder farmers' market arrangements, stating that as well as supporting smallholder farmers, they provided support to markets that were sourcing from smallholder farmers or would like to. Officials facilitated both access to farmers and organised smallholder groups to supply greater quantities of produce more consistently, and to improve the variety of produce. Other types of support to markets included taking farmers produce to the market, for example at month end, and taking samples of produce to inform potential buyers of harvests in particular areas. An assistant extension officer stated that support was provided to the informal market because the farmers were often located in remote areas. All other respondents indicated that they provided support to both formal and informal markets. They stated that there were no criteria for markets to obtain assistance.

Government officials also identified traditional leaders as a source of support to smallholder farmers. They also identified other government departments that provided smallholder farmers with marketing assistance: these included the Department of Social Development (through a programme called One Garden, One Home), the Department of Education (through school feeding schemes), municipalities, and councillors.

2.4.7 Marketing strategies and current market support

Farmers were also asked about various strategies they employ to manage and gain new market relationships. These included market research, the preparation of produce for the market, and their knowledge of food safety standards and certification. They were also asked about external support related to markets, including training in food safety standards and certification. In general, farmers reported that:

- Most of them do market research, mostly by speaking to neighbouring farmers and government representatives.
- The preparation of produce for markets involved a combination of washing, grading, and packing produce. Packaging was reported by less than half of the farmers, however.
- Most farmers were aware of food safety standards and reported using responsible and/or agro-ecological methods on their farms.
- All, but one farmer claimed to be compliant with the food safety standards they were aware of. Their biggest motivations for compliance included greater income and access to more markets.
- Only 7% of farmers held some form of certification, mostly through participatory guarantee systems (PGSs), as they lacked knowledge and sufficient training to reach full compliance with official standards.
- Most farmers had received some form of training in either standards or certification requirements, mostly through extension officers.
- Just more than half of the farmers reported that they received selling support, mostly through extension officers.

Most (96%) of farmers reported that they conducted market research. Of these farmers, more than half spoke to neighbouring farmers (53%), government representatives (39%) and/or market representatives (30%). Some also conducted other types of research (6%) such as market observation and, weather permitting, planting out of season produce to capitalise on high demand for produce in low supply.

Reasons for not conducting market research included that farmers did not have any knowledge about market research or its importance. Instead they produced seasonal produce by observing what their peers were planting or using the production guide from DAFF. Some farmers also planted what had sold well during the previous season, which could arguably be a form of market research, but unfortunately could also flood the market with one crop in the next season.

To prepare their produce for markets, just less than half (49%) of farmers packed their produce. Of those who packed their produce, 82% used their own packaging and 17% used buyers' packaging. Of the 161 farmers, 14% only washed and graded their produce, and 7% only graded their produce without washing it.

Farmers were not happy with the questionnaire options and therefore 58% (93) explained other ways of preparing produce, using different combinations of washing, grading, and packing:

- washing, grading and packing
- wash and grade
- wash and pack
- grade and pack
- wash, grade and bundle produce
- allow customers to come with their own bags to collect produce.

With regard to current food safety or other standard requirements in South African markets (for example, the responsible application of chemicals), 89% of farmers reported that they were aware of them. To determine their knowledge they were asked to describe their understanding related to their production process. They indicated that they used various combinations of procedures to ensure their adherence to acceptable standards including following label instructions and accurate measurements when applying chemicals, farming using acceptable organic matter or fertiliser, and using natural herbs to control pests.

One farmer reported not complying with the standards she was aware of, with 99% of the knowledgeable farmers reporting that they were compliant. The farmer who did not comply did not explain why she was not compliant. Reasons given for complying included greater income (83%), to be able to sell to specific markets (73%), and other reasons (25%). Farmers explained that non-compliance could be dangerous and costly. Depending on their production process, they complied with standards because they wanted to produce good quality, healthy and safe food in an effective way. They also believed compliance was the right path to successful farming.

Only 7% of farmers were certified –92% of them through PGS certification and one farmer through the SA GAP Mark Scheme. Reasons for not being certified were probed using an open-ended question. Farmers indicated that they were not certified because they didn't have any knowledge about certification, nor information on how to obtain it. Some had only received basic training, which was not enough for certification.

Of the 161 farmers, 81% had previously undergone training in either standards or certification requirements. Most farmers received training from extension officers (76%), whilst some reported that NGOs (12%), a private company (9%) or a mentor (3%) provided them with the necessary training. Twelve per cent of farmers also reported other sources of training such as learning from other farmers how to follow chemical labels, learning from their parents, working experience on other farms, and training organised by DAFF, AgriSETA, fertiliser and chemical representatives, nurseries producing seedlings, and Cotton SA. Ninety-six per cent of farmers expressed interest in receiving training related to safety and other standards in the future.

Of the farmer sample, 56% reported that they received selling support. Of these farmers, most received support from extension officers (62%), followed by marketing organisations (32%). Fewer received support from private companies (16%), NGOs (14%) and mentors (6%). Farmers also identified other sources of selling support (14%) including other farmers, neighbours, employees in schools, clinics, companies, church members, the community and family members.

2.4.8 Research findings according to the research questions

With the background to smallholder farmers provided in 2.4.1 to 2.4.7, this sub-section provides answers to the research questions by drawing on questionnaires completed with farmers, market representatives and government officials. The research answers are organised into key findings, supported by claims from the

three participating groups. Answers are split into the formal and informal sector where possible. Key statements are also related back to the literature review where relevant.

Q1 What markets do smallholder farmers currently serve and in what proportion?

From the data collected during the research, a number of key claims can be made to answer research question one. These claims are limited to some smallholder farmers and market segments in the Umkhanyakude District, KwaZulu Natal. With regard to markets served by smallholder farmers with relevant proportions:

- Most farmers from the sample sold their produce to neighbours or local communities, followed by bakkie traders, and hawkers.
- Most produce was sold to neighbours or local communities, followed by bakkie traders, direct to retailers, and events.
- Smallholder farmers deal mostly in the informal sector. Dealings with the formal sector are limited to direct sales to supermarkets, and direct government procurement or government programmes.
- The market segments that buy produce from smallholder farmers buy most of their produce from intermediaries, including bakkie traders and hawkers, and then from smallholder farmers. As smallholder farmers sell significant quantities to bakkie traders, it can be argued that market segments supporting intermediaries are buying indirectly from smallholder farmers. These markets buy more produce from smallholder farmers than from distribution centres or commercial farmers.
- The most important considerations for market representatives when buying produce from any supplier were quality and price.
- Market representatives feel most comfortable buying produce from smallholders through an intermediary or from farmers who can describe their production processes.
- Market representatives buy from smallholder farmers, because they would like to build local economies, because smallholder farmers' prices are competitive and they are flexible.

In accordance with the sampling criteria, all of the smallholder farmers indicated that they normally sell more than 50% of their total produce. Thirty-four per cent of the farmers sell between 50–75% of their produce and 66% of the farmers sell between 76–100% of their produce. Figure 15 shows the markets that farmers reported they served and the percentage of farmers supplying these different markets.

As indicated in figure 15, most of the sampled farmers sold to their neighbours or local communities, followed by bakkie traders, hawkers and events. Other markets not listed in the questionnaire were supplied by 15% of farmers and included local medical facilities, technical support organisations and commuters. It is clear from figure 15 that smallholder farmers mostly deal with the informal sector.

When aggregating the data used to draw up figure 15, it is possible to create a pie chart to demonstrate the relative size of the market segments supplied by smallholder farmers according to the percentage of farmers supplying each segment. Figure 16 contains the result of this aggregated data and reveals that communities still form the largest relative segment, followed by hawkers, bakkie traders, and events. Segments smaller than 0,5% are not labelled.

Whereas figure 15 shows the *percentage of farmers* per market segment, and figure 16 indicates the aggregated data as relative sizes of market segments, figure 17 indicates market segments per *proportion of produce* smallholder farmers reported selling to these segments, and figure 18 shows the aggregated market segment share according to produce supplied.

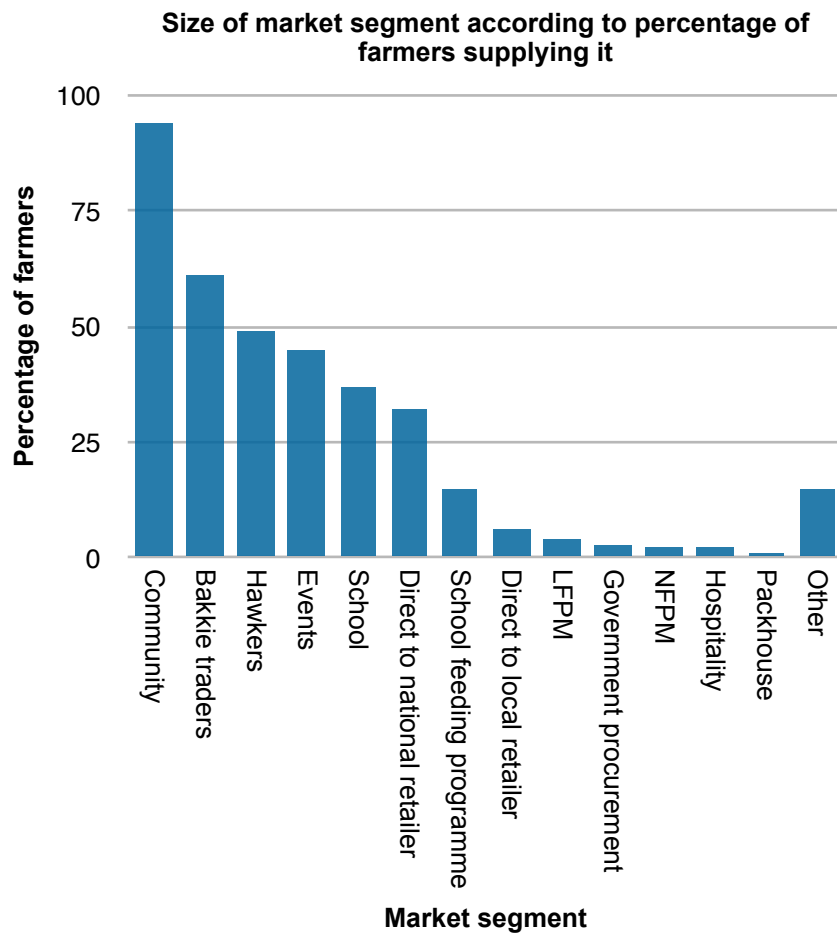


Figure 15: Percentage of farmers supplying different market segments

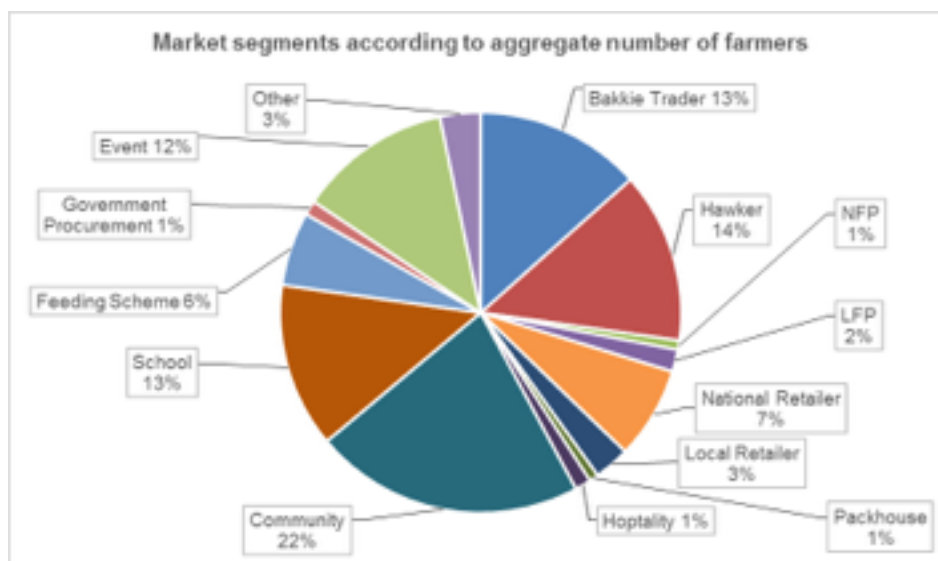


Figure 16: Market segments according to aggregate number of farmers

According to figure 17, the largest amount of produce is sold to the community, followed by bakkie traders. Direct sales to national retailers and events share third place. Figure 18 supports this finding, showing the community as the segment receiving the largest proportion of produce, followed by bakkie traders. Interestingly the aggregated data shows that events receive 1% more produce than national retailers and hawkers. Hawkers thus become as significant a segment as national retailers when the data is aggregated. Figures 15 to 18 thus support the claim that farmers deal mostly in the informal sector.

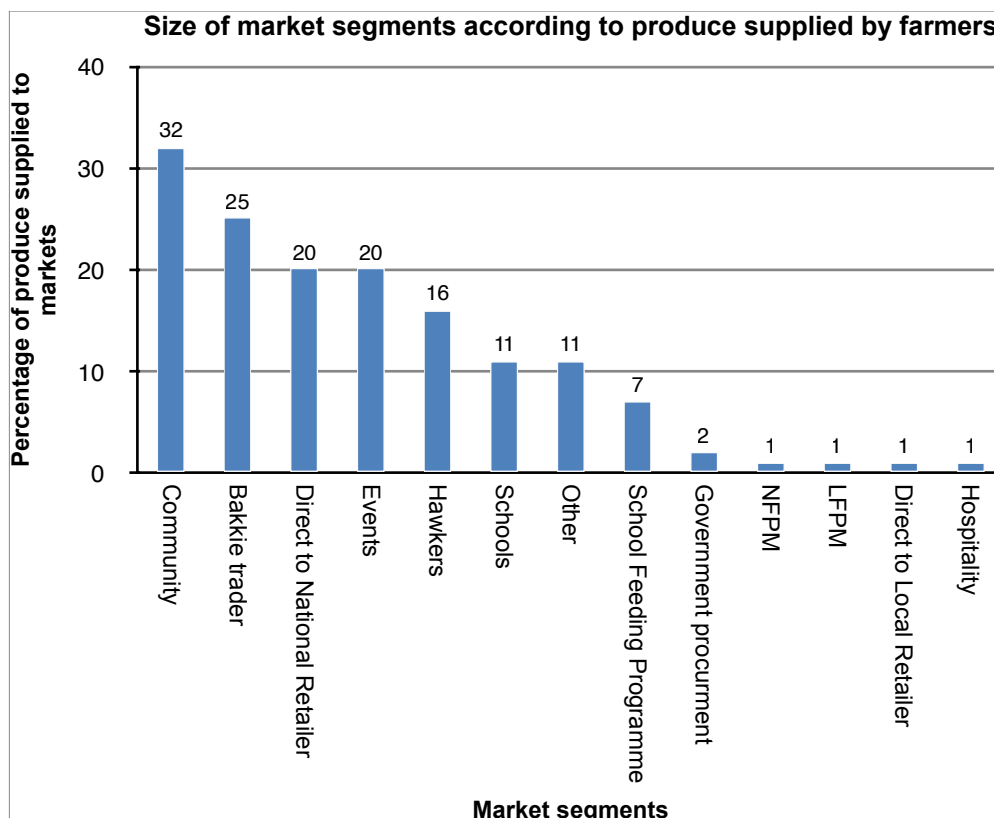


Figure 17: Market segment according to proportion of produce received from smallholder farmers

Drawing on figures 15 and 17, one can observe that although more farmers sell to the community, the amount of produce sold to the community is only 7% more than to bakkie traders. Furthermore it is also possible to deduct that the amount of produce sold directly to national retailers makes it a significant segment, although the number of farmers selling to national retailers is less than the number selling to informal segments including the community, bakkie traders, and hawkers. It is also interesting to note that smallholder farmers sell directly to retailers and not to the distribution centres of these supermarkets. One can thus argue that these supermarkets are motivated to support their local communities, as also reported by market representatives later on. It could, however, also be that smallholder farmers offer better quality produce due to shorter supply chains, as will also be discussed later.

Interviews with market representatives also offered valuable information on markets smallholder farmers served. According to these participants, depending on the variety of the produce they require, the informal market sector (including bakkie traders and hawkers), and some markets in the formal sector (including food scheme tender holders and food parcel coordinators), sourced most if not all their produce from smallholder farmers. However, the formal retail sector (including national retailers and the hospitality industry) also sourced fruits and vegetables from other supply categories including commercial farmers, distribution centres, intermediaries and other markets.

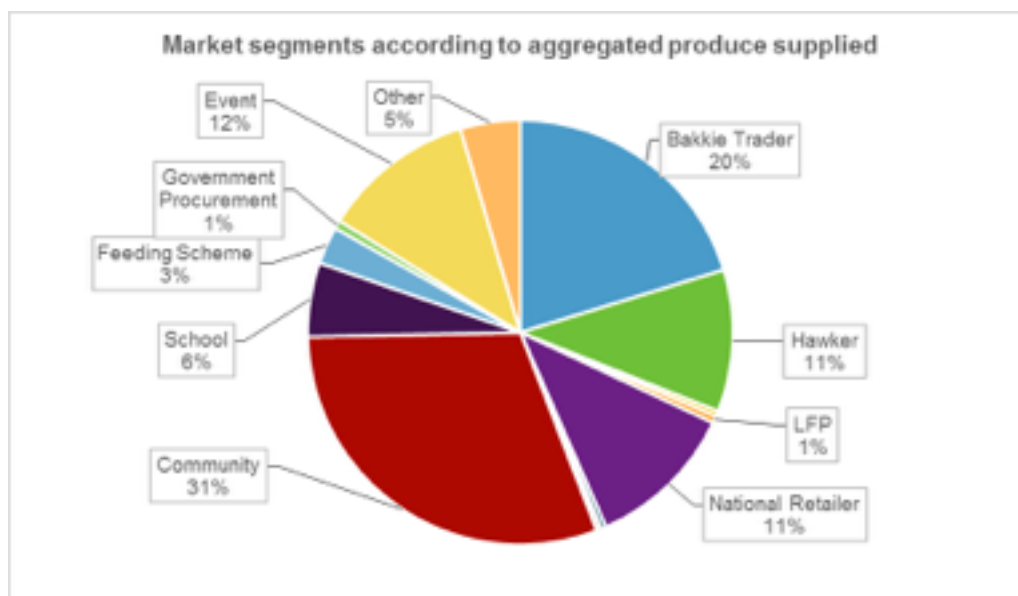


Figure 18: Market segments according to aggregate amount of produce supplied

Following on figures 15 to 18, figure 19 illustrates the size of *supply segments* according to the quantity of produce market representatives reported buying from these segments. From this chart it is clear that market segments bought most of their produce from intermediaries, which as explained to interviewees, included bakkie traders and hawkers. Smallholder farmers make up the second largest supply segment to markets that actually source produce from smallholder farmers.

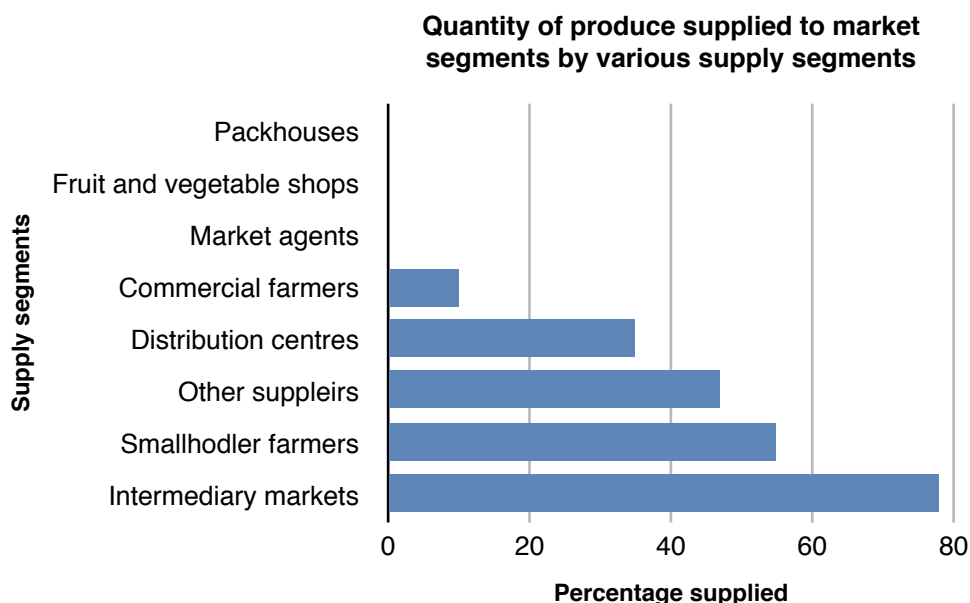


Figure 19: Percentage of produce the market representative sample procured from different suppliers

According to market representatives, they mostly consider product quality, price, quantity and specific produce when sourcing fresh produce, whereas, certification was considered less important. Most market representatives considered product quality and price as most important, because their customers buy with their eyes and price is important for their mark up. This finding might suggest that market segments would be forgiving of insufficient and/or inconsistent quantities of produce if the quality and price were good.

Figure 20 illustrates the distribution of requirements considered by market representatives when deciding to accept delivery of produce from any supplier of fruits and vegetables.

Some market representatives also mentioned that they had more confidence in supplies from smallholder farmers when government representatives are involved in some way as middlemen to conduct regular quality checks on produce and to assist or work continuously with smallholder farmers. This further supports the claim in 2.4.6 that formal market arrangements with smallholder farmers would most likely be through a mediator such as an extension officer. Market representatives also tend to trust the produce more if smallholder farmers are able to describe their production process themselves when looking for business from market representatives.

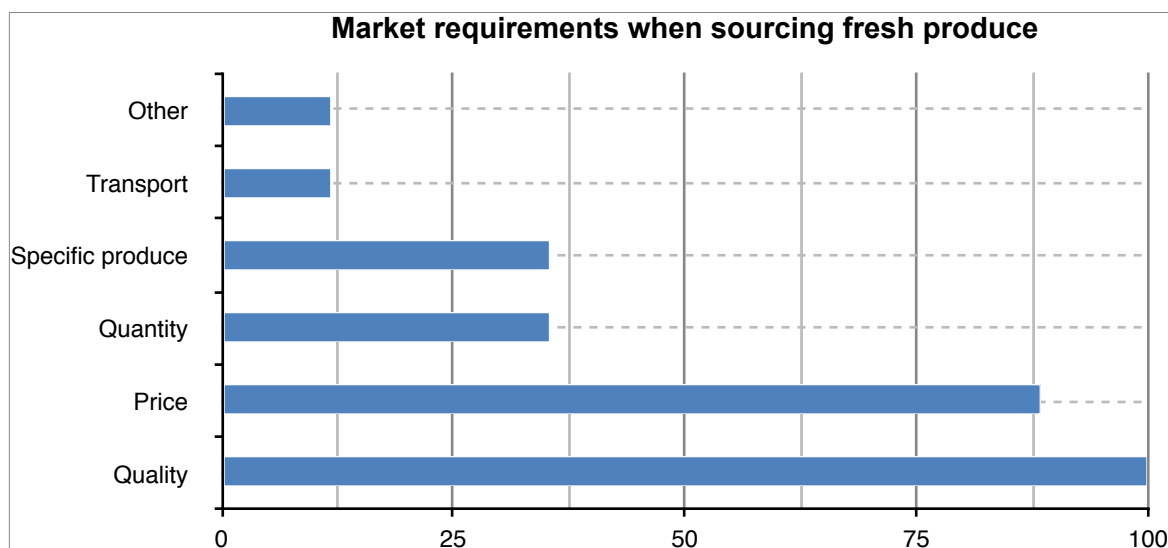


Figure 20: Market considerations when sourcing fresh produce from suppliers (percentage of market representatives)

Data from the interviews with market representatives, explaining their reasons for sourcing from smallholder farmers, offers further insight into appropriate markets smallholders could potentially supply in the future. Building local economies (BLE) and better pricing of produce by smallholder farmers were indicated by 16 market representatives as some of the reasons for doing business with smallholder farmers. Both product quality and flexibility were the second most important reasons for sourcing produce from small farmers, as indicated by 15 market representatives. Other reasons such as supporting and developing the business of small farmers, and the ease of negotiation with small farmers were indicated by 10 market representatives. Twelve market representatives also considered distance an important determining factor for sourcing from smallholders. Market representatives also indicated that smallholder farmers are willing to rectify issues associated with their produce when brought to their attention, and would often try and improve on the highlighted issues. Figure 21 below depicts the reasons market representatives gave for sourcing from smallholders, ranked according to the percentage of market representatives identifying them.

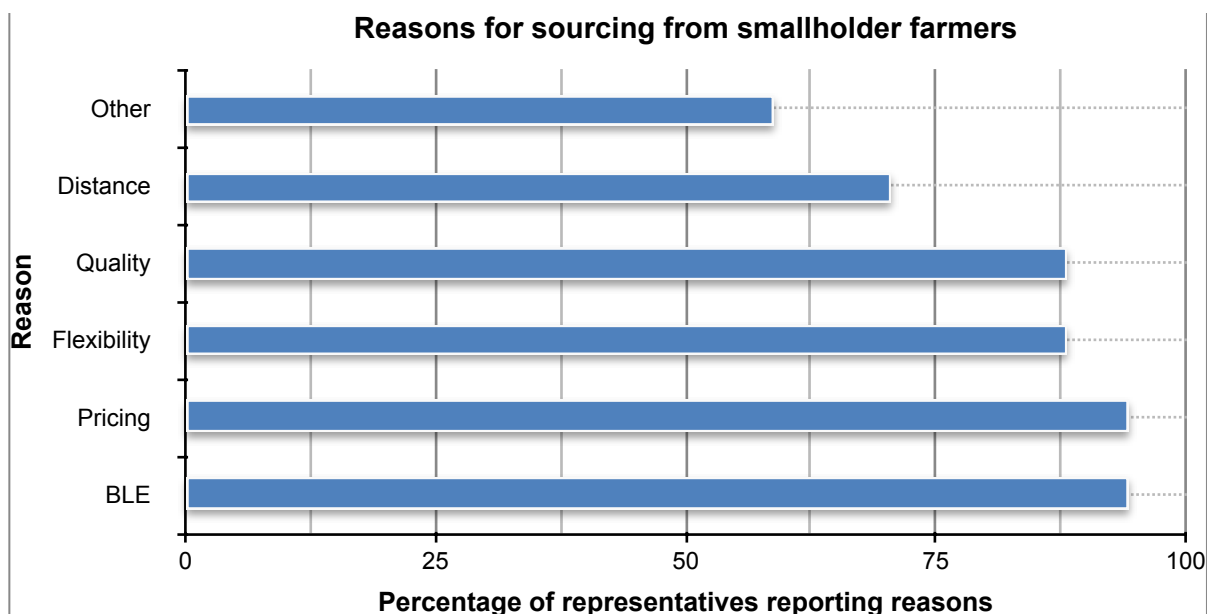


Figure 21: Reasons for sourcing from smallholder farmers, as reported by percentage of the market representative sample

Q2 Are there other appropriate markets that smallholder farmers could supply that have been previously underserved? (And: What is the saturation of the markets that smallholder farmers currently supply as well as of other potentially appropriate markets?)

From the data collected during the research, a number of key claims can be made to answer research question two. These claims are limited to some smallholder farmers and market segments in the Umkhanyakude District, KwaZulu-Natal. Regarding other alternative markets smallholder farmers could supply, and the saturation of those markets:

- Most of the participating farmers indicated that they would like to supply the hospitality sector, government procurement, and distribution centres in that order. As a fourth category, farmers also identified feeding schemes, yet this category could arguably be categorised with government initiatives. In that case, government initiatives would become a larger desired alternative market than the hospitality sector.
- These four market segments remained the most prominent desired markets when cross referencing their identification with whether or not farmers received technical and selling assistance, did market research, belonged to a cooperative, had irrigation, sold approximately 50% of their produce, were aware of food safety principles, and had received food safety training in the past.
- Government officials also regarded government procurement as a viable alternative market, but in addition included bakkie traders, hawkers, the local community, and direct sales to national and local retailers. It may well be that farmers did not identify these additional markets, as they were already selling most of their produce to them (see the answer to the previous research question). These officials also suggested that farmers sell their produce at monthly government grant pay points (such as pension and child grant pay outs).
- Although government officials agreed on the above-mentioned markets, other suggestions were contradictory, for example, the hospitality industry was identified as a less appropriate market by one interviewee and as a possible stable market by another.
- The saturation of markets smallholder farmers currently supply, and those they could possibly supply in future, could not be determined with certainty from the collected data, and remains an area for future investigation.

Before delving into the data that supports the claims made above, it is important to note that farmers informally expressed that they were not actively seeking out new markets at the time the questionnaires were administered. Their answers to the questions informing the statements mentioned above therefore did not form part of concerted efforts to engage new markets, but enumerators nevertheless facilitated consideration by farmers of a variety of options listed in the questionnaire.

All farmers indicated that they would like to sell to other or new markets. Farmers could choose more than one option. Most interest was expressed in supplying to the hospitality sector, followed by government procurement, distribution centres and feeding programmes. Very little interest was expressed in supplying neighbours and the local community (most do this anyway), hawkers, local retailers, packhouses and events. Table 8 gives the top ten markets farmers would like to supply in the future, which were all identified as desirable markets by more than 30 (19% of) farmers.

Table 8: Top ten markets farmers would like to access in the future

Alternative markets	Percentage of farmers out of the larger group wanting to supply this market
Hospitality	53
Government Procurement	48
Distribution Centre	42
Feeding Schemes	40
National Fresh Produce Markets	33
Retailers	28
Local Fresh Produce Markets	27
Agro-processors	21

The data was also cross referenced to see if any significant patterns arose from comparing smallholder farmers' aspirations to supply other markets with whether or not they received technical and selling assistance, did market research, belonged to a cooperative, had irrigation, sold more or less than 50% of their produce, had food safety awareness and had received food safety training. The graphs in appendix A indicate that, similarly to what is presented in table 8, the hospitality sector, government procurement, distribution centres, and feeding schemes ranked highest in every single comparison.

The five interviewed government representatives all regarded bakkie traders, hawkers, government institutions and retailers (supermarkets and local stores) as most appropriate for smallholder farmers. One official regarded tender holders, the hospitality industry and private companies as less appropriate, whilst another claimed that government institutions, tender holders and the hospitality industry could provide stable markets. Most officials regarded private companies as holding least potential. The government representatives also included the local community, pay points, and government events as possible markets that were not listed on the questionnaire as options. Other potential markets included cooperatives, roadside markets, the export market, and fresh produce markets.

The literature review mentions local government procurement, alternative food networks, and the hospitality sector as presenting potential opportunities for smallholder farmers. The findings here confirm the hospitality sector as the top market farmers would like to access in the future. However, this did not feature among the government representatives, all of whom regarded bakkie traders, hawkers, government institutions and retailers as most appropriate for smallholder farmers. Interestingly, the literature also calls

for local market infrastructure to allow farmers to sell their own produce through, for example, e-markets, packhouses and distribution centres.

A final contribution to answering this research question includes characteristics of alternative markets as identified by farmers and government officials, which make them more or less desirable as future market segments. Taking into consideration the background information provided in sections 2.2.1 to 2.2.6, current smallholder farms need markets that can accommodate flexible market, payment, and transport arrangements. Farmers also seem to supply produce when it is ready for harvesting, in quantities and varieties available at the point of harvesting. Criteria for consideration for future market segment characteristics thus included price, quantity, quality, consistency, variety, and transport arrangements.

- The hospitality sector

Farmers clearly wanted to sell to the hospitality sector, whilst government officials could not agree on whether it would be a stable or suitable market. During informal conversations at the time of administering the relevant questionnaire to the two representatives from the hospitality sector, the view was expressed that quality and convenience, more than price, motivated fresh produce purchases. Guest houses in the area bought produce when needed in quantities required by the number of visiting guests. Flexibility would thus be a key-determining factor for the hospitality sector when deciding whether or not to buy from smallholder farmers. Deliveries of fresh produce to hospitality units would also most likely increase purchases by the hospitality sector from smallholder farmers.

- Government initiatives (including feeding schemes and government grant payments)

Both farmers and government officials regarded government initiatives as a viable alternative market. Further research is required to map out the various government projects that are mandated to procure fresh produce from smallholder farmers. Unfortunately, these initiatives are not always sustainable, as was demonstrated by the short-lived SASSA food parcel scheme. Government grant pay points could however provide viable markets, as a number of people are gathered in one place and can afford to buy food directly after pay outs.

- Retail distribution centres

Although farmers expressed an interest in selling to retail distribution centres, careful consideration of the strict criteria applied by these centres may deter farmers from pursuing this option. Distribution centres generally require large quantities of good quality produce, delivered by some form of transport arrangement at specific pre-arranged times. The location of these centres may also be inconvenient for smallholder farmers.

- Direct sales to retailers

Government officials considered direct sales to retailers as a viable market, which could work if retailers were able to accommodate more flexible quantities, variety, and support transport arrangements.

- Bakkie traders

As one of the largest market segments currently supplied by smallholder farmers in both farmer numbers and quantity, government officials were accurate in identifying this as a viable market. Bakkie traders can collect produce from the farms and are not as concerned with consistency of supply, product quantities, or a large variety of produce. However, as a future market for increased smallholder sales, farmers will require greater support and facilitation to establish market arrangements with bakkie traders.

- Hawkers, and the local community

Similarly to bakkie traders, government officials were correct to identify these two segments as viable future markets. A significant number of farmers currently sell to both segments and to the latter in significant quantities too. Once again, greater support and facilitation would be required to grow these segments, most likely from government extension officers.

Q3 What are the major barriers that prevent smallholder farmers from entering or increasing interaction with various market segments?

As mentioned before, farmers informally expressed that they were not actively seeking out new markets at the time of administering the questionnaires, yet enumerators facilitated consideration by farmers of a variety of alternative market options listed in the questionnaire. In addition, farmers then considered possible challenges that could prevent them from entering these markets, or in a few cases shared actual personal experiences or those of others. Furthermore, except for wanting to enter new markets, farmers also stated that they would like to sell more of their produce into markets they already had access to. The challenges discussed here thus relate to entering new markets and increasing supply to markets smallholder farmers already have access to. From the information gathered from the three stakeholder groups, it was possible to identify key barriers:

- As reported by all the stakeholder groups, the major challenges smallholder farmers experienced when attempting to increase quantities of produce sold to markets or when entering new markets were production limitations and a lack of transport to markets.
- As reported by government officials and market representatives, a lack of business skills was also a major challenge for smallholder farmers.
- The *main challenges preventing farmers from increasing sales to already-accessed markets*, as reported by more than half of the farmers, included an inability to increase production outputs and the cost of transport to markets.
- Key production challenges reported by farmers included a range of water issues, inadequate capital to purchase inputs, and lack of farming tools and equipment. The most reported water issue was a lack of irrigation infrastructure, including pumps. Farmers and government officials agreed that a lack of land was not a major production challenge.
- The *main challenges to entering new markets*, as reported by more than half of the farmers, also included the inability to increase production outputs and the cost of transport to markets, but farmers also added a lack of appropriate certification.
- Market representatives stated that their three biggest challenges when sourcing from smallholder farmers included lack of transport, inconsistent supply, and farmer's lack of business skills.
- With regard to smallholder farmers' supply trends, more than half of the market representatives reported that it was inconsistent. They ascribed this trend to seasonal changes and short-lived and unsustainable support programmes.
- Government officials identified farmers' greatest barriers to entering new markets as production challenges that resulted in the supply of inadequate quantity and inconsistent supply of produce, farmers' lack of coordination in providing sufficient consistent quantities of produce, unreliable transport arrangements, and a lack of business skills amongst smallholder farmers.

Most farmers expressed that they would like to sell more of their produce into the *markets they currently sell to* (91%). Challenges that prevented them from doing so included the inability to produce more (see production challenges below) (86%), the cost of transport (51%), inadequate demand (28%) and other reasons (8%). Pricing was regarded as a challenge, as were lack of information and communication about markets. Start-up capital, business skills and organic farm training were also mentioned as challenges. Farmers explained that current markets were only buying small quantities of produce relative to their production outputs and that they as farmers had not (yet) made arrangements with other markets. Although 9% of farmers did not want to sell more produce to the markets they were currently selling to, only 6% explained why not. Reasons included low prices, financial problems, unavailability of storage areas, drought, and doubt whether markets would buy their produce.

Production challenges that created barriers to selling more produce to markets, ranked from most to least reported, included water challenges (75%), inadequate capital to purchase inputs and afford other production costs (53%) and inadequate tools and other farm equipment (50%). Inadequate land (29%), a lack of knowledge and/or skills (20%) and other reasons (19%) were also listed. Farmers faced challenges such as unavailability of fencing, unaffordability of more labour due to high cost, higher electricity tariff, lack of training and guidance to deal with serious weeds, unavailability of infrastructure, and poor soil quality for some farmers.

As stated in the previous answer, most farmers indicated that they would like to sell to *other or new markets*. The most significant challenge to entering new markets reported by 80% of farmers was their inability to produce sufficient quantities. In second and third place, 76% of farmers reported a lack of transport to markets and 71% of farmers reported a lack of certification. The fourth largest challenge was irregular production outputs reported by 55% of farmers, and the fifth largest challenge was limited resources and funding to produce, reported by 48% of farmers. Low market prices (13%) and unstable or uncommitted markets (5%) were considered less challenging. See figure 22 for a chart depicting these challenges. Other challenges specified by 19% of farmers included limited land, water and farm machinery and equipment. Pricing was also regarded as a challenge as well as lack of information and communication about markets. Start-up capital, business skills and organic farm training were also mentioned as challenges.

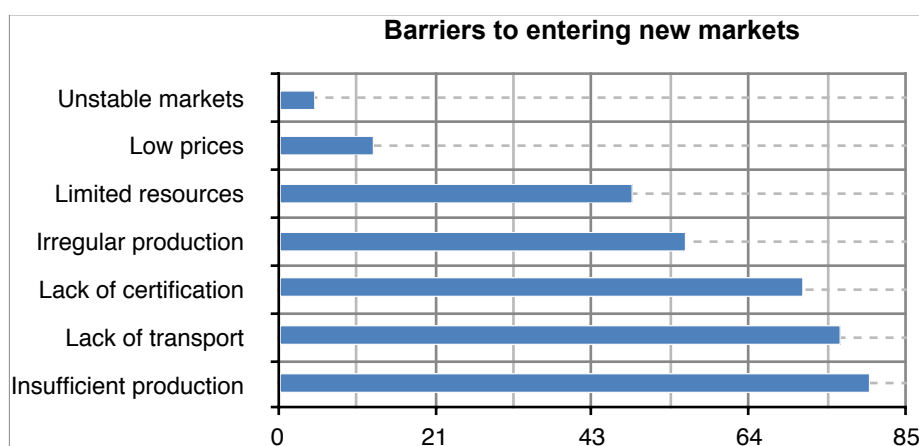


Figure 22: Barriers to entering new markets as reported by percentage of smallholder farmers

When matching identified challenges with the top ten markets smallholders would have liked to supply in the future (see table 8), the findings suggest that challenges are not necessarily linked to specific desirable markets, but are more general. The graphs in appendix B indicate that insufficient quantities, unreliable transport and lack of certification, are farmers' greatest perceived challenges regardless of the markets they would like to access. Limited input capital and irregular production are also part of the top five challenges identified by farmers across desirable market segments. Challenges of accessing new markets are thus less concerned with specific market arrangements, and more related to production and transport challenges, which are also discussed in the literature review. The literature review also notes that the "high-volume, low margin" arrangements of most formal markets may correspond to the finding that farmers identified their most significant challenge as an inability to produce sufficient quantities consistently. This inability is clearly linked to the other barriers mentioned in the literature review and the other challenges experienced by farmers in Umkhanyekude.

Farmers also identified ways of overcoming the above-mentioned challenges. They wanted increased access to capital to purchase farm equipment such as tractors, irrigation equipment, pumps, and production inputs. They also stated that they needed better infrastructure such as:

- electricity (expanding the grid and lowering costs to switch from fuel energy)
- building storage facilities
- a market place to sell their own produce
- dams and sufficient water tanks
- reliable transport systems to markets.

Farmers said that mentorship and more farm business related training to develop their communication and broad farming skills would be beneficial. They asked specifically about support to farm organically, including mentorships and monitoring. They required help with market research to assist with market information to guide their planting, market linkage and access to new markets. Farmers also expressed interest in future training to assist them with certification requirements. The literature review also discussed the need for infrastructure, including irrigation systems, roads and transport, communication networks, electricity, and machinery and equipment.

Figure 23 depicts the distribution of challenges experienced by market representatives when sourcing fresh produce from smallholder farmers. These challenges were all listed on the questionnaire. Transport related issues were identified as a problem most often, followed by supply inconsistency. A lack of business skills was the third most reported challenge and poor grading took fourth position. Fewer representatives reported inadequate supply, poor quality, competition, and other challenges.

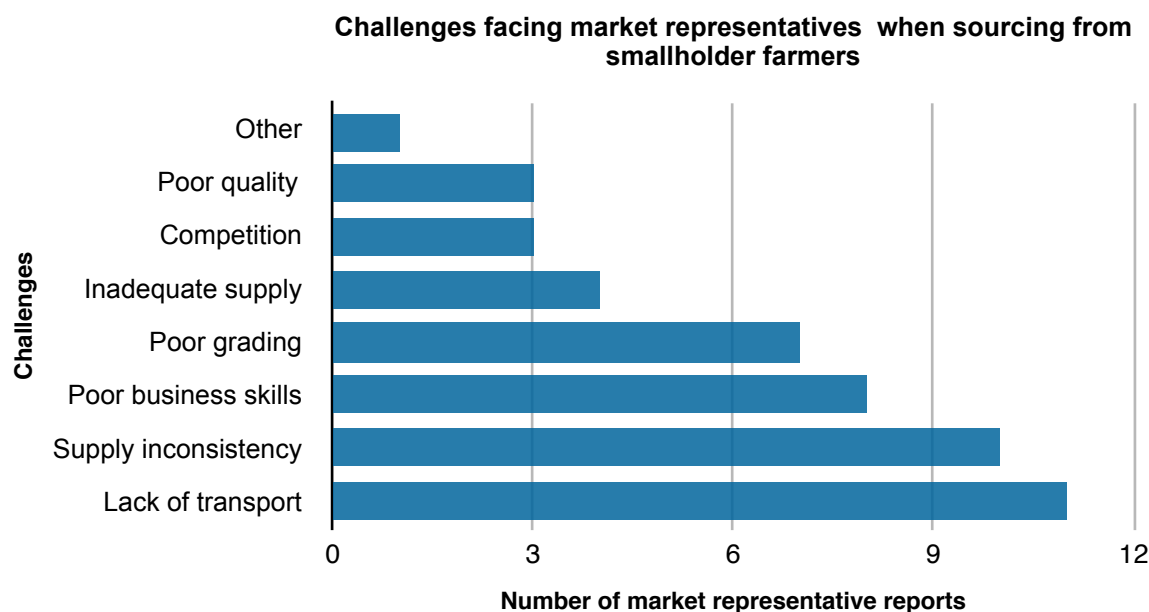


Figure 23: Distribution of challenges across market representatives when sourcing produce from smallholder farmers

Transport was a major problem, as some market representatives often had to go and fetch produce. Grading was a problem, as farmers mixed different sizes of produce. Market representatives indicated poor quality as less of a problem and regarded smallholder farmers as strong competitors. However, quality consistency is affected by seasonal changes and the dry spell at the time of the research was seen as another challenge to smallholder farmers. Market representatives suggested that coordination, motivation, and training of smallholder farmers were required to empower these farmers.

Figure 24 illustrates market representatives' responses with regard to supply trends of fresh produce from smallholder farmers. The chart indicates that market representatives are generally unhappy with the supply trend of produce from smallholder farmers, with 53% of respondents indicating that the supply is inconsistent. However, 23% also suggested that supply was increasing, 18% indicated that supply was consistent, and only 6% said the supply trend had decreased. Some of the representatives ascribed the decrease and inconsistent supply trends to seasonal changes, and short-lived and unsustainable government projects aimed at assisting farmers, leaving farmers alone without mentorship and monitoring.

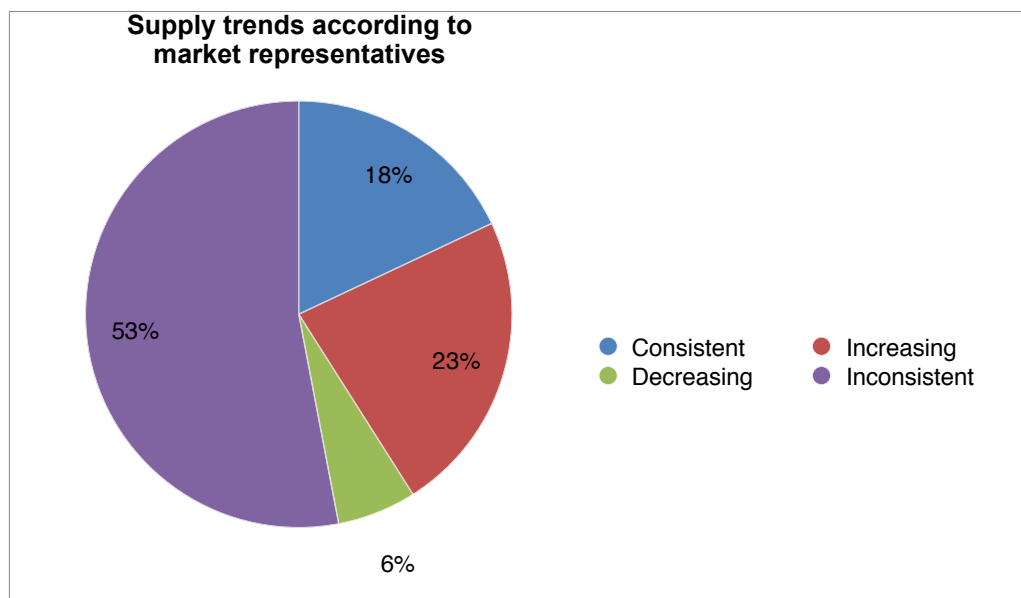


Figure 24: Market representatives supply trend response distribution

In additional comments after completing the questionnaires, some of the market representatives indicated that the major problem encountered when doing business with smallholder farmers was limited diversity of fresh produce, hence, they often had to source from many different smallholder farmers. Quantity was another pressing issue that had to be addressed and even if smallholder farmers were able to produce more, production coordination would be required to ensure diversity. From interviews with market representatives, it became evident that smallholder farmers were also facing tough competition from intermediary suppliers, other segments (mainly Durban Market), and distribution centres of national retailers.

Seven market representatives who did not source produce from smallholder farmers did not complete questionnaires, but were only informally asked why they are not taking supplies from smallholder farmers. Two of the four hospitality industry representatives cited as an important economic reason that they have low numbers of guests making bookings and mostly with only a few of the guests staying at the lodge eating there. They would thus not be able to support smallholder farmers consistently and prefer the convenience of local supermarkets. Two of the national retail representatives indicated that they prefer sourcing from their distribution centre as supplies come pre-packaged and branded, which gives them brand uniformity and identity nationally. One of the national retailer market representatives indicated willingness to take produce from smallholder farmers only if they formally registered their businesses, were registered for tax and had a business bank account. The one hawkker who is currently sourcing produce only from bakkie traders showed interest in sourcing produce from smallholder farmers, yet did not know any smallholder farmers or how to go about sourcing from them.

According to government officials, the most pressing challenges for smallholder farmers include production challenges that result in inadequate quantity and inconsistent supply of produce, farmers' lack of

coordination in providing sufficient consistent quantities of produce, unreliable transport arrangements, and lack of business skills among smallholder farmers. Government officials agreed with smallholder farmers that lack of market information (or pricing) was another challenge. Quality and lack of access to enough land were regarded as the least important challenges. Officials stated that the most important factors contributing to these challenges were insufficient water and lack of business education. Weather conditions were identified as a more significant contributing factor than insufficient capital for inputs and lack of power to negotiate prices. Government-related challenges mentioned included the lack of government transport, which extension officers experienced as a challenge in providing an effective service in remote locations.

The literature review also states that without any strategic efforts to address the challenges as discussed here, farmers are often forced to leave the production of food crops they are familiar with, to access more stable markets for crops such as cotton. In Umkhanyakude District, farmers may end up moving from fresh produce to sugarcane if their challenges are not addressed.

Q4 Are there access points upon which attention should be focused to increase smallholder farmers' market access and which stakeholder(s) is/are in a position to best affect these?

The literature review noted that government was the stakeholder most often nominated to take the lead on capacity building, policy reform, and support in the form of extension services and access to information. The findings did not elicit much information regarding innovative strategies and new relationships, however, they confirmed that the delivery of such services must be increased or strengthened in remote areas to improve accessibility. Business partnerships between markets, including the formal sector and smallholder farmers may however begin to offer more sustainable ways of addressing farmer challenges, as such linkages will be built on mutual benefit.

Market representatives in Umkhanyakude considered smallholder farmers as committed and hard workers, because even when seasonal conditions were tough, they attempted to produce quality produce. Market representatives indicated that good farmers had to be identified to concentrate on niche markets. They also said that project leaders who start projects must not raise unreasonable expectations. These leaders must be realistic about both the challenges and benefits of farming for smallholder farmers. Market representatives also felt that smallholder farmers needed training in production to ensure consistent supply in line with the demand from market representatives. Market representatives said smallholder farmers required assistance with farming requisites and building a market area. One market representative also said that smallholder farmers should start thinking like business people, rather than only farming for subsistence.

Below follows a list of influential stakeholders that can affect change, and the key areas they need to focus on to improve market access for smallholder farmers. Smallholder farmers are best positioned to improve their own market access.

- Smallholder farmers

- Capitalise on strong points reported by markets sourcing from smallholder farmers: good pricing, quality, and flexibility
- Establish cooperatives to improve general coordination, share information, increase farmer-to-farmer learning networks, and reduce transaction costs
- Use basic, accessible mobile technology to organise planting schedules, price negotiations, produce pick-ups etc.

- Support organisations (and formal markets)

- Provide training and mentorship programmes to improve agro-ecological production (as requested by smallholder farmers)
- The development of an integrated farming standard that will ensure food safety, and compliance with the environmental and ethical requirements of markets

- Improve smallholder farmers' access to market information, business acumen
- *Informal markets*
 - Establish coordinating representative bodies to improve coordination
 - Create built local market spaces, possibly by putting pressure on local municipalities
- *Banks*
 - Improve smallholder farmers' access to capital for farming inputs
- *Government*
 - Develop road infrastructure and/or more build accessible local market areas
 - Provide good quality irrigation infrastructure that is independent of the national electricity grid
 - Increase government procurement from smallholder farmers for long-term, sustainable projects
 - Work with other support organisations to synthesise support efforts to smallholder farmers

2.5 Research conclusions

This section gives an overview of the key findings from each of the sections in 2.4. It is translated into a typical farmer profile in Umkhanyakude, KwaZulu-Natal, as this project is embedded within a larger project in which the farmers' voice is central. Writing the findings in this way offers an opportunity to see market segmentation from the perspective of a typical smallholder farmer in Umkhanyakude.

A typical smallholder farmer in Umkhanyakude is female and between the ages of 40 and 59. She is the breadwinner of a household with approximately 10 people of whom four are under the age of 18 years. She has most likely completed at least primary school and has one to five years farming experience.

She has permission to farm on a plot of 0,5 ha or smaller that forms part of tribal land. The plot is primarily used for farming on a full-time basis for cash income first, and then to provide supplementary food to her household. By farming on her plot, the farmer annually earns less than R30 000. She has access to informal loans, including her own savings and receiving financial support through government grants.

The farmer most likely grows vegetables for commercial purposes, followed by grains for commercial purposes. Water is most likely accessed from a river without an irrigation system (including pumps), but if accessed from a dam, she is more likely to use an irrigation system. She experiences annual crop losses due to insect, irrigation, and weather challenges, in that order. Generally, the farmer employs temporary female labour and family members, including children when they are not in school.

The female farmer does not belong to a commodity organisation, but most likely forms part of a primary co-operative, which provides her with opportunities to share information, market and sell collectively and buy inputs in bulk. She will only receive support in the form of inputs and advice if she really needs it. This support generally comes from government extension officers, although the quality of said support is undetermined.

Together with most of her fellow farmers, she sells her produce to neighbours or local communities followed by bakkie traders, hawkers and directly to retailers. In terms of quantities, however, she sells most vegetables to neighbours or local communities and bakkie traders. She most likely sells more vegetables directly to supermarkets than to hawkers. She thus mostly engages with the informal sector, and only sometimes with the formal sector when selling directly to supermarkets and government initiatives. Her markets consider quality and price to be the main considerations when buying from any supplier, and buy specifically from her because she offers quality produce at competitive prices, and because she is flexible. She may, however, be exploited in terms of pricing, as she sells her produce in crates and not by weight.

Whether with formal or informal market segments, the market arrangements she has are mostly driven by flexibility, distances from markets, and having established relationships with specific markets. The arrangements are generally informal including a variety of transport methods. The reason for not having formal arrangements is due to small, inconsistent production outputs of vegetables of limited variety. She may have formal arrangements, which would most likely be through a mediator such as a government extension officer, who is also likely to provide her with marketing support. She is paid cash on delivery.

She markets her vegetables by producing better quality produce and actively trying to convince buyers to buy from her. She also does market research by speaking to neighbouring farmers and government representatives. Her preparation of produce for markets involves a combination of washing, grading, and packing produce. She is aware of food safety standards and complies with them by using responsible and/or agro-ecological methods on her farm. Although she has received training in certification standards, she is most likely not certified, because she lacks knowledge and/or sufficient training to reach full compliance with all official standards.

Her markets buy most of their produce from intermediaries, including bakkie traders and hawkers, and only then from her. As she sells significant quantities of her vegetables to bakkie traders, it can be argued that market segments supporting intermediaries are buying indirectly from her, although she benefits less than if she was selling to them directly. Her markets buy more produce from her and her peers than from distribution centres or commercial farmers.

She would like to sell to the hospitality sector, government procurement, and distribution centres in that order. As a fourth category, she would also like to sell to feeding schemes, yet this category could arguably be categorised with government initiatives. In that case, government initiatives would become a larger desired alternative market than the hospitality sector. Her extension officer also thinks government procurement is a viable alternative market for her, but feels that her sales to bakkie traders, hawkers, the local community, and direct sales to national and local retailers could be increased. The official also thinks she should sell her produce at monthly government grant pay points (such as pension and child grant pay outs). The saturation of the markets she would like to sell to is still undetermined.

Whether selling more produce to her current markets, or accessing new markets, the farmer is experiencing severe production limitations and a lack of transport to markets. Her key production challenges include a range of water issues, inadequate capital to purchase inputs, and lack of farming tools and equipment. Her lack of irrigation infrastructure, including pumps, is her major water-related challenge. These limitations force her to grow limited varieties of vegetables in small quantities and prevent her from producing consistently. Her informal enterprise and lack of business skills also close alternative markets for her.

She requires consistent and continued support if she is going to be able to increase her production outputs and sell to new markets. She needs production and marketing support, including training in food safety and other certification standards. The development of such training should take her limitations into account, and be designed to empower her within her specific context. Her more formal markets would appreciate it if she specialised in a niche product, yet the risk of only growing one crop for one market cannot be carried by her alone. Her livelihood is too vulnerable.

Her primary cooperative should be used as an entry point for future training and support, as it is most likely her biggest support structure and she will be able to share key lessons and learn from others.

2.6 Future plans

SAFL has successfully submitted another proposal to the Flemish government in order to synthesise the findings reported above with those of a similar project conducted by the NAMC¹⁰ in the Mopani district. Ideally this synthesis could begin to sketch out a clearer overview of smallholder market access in order to support the development of a policy brief to government. This work could also stand as a pilot for future iterations of the same study, using the questionnaires and databanks that were developed during the process. A roll-out of the questionnaires across the rest of the country would contribute to a national overview of smallholder market access.

Future studies are also required to build on this work. Key areas that need further investigation include:

- The relation between the distance smallholder farmers are located from markets, and the proportion of produce they consequently sell to informal vs formal markets; and consume vs sell
- The informal sector, smallholders farmers relationship with the informal market, and ways of strengthening the informal sector to facilitate smallholders farmers market access
- The use of mobile technology to organise farmer cooperatives, improve access to micro-finance, provide crop insurance, access market information etc.
- How to build empowerment mechanisms into extension services, so that smallholder farmers do not come to rely on said service, but eventually no longer require it

¹⁰ For access to the NAMC study, contact Sydwell Lekgau: sydwell@namc.co.za .

3. FOOD SAFETY, ETHICAL, AND ENVIRONMENTAL STANDARDS

3.1 Introduction

The *Food Safety, Ethical, and Environmental Standards (STA)* innovation was based in the Mopani District in Limpopo Province and took place over ten months from October 2014 until July 2015. It targeted market-orientated smallholder farmers in loose and tight value chains, drawing on the definition by Cousins and Chikazunga (2013): Aiming to sell at least half of their produce, the objectives of farming operations for these farmers include household consumption and cash income. The income from sales typically offers variable contributions to household income. These farmers employ some hired labour on the farm, but also use family members. Mechanisation on these farms is typically low, as is capital intensity. Farmers have some access to finance. This group of farmers make up between 200 000 to 250 000 households in South Africa.

Through the study, the SAFL aimed to support smallholder farmers to reach compliance with an entry-level food safety standard in order to sell their produce to supermarkets. This section contains the motivation, purpose, significance, and scope of the study that focused on this group. The research questions are also outlined in this section. The next section contains a literature review, followed by a final section presenting and discussing the research findings.

3.1.1 Motivation for the project

Existing, arduous food safety, ethical, and environmental standards have presented major barriers to smallholder farmers who wish to increase their presence in the food retail market. However, affecting change in this arena requires action from government, retailers, standards owners, and farmers. The STA project aimed to test a newly developed entry-level standard called localg.a.p. in the Mopani District of Limpopo Province, which would allow smallholder farmers access to the food retail market.

3.1.2 Purpose and significance of the project

In Limpopo, the STA research aimed to record the process, challenges, and successes of emerging farmers trained and assessed in the entry-level standard of localg.a.p. While this study covered a limited number of cases, it provided valuable lessons from the training and assessment of smallholder farmers in the entry level of localg.a.p. to inform similar future endeavours.

The initial findings from the STA project can be of use to involved smallholder farmers; academic researchers; private extension organisations, such as TechnoServe and Lima; GlobalG.A.P. and certification organisations; retailers (such as SPAR) who are interested in training their suppliers in localg.a.p.; as well as government agencies such as the Department of Agriculture, Forestry and Fisheries (DAFF), and the National Agricultural Marketing Council (NAMC). It should be noted that representatives from these organisations have participated in some part of either one or both of the BLE and STA innovations and could be directly reached with any relevant findings.

As foundational knowledge was established through this project, and the data collection and analysis methods were refined to fit the specific smallholder context, future iterations of this study should begin to create and test interventions to affect change in smallholder farmers' market presence. The logical framework below includes and illustration of the STA research process on the left of the red line, however, additional work is required to reach the ultimate goal of increased market access for smallholder farmers on the rights of the red line. These future iterations are explored further in section 3.6.

As the overall project took an exploratory approach, it was purposefully constrained in depth and scope. It allowed for a quick iteration of the research to be performed and reviewed in order to refine the method and focus in future related studies. The findings of this research are not to be taken as conclusive or definitive, but rather as a beginning step to be recreated and scaled up over time.

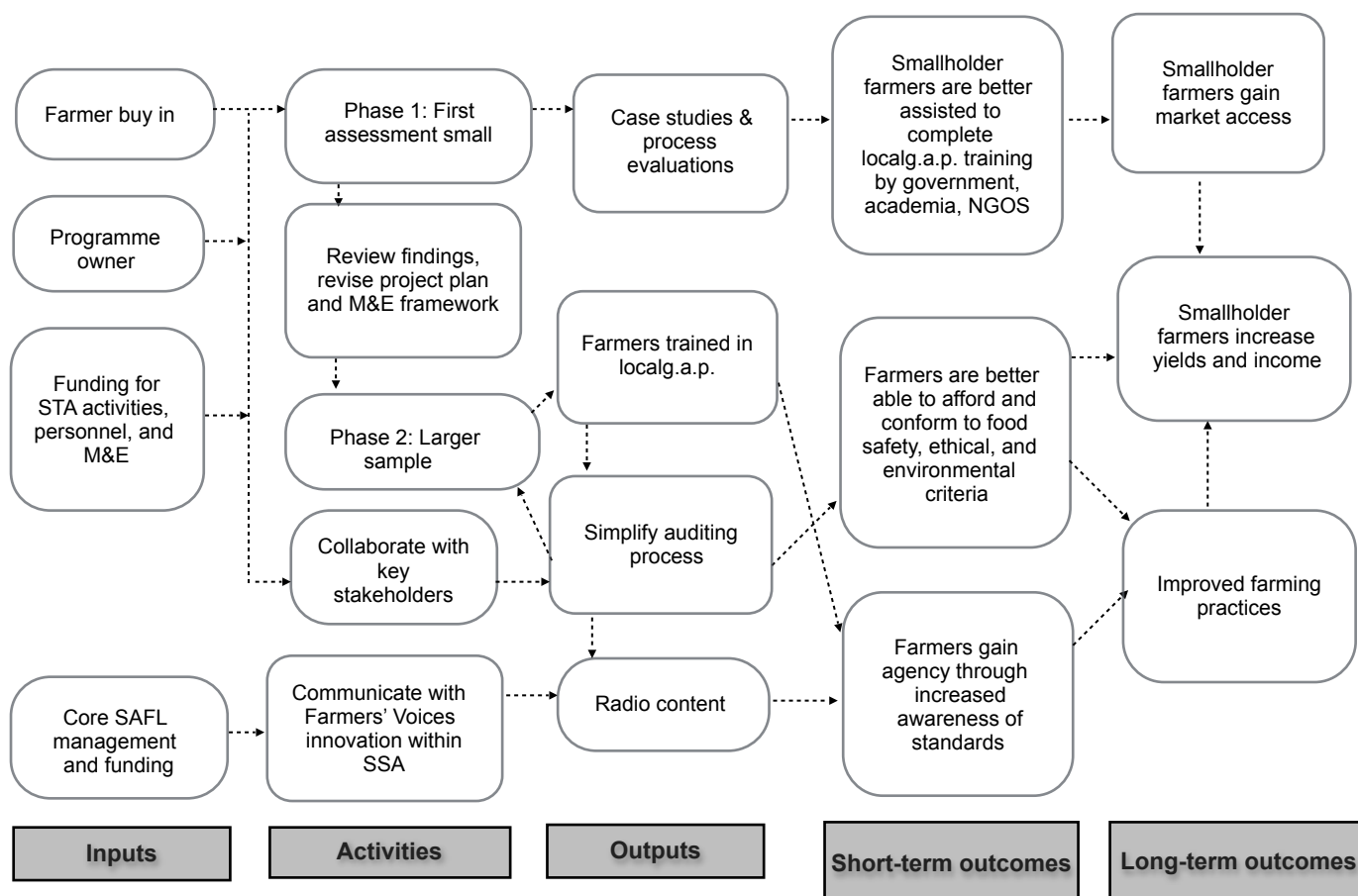


Figure 25: The STA framework

The STA research was initially limited to two case studies in the Mopani District of Limpopo, where 13 farmers were initially trained in localg.a.p.. Only two farmers reached compliance by the end of the project. The process offered valuable lessons for future trainings in localg.a.p. and other relevant standards for smallholder farmers.

3.1.3 Scope and research questions

For the STA project, key research questions included:

1. What conditions helped the identified farmers attain conformance or a proportion of conformance with the entry level of localg.a.p. before and after training?
2. What are the challenges that prevent the identified farmer from attaining conformance with the entry level of localg.a.p. before and after training?

The answers to the STA questions will also inform overarching questions, to be answered in future iterations of the study, including:

1. How attainable are the current entry-level food safety, ethical, and environmental programmes for smallholder farmers in South Africa?
2. What conditions are needed to streamline the process to one “umbrella” audit that can assess a smallholder farmers’ conformance with entry-level food safety, ethical, and environmental programmes?
3. What conditions are needed to simplify “programme ownership” to allow for more smallholder farmers to participate in local markets that require conformance?

3.1.4 Research objectives

Research objectives for the *Food Safety, Ethical, and Environmental Standards* project:

1. To identify access points into retail markets for smallholder farmers.
2. To improve the inclusivity of standards and entry level programmes.
3. To assess the ability of smallholder farmers to conform to entry level food safety, ethical, and environmental programmes and standards.

Research objectives specifically for phase one:

1. To build foundational knowledge on the topic of training smallholder farmers in entry level localg.a.p.
2. To better understand what conditions contribute to or prevent conformance with entry level localg.a.p.
3. To identify potential areas to be strengthened in future pilots and programmes training farmers in entry level localg.a.p.

3.2 Literature review

The STA innovation of the Southern Africa Food Lab’s *Supporting Smallholder Agriculture* (SSA) project aims to assist the development of a more inclusive view and use of standards that are relevant to the South African smallholder’s experience. To this end, an account of the history of standards in the agricultural sector places the innovation in context.

Grades and standards for agricultural products first emerged in the second half of the nineteenth century (Daviron & Vagneron 2011). The Chicago Board of Trade – a voluntary association of traders in the grain market – created a uniform wheat standard in 1856, based on three grades (Daviron & Vagneron 2011).

Standards for tropical products began with cotton in 1874 with the New York Cotton Exchange standard, followed in 1881 by the New York Coffee Exchange standard which defined nine grades depending on the number of defects (Daviron & Vagneron 2011). In 1913 the London Rubber Trade Association started standardisation in the rubber trade (Daviron & Vagneron 2011). In cocoa standardisation began in the 1920s and 1930s when inspections were organised preventing exports of substandard cocoa, with two or three simple classifications of exportable cocoa (Daviron & Vagneron 2011). These early standards provided simple information mostly about the cleanliness of the commodity, no information about the production process, and, above all reflected the absence of demand for variety (Daviron & Vagneron 2011).

During the 1960s new agricultural chains developed, with the organic agriculture and fair-trade movements both explicitly encouraging and valuing the differentiation of agricultural products, and challenging the mainstream agro-food system (Daviron & Vagneron 2011). They promoted new rules and production techniques, and expressed concerns for the impacts of agriculture on the environment and on labour conditions respectively (Daviron & Vagneron 2011).

Organic agriculture relied originally on shared and informal values and norms rather than on official criteria, until 1970 when the first written technical specifications for organic farming were created (Daviron & Vagneron 2011). In the fair trade model, it was the direct and personalised trading practices between organisations and their partners that defined fair trade, rather than a common external standard. The historical models of both the organic and fair trade movements were challenged in the late 1980s and early 1990s. National organic standards were created in Europe (1991), Japan (1991) and the US (2002) (Daviron & Vagneron 2011). Second generation fair trade initiatives focused on setting standards and certification (Daviron & Vagneron 2011).

The 1990s saw corporations adopting proprietary standards regarding the provision of raw materials, through initiatives such as Tesco's 'Nature's Choice' standard for suppliers of fresh produce (1991), and in the coffee sector, Nestlé's Corporate Business Principles (1998), Sara Lee's Supplier Selection Guidelines (2001), Starbucks' Preferred Supplier Scheme (2001) and Kraft's Code of Conduct (2003) (Daviron & Vagneron 2011). At the same time, NGOs such as the Rainforest Alliance and Utz Kapeh started developing their own third-party certification schemes (Daviron & Vagneron, 2011). Sustainability standards in a multi-stakeholder framework started in the mid-1990s, with the Forest Stewardship Council (1993) and the Marine Stewardship Council (1997) (Daviron & Vagneron 2011). The evolution from multi-sectoral to crop-specific standards is evident from the mid-2000s onwards with several crop-specific (soy, palm oil, cotton, sugarcane, coffee, tobacco, and so on) initiatives (Daviron & Vagneron 2011).

Business-to-business (B2B) standards have developed to organise the supply chain and ensure compliance with existing national food safety regulations (Daviron & Vagneron, 2011). B2B standards are not communicated to the final customer through a label, whereas business-to-consumer (B2C) standards are accompanied by an identifiable signal (logo, brand) and are aimed at product differentiation (Henson 2006). In the *State of Sustainability Initiatives Review 2014*, of 16 standards initiatives reviewed (including most of those mentioned above) roughly two-thirds apply a consumer-facing label, with the remaining one-third relying primarily on business-to-business implementation processes (Potts et al. 2014).

GLOBALG.A.P., a private B2B standard for safe and sustainable agriculture, was developed by a network of European retailers in 1997. By 2010 over 102 000 producers in 108 countries were certified against the GLOBALG.A.P. standard (Daviron & Vagneron 2011). localg.a.p. is a stepping stone towards GLOBALG.A.P. certification, offering producers entry-level recognition where GLOBALG.A.P. certification is not possible. The Global Food Safety Initiative (GFSI) was launched in 2000 as an initiative providing guidance on food safety management system controls. The GFSI Global Markets Programme is a capacity building programme for small and/or less developed businesses. At the local level the Food Safety Initiative, under the auspices of the Consumer Goods Council of South Africa (CGCSA), amongst other objectives, aims to optimise food safety auditing by developing a single, harmonised food safety standard.¹¹ However, the GLOBALG.A.P. system remains the dominant standard in South Africa.

During the late 1990s ethical trade initiatives began to emerge as, "a fast growing field in term of interest and practice" (Blowfield, 2010:1). There is no consensus on the definition of ethical trade. However, the term "is frequently used to refer to the sourcing of products from companies guaranteeing core labour and human rights standards to their workforce" (Blowfield 2010:1), and is clearly distinguishable from Fairtrade which has a more specific developmental goal (Blowfield 2010). The standards for corporate conduct mentioned above have to do with ethical sourcing – managing the social conditions of production, but do not challenge trading relations.

¹¹ See the presentation at this link for more information: <https://www.cgcsa.co.za/SiteItems/documents/cgcsa/presentations/GlobalGAP%20Local%20GAP%20System.pdf>.

In 1997 Social Accountability International (SAI) established SA8000, a social standard for decent work, now being implemented in over 3000 factories, across 66 countries and 65 industrial sectors (www.sai-intl.org). Similarly, the Ethical Trading Initiative (ETI), launched in 1998, developed the ETI Base Code. All corporate members of ETI agree to adopt the ETI Base Code of labour practice, and the code is being used to benchmark labour standards for auditing bodies around the world. Also, the ETI Smallholders Project Group has developed recommendations and working tools to provide guidance on how retailers, purchasers, smallholders and others can take action to help improve the working conditions of smallholders.

The Sustainability Initiative of South Africa (SIZA), under the mantle of Fruit South Africa, promotes sound and ongoing improvement of ethical labour practices on South African fruit farms and packhouses. Although initiated by the fruit industry, it is applicable and open to all agricultural industries in South Africa.

3.2.1 Southern Africa Food Lab

The STA innovation began in 2013 by conducting a mapping exercise of current standards for primary production that could be applicable to smallholder farmers in South Africa. The project team aggregated this information into a table showing the various food safety, ethical, and environmental standards available at the time, who created them, who used them, who monitored them, the perceived benefits, and perceived shortcomings for our purpose (i.e. for South African smallholder farmers to attain).

Interestingly, as the team learned about certain food safety, ethical, and environmental standards, they would also find out about other food safety, ethical, and environmental standards, which in turn would lead them to even more standards. This complicated landscape of multiple standards led the project team to focus on ways of simplifying the standards process so that it could be used as a tool to include smallholder farmers in the market rather than act as a perceived barrier.

The project team interviewed fifteen key stakeholders, including representatives from the retail sector, auditors, standards bodies, CGCSA, NGOs, and academia. They provided vital information on the critical components necessary for a standard or non-accredited “checklist” to perform the function of ensuring food safety, ethical practices, or environmental practices; the challenges smallholder farmers face when trying to conform; and the recent developments of standards programmes around the world and in South Africa. The project team originally planned to develop its own non-accredited checklist that would capture all of the critical food safety, ethical, and environmental requirements of food retailers in one training and assessment module, but would take into consideration the needs and abilities of smallholder farmers in South Africa specifically. However, entry-level [localg.a.p.](#) was developed during this period and the team recognised that it might offer a potential access point to smallholder and emerging farmers in South Africa wishing to improve (or prove) the safety of their produce and gain further market access.

3.2.2 Background to [localg.a.p.](#)

The GLOBALG.A.P. organisation created [localg.a.p.](#) (originally called Primary Farm Assurance) to engage with farmers who were new to standards, such as smallholder and emerging farmers. [localg.a.p.](#) is not a standard itself but rather a path to GLOBALG.A.P. certification that aims to help farmers progress from conformance with one level to the next until they are able to achieve full certification (GLOBALG.A.P. 2012).

[localg.a.p.](#) came to South Africa in 2013. The programme included two levels of conformance (foundation and intermediate) before a farmer was finally audited for GLOBALG.A.P. certification (GLOBALG.A.P. 2012). However, [localg.a.p.](#) was largely developed in the United States and even the foundation level did not fit the context of many smallholder farmers in South Africa. In response to this challenge, James Lonsdale of SPAR South Africa, together with GLOBALG.A.P. led the creation of an “entry-level” of [localg.a.p.](#) This new level was specifically designed to include more smallholder farmers while maintaining

the integrity of the main localg.a.p. food safety requirements and the focus on progression towards eventual certification. Instead of a farmer directly soliciting the localg.a.p. training and assessment, the GLOBALG.A.P. organisation requires that a “localg.a.p. programme owner” requests training and assessments for certain farms. This is meant to ensure farmers not only receive the necessary training for localg.a.p. conformance, but also the market linkages and complementary assistance that can be so critical to a farm’s success. The localg.a.p. programme owner determines the level of localg.a.p. it will accept and the amount of time a farmer will have to advance from one level to the next.

While SPAR was instrumental to the development of this new level, it is available for any potential localg.a.p. programme owner (including other retailers, exporters, farmer associations, etc.) to use. As GLOBALG.A.P. has been accepted by all major retailers in South Africa as their preferred food safety standard, the introduction of localg.a.p. as a path to certification may result in potentially more interaction between retailers and smallholder farmers. To this end, SPAR (the localg.a.p. programme owner for this current SAFL study), Massmart/Walmart, Shoprite Holdings (Freshmark), and Pick ‘n Pay are currently acting as programme owners for a number of smallholder produce and vegetable farms’ localg.a.p. training and assessment (GLOBALG.A.P. nd)(). SA Livestock G.A.P. is also acting as programme owner for a smallholder livestock initiative (GLOBALG.A.P. nd). Programme owners decide which level they are willing to accept from farmers: Massmart will accept foundational- and intermediate-levels; Pick n Pay will accept entry-, foundational-, and intermediate-level; and Freshmark will accept foundational- and intermediate-level. Massmart has begun a training programme for a select number of smallholder farmers to conform to localg.a.p. starting at foundational-level. While the number of smallholder farmers currently in these programmes is relatively small as a representation of the entire South African smallholder population, these early programmes may provide examples from which future, larger-scale projects can learn.

In April 2014, the SAFL hosted a “Standards Dialogue” to bring together the major stakeholders in smallholder farmers’ interaction with food safety, ethical, and environmental standards. This included representatives from smallholder farming, government, NGOs, the retail sector, and standards bodies. During this dialogue, stakeholders discussed challenges to smallholder farmer conformance with standards or food safety programmes, voiced concerns about the perceived power imbalance in the retail food system, and learned about the newly created entry-level localg.a.p. as well as developments within SIZA and WWF South Africa to include more smallholder farmers in environmental and ethical practices training and assessment.

Participants gave valuable feedback on the SAFL’s STA innovation team’s project plan that greatly helped in shaping the size and focus of the project. For example, the SAFL team originally planned to include an assessment of farmers’ ability to increase their incomes after training and conformance with entry-level localg.a.p. However, the Standards Dialogue participants thought this was unrealistic given the project team’s proposed timeline and the number of participants that would be needed to produce findings that were statistically relevant. They recommended that the project start on a smaller scale and simply assess whether the farmers were able to conform to this new level. In addition to shaping this SAFL project plan, this Standards Dialogue developed relationships between various sectors, brought many up to date on the current reality of smallholder farmers’ ability to conform with current standards or standards programmes, and introduced many participants to a new option in the form of entry-level localg.a.p.

3.2.3 What barriers do smallholder farmers face to conformance with standards?

Literature that addresses smallholder farmers and standards often mentions standards in passing while listing barriers to smallholder market access without mention of the precise factors that contribute to standard-related challenges or things that may contribute positively to conformance. Another area of literature focuses on the outcomes of conformance with a particular standard namely, did market access, income, or production increase as a result of compliance? While these outcomes are of course important, when one wants to assess the challenges to even attaining compliance with a certain standard or

programme, the literature is sparse or often refers to farmers in developing countries as one category without much recognition or discussion of the wide range of realities and challenges that face farmers from country to country or even within one country.

Therefore, this literature review has not been limited to entry-level localg.a.p. or even to GLOBALG.A.P., but includes challenges smallholders face with conforming to standards and programmes generally. Through its current study, the SAFL STA innovation hopes to contribute to a better understanding of the challenges smallholder farmers face specifically when trying to conform with entry-level localg.a.p. It should be noted that the use of the word “standard” below refers to non-accredited development programmes as well.

What does come through clearly from the literature is that the cost of consultancy, technical improvements, auditing, and certification fees have hindered smallholder farmers’ ability in the past to conform with standards (Alexander 2013; Henson & Jaffee 2006; Jaffee, Henson & Diaz Rios 2011). Unlike their neighbouring large commercial farms, smallholders often lack the economies of scale to bring down the relative cost of new equipment and recurring fees (Kritzinger-van Niekerk 2013).

From record keeping to personal hygiene to pesticide storage, smallholder farmers’ practices often need to be assessed and improved in order to conform with a standard or programme, but frequently they lack the technical expertise or access to adequate support and extension to enact these changes (Kritzinger-van Niekerk 2013; Maertens & Swinnen 2006)

Recognised standards and programmes vary by market, industry, and company and include numerous options for safety, ethical practices, environmental practices or a combination. In addition, some retailers customise a standard to their internal requirements, and there is limited harmonisation across different kinds of standards (Maertens & Swinnen, 2006). This can contribute to a situation where smallholder farmers not only lack clarity on what is expected of them but also what path to follow in order to fulfil these requirements (Maertens & Swinnen 2006). During a ‘GFSI Focus Day’ in 2013, Nigel Alexander, who now heads up SAI Global in South Africa, noted that even what he calls smallholder farmers’ “misconceptions” – such as “Food safety is only for exporting farms. Food safety relates to farm condition. If product is washed it is safe to eat. Food safety is too complicated. Food safety does not add value. Food safety is about paperwork. Food Safety is the retailers’ responsibility” (Alexander 2013, slide 16) – can act as a hurdle to overcome when trying to engage smallholder farmers with standards or certification programmes. As many food safety standards have originated in the United States or Europe, they can also lack relevance to the South African smallholder context. As previously stated, this has led to the recent creation of the entry-level of localg.a.p., which aims to account for this context and include more farmers in the process.

3.2.4 What factors help smallholder farmers conform to these standards?

As stated above, there is a dearth of information regarding the specific factors that hinder or contribute positively to a smallholder farmer’s ability to conform with entry-level localg.a.p. specifically or standards more generally. Fortunately, we can look to one example from a South African procurement and distribution company that has reported back on its experience with engaging smallholder farmers with a version of GLOBALG.A.P. to give some specificity to our literature review.

Louw et al (2008) acknowledge that development programmes may benefit smallholder farmers’ efforts to conform to a specific standard and develop skills. These efforts can manifest as multi-stakeholder programmes; contract farming with a retailer, processor, or commercial farmer; or more informal mentoring that can come from a relationship with a commercial farmer. In addition to improving technical skills through mentorship contracting arrangements, whereby a farmer has more certainty of a market, can create more stability for smallholder farmers’ cash flows as well. This may contribute positively to the costs associated with standards conformance (Maertens & Swinnen 2006; Wiggins 2012). As Kritzinger-van Niekerk notes,

“improved smallholder capacity to meet standards is no short cut to development. In many contexts, there remains unfinished business in addressing the old constraints to remunerative smallholder participation in markets, e.g. basic infrastructure, farmer organisations, access to finance, etc.” (2013: slide 20). Programmes should therefore strive to address issues such as market linkages, financial access, and infrastructure either within their design or, more likely, with complementary projects led by other relevant stakeholders (ECI 2012).

From 2008 to 2011, Freshmark, Shoprite Checkers’ fresh produce sourcing and distribution arm, trained and assessed 158 farmers in four countries, including South Africa, on an in-house standard based on GLOBALG.A.P. requirements. In 2012, ECI (Africa) Consulting (Pty) Ltd evaluated the success of the programme and submitted a final report on the project. According to the report, 66% of farmers involved in the programme were still actively supplying Freshmark at the time of evaluation. Sixty-one per cent of these active farmers had increased the rand value of their sales to Freshmark and some had started supplying other retailers as well (ECI 2012).

The report makes recommendations for future iterations or similar projects, in which it highlights several times the importance of understanding the abilities and needs of the specific beneficiary farmers as well as the involvement of these farmers and relevant stakeholders in the design of the project (ECI 2012). This could not only make implementation potentially smoother but also increase farmer engagement and long-term success of the initiative (ECI 2012). In the case of retailer involvement in a programme, “commitment by top management and the existence of a clear link between company strategy and the project are critical for success to be achieved” (ECI 2012:7).

3.3 Research methodology

3.3.1 Research approach and strategy

Given the lack of qualitative studies on the process of training and assessing smallholder farmers in various market standards in the southern African context, the STA project was conceived as an exploratory study and thus employed a mixed methods approach. Similarly to the BLE study, it was proposed that the study would take on a grounded theory approach, but this was abandoned during the process due to contextual, time, and funding constraints. Instead, the exploratory approach allowed for the assessment of unknown variables that were brought to the surface and categorised through qualitative inquiry.

The original research approach and strategy was completely abandoned once the team realised the complexities in the local context. Whereas the project intended to train 15 market-orientated smallholder farmers from two farms, 14 market-orientated and capitalist farmers from five different farms were trained. These farmers also required additional support to reach compliance. The original assessment was to take place three months after the first training, yet had to be postponed to eight months after the first training to give farmers sufficient time to come to terms with the newly required standards and prepare for the final assessment. Only two farmers managed to reach compliance in the end.

Also important to mention as part of the research approach is the range of stakeholders that participated in the study and their various roles:

- SPAR – a South African supermarket and the localg.a.p. programme owner who intends to eventually buy produce from smallholder farmers for their own local stores
- The Southern African Food Lab – the coordinating and research organisation interested in the training process and factors enabling and complicating smallholders’ localg.a.p. compliance
- Beerseun Boerdery – a local large-scale commercial farmer with a packhouse that buys produce

from smallholder farmers in the Mopani District,¹² and sells directly to SPAR

- SAI Global – the organisation that trained and assessed the smallholder farmers in localg.a.p.
- LIMA – a non-governmental rural development agency which provided two LIMA fieldworkers to facilitate the SAI global training and collect feedback post-training
- TechnoServe – an international non-profit that promotes business solutions to poverty, and that provided a fieldworker to support smallholder farmers post-training to reach compliance
- The group of 13 smallholder farmers – a combination of market-orientated and capitalist farmers from five different farms in the Mopani District (note that capitalist farmers were included in the sample by Beerseun Boerdery, although the original plan was to only target market-orientated farmers)

3.3.2 Research design, data collection methods, and research instruments

Given the nascency of the entry level of localg.a.p., the small sample available due to programme ownership constraints, and the lack of previous research, a theory-building case study approach allowed for a quick but in-depth view of the process, challenges, and successes of this new level of localg.a.p. Exploratory case studies are not meant to be conclusive, but are instead employed to prepare the groundwork for further research by providing information on a topic of which little is known.

The data collection processes covered the breadth of the event at hand, beginning pre-training and concluding post-assessment. As is common with case studies, the study employed a mixed method design, focusing mainly on qualitative data. Data was sourced from site visits to the farms (including interviews, transect walks, and observations), interviews with key stakeholders, and relevant documents such as training materials, reports from the final assessments, and a focus group discussion post-assessment. SAFL, SAI Global, TechnoServe, and the farmers collected and/or provided the data that was eventually analysed by SAFL.

3.3.3 Sampling

The study was meant to target 15 market-orientated smallholder farmers from two farms, as they were more likely to reach compliance than subsistence smallholder farmers, and could provide valuable lessons for future endeavours around market standard training. Although a non-random approach was meant to target market-orientated smallholder farmers, Beerseun Boerdery chose to sample farmers whom they had worked with before and whom they felt would be able to reach compliance, thus the sample ended up also including capitalist farmers. According to Cousins and Chikazunga (2013), capitalist farmers farm exclusively for profit, selling all of their produce to various markets. The profit from sales contribute very significantly to household income. Labour on their farms are hired, and mechanisation and capital intensity is high. These farmers typically have access to finance. Arguably these farmers are smaller versions of large-scale commercial farms in the country, but the number of capitalist smallholder farmers are unknown.

Originally 15 farmers from two farms were going to participate in the study, but unforeseen challenges and the involvement of a variety of stakeholders resulted in 14 farmers from five farms completing training. From the group of 14 trained farmers, only two capitalist smallholder farmers from two separate farms successfully reached localg.a.p. compliance. Beerseun Boerdery's selection of capitalist farmers was thus a fortunate mistake, which lend a lot of insights to the research conducted by SAFL.

¹² Beerseun Boerdery rents areas of farmland from the one group of farmers that were originally meant to make up half of the case study. Although it was assumed that Beerseun Boerdery would then also buy produce from this group, they instead selected more capitalist farmers they buy produce from to be part of the localg.a.p. training.

3.3.4 Data analysis methods

The data analysis began as soon as the final localg.a.p assessment was complete. Site visits and a focus group discussion with participating smallholder farmers were, in the end, the key data collection methods. Weekly reports from TechnoServe also proved informative. These documents were analysed by identifying key emerging themes, which were continuously checked in subsequent steps.

3.3.5 Limitations and delimitations

As qualitative research necessitates understanding complex, social phenomena, and grounded theory stresses the importance of participants' views, opinions, and experience of these phenomena, the research team members, and other stakeholders discussed in section 3.3.1, were instrumental in both research processes, as they collected, analysed and assigned value to the collected data (Leedy & Ormrod 2005).

Unfortunately many smallholder farmers dropped out after the initial training. Although their reasons have provided valuable feedback, as discussed in section 3.4.1, only four remaining farmers participated in the final focus group discussion after the final assessment. Their feedback could thus not be generalised to the entire group, as two of these farmers reached compliance and may thus not have had the same challenges as other farmers. Nevertheless, the final focus group discussion proved critical for identifying challenges when training smallholder farmers to reach compliance with market standards.

3.4. Research findings and analysis for the STA innovation

Although the main purpose of this section is to answer the research questions, the research process and valuable background information collected during the research process offer a more complete overview of the project. This section is thus divided into:

- an overview of the research process
- answers to the research questions.

Only the first two research questions are answered here, with some additional insights towards further overarching questions (see section 3.1.3).

The sources of data informing this section include:

- the original project proposal
- a post-training report from SAI Global
- telephonic conversations between the project manager and the SAI Global trainer
- the attendance register of the official SAI Global training
- assessment forms completed by smallholder farmers after the official SAI Global training
- notes from a field visit conducted by the project manager after the official training
- reports from a TechnoServe field agent supporting smallholder farmers to reach localg.a.p. compliance
- notes from a focus group discussion with smallholder farmers after the final assessment.

3.4.1 The research process

This section provides an overview of the research process through a chronological account of events. The narrative and claims draw on a number of data sources, as listed above, and mentioned where relevant.

As already mentioned, the project proposal planned the training of two groups of farmers from two separate farms, Thabina and Maitjene. The two farms, consisted of collective farming arrangements that were consequences of the land reform programme in South Africa. The theoretical training took place at the Maitjene head office on 8 October 2014.

According to the official post-training report from SAI Global, 15 farmers were trained, who mainly farmed on either Thabina or Maitjene. The signed attendance register, however, indicates that only 11 farmers attended, and that they were from five farms: Itemeleng Bamakhutjwa Co-operative, Maitjene, Movomoca, Shaai & Shaai Trading Enterprises, Solsa Farming, and Thabina. On reviewing the assessment forms completed by smallholder farmers after the training, it became clear that four farmers failed to sign the attendance register, as 15 forms were completed. These farmers were from Maitjene, Thabina, and Thomas Farm. See table 9 for an overview of the names of farmers who completed the training and the names of their farms.

Table 9: The smallholder farmers who attended the SAI Global training on 8 Oct. 2015

Farmer	Farm or enterprise
Theledi Albert Shokane	Itemeleng Bamakhutjwa Cooperative
Joyce Mmola	Itemeleng Bamakhutjwa Cooperative
Johannes Magomane	Maitjene
Hendrik Neethling	Maitjene
Robert Motshana	Maitjene
Brighton Musingakobi	Maitjene
Ferao Mebongo	Maitjene
John David Tuuyawana	Movomoca
Agnes Nwyawenah	Movomoca
Oupa Shaai	Shaai & Shaai Trading Enterprises
Solly Letsoalo	Solsa Farming
Salmima Magono	Thabina
Thelma Maleyana	Thabina
Irene Bvuma	Thabina
Thomas Malapani	Thomas Farm

Of the 15 farmers, five were from Maitjene and three from Thabina. It is, however, important to note that Mr Neethling from Maitjene is the farm manager, and cannot be considered a smallholder farmer himself. Therefore, a total of seven smallholder farmers were trained as originally planned, with an additional seven farmers from six unplanned farms joining the training. The farmers from Maitjene and Thabina could be considered market-orientated smallholder farmers in loose and tight value chains, whilst the rest of the farmers most likely fall under the capitalist smallholder farmer category.

The four non-farmer attendees who signed the training attendance register included two LIMA fieldworkers who were supposed to conduct the post-training interviews, one employee of Beerseun Boerdery, who specifically works in their packhouse, and the manager of Ofcolaco Packers, who acted as an interpreter.

According to the official SAI Global post-training report, using “GlobalG.A.P 4.0-2 as a reference, and Entry Level localg.a.p., all Farm Base, Crop Base, and Fruit and Vegetable control points and criteria were covered”. The training materials consisted of study manuals (control points, general rules and regulations, and a checklist), a visual PowerPoint presentation, and group discussions. The knowledge areas discussed included:

1. Product safety vs product quality
2. Background for good agricultural practices and food safety management systems
3. Differences between localg.a.p. and GlobalG.A.P
4. localg.a.p. structure and scopes
5. Basic risk assessment
6. localg.a.p. control points and criteria
7. What a chemical storage facility should look like
8. Basic record keeping
9. Removal of empty chemical containers.

The SAI Global report also states that the training concluded with a question and answer session, and that the next day was spent visiting the farms to determine the needs of the project.

Upon analysing the completed smallholder post-training assessment forms it became clear that many smallholder farmers misinterpreted the questions, bringing the facilitation of the post training assessment by LIMA field workers into question. Nevertheless, some comments were still useful including answers to the hardest and easiest required changes to reach localg.a.p. compliance, and the general recommendations to improve the training.

Thirteen farmers provided valid answers to the hardest required changes to reach localg.a.p. compliance. The number of farmers listing each ‘hardest change’ is indicated in brackets:

- Access to enough finance to make the necessary changes (3)
- General compliance to the entire set of localg.a.p. rules (2)
- The required facilities that must be built for compliance (2)
- The hygiene of labour (2)
- The general training of labour (2)
- The correct application of chemicals (1)
- The interpretation of localg.a.p. documentation (1).

Only two farmers correctly answered the question about the easiest required changes to reach localg.a.p. compliance. The one stated that adhering to hygiene requirements would be easy, whilst the other stated that the safety requirements would be the easiest. One farmer did not answer the question. Twelve farmers misinterpreted the question and answered it by naming things that would make reaching localg.a.p. compliance easier or by stating how compliance would make farming easier. Five farmers stated that complying with the rules would make reaching compliance easier. Two farmers were more specific and stated that record keeping will make it easier to reach compliance. The rest of the farmers named external influences that would make reaching compliance easier including continuous training (mentioned by two

farmers), regular farm visits to check up on progress (mentioned by one farmer), and access to finance (mentioned by one farmer). The last farmer answered the question by stating how localg.a.p. compliance would make farming easier and stated that it would increase market access.

The most useful data collected through the post-training assessment forms were recommendations on how to improve the training in the future. Thirteen farmers answered this question correctly. The number of farmers mentioning each recommendation is indicated in brackets:

- The training material and presentation needs to be less technical and adjusted to meet less educated smallholder farmers on their level of understanding (6)
- The theoretical training needs to be accompanied by farm visits (2)
- The training needs to be split up into smaller parts over six months and happen at regular intervals (2)
- The information needs to be translated into the local languages (1)
- More information on general farm management needs to be included (1)
- More farmers must be included in the training to improve collective knowledge for farmer-to-farmer support (1)

Although these recommendations were given, all but one farmer scored the training 10 out of 10, expressing that they were very satisfied with the training. This contradicts the reports by the four farmers attending the final focus group discussion after the localg.a.p. assessment. Their feedback was much more critical:

- The 2,5 hours of training was not sufficient. The farmers thought at least two days would be required to get through the material in a meaningful way.
- The presenter seemed unprepared, as he just read through the slides without engaging the group or allowing for questions. He was also not fluent in English, which created a language barrier.
- The farmers would have liked to see more practical work, including exercises of how to complete production and chemical application records.
- The farmers would like to write a small test at the end of the two days to check their learning.
- The farmers were concerned that those who were illiterate would not be able to complete the training. They suggested that the material be revised to unpack each issue and that illustrations should be included similar to the Bayer fertiliser instruction manual.
- The literacy issues should also be considered within the actual localg.a.p. requirements, as their labour would more likely be able to follow illustrated instructions than written signs about hygiene and chemical applications.
- The farmers suggested that the localg.a.p. training include methods of training other farmers and labour, so that the farmers can help each other with the requirements.
- The farmers also said that they would need a contact person to consult whilst preparing for the final assessment, and would appreciate monthly contact sessions.

SAI Global conducted a pre-audit on 18 and 19 November 2014. Maitjene, Thabina, Shaai & Shaai Trading Enterprises, Itemeleng Bamakhutjwa Cooperative, and Solsa Farming were visited. According to the report, the following non-conformacy issues were identified:

For Maitjene:

- No water testing had been done

- There was no evidence to prove that pre-harvest intervals had been followed
- Fertiliser and pesticide product names were displayed, but not the active ingredients
- There was no hand washing facility
- There was no evidence of the implementation of localg.a.p. requirements.

For Thabina:

- SAI Global did not receive the self-assessment forms required after the October training
- Labour had not received any form of hygiene training
- There was no evidence of the implementation of localg.a.p. requirements.

For Shaai & Shaai Trading Enterprises:

- SAI Global did not receive the self-assessment forms required after the October training
- There were no hand washing facility or field toilets
- There were no records of chemical applications to crops
- There was no evidence of the implementation of localg.a.p. requirements.

For Itemeleng Bamakhutjwa Cooperative:

- SAI Global did not receive the self-assessment forms required after the October training
- Labour had not received any form of hygiene training
- The chemical store required maintenance and there was no designated area for fertiliser storage
- There were no records of chemical applications to crops
- There was no evidence of the implementation of localg.a.p. requirements.

Solsa Farming was visited, but there was no one present and the farm gate was locked. SAI Global could thus not conduct a pre-assessment. The conclusion of the SAI Global report was that although the farmers had received training, there was no evidence indicating that the farmers were preparing for a final localg.a.p. assessment. The farms presented a food safety risk and it was thus suggested that the final assessment be postponed from January 2015 to April 2015.

Background and developments on Maitjene and Thabina farms

In November 2014, the STA project was handed over to a new project manager. In order to come to terms with the project, she visited Ofcolaco on 2 December 2014 and spoke to one of the Beerseun Boerdery farmers, as well as one Thabina and two Maitjene farmers. She wrote a report explaining the history between Beerseun Boerdery and the two collective farming enterprises and identified why farmers had not been actively implementing the required changes to reach localg.a.p. compliance. Below are excerpts from her report.

Maitjene

The land given to the Maitjene group after a successful land claim included a farm that Beerseun Boerdery was already leasing from the pre-claim owner. The Maitjene group decided to continue the lease with Beerseun Boerdery. The group did this with most of the 7 500 ha they received as an outcome of the claim. Most of the land was leased back to the previous owners or tenants. Although the claim originally only had 246 claimants, at the time of the site visit there were more than 1 800 beneficiaries.

When the Maitjene group wanted to build an office somewhere on the claimed 7 500 ha, Beerseun Boerdery was the only willing tenant. Furthermore, Beerseun Boerdery built the Maitjene office at its own expense. As a considerable amount of land in the area belonged to the Maitjene group, Beerseun Boerdery felt that good relations with them were imperative. The Maitjene group also negotiated 6 ha at the front of the farm leased to Beerseun Boerdery for their own farming use. This production area was expanded to 11 ha at the time of the site visit.

The Maitjene group supplied all its vegetable outputs to the Northpark packhouse owned and run by Beerseun Boerdery. The Maitjene production manager explained that although most of the Maitjene land was under production by its previous owners and tenants, approximately 75 ha was still available for expansion of production by Maitjene beneficiaries. SPAR was mostly interested in working with the smallholder farmers cultivating this 75 ha.

Thabina

Thabina is located approximately 20km away from Beerseun Boerdery. One of the Beerseun Boerdery farmers was chosen as the Young Farmer of the year in 2010/11. This news was reported in the local paper and Thabina approached Beerseun Boerdery to ask if it would enter into a mentoring programme with them. Beerseun Boerdery agreed to do so and began monitoring Thabina in 2011 at a cost of R22 000 per production month from March to December.

For the first three years (2011–13) Beerseun Boerdery permanently employed a farmer to live and work with the Thabina beneficiaries. The manager's package, which included a house, bakkie, staff and salary, came to approximately R40 000 per month, whilst Thabina paid only R22 000 per month as a mentoring fee. Thabina did not produce enough vegetables to supply the Northpark packhouse with the quantities to justify keeping a permanent mentor on the farm. Consequently the mentoring structure was changed at the beginning of 2014 to twice-weekly visits. Beerseun Boerdery also realised that an exit strategy was necessary and by reducing their involvement wanted to build sustainable capacity within the group to continue independently once they stopped mentoring them.

Unfortunately the change in mentoring structure did not go according to plan. Thabina began experiencing significant challenges and the Beerseun Boerdery farmers decided to withdraw their support completely at the end of the planting season in December 2014. A number of issues contributed to their decision:

- A severe lack of commitment from beneficiaries and a lack of accountability for non-performance challenged further support from Beerseun Boerdery.
- Internal institutional issues prevented Thabina beneficiaries from producing optimally on the claimed land.
- Thabina complained on numerous occasions that Beerseun Boerdery was stealing money from them and misrepresenting their packed outputs. Consequently Beerseun Boerdery had quit their mentoring position more than twice before theSAFL site visit in December 2014.
- Beerseun Boerdery was in part responsible for managing the funds Thabina received from government. With guidance from Beerseun Boerdery, Thabina used the grant to build three centre pivots and to buy a variety of state of the art equipment, including two John Deer tractors. The remaining funds were held in a bank account to pay for running costs. The Beerseun Boerdery financial manager had been appointed to make payments from an online account. He required signed permission from two Beerseun Boerdery farmers, one Thabina board member, and two beneficiaries before making any payments. Cheques also had to be cleared in this way. This set-up possibly contributed to:
 - Thabina's continued dependence on Beerseun Boerdery

- The fact that some Thabina members felt that Beerseun Boerdery was stealing from them.
- Thabina only paid monthly mentoring fees for two months in 2014.

When the new SAFL project manager visited the Thabina office and storage area, the new government extension officer introduced himself to her. Although a Thabina farmer and Beerseun Boerdery later confirmed that Thabina consisted of 60 ha, the extension officer thought it was 30 ha and did not know how many farmers he was responsible for. He estimated 100 farmers, but said it changed weekly. He also said that government did not currently have any funds to support these farmers. His role on the farm seemed unclear.

The Thabina farm production manager was reluctant to go into the challenges on the farm, indicating that she was uncomfortable talking in front of labour engaged in packing gem squashes. She also mentioned that the administration manager for Thabina had recently quit. She was uncertain if anyone would step in to take his place.

The production manager explained that they were currently producing beans, baby corn, butternut and gems, of which most were sold to Northpark, the Beerseun Boerdery packhouse. Although Thabina had 75 beneficiaries, only six were working on the farm. Most beneficiaries were too old to work and instead sent their children or grandchildren to work. According to Beerseun Boerdery this had contributed to the politics and lack of accountability at Thabina.

Programme change and final assessment

Early in 2015 the internal politics and consequent challenges on Thabina farm, led SPAR to the decision to cut them from the programme. Those who received training in October 2014 were no longer supported and they would not be considered for the final assessment.

The SAFL site visit and report led the team to make a decision to change the original design of the programme. It had become clear that the farmers would require additional support if they were to reach localg.a.p. compliance. Consequently, it was agreed that SPAR would contract TechnoServe to do weekly visits in order to prepare the farmers for their final assessment. As it was unclear at that time which of the farmers were still committed to the programme, the TechnoServe field officer's first activity was to distribute localg.a.p. self-assessment forms to the farmers. She explained that if they wanted to continue with the project they had to complete the form in order for her to gauge their progress and the support they required from her.

These self-assessments exposed further confusion amongst farmers, as it became clear that farmers outside those listed in table 9 had received training previously in localg.a.p. as part of other supermarket projects. The TechnoServe field agent then used the original attendance register to collect forms only from those who attended the October 2014 training. This revealed that only Solsa Farming, Itemeleng Bamakhutjwa Co-operative, Movamoca, and Shaai & Shaai Trading Enterprises were willing to continue with the programme.

The TechnoServe field agent started visiting the six smallholder farmers involved from these four remaining farms on a weekly basis. Due to public holidays at the time, as well as the field agent's other responsibilities, it was not always possible to visit all four farms on a weekly basis. A lack of Internet connectivity in the area also meant that only one farm site assessment report was written and submitted to SAFL. Nevertheless, the SAFL project manager and the TechnoServe field agent had regular telephonic conversations to discuss the farmers' progress and gauge their readiness for the final assessment.

In April 2015 SPAR decided that they would not enter into relationships with farmers that were not part of the original proposal that aimed to include smallholder farmers in loose and tight value chains. SPAR also decided to sample new farmers at that time, train them, and postpone the final assessment to the end of May 2015. SAFL then took over the cost of the extension support and final assessments of the remaining four farms. Although these four farms had to remain part of the SPAR group to register as localg.a.p. farmers, it was made clear to them that SPAR would not commit to purchasing produce from them if they reached compliance. SPAR might do so in the future, but had no obligation towards these farmers, as they were wrongly selected for the October 2014 training.

The Food Lab project manager visited the TechnoServe offices in Letsitele on 30 April 2015 to clarify what had happened and to explain to the farmers that SAFL would now take over their costs. The TechnoServe field agent, and all the farmers except for the two from Movamoca attended the meeting. At this stage the farmers from Movamoca decided to withdraw from the final assessment, leaving only four farmers from the three remaining farms in the final group. The TechnoServe field agent explained that Movamoca farmers had not been planting anything and that there would not be anything to assess at the end of May 2015.

SAI Global conducted the final assessment on 26 and 27 May 2015. Only Itemeleng Bamakhutjwa Cooperative and Shaai & Shaai Trading Enterprises completed the assessment, as there was no one to receive the SAI Global inspector on Solsa Farming on the day of the assessment. Solsa Farming was visited on both days of the assessment without any success. The TechnoServe field agent then explained that Solsa Farming also had planted nothing since the October 2014 training.

The final assessment reports indicated that both assessed farms had some final changes to make before the end of August, in order to reach compliance. These included:

For Itemeleng Bamakhutjwa Cooperative:

- A lacking recording system for the production unit
- Hygiene training was done two years ago, and there were not enough displayed hygiene instructions for labour
- No operator details were given on the fertiliser instructions
- No operator details were given on the spray instructions
- The application machinery was not mentioned in the application records
- No pre-harvest intervals were recorded for plant applications in the spray records.

For Shaai & Shaai Trading Enterprises:

- Information needed to be added to the farm map with records of various production units
- As nothing has been planted, the traceability procedures could not be tested.

In contrast to the pre-assessment report, the final report clearly states that these two farmers would be able to meet the requirements of localg.a.p. if they are given support with basic hygiene training and development, and record keeping. Being the only two remaining farmers in the group, and the only two to have a chance of reaching compliance, it's important to consider their farming enterprises.

Drawing on the one TechnoServe farm visit report, the Itemeleng Bamakhutjwa Cooperative has access to 530 ha of open field with drip irrigation. There is also a fence around the farm. Water is pumped directly from a canal. During the farm visit, mangoes, litchis and cabbages were being cultivated. During harvest season the farm employs 20 seasonal labourers. Most produce is supplied to Northpark and Ezemvelo packhouses. Itemeleng would thus fall under the smallholder capitalist farming category.

Shaai & Shaai Trading Enterprises operates on a 208 ha farm acquired through a land claim. The farm also has drip and micro sprinkler irrigation, and is fenced. There are a number of structures on the farm including a brick family house, a packing shed, and a chemical storehouse. Water is pumped from a river. Crops under cultivation during the visit included bananas and mangoes. When harvesting, Shaai & Shaai Trading Enterprises employs 10 seasonal workers. Produce is sold to local markets and to the Tshwane Market in Gauteng. Shaai & Shaai Trading Enterprises would thus also fall under the smallholder capitalist farming category.

3.4.2 Answering the research questions

Drawing on the research narrative and findings above, this section answers the two key research questions:

- What conditions helped the identified farmers attain conformance or a proportion of conformance with the entry level of localg.a.p. before and after training?
- What are the challenges that prevent the identified farmer from attaining conformance with the entry level of localg.a.p. before and after training?

Before answering these questions, it is important to distinguish between market-orientated smallholder farmers in loose and tight value chains, and capitalist farmers, as the differences between these two categories explain some of the conditions and challenges referred to in the research questions. In accordance with the definitions introduced earlier in 3.1 and 3.3.3, the main differences between market-orientated (grouping those in loose and tight value chains) and capitalist smallholder farmers are that the farmers in the latter group:

- have higher degrees of mechanisation, capital intensity, and access to finance
- employ hired labour and not family members
- sell all of their produce to markets for profit and not household consumption

As will be discussed in the next sections, these conditions enabled the two capitalist farmers who successfully reached localg.a.p. compliance to do so. The fact that market-orientated smallholder farmers did not have easy access to finance, high degrees of mechanisation and capital intensity, or hired labour, led to certain challenges that prevented these farmers from reaching localg.a.p. compliance. The first research question is thus answered according to the experiences of capitalist smallholder farmers, and the second according to the experiences of market-orientated farmers.

Conditions that helped the capitalist smallholder farmers attain conformance or a proportion of conformance with the entry level of localg.a.p. (before training and after training)

The two farmers who attained a proportion of conformance with entry level localg.a.p. were both capitalist farmers with access to finance, fencing, irrigation infrastructure, and built storage facilities. The market-orientated smallholder farmers who did not attain conformance were farming without these systems in place. Furthermore, as discussed in the literature review, outgrower programmes have the potential to support smallholder farmers by providing market linkages, and either personally or in collaboration with support organisations, provide smallholder farmers with financial access, and infrastructure. It thus seems that at least:

- access to finance and
- some basic infrastructure such as fencing and irrigation systems

help smallholder farmers attain conformance.

Some of the other aspects the capitalist farmers reported as helpful during the process included:

- continuous training support with regular farm visits to check up on progress (from TechnoServe)
- record keeping templates (supplied by SAI Global, but explained and monitored by TechnoServe)
- the fact that SAFL paid for the final assessments

Challenges that prevented the market-orientated smallholder farmers from attaining conformance or a proportion of conformance with the entry level of localg.a.p. (before and after training)

According to the literature review, the key challenges smallholder farmers face when wanting to reach compliance include:

- a lack of knowledge and extension support
- the cost of the infrastructure required for compliance
- the cost of the final assessments
- international standards that are not relevant for specific local contexts

The narrative outlined in the 3.4.1 clearly confirms that the smallholder farmers who formed part of this research project also faced these challenges. The training by SAI Global attempted to address farmers' lack of knowledge, but as reported before and further discussed in the next section, the training approach and materials require some drastic changes in order to successfully train smallholder farmers. It's also important to note that the extension support by TechnoServe only formed part of the training after the first pre-assessment, but clearly should form part of any future localg.a.p. programmes. As the capitalist farmers had access to finance, they could afford to build the necessary infrastructure required for compliance, but this was not the case for the market-orientated farmers. As part of localg.a.p. training farmers thus either need access to finance or localg.a.p. requirements need to be adapted to allow smallholder farmers to incrementally build up their infrastructure as they grow their farming enterprises. More affordable infrastructure options would also help solve this challenge. The same can be said for the cost of final assessments. Although localg.a.p. typically belongs to a corporate owner such as SPAR, farmers would eventually need to pay for assessments as the progress towards GLOBALG.A.P.. It may be more sustainable to train local assessors to be local entrepreneurs and bring down the cost of assessments whilst also empowering local communities and building the local economy. As this research did not analyse the actual content of localg.a.p., it is not possible to comment on its relevance for the local context of the farmers who participated in the study. However, as discussed in the next section, the format of localg.a.p. content should be adapted to accommodate local realities such as illiteracy and farmers who do not speak English.

Additional challenges smallholder farmers faced included:

- a lack of understanding of the overall project, who the various stakeholders were, why they were chosen as beneficiaries, and that the project was voluntary
- too technical language in the localg.a.p. training materials and actual training
- difficulty with record keeping

3.5 Research conclusions and recommendations

This research project clearly showed that the approach taken to train smallholder farmers to reach local.g.a.p. compliance to date has been unsuccessful. However, the process also helped identify some key insights.

Firstly, capitalist smallholder farmers are more likely to reach localg.a.p. compliance if programme owners are not willing or able to provide or enable access to funding. First working with capitalist smallholder farmers to refine the training process towards reaching localg.a.p. compliance may be a better approach, however with continuous extension support and access to finance, market-orientated smallholder farmers could also reach compliance.

This study identified some key factors that must form part of future localg.a.p. programmes if they are to be successful. These may be most useful for programme owners such as SPAR. They include:

- working with farmers who already have access to finance and some basic farm infrastructure such as fencing and irrigation (typically capitalist smallholder farmers), or a willingness to supply smallholder farmers with said finance and infrastructure (typically market-orientated smallholder farmers)
- clear communication of the project, stakeholders involved, and responsibilities of each stakeholder group, including participating smallholder farmers
- a programme owner or other support agency that pays for the final assessments, or reduced assessment costs
- context-appropriate standard requirements
- appropriate training materials (including record keeping templates) and training processes
- continued extension support from the first training to the final assessment

Some basic recommendations for organisations training smallholder farmers in localg.a.p. include:

- training material needs to:
 - be context-specific
 - include basic record keeping templates
 - use less technical terms to communicate standard requirements
 - possibly be translated into local vernacular
- training should be broken down into more sessions over a period of time so that farmers have time to come to terms with new learnings, implement them, and be assessed at the next training session
- training needs to be followed by continuous extension support, preferably by someone who has been sufficiently trained in localg.a.p. and who can speak the local vernacular

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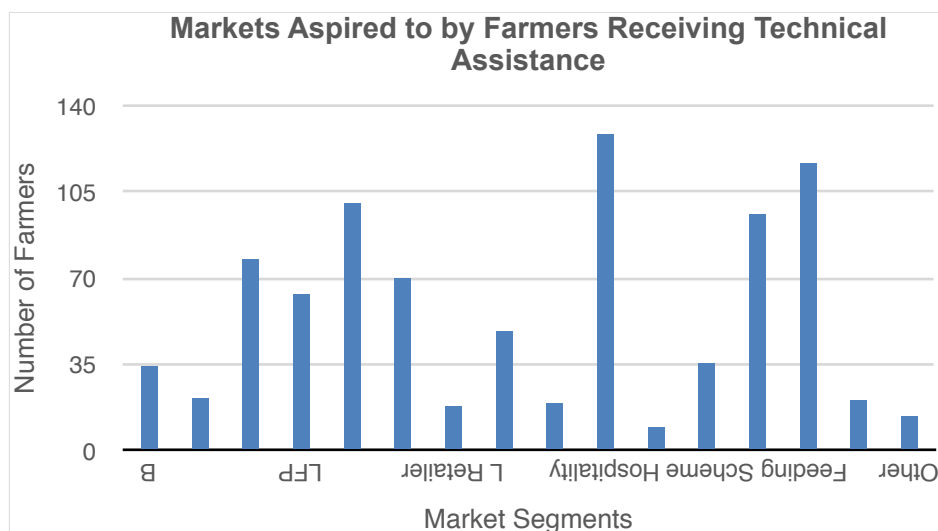
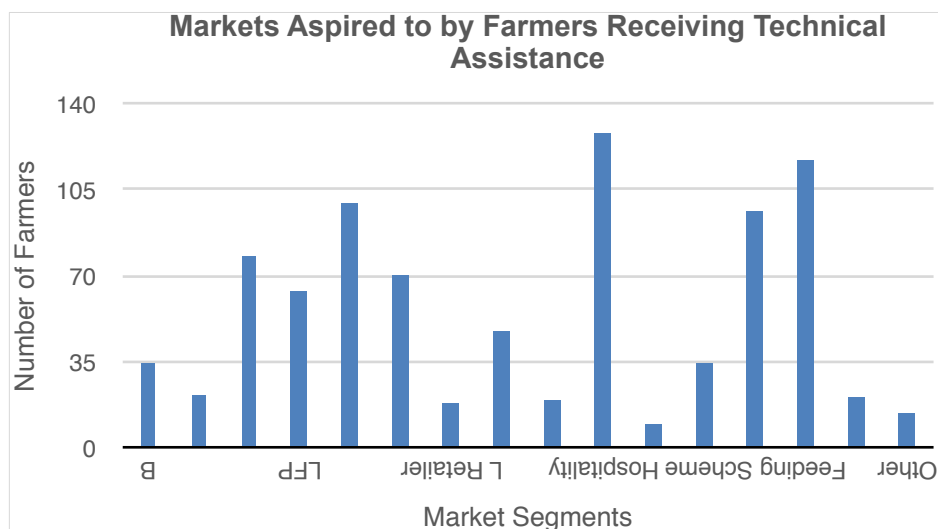
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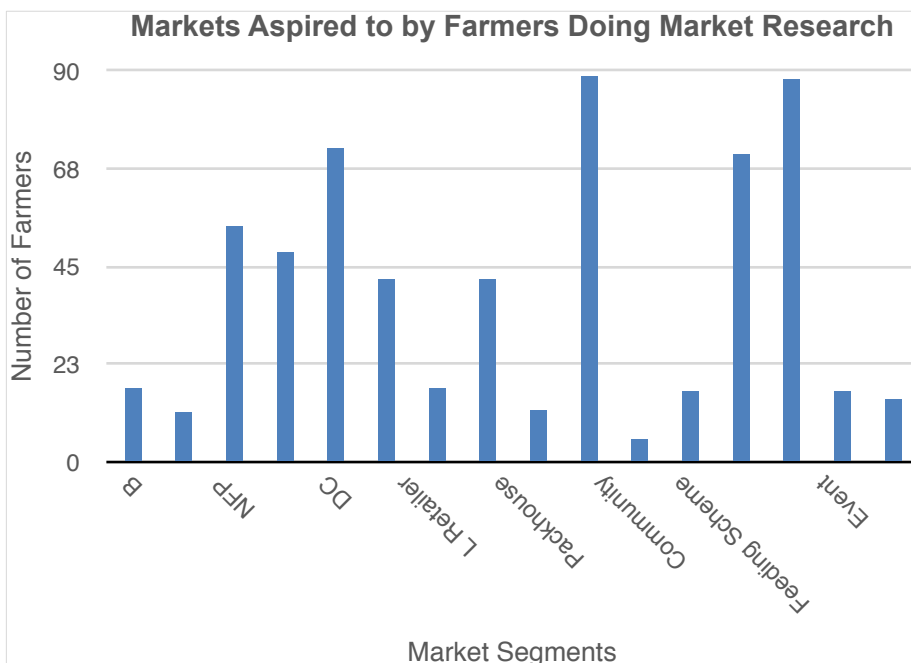
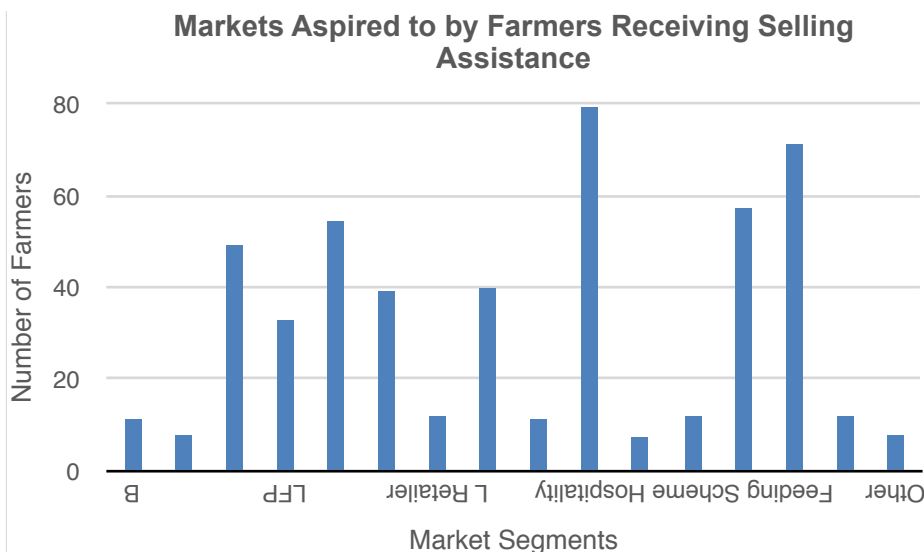
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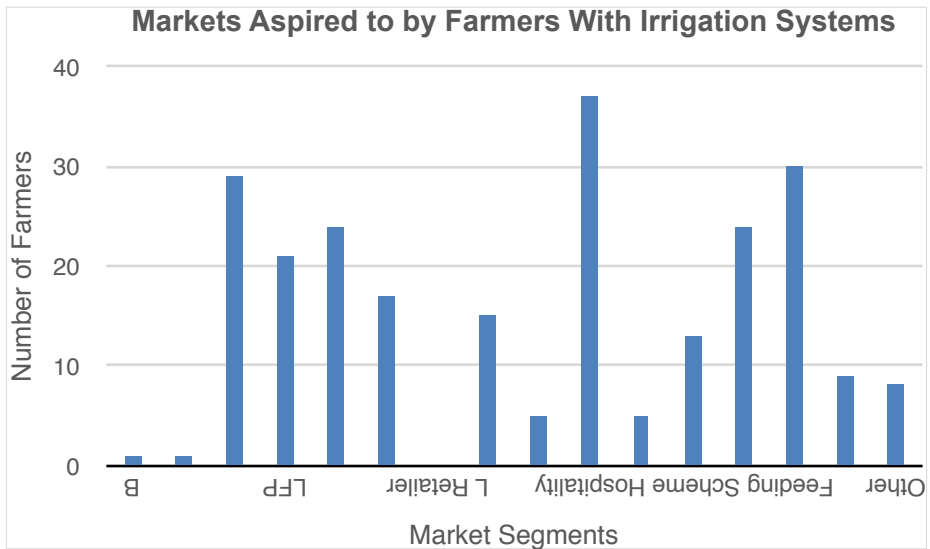
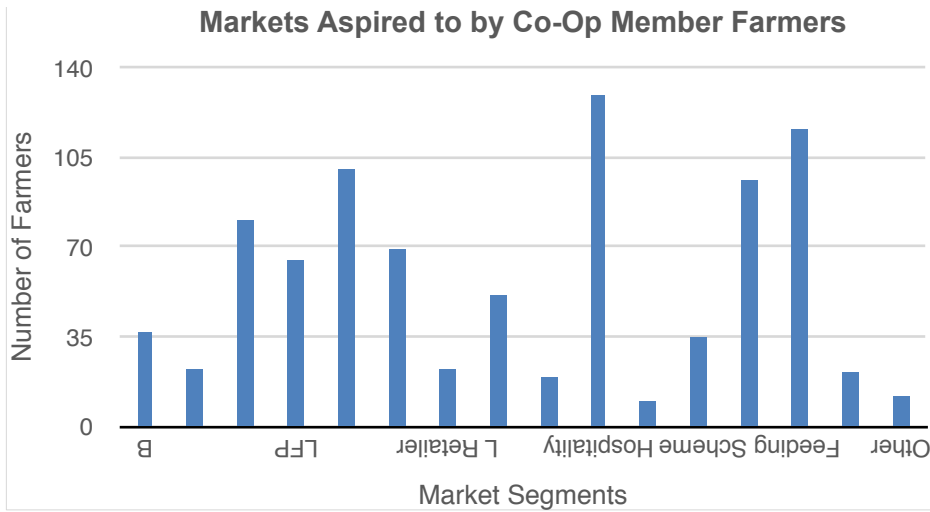
¹³ See the SAFL website for more on this project: <http://www.southernafricafoodlab.org/-supporting-smallholder-agriculture.html>.

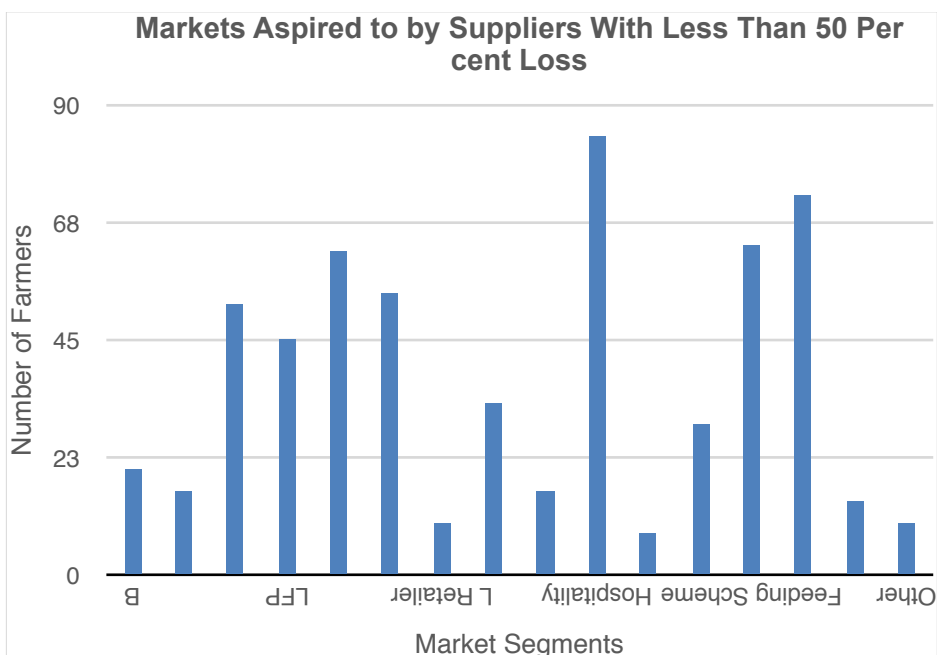
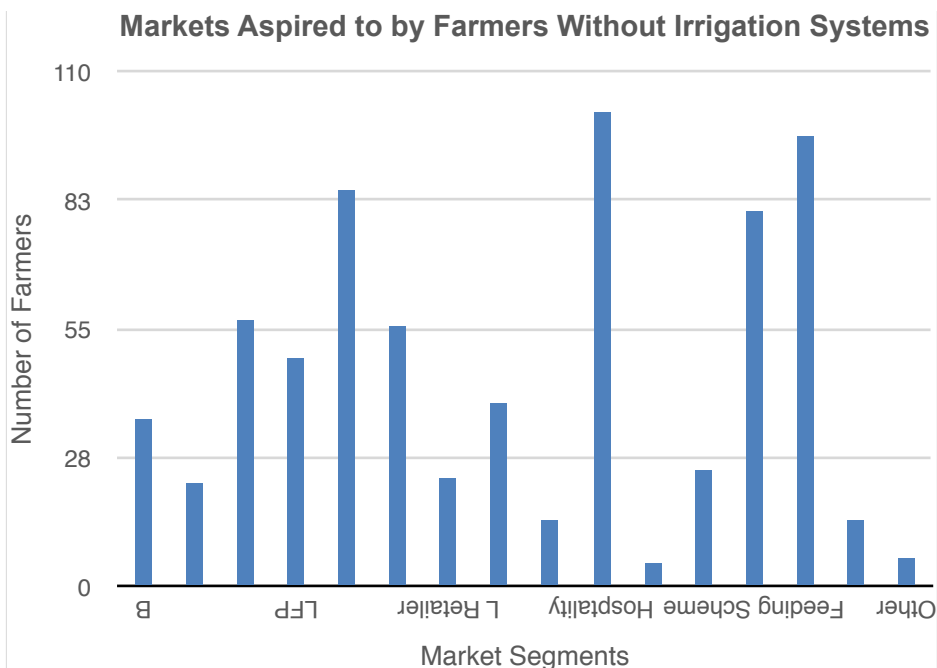
APPENDICES

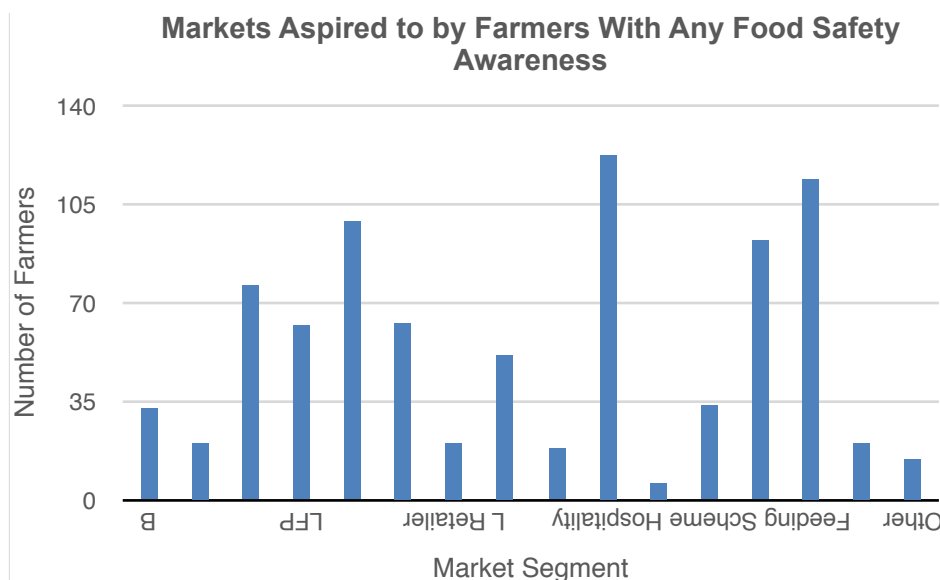
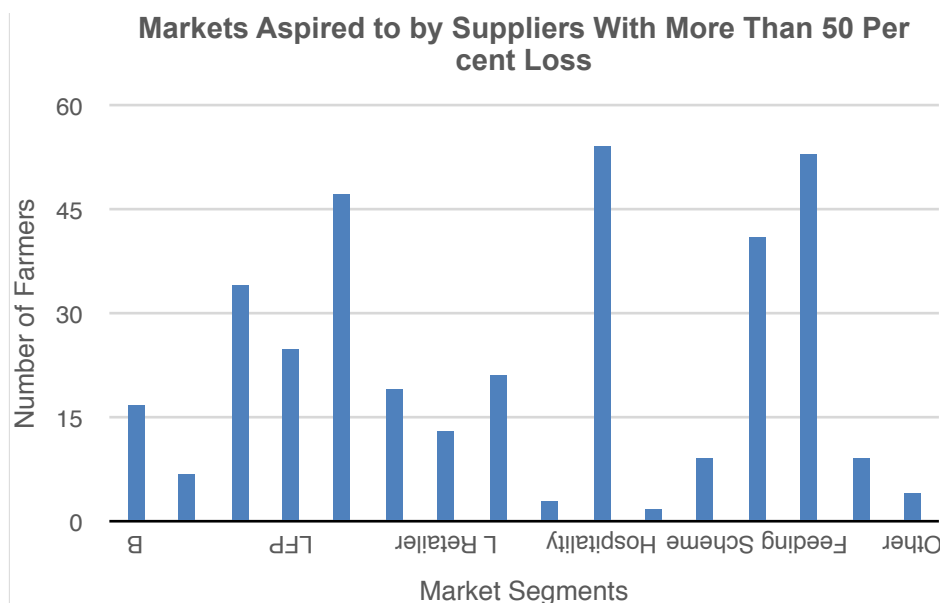
Appendix A: Graphs linking smallholder farmers' aspiring markets to whether or not they received technical and selling assistance, did market research, belonged to a cooperative, had irrigation, sold more or less than 50% of their produce, had food safety awareness, and received food safety training

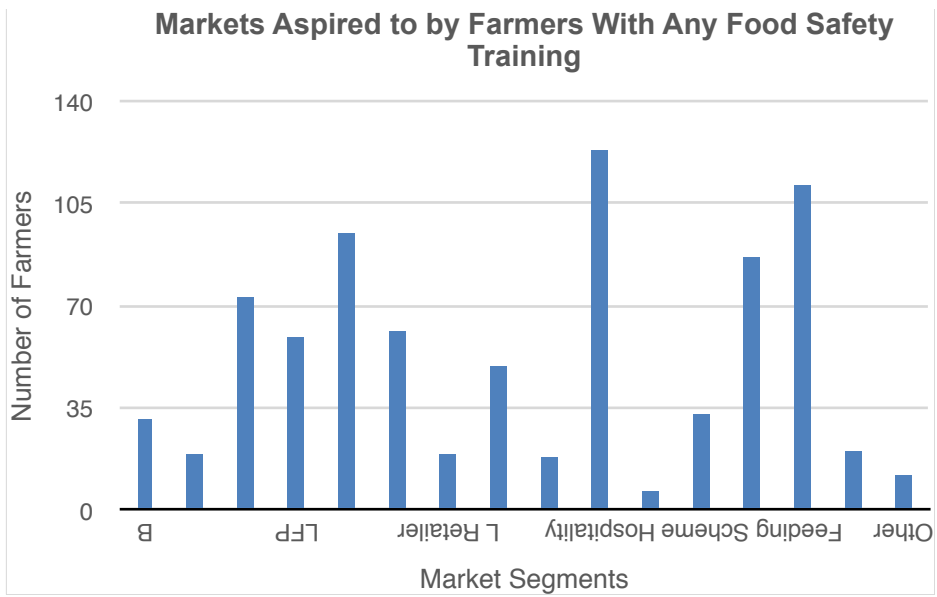












Appendix B: Graphs linking smallholder farmers’ top ten markets they would like to access in the future with the challenges identified by those same farmers as related to entering new markets

