

**THE EVALUATION OF INCLUSIVE BUSINESS MODELS FOR SMALLHOLDER
MARKET ACCESS: TWO SOUTH AFRICAN CASE STUDIES**

by

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DECLARATION

I, Etienne Kruger, declare that this dissertation, which I hereby submit for the degree Master of Economics (Agricultural Economics) at the University of Pretoria, is my work and has not been submitted by me for any other degree at this or any other tertiary institution.

SIGNATURE:.....DATE:.....

DEDICATION

I dedicate this to my parents, Jan and Petro Kruger.

ACKNOWLEDGEMENTS

First, I would like to thank the Lord Jesus Christ for providing me the determination, the patience and the courage to finish this dissertation. Without Him, it would have been an impossible task. Proverbs 16 verse 3 says, “Commit your actions to the Lord, and your plans will succeed.”

I want to thank everyone who has given inputs along this journey of completion. I want specifically to highlight the following persons who have played an exceptional role during the development of this research study:

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ABSTRACT

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Statistics South Africa has estimated the South African population at more than 55 million people. The World Wildlife Fund has estimated that, with a population growth of nearly 2% per year, the population could reach nearly 80 million by the year 2035. South Africa, with its growing population, is seeing a changing agro-food landscape in accordance with global changes.

It is important to note that the South African agricultural sector takes on a form that is dualistic in nature, spread between large-scale commercial farmers and small-scale, emerging farmers. These small-scale farmers often face numerous constraints, which curb their market access. Without small-scale farmers entering the value chain, there is limited participation of smaller agro-processing organizations in the downstream value-chain. Following a description of these critical constraints faced by small-scale farmers in a country like South Africa, this dissertation focuses on a method to capture the true responses from respondents in two case studies. In the first part of the objective, the analysis focuses on value-related questions applied to different respondents in each case study. These value-related questions relate to the following:

- The main advantages
- The main disadvantages
- The major lessons learned
- The major challenges experienced

After the value-related analysis, further analysis of the specific objectives captures the true impacts of the model and evaluates how the current constraints are eliminated. The impacts and constraints are:

Impacts of participating in the agro-processing model:

- *“Access to resources and knowledge*
- *Economic and social gains*
- *Environmental and health impacts”*

Addressing the constraints faced by the small-scale farmers:

- *“Weakness of support services*
- *Prevailing farming structure*
- *Access to finance and risk management*
- *Producer knowledge”*

After studying previous literature and the current analyses, it became increasingly clear that it is important for big business to engage in transactions with small-scale farmers. Critical impacts for small-scale farmers as specified above and examined in more detail in Chapter 4 through inclusive business models will be beneficial to small and rural communities. They will improve food security on small and commercial scales, and ultimately lead to the development of agricultural land that was previously not utilized or underdeveloped.

In conclusion, it can be said the proposition can be supported that a small- and medium-scale agro-processing model could be accepted as an alternative inclusion mechanism that would effectively address the constraints faced by small-scale farmers when entering high-value food markets. However, further research is recommended in this area.

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LIST OF ACRONYMS

AAACP	All Africa Caribbean Pacific Commodities Program
APMC	Agricultural Produce Market Committee
CGIAR	Consultative Group on International Agricultural Research
CSM	Civil Society Mechanism
DAFF	Department of Agriculture, Forestry and Fisheries
EDD	Economic Development Department
FAO	Food and Agriculture Organization of the United Nations
F&A MNE	Food and Agribusiness Multinational Enterprises
GDP	Growth Domestic Product
GMED	Growth-Orientated Microenterprise Development program
HOH	Harvest of Hope
HVAP	High-Value Agricultural Products
IAASTD	International Assessment of Agricultural Knowledge, Science and Technology for Development
IBM	Inclusive Business Models
ICA	International Co – operative Alliance
IFAD	International Fund for Agricultural Development
NGO	Non-Governmental Organizations
NPC	National Planning Commission
OED	Oxford English Dictionary
SME	Small and Medium Enterprise
SSA	Sub-Saharan Africa
TIPS	Trade and Industrial Policy Strategies
TTI	Timbali Technology Incubator
UN	United Nations
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development
WDR	World Development Report

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

The human population is vastly expanding and it is estimated that by 2050 it could reach 9.6 billion, 6.3 billion of whom are expected to live in cities (UN Population Division, 2014). With this rapid expansion of the human population, it is clear that the demand for agricultural products is increasing and that food systems are being transformed by urbanization (Vellema, 2015).

Since the 1980s, agricultural activities have become more diverse and complex, particularly in developing countries. This is mainly due to the globalization of production and trade, gradual natural resource degradation, the effects of climate change, and the development of high-value agricultural products in developed countries (Amador & Vera-Cruz, 2013). With the global population increasing rapidly and the changes in the food systems becoming more evident, there is a *“growth in demand for high – value food commodities that creates opportunities for farmers especially small – scale farmers to diversify towards commodities that have a potential for higher returns to land, labour and capital”* (Birthal, Jha, & Singh, 2007). Small-scale farmers could benefit from the diversification into high-value food commodities, and benefit from the rapid expansion of global food demand. It is an ideal opportunity to include small-scale farmers in formal value chains (Vellema, 2015). However, research has identified that small-scale farmers lack certain abilities, such as access to resources, credit, and technical skills, that are required to participate in these formal markets. There is an ever-present concern over the capabilities of small-scale farmers to participate in markets, due to their lack of formal market access, finance, inputs, technology, and technical and extension services (Mkhabela, 2013). This forms part of the troubling concern relating to small-scale farmers’ abilities to participate effectively in existing commercial value chains. Unfortunately, the high fixed costs of transactions when dealing with multitudes of small-sale farmers are higher than when dealing with a few larger farms (Vellema, 2015). When this problem is not dealt with, it leads to a dual system of capitalized larger farms delivering to heavily regulated commercial supply chains on the one hand, and small farms, which depend primarily on family labour, delivering to local markets on the other hand (Vellema, 2015). In the following section, the South African agricultural context is discussed with an emphasis on the small-scale

farming environment. This will lead to the problem statement, objectives and the dissertation's proposition.

1.2 THE SOUTH AFRICAN AGRICULTURAL ENVIRONMENT

With a current population of over 55 million people (Statistics South Africa, 2017), it is estimated that with a 2% growth rate per year, the South African population could reach nearly 80 million by 2035 (WWF, 2011). With the expanding population, the production of food and/or food imports must more than double, and the efficiency and sustainability of production needs to increase, using the same or fewer natural resources (WWF, 2011). Mkhabela (2013) has stated that there is consensus that the South African agriculture and agro-food market landscape is changing in accordance with global changes, because of globalization and market liberalization. Researchers believe that South Africans are continually changing their food habits and currently, the rapid evolution towards high-value food products such as vegetables, fruits and animal products is evident (Mkhabela, 2013). These phenomena are also addressed by the WWF (2011) in their statement that the demand for certain food types will shift as more people become wealthier through the gradual expansion of the middle class. Given this trend of a global shift in the transformation of agro-food markets, there is a simultaneous evolution of the procurement of food and distribution systems, as illustrated by the current trends and innovative ideas of institutions to move towards cooperatives, producer' associations, contract farming, and supermarkets (Mkhabela, 2013). Two important questions come to mind, what does the South African agro-food market look like? Moreover, how has it evolved since 1994?

The nature of the South African agricultural sector, which makes up the agro-food market, takes on the form of a dualistic system (Vink & Kirsten, 2003). The South African farming system is highly diversified. Commercial farmers, comprising around 35 000 to 40 000 white farmers who farm on nearly 87% of the agricultural land, produce nearly 95% of the commercial produce (Agri Sector Unity Forum, 2014; Aliber & Hart, 2009). In contrast, the small-scale sector consists of around 200 000 black, emerging farmers, who operate in the former homeland areas, together with 4 million subsistence farmers who farm on about 14 million hectares of the South African land area (Agri Sector Unity Forum, 2014; Aliber & Hart, 2009). The South African dualistic farming structure is evidence of the political system that was dominant in South Africa until 1994 (Van Schalkwyk, Groenewald, Fraser, & Obi, 2012).

It becomes increasingly important for these two systems of the South African farming environment to work in a synergy, rather than as two individual systems. Large commercial farming is

characterized by a competitive market structure and a high level of integration, which could assist and support small-scale farmers in land issues, upgrading their infrastructure, and by providing technical expertise (Agri Sector Unity Forum, 2014). Literature states that the dual system of the South African agricultural sector, combined with its highly complex integration patterns in the up and downstream segments of the agricultural value chains, seems to make the connection between small and large a necessary, or perhaps the only, way to achieve small-scale farmer integration (Chamberlain & Anseeuw, 2017). However, South Africa is characterized by a longer-term engagement of large agricultural enterprises, where commercial farmers supply large-scale agribusiness (Chamberlain & Anseeuw, 2017). The era prior to the market deregulation and trade liberalization, which had a structure of segregated development, has led to a dual primary sector where large and very sophisticated farms exist within an environment filled with a large number of very small, often pluri-active farms (Cochet, Anseeuw, & Fréguin-Gresh, 2015). Since 1994, consolidation patterns were reinforced to rectify the shadow cast by apartheid. According to Makhura and Mokoena (2003), the government that succeeded the 1994-era invested in numerous market deregulation and trade liberalization policies as part of a broader strategy to include small-scale farmers into the commercial system. These strategies resulted in the establishment of powerful agribusinesses and the consolidation of large-scale farms, due to privatization of the country's physical and financial assets, such as the former cooperatives that had accumulated over four decades of state subsidies (Chamberlain & Anseeuw, 2017). Unfortunately, these post-1994 policies have had limited success, and small-scale farmers continue to face difficulties in gaining access to markets (Van Schalkwyk et al., 2012). It remains fair to say that small-scale farmers struggle to access mainstream value chains, and that commercial farmers are the preferred counterparties for engaging in business with agribusinesses (Bernstein, 2013; Biénabe, Vermeulen, & Bramley, 2011). The next paragraph will give the reader more insight into the meaning of small-scale farming in South Africa, and will then focus on the problems of why small-scale farmers are still excluded from the value chain.

Before the term 'small-scale farmer' can be fully explained, it is important to understand the definitions used when referring to smallholders or small-scale farmers in South Africa (Pienaar & Traub, 2015). Expressive words such as "small", "small-scale", "family", "subsistence", "emerging", and even the word "smallholder", have been used to refer to the group of farmers dealt with in this dissertation. Worldwide, these farmers are assessed according to various characteristics (Chamberlin, 2008). This group of farmers can be divided into two groups; emerging and smallholder farmers (DAFF, 2012c; Pienaar & Traub, 2015). In South Africa, however, the term "*small-scale*" usually refers to farmers or households participating in any form

of subsistence or emerging agricultural production (Pienaar & Traub, 2015). As noted in the first paragraph of this section, around 13% of the South African agricultural landscape is in the hands of small-scale farmers, who comprise both emerging and smallholder farmers.

This sector, where small-scale farmers produce agricultural products, is often referred to as the “*smallholder sector*”, and is mainly driven by small farms which are labour intensive and make use of relatively old production techniques (Louw, 2013). These farmers often primarily rely on family labour, are largely subsistence driven, and they often lack institutional capacity and support services (Louw, 2013). This brings the question to mind as to whether subsistence, small-scale farming in South Africa can be seen as providing an opportunity for rural development and formal job creation. Van Schalkwyk et al. (2012), Vellema (2015) and Ortmann & Macheche (2003), state that small-scale farmers can improve their agricultural output if adequate access to support services and markets were to be guaranteed. Moreover, small-scale households can develop different livelihood strategies that could enhance their current opportunities and constraints (Tittonell et al., 2010). With this positive view of small-scale farming, it is implied that such farmers could contribute to improving the South African unemployment and food security rate. Statistics show that, at the end of the fourth quarter in 2016, the South African unemployment rate was reported to be 26.5% (Statistics South Africa, 2017). Although South Africa is regarded as being the second-largest economy in Africa, with adequate food supply at national level, there still remains a need to translate this food security to household level (Shisana, Labadarios, Rehle, Simbayi, & Zuma, 2014). It is estimated that in South Africa, around 21% of household engage in agriculture, and that more than 60% of these households produce crops only to feed their families, in a subsistence manner to meet their household demands (DAFF, 2014). Statistics reported by Shisana et al. (2014) estimate that around 45% of South Africans are food secure, 28% are at risk of hunger, and 26% experience food hunger.

The question remains as to whether subsistence farming could provide an opportunity for rural development and formal job creation, rather than leaving the poor to survive in a subsistence manner. With current literature showing that small-scale farmers are still being excluded in formal food markets, DAFF, (2012b) has noted that an opportunity emerges for the country to investigate different opportunities to develop the small-scale processing industry and to engage in high-value food markets. Although the opportunity is there for small-scale farmers to take, it remains difficult for them to become competitive (Vellema, 2015). Two major constraints exist within the current food market of South Africa: the food processing sector is characterized by a few large agribusiness (i.e. National Brands, Pioneer Foods, Tiger Brands, and Nestlé SA); and the food

retail sector is highly monopolistic, continuously concentrating, with only four retail chains controlling the sector (Bernstein, 2013; Biénabe et al., 2011). Trends, such as vertical integration and downstream concentration, have the potential to exclude small-scale farmers from formal food markets (Louw, Chikazunga, Jordaan, & Biénabe, 2007). Interestingly, as noted above, there are valid arguments that there is scope for restructured agri-food markets to provide viable market opportunities for small-scale farmers, although the general trend of market restructuring has clear exclusionary effects on small-scale farmers in South Africa (Anseeuw et al., 2011; Biénabe & Vermeulen, 2007). According to Chamberlain & Anseeuw (2017), these restructurings and present practices within the agri-retail and food sector entail higher levels of sophistication, and represent higher barriers to entry for small-scale farmers. Barriers to entry to sophisticated markets, such as high food safety regulations, intense marketing activities, and the need for a cold chain to transport produce can all form part of the limiting factors for small-scale farmers (Chamberlain & Anseeuw, 2017). In an era where emphasis should be placed on including these farmers, the sector seems blocked more than ever since the end of apartheid, and provides very few prospects for the now legitimized farmers to prosper. With public agricultural extension and technical support services still existent, but often inadequate and inefficient (Anseeuw & Mathebula, 2005), the call for the commercialized and well-developed private sector to engage with small-scale farmers in order to facilitate their integration seems now relevant more than ever before.

As mentioned above, the commercial food sector remains monopolistic, albeit with a few large organizations partnering with small-scale farmers. The commercial sector consists of a supply chain which involves many players, with producers at one end and consumers at the other, bounded within historical social structures and institutional systems (Mkhabela, 2013). This structure of the South African agricultural landscape presents both opportunities and challenges to farmers, especially small-scale farmers. Commercial farmers have opportunities in this current environment, but they face numerous challenges as well. However, for the purposes of this study, the challenges and opportunities relating to small-scale farmers will be discussed. The majority of small-scale farmers are located in the more rural areas, which are mainly in the former homelands, with poor living conditions and a lack of physical and institutional infrastructure, which limits their farming capacity DAFF (2012a). According to Mkhabela (2013), Johnson (2003) and Vellema (2015), small-scale farmers can benefit from producing high-value commodities due to their higher returns to land and market access opportunities. Arguably, the benefits from producing higher-value crops can improve their wealth status. Although small-scale farmers can benefit from this diversification, there is doubt whether small-scale farmers in South Africa could

benefit from market inclusion strategies, in the same way as larger farmers do, given that big business more often prefer doing business with commercial farmers (Mkhabela, 2013; Vellema, 2015).

The next section will give the reader further understanding of the current situation within the farming sector of South Africa. The section starts with a general problem statement that follows on to the more specific problem statement. This will be concluded with the objectives of the study, followed by the study's propositions.

1.3 GENERAL PROBLEM STATEMENT

There are numerous commodity diversification opportunities for small-scale farmers, given the growth in demand for higher-value food products (Birtal et al., 2007). Although this opportunity exists, big business initially avoided dealing directly with small-scale farmers, due to the high fixed costs of transactions that make dealing with them too costly, when compared with commercial farmers (Vellema, 2015). Besides this, small-scale farmers are continually under economic pressure and face turbulent markets (Vorley, Lundy, & MacGregor, 2008). Within this turbulent market environment, local markets are experiencing modernization to such an extent that high-value and export markets are continually being supplied by commercial farmers (Vorley, Lundy, & MacGregor, 2008).

However, this situation is changing and literature shows that throughout the world, large organizations are trying to engage with small-scale farmers by connecting them with commercial value chains so that they can commercially produce high and market value-added products (Vellema, 2015). This literature, as indicated by Vellema (2015), supports the need for small-scale agricultural production to increase and become integrated with modern supply chains (Vellema, 2015). For these small-scale farmers to engage with modern value chains, the question arises as to what effective linkage system should be implemented. In reality, "*... most of these small-scale farmers do not have the resources or access to credit to close the productivity gap on their own; effective linking with modern supply chains might prove an opportunity to overcome these limitations and consequently increase their income*" (Vellema, 2015). Small-scale farmers who participate in markets, with a linkage system that is not strong, still make a sizeable contribution to the production of high-value food commodities (Birtal et al., 2007). The most effective way for

linking these farmers to modern supply chains, however, remains a major question, both academically and in practice.

According to FAO (2015b), the past decade has seen increases in investments that have improved market opportunities for the producers. The majority of studies on these investments have focused on how costs can be distributed effectively between actors along value chains (FAO, 2010). Many of these investments have adapted a value-chain approach. The FAO (2015) has introduced the Inclusive Business Model (IBM) approach in Africa, which is similar to a value chain approach, but focuses more on farmer–buyer linkages in the chain. The ultimate goal of the IBM approach is to reduce poverty and improve food security for small-scale farmers (Vellema, 2015 & FAO, 2015). The transaction that links small-scale farmers to modern markets is called an inclusion mechanism, but the IBM approach is a inclusion mechanism which intends to make the farmers who are involved better off, financially (Vellema, 2015). An IBM can be seen as a system which recognizes the small-scale farmer and understands the needs of the actors in rural areas in developing countries (Vorley et al., 2008).

“IBM’s are intended to circumvent existing market failures and inefficiencies to successfully integrate the poor, either on the demand side as clients or on the supply side as distributors, suppliers of goods and services, or employees” (GIZ, 2013).

Could this be the effective link that small-scale farmers need to become part of modern food chains? Increasing food production is one important aspect; but without any markets, or access to these markets, food production capacity alone is irrelevant. The IBM approach can be an effective link between small-scale farmers and modern food chains. With the current rate of urbanization, the demand for reliable intermediaries in the food supply chain is becoming increasingly important. Using the IBM approach, small-scale farmers can be assured that they will get access to markets where they can provide essential goods and services, technical assistance, and financial advice (GIZ, 2013). Together with access to markets, small-scale farmers get access to information regarding consumers’ wants and preferences. Market information is extremely important to the smallholder, especially for market integration (DAFF, 2012a; GIZ, 2013; Mkhabela, 2013). Without market information, linkages would be imperfect and skewed towards one kind of linkages, an example of which is given in the literature by Mkhabela (2013): farmers often deliver to small village markets or buyers who come to a certain village to purchase goods. In the case of cocoa and banana farmers in Indonesia and Papua New Guinea, Johnson (2003) notes that, because farmers in remote villages have little contact with markets it is not surprising

that farmers have limited awareness of the sustainability of their produce, or indeed if they are producing the right crops. In a similar line of thinking, Mkhabela (2013) states that the main reason why consumers' needs and desires are not being communicated to the farmers who produce these crops is that the gap between the supplier, at the one end (farmers), and consumers at the other end, remains intact.

In summary, the general problem that small-scale farmers face is that they have limited efficient access to markets. This can ultimately be very problematic for the growth of small-scale farmers, due to them having limited or no market exposure. A lack of market exposure can lead to limited market information and the further worsening of the situation of the poor (GIZ, 2013). Another important consequence to take note of in a lack of market access scenario is that the monopolistic or oligopolistic enterprises continue to grow in strength, and the poor often pay a 'poverty penalty', which manifests in higher prices for the products they purchase and in services of a lower quality (GIZ, 2013). The next section will introduce the reader to the specific problem that South African small-scale farmers face.

1.4 SPECIFIC PROBLEM STATEMENT

Small-scale farmers within the South African agricultural sector face challenges similar to those of small-scale farmers around the world. Since market liberalization reforms undertaken by the government in the mid-1990s, small-scale farmers have struggled to use agricultural markets efficiently (DAFF, 2012d). More than 15 years into these reform measures, not many significant changes have happened among the rural small-scale farmers of South Africa (Van Schalkwyk et al., 2012). A more recent document that supports this is the report of the High-Level Panel (HLP) on the assessment of key legislation and the acceleration of fundamental change. The HLP (2017) stated that after the fall of apartheid in 1994, the country has worked its way towards achieving a constitutional, democratic order, but, more than two decades later, slow progress is visible. The Constitution provides three rights to land that support land reform (HLP, 2017):

- Equitable access to land;
- Tenure security; and
- Restitution.

The HLP's work identified the point that the speed of adaption to these rights is concerning, and that the pace of land reform has been slow (HLP, 2017). Sadly, evidence, such as broken

transactions between the producer and the consumer, limited market information, quantity and quality concerns in products offered by individual small-scale farmers and producers, and poorly structured and inefficient offset points, shows the inefficiency of reform intended for smallholders (DAFF, 2012d). In 2003, only nine years after the institution of trade liberalization and measures to democratize the agricultural sector, it appeared as if small-scale farmers were never part of the land reform plan (Makhura & Mokoena, 2003; Van Schalkwyk, Groenewald, & Jooste, 2003). In more recent literature, it is stated that the development of policy and law has drifted away from the initial stance, to benefit the poor, and lacks an inclusive vision (HLP, 2017).

Today, like many small-scale farmers around the world, South African small-scale farmers face immense constraints, as noted above. Primarily, these constraints give way to high transaction costs (DAFF, 2012b). Transaction cost can be defined as follows: *“The costs of using the market are transaction costs, which include per unit costs such as transportation fees and fixed costs which do not vary with the size of the transaction”* (Goetz, 1992; Key, Sadoulet, & Janvry, 2000). Vellema (2015) identified the fact that transaction costs include searching for potential partners, bargaining over the terms of the agreement, and enforcing the agreement once it is in place. In other words, these transaction costs are summarized as comprising the following: searching costs, information costs, and negotiating costs. These costs depend, in part, on the institutional environment, since enforcement costs are higher when the rule of law is weak (Fafchamps, 2004; North, 1990). According to DAFF (2012a), these high transaction costs that small-scale farmers face limit their growth and competitiveness. In a practical sense, high transaction costs and limited growth means that farmers in remote villages cannot grow to full, efficient capacity. Vellema (2015) states that small-scale farmers often do not have the capacity to graduate to commercial farmer status, due to their inability to utilize poor resources and minimize their transaction costs. A lack of infrastructure usually limits their access to a road network, which then limits their ability to access inputs, transport their produce, and access information, which lack then increases small-scale farmers’ transaction costs and prevents them from progressing into more sustainable farming units. Another practical scenario occurs where small-scale producers have surplus production, but the lack of access to markets and transportation forces them into making alternative marketing decisions, and post-harvest losses are inevitable, which further leads to erosion of their welfare and drives them deeper into destitution (Van Schalkwyk et al., 2012).

Finally, without access to the full marketing system (markets, transport, market information, etc.), small-scale farmers in South Africa only produce crops or raise their animals without having any reliable knowledge of what the end consumers need (Mkhabela, 2013). Quoted directly, *“a poor*

road network, for example, and unreliable distribution will force farmers to grow their own food and less of perishable commodities causing a lower productivity” (DAFF, 2012a). Thus, DAFF (2012a) identified the fact that, in most cases, high transaction costs are caused by the absence of formal markets and reliable infrastructure, which is usually a result of inefficient institutional structures that should enable inclusion.

In summary, a lack of market access leads to poverty that arises from farmers not being able to sell at a profit, and thus, the urgency remains to address this, despite the efforts of the reform policies instituted since 1994 (Van Schalkwyk et al., 2012). The following is a summary of the practical problems faced in developing countries, and specifically within the context of the South African agricultural environment. This summary will form the core problems that the specific objectives of this study will address.

- Small-scale farmers face markets in an *“unprecedented state of flux”* (i.e. constant change) – (Vorley et al., 2008).
- Markets are becoming more modernized and primarily focus on large-scale suppliers – (Vorley et al., 2008).
- Agricultural productivity must increase, using small-scale farmers’ current production and transform it into high-value food commodities – (Vellema, 2015)
- Currently, missing links hinder farmer connection with end consumers – (Mkhabela, 2013)
- *“Lack of access to land, poor physical and institutional infrastructure”*, reliable markets, human capital, inconsistency in production, and poor bargaining power lead to high transaction costs – (DAFF, 2012a).
- Without small-scale markets entering the value chain, a *“limited participation of small and medium-scale agro processing enterprises in agro-food value chains are observed”* – (DAFF, 2012b).
- Finally, the above constraints lead to downstream market concentration in agro-processing – (DAFF, 2012b).

In summary, one of the major problems the South African small-scale farmers are facing is the lack of access to formal markets. The lack of small-scale farmers within formal markets leads to a limited participation of small and medium-scale agro processing enterprises (SMMEs) in agro-food value chains, as has been observed (DAFF, 2012b, 2012a). With limited participation of

SMMEs in the value chain, downstream markets become concentrated, and business preferences for contracting with larger commercial farmers are evident.

Together with current problems, the core constraints that will be identified within the proceedings of this dissertation can be conceptualized in Table 1-1 below, which forms the bridge between the problem statement and the objectives. This table represents some of the constraints faced by small-scale farmers due to a lack of market access, summarized into four main constraints.

Table 0-1: Four main constraints faced by small-scale farmers in developing countries

1) Weakness of support services	2) Prevailing farming structure	3) Access to finance and risk management	4) Producer knowledge
Weak rural transport infrastructure	Lack of scale	Lack of access to competitively priced finance	Limited technical knowledge of farmers
Limited availability of technical advisory services			
Lack of market information	Insecure land tenure	Risk management concerns	Lack of farmer quality consciousness
Lack of commercial skills			

Source: Henson, Jaffee, Cranfield, Blandon, & Siegel (2008)

In total, Henson et al. (2008) identified 21 typical constraints faced by small-scale farmers in developing countries, especially in Africa, and used four main categories to classify the most important constraints. In the next section, the objective of the study will be explained, and this table will form the basis for the specific objectives.

1.5 OBJECTIVES

This dissertation is divided between a broader, general objective and a more specific set of objectives. The next subsections will explain what the general objectives of this dissertation entail followed by a detailed set of specific objectives. These two sets of objectives will be used to

validate the proposition made in this dissertation and will be used to identify any gaps in research and enhance further research.

1.5.1 General objective

The general objective of this research study is to explore whether small- and medium-scale agro-processing is a useful enhancing mechanism for inclusive business models for small-scale farmers. The general objectives of the research are attained by an analysis of two case studies. The two case studies will be individually assessed in terms of their model. The general objective is to document the following:

- The main advantages of the agro-processing model
- The main disadvantages of the agro-processing model
- The major lessons learned from participation in the agro-processing model
- The major challenges experienced from participation in the agro-processing model.

Taking the above into consideration, the aim is to focus specifically on inclusive business models designed to improve the prospects of the farmers involved. The specific inclusion mechanisms that are discussed within the scope of this dissertation are adapted from the framework specified by (Vellema, 2015). In Figure 1-1 below, which is adapted from Vellema (2015), inclusion mechanisms are referred to as mechanisms which focus on the improvement of the population involved. This forms an integral part of this dissertation, because the two cases studied in further chapters focus on improving their populations.

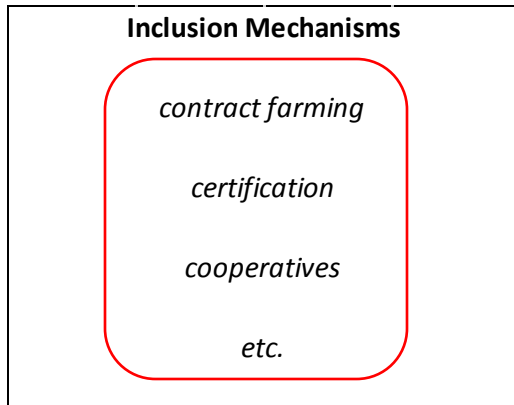


Figure 0-1: Inclusion Mechanisms

Source: Vellema (2015)

Figure 1-1 above shows that contract farming, certification schemes, and cooperatives can be seen as types of inclusive mechanisms. Inclusive mechanisms can be seen as inclusive business models when their stated intention is to make the included population better off (Vellema, 2015). Without such a clearly stated intention, an inclusion mechanism should not be considered as being an inclusive business model, but a 'commercial and inclusive value chain' (Harper, Belt, & Roy, 2015), the definition of which explicitly excludes inclusion mechanisms and which solely intends to increase the well-being of the people they include. The two cases studied in this dissertation relates to inclusion mechanisms – as defined in relation to Figure 1-1 – which may also be considered inclusive business models, because of their stated interest in the well-being of the farmers they endeavour to include.

1.5.2 Specific objective

The specific objective evaluates the potential of the two agro-processing models as constituting inclusive business model for graduating small-scale farmers into formal markets. The specific objective of the study then aims to evaluate the extent to which the agro-processing model affects the participants, in terms of their constraints being addressed. The specific objective will be achieved by following the method identified in a study by Henson et al. (2008). During this study, Henson et al. (2008) identified two ways of evaluating the potential of an agro-processing model as an inclusive business model for small-scale farmers. This method can be seen, as described in the paragraphs that follow.

Impacts of participating in the agro-processing model on the farmers involved:

- *“Access to resources and knowledge*
- *Economic and social gains*
- *Environmental and health impacts”.*

Addressing the constraints faced by the small-scale farmers, before and after they were part of an inclusive model:

- *“Weakness of support services*
- *Prevailing farming structure*
- *Access to finance and risk management*
- *Producer knowledge”.*

An examination of the objectives set out above leads to the formulation of the dissertation’s proposition. The formulation of this proposition is important for the analyses in this dissertation. From the literature review, a study proposition can be formulated. Together with the literature and case studies reviewed, the proposition will be used as the foundational building blocks for the analyses of these case studies.

1.6 PROPOSITION

The main purpose of this proposition is to describe an arguable academic foundation and a practical link between small- and medium-scale agro-processing and inclusive business models. Empirical research has been done on similar topics, but it remains difficult to fully understand whether small-scale agro-processing can be viewed as an inclusive business model. This proposition can be used to spur further research within this field, and possibly contribute a method, which can be seen as evidence to validate this link.

The specific proposition for this study is that small- and medium-scale agro-processing models can be accepted as an enhancing mechanism in an inclusive business model that would

effectively address the constraints faced by small-scale farmers in entering high-value food markets.

In the next chapter, a literature review will be discussed with regard to the current problem discussed in the current chapter. The first section will cover a general overview, and then a global overview of small-scale farmers around the world will be discussed. This will be followed by a discussion of inclusive business models and transaction costs, and especially transaction costs within the agricultural sector. This chapter is concluded with a description of different alternatives to linking small-scale farmers to markets, and discusses two case studies on linking farmers to markets and reducing transaction costs.

1.7 METHODOLOGY AND ANALYTICAL FRAMEWORK

This section will discuss the dissertation's research methodology, which is based on a mixed method design. The methodology used to conduct the research will be discussed in accordance to its relevance in addressing the research proposition. This chapter addresses the methods and procedures, data collection methods, and ethical considerations that are relevant to the study.

1.7.1 Mixed method design: A survey within a case study

This subsection will discuss the rationale behind adopting a mixed methods research design. The three case studies, Harvest of Hope, Timbali Technology Incubator, and Fruitlips, will be analysed as follows:

- Qualitative – A case study method
- Quantitative – Data collection and numerical analyses.

All three case studies will be analysed by using a qualitative approach through a case study method, but only Harvest of Hope and Timbali Technology Incubator will be analysed using a quantitative approach. The appropriateness for a mixed method research design which addresses the research question is supported by Kirsten (2004) and Doyer and Van Rooyen (2001), in which it is suggested that the combined approaches of constructivism and positivism provide a more holistic understanding of the complex and interconnected phenomena present in agricultural value chains.

The use and applicability of the mixed method approach is viewed in various ways by different researchers. Tashakkori & Teddlie (1998) said that this form of research should consider more philosophical assumptions, while other researchers like Creswell, Plano Clark, Gutmann, and Hanson (2003); and Greene, Caracelli, and Graham (1989) have emphasized that this method is more about the techniques or methods of collecting and analysing data. Figure 1-2 below reflects a research design adapted from Creswell (2003), who conceptualized Crotty's model from (1998) to address three questions central to the design of research. This model by Creswell (2003) incorporates “*knowledge claims, strategies and methods*”, which can lead to different research approaches.

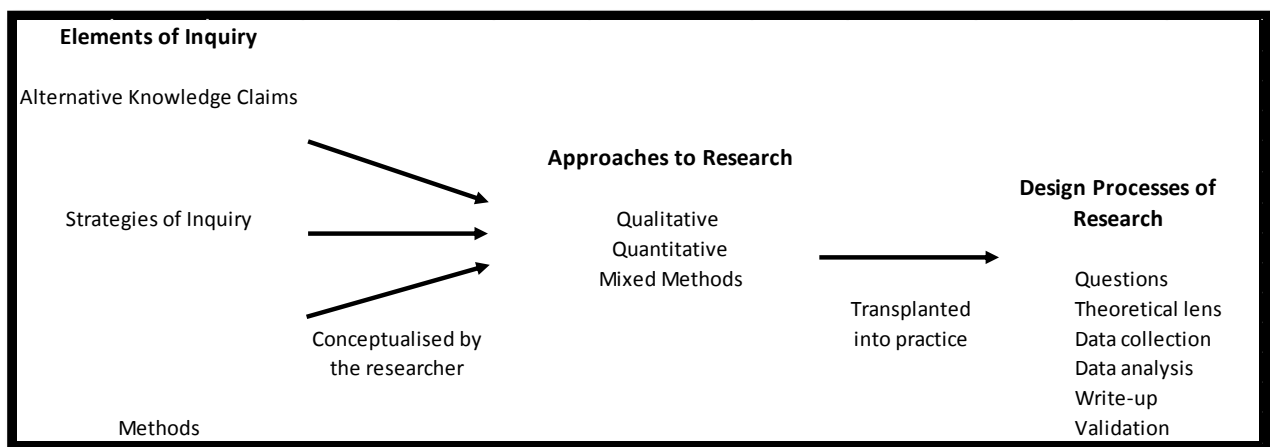


Figure 0-2: Three elements of inquiry

Source: Creswell (2003)

Figure 1-2 above addresses three important questions that a researcher should ask, before deciding on the research approach to follow. It is important to note that the three questions in Figure 1-2 are seen together to form the basis to indicate why a mixed method design should be used. Creswell (2006) defined a mixed method research as follows: “*It can be viewed as a combination of philosophical assumptions that guides the combination of data collection for both quantitative and qualitative analysis*”. This definition will be used as the basis for this dissertation’s research, because the data gathered will be analysed using a combination of quantitative and qualitative data.

Following this definition by Creswell, authors such as Sterns, Schweikhardt, and Peterson (1998) have added that mixed methods can derive knowledge that is positivistic, normative and pragmatic. Positivism can be seen as gathering general knowledge towards a specified case, i.e. value-free knowledge. A good example of this would be a descriptive profile of the firm in

analyses, such as physical, financial and human resources (Sterns et al., 1998). Normativism can be seen as knowledge about their values, which means that normativism focuses on the detailed specifications with regard to the resources or values observed in the acquired positivistic knowledge (Sterns et al., 1998). Pragmatism can be seen as arbitrary knowledge, or stated differently, pragmatism can be seen as the “what if” scenario, in effect, enquiring as to how the strategies of the firm would change, if they had structured their resources differently (Sterns et al., 1998). Table 1-2 below shows how this is relevant for this specific research.

Table 0-2: Different philosophies of research

Philosophies of research	Selected case studies
Positivistic: Value-free knowledge	What can be observed here?
	Physical resources
	Financial resources
	Human resources
Normative: Knowledge about values	Knowledge on the above findings, and how their current environment determines their outcome
Pragmatism: Prescriptive knowledge	What would have been the result if the firm had chosen a different strategic approach w.r.t their resources?

Source: Sterns et al. (1998)

Together with these philosophies, data collection and analyses to answer specific research questions has been conducted predominantly in a mixed method research design. As mentioned above, the qualitative approach in a mixed method research design will be the case study design used in this study. However, the question as to when a researcher should use a case study approach has become important. This question was answered by Yin (2003), where he mentioned that a case study design can be considered when the study aims to answer “*how and why questions*”. Questions such as “how does the agro-processing business model contribute to the successful market access of small-scale farmers?”, and “why does the agro-processing business model assist in the market access of small-scale farmers?” According to Yin (2003), “*the case study allows an investigation to retain the holistic and meaningful characteristics of real-life events-such as individual life cycles, organizational and managerial processes, neighbourhood change, international relations, and the maturation of industries*”. According to Yin (1994), there are four designs for case study research, as seen in Figure 1-3 below. The horizontal axis

represents the amount of case studies analysed within the dissertation and the vertical axes are the different units of analyses.

		Number of Cases	
		Single	Multipile
Unit of Analysis	Single	<i>agribusiness firm (i)</i>	$\sum_{i=1}^n \text{agribusiness firm } (i)$
	Multiple	<i>agribusiness firm (i)</i> 1 = Impacts of model 2 = Identifying constraints before 3 = Identifying constraints after	$\sum_{i,j=1}^{n,3} \text{agribusiness firm } (i,j)$ And for j - 1 = Impacts of model 2 = Identifying constraints before 3 = Identifying constraints after

Figure 0-3: A Matrix of Potential Case Study Research Designs

Source: Adapted from Yin (1994)

Yin’s approach, as depicted in Figure 1-3 above, was used to analyse the two case studies in this dissertation. As seen in Figure 1-3 above, the multiple case and multiple unit of analysis is the most applicable way to conduct this research. In this block, two case studies (i and j) will be analysed using three approaches. Based on this outcome, the proposition will be justified, and further research recommended.

1.7.2 Data collection methods

The data collection method comprised collecting answers to questionnaires that were handed out to the participants for completion.

1.7.2.1 Participants

A structured questionnaire was submitted to farmers/beneficiaries and a representative of the agro-processing case in each individual case, using a random selection approach where farmers were not selected beforehand, but rather selected on the day of questionnaire. The aim was to understand how agro-processing may reduce constraints faced by small-scale farmers when entering high-value food markets. However, in the case of Harvest of Hope, communication with the management team of the firm, made prior to the day of data collection, specified which farmers

were to be interviewed. In the case of Timbali Technology Incubator, farmers were randomly selected on the day for interviews, depending on their availability.

1.7.2.2 Questionnaires

As noted above, there are two objectives in this dissertation. A standardized questionnaire was used to interview relevant participants to address both the general and specific objectives. A set of questions, set out below and as adapted from Strydom (2016), was used to address the general objectives of the study:

- What are the advantages of the agro-processing business model?
- What are disadvantages of the agro-processing business model?
- What are the major lessons learned?
- What are the major challenges experienced?
- Does the agro-processing model assist in the improvement of the limited market access faced by small-scale farmers, and why?

The specific objective will be achieved by following the method identified in a study by Henson et al. (2008). In their study, Henson et al. (2008) identified two ways of evaluating the potential of an agro-processing model as an inclusive business model for small-scale farmers. This method can be seen below:

Impacts of participating in the agro-processing model on the farmers involved:

- *“Access to resources and knowledge*
- *Economic and social gains*
- *Environmental and health impacts”.*

Addressing the constraints faced by the small-scale farmers, before and after they were part of an inclusive model:

- *“Weakness of support services*
- *Prevailing farming structure*
- *Access to finance and risk management*

- *Producer knowledge*".

To prevent confusion arising from the above set of questions, it is necessary to create a distinction between the two sets of questions. Questions adapted from Strydom (2016) were presented in a more general way. Advantages, disadvantages and challenges refer to the general view of the respondent as regards being part of the agro-processing model. Questions adapted from Henson et al. (2008) were presented in a more specific way. Impacts or benefits and constraints refer to the specific impacts and constraints adapted from Henson et al. (2008) and to test whether or not the specific questions by Henson et al (2008) can be adapted by the current study. Ultimately, these two sets of questions can be viewed together, because some of the answers under the general approach could be similar to those under the specific approach. The main difference between the two, however, is that the specific approach tries to establish the effect that the model has on the challenges or constraints the farmers are facing, by quantifying it using a Likert-scale approach. The specific approach also tries to quantify the impacts or advantages the model has on the farmers by using a Likert-scale approach. Due to the nature of the data, and the sampling methods, simple Excel statistics were used for the analyses. Statistical inference tests were used to support or reject the study proposition.

1.7.3 Ethical considerations

This research study received ethical clearance from the University of Pretoria before any questionnaires were administered. Participation was voluntary by respondents, and all information given by participants will be kept confidential and anonymous. Key summary findings of the research will be given to the participants, on request. For the two case studies to be correctly analysed, this chapter should be well executed. It is important for this case study research to meet the two objectives of a case study research. These two objectives (as adapted from Sterns et al., 1998) are:

- **Applied, problem solving research** – Small-scale farmers face constraints before they are part of an inclusive business model
- **Develop a theory and apply it** – Inclusive business models can be seen as constituting an enhancing mechanism to include small-scale farmers into formal markets.

The next chapter will focus on value adding within the value chain process, and how this can be seen as constituting an important link between small-scale farmers and commercial markets.

CHAPTER 2

REVIEW OF RELEVANT LITERATURE

2.1 INTRODUCTION

This chapter will give a brief overview of inclusive business models in a global context and describe how small- and medium-scale agro processing can be seen as an enhancing mechanism to include small-scale farmers in the markets. The goal of this chapter is to identify similar studies that have focused on small-scale farmer inclusion within the food value chain and what challenges these small-scale farmers had faced in becoming part of this value chain. Globally, Inclusive Business Models (IBMs) are becoming increasingly important in development programmes, but without the right policies in place together with development programmes, these IBMs cannot successfully link small-scale farmers to markets (Birtal et al., 2007). Vellema (2015) addressed the topic of transaction costs, together with IBMs, and mentioned that the majority of these models typically tend to be hybrid governance structures, and therefore they fall within the scope of transaction cost theory analysis. Hybrid governance structure takes on the form of both a market and hierarchy structure between two counterparties (Vellema, 2015). Although transaction cost theory will not be used to analyse this dissertation's research question, it remains important to understand the fundamental principles of transaction cost theory.

As stated in Chapter 1, the general objective of this research study is to investigate the extent to which small- and medium-scale agro-processing can be seen as constituting an enhancing mechanism to an inclusive business model. The specific objective goes into further detail within each case study to evaluate the extent to which the agro-processing model affects the participants, in terms of their constraints being addressed. In a broad context, this dissertation focuses on inclusive business models that aim to leave the farmers in a better position. This chapter is divided into three sections. The first section starts by giving a global overview of small-scale farmers' inclusion within the commercial value chain in the form of contract farming, cooperatives, and certification schemes, as well as describing the constraints they face in searching for markets. The second section continues with alternative approaches to link small-scale farmers to markets and briefly discuss the definition of transaction costs. The third and final section identifies case studies in South Africa where agro-processing business models could potentially be used as an alternative for market access for small-scale farmers.

2.2 GLOBAL OVERVIEW OF SMALL-SCALE FARMERS

According to IAASTD (2014), nearly one-third of the world's population, which falls within the bracket of people capable of earning an income, obtain their livelihoods from agriculture. Countries within Africa and Asia, where farms are small in size and have millions of subsistence farmers and other small-scale farming activities, produce most of the food consumed, worldwide (Weinberger & Lumpkin, 2005). IAASTD (2014) has reported that around 8% of agricultural land is worked by 72% of farms, which are less than one hectare in extent. Farms as small as 1 to 2 hectares account for 12% of all farms and work 4% of the land. In contrast to this, IAASTD (2014) highlight the fact that farms larger than 50 hectares are in the hands of only one percent of all farmers in the world, but they cultivate nearly 70% of all the world's agricultural land.

As stated in Chapter 1, the term "smallholder farmer" can take on many different meanings. As stated by Pienaar and Traub (2015), smallholder farmers can be seen as "small", "small-scale", "family", "subsistence", and "emerging", and even the word "smallholder" is used to refer to the particular group. For the purposes of this study, the term "small-scale" is used. In Chapter 1, it was mentioned that in South Africa, the term "*small-scale*" usually refers to farmers or households participating in any form of subsistence or emerging agricultural production (Pienaar & Traub, 2015). These small-scale farmers in South Africa are viewed as being black, emerging farmers, who operate in the former homeland areas, together with 4 million subsistence farmers who farm on about 14 million hectares of the South African land area (Agri Sector Unity Forum, 2014; Aliber & Hart, 2009). However, this term is interpreted slightly differently around the world. According to the FAO (2017), there is a challenge in defining the correct nomenclature for the term "small-scale farming". Numerous authors, such as Dixon, Taniguchi and Wattenbach in 2003, Brooks, Cervantes-Godoy and Jonasson in 2009, and Murphy in 2010 all had a similar approach to defining small-scale farming. Finally, this could be summarized in the definition given by the World Bank Rural Development Strategy (2003), to the effect that small-scale farmers are those farmers with a low asset base, producing on less than two hectares of cropland.

Small-scale farmers play an important role in the current era, because they have to feed a growing population. Small-scale farming is a term that is widely discussed in the agricultural economics world. Extensive research has been done on this specific topic, and according to Christiaensen, Demery, & Kuhl (2010), the term "small-scale farming" had received so much attention, that 2014 was marked as the year of the small-scale farmer, and focus was given to their specific role in feeding a growing population. Graeub et al. (2016) have identified the importance of small-scale farming, and estimate that nearly 500 million small-scale farmers manage most of the world's

agricultural land and produce most of the world's food. However, this statement made by Graeub et al. cannot be assumed to apply in the South African farming environment. As stated in Chapter 1, the South African farming system is highly diversified. Commercial farmers, comprising around 35 000 to 40 000 white farmers who farm on nearly 87% of the agricultural land, produce nearly 95% of the commercial produce (Agri Sector Unity Forum, 2014; Aliber & Hart, 2009). In some literature resources, small-scale farming is often misinterpreted as meaning "family farms" (Graeub et al., 2016). Light is shed on this when the work of Berdegúe and Fuentealba (2011) is taken into consideration, together with further research building on their findings and analysis – e.g. Chappel et al. (2013) and Vorley, Cotula, and Chan (2012) state the terms "family farming" and "small-scale farming" can be divided into three groups:

- Group A – which includes farmers who are well connected with commercial markets
- Group B – which includes farmers who lack critical elements of those in a commercial chain
- Group C – which is classified as the resource-poor, and who primarily focus on subsistence agriculture to feed their families' needs.

Consequently, for the purposes of this study, the focus group would comprise those specified within groups B and C. These groups of farmers are those farmers who are resource poor, lack access to a commercial value chain, and face high transaction costs. Large organizations have tried to minimize business transactions with these farmers, but this situation is changing (Vellema, 2015). Small-scale farms are important for global food security and it is important that these farms are kept alive to act as a safeguard for the natural environment and to stop poverty and famine (FAO, 2013). For these farms to become more productive and sustainable, it is important for public policy to support them. The FAO (2014b) stated that governments should design policies that support small-scale farmers to become recognized within a system that understands the diversity and complexity of the challenges they face. Graeub et al (2016) states that there is reliable evidence that small-scale farms can be more productive per unit area, that they may show improved stability and flexibility, that they can generate more jobs and income within local economies, harbour more agrobiodiversity and contribute to dietary diversity. The FAO's High-Level Panel of Experts (2013) states that there should be a focus that is directed towards a problem-solving mind-set in the model/scale of small-scale farmer inclusion in mainstream market channels, due to the fact that small-scale agriculture in some cases outperforms large-scale agriculture in terms of yield per unit of land.

How can these farmers be included into the commercial value chains? It is important to bear in mind that the production of small-scale farmers is important to the global food demand, and as stated above, there should be structures in place to include small farmers into value chain. The next section will discuss the basic principles of inclusive business models.

2.3 INCLUSIVE BUSINESS MODELS (IBMs)

During the past decades, the agricultural sectors in developing countries have encountered numerous challenges, such as rapid but uneven modernization, urbanization, and changes in consumer purchasing power and preferences (Vorley et al., 2008). These challenges can be seen as the drivers that have led to the more-preferred choice for commercial farmers to export to higher-value food markets (Vorley et al., 2008). Together with Vorley et al (2008), Le Courtois (2011) also identified challenges that impact on agricultural food systems, such as food standards that are becoming increasingly stringent, increasing retail consolidation, trade agreements, and consumer trends. Considering this, together with globalization and rapid urbanization, the changes within the food systems are self-evident.

Given the growing world population, rates of urbanization, and the increasing demand for food, the need to include small-scale farmers is becoming ever more important (Mkhabela, 2013; Temu & Temu, 2006; Vellema, 2015; Vorley et al., 2008). Small-scale farming is usually associated with “developing countries”, where the absence of market institutions is conspicuous, because the markets do not function effectively and sometimes do not work (McMillan, 2008). Small-scale farmers can potentially contribute to the solution of this growing demand, and provide a sustainable approach for future generations. The FAO (2014a) identified the point that the only potential for increasing agricultural production is situated within the capability of small-scale farmers, who mainly operate within developing countries where the yield gap is the largest. The yield gap refers to the difference between current yields and potential yields. Vellema (2015) summed up the situation by saying that producing more food is necessary, but the critical determining factor in feeding a nation would be to make this food accessible for remotely situated consumers. Fortunately, food companies, globally, have recognized this need and have started to include specific targets for small-scale farmer inclusion in their annual reports. According to Vellema (2015), governments are increasingly undertaking development projects, together with the private sector, to overcome the problem faced by developing nations, such as inefficient

market institutions in place, and this leads to market imperfections and lack of market access for small-scale farmers.

It is important to note that, with the rapidly growing global population, the dynamics of agricultural food systems begins to find different shapes. This change in dynamics stimulates interest in demand for high-value food commodities, which in return creates opportunities for small-scale farmers to produce higher-value crops, which could lead to new market channels and increase their returns per unit of land (Birtal et al., 2007). Inclusive business models (IBMs) can be seen as a mechanism for including small-scale farmers in markets. Numerous definitions can be highlighted, but it is one that captures the true meaning of the term. The United Nations Development Programme (UNDP) describes IBMs as “*Models that aim to include poor people into value chains as producers, employees or consumers in ways that are both equitable and sustainable*” (UNDP, 2010:3). Vellema (2015) states that IBMs fall under the umbrella of inclusive mechanisms, and they can be seen as constituting a strategic approach, through which government and non-governmental organizations could engage small-scale farmers so as to improve their productivity, and specifically to participate in high-value food networks, thereby adding more value to their products after exiting the farm gate. As noted in Chapter 1, a clear distinction can be made between these two similar terms – inclusive business models and inclusion mechanisms. However, there is little difference, as both include small-scale farmers, require profit for both the firm and the farmer in order to be durable, and go beyond an arms’ length, spot market transaction (Vellema, 2015). However, the one distinguishing factor between the two terms is that inclusive business models solely intend to make the included population better off (Vellema, 2015). According to Harper, Belt, and Roy (2015), one should assume that an inclusion mechanism is an inclusive business model, unless specified differently. Vellema (2015) identifies a conceptual framework of various inclusive mechanisms, which can be directly linked to the behaviour of farmers to improve their returns on investments when products leave the farm gate, as presented in Figure 2-1 below.

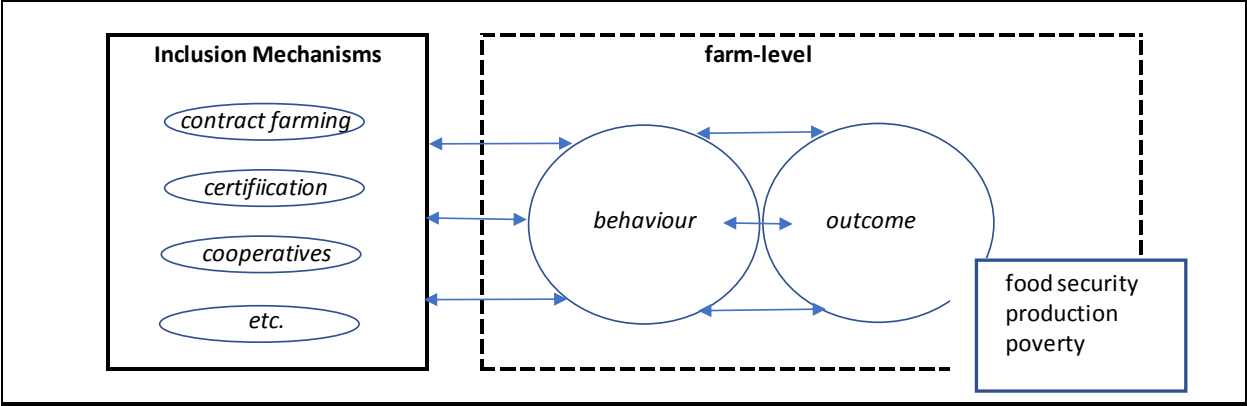


Figure 2-1: Conceptual framework for inclusion mechanism impact on small-scale farmers

Source: Vellema (2015)

Researchers have often asked the question as to what models could be used to connect small-scale farmers to commercial markets. Reading from literature, Vellema (2015) and Vorley et al (2008) state that models such as contract farming, certification, and cooperatives are models that seek to include small-scale farmers into mainstream markets. These inclusive business models, such as contract farming, certification and cooperatives, which fall within the scope of inclusive mechanisms, are tools used by different types of organizations to include farmers and ultimately make their livelihoods more sustainable, by increasing their returns.

Before any type of organization enters into these types of contractual arrangements with small-scale farmers, it must consider the costs involved in doing business with these farmers. Kelly (2012) specifies that governments need to create an integrating and business-friendly environment, where small-scale farmers can easily access the value chain by ensuring that policy eases the costs and obstacles in doing business with them. Reviewing the “AAACP Paper Series” by the FAO (2010), it becomes clear that conceptual and empirical confirmation reflects a positive suggestion, although interventions such as contractual arrangements, with special attention to including small-scale farmers into markets, require support which is stressed towards cost reduction for agribusiness along the value chain.

Organizations such as the “Food and Agriculture Organization of the United Nations” (FAO), “International Fund for Agricultural Development” (IFAD), “International Assessment of Agricultural Knowledge, Science and Technology for Development” (IAASTD) and the World Bank are focused on improving the lives of farmers involved. During the period from September 2008 to December 2010, the FAO, in conjunction with the EU, tested an IBM approach to identify the success factors among the parties involved. The idea behind this project was to understand how

the public sector could engage in supporting small-scale farmers to connect to markets. One of the biggest constraints faced by farmers in remote villages comprises high transaction costs. High transaction costs exist because of the lack of access to roads that lead to markets. Insufficient access to a road network can force farmers to travel far distances to reach a formal market, or even a local market, to sell their produce. In 2016, the Civil Society Mechanism (CSM) International (2016) conducted a study called “*Connecting Smallholders to Markets*”, in which they defined markets in which small-scale farmers produce as “territorial”, because they are all situated and linked to specific local, national, and regional food systems. Small-scale farmers, although connected to territorial markets, which can range from local villages to a regional system, remain isolated in remote villages with poor road and network access, which leaves the majority of them disconnected from remunerative markets. In the abovementioned study, the CSM International (2016) stated that small-scale farmers are somehow disconnected from markets. In reality, this is the case and the majority of these farmers are disconnected from formal markets, but the issue is not one of market access in general, but rather of access to markets that are worth the while for these farmers and how they might be able to access them. Together with restricted access to any reasonable form of a market, limited knowledge of what consumers really want results in a lack of any bargaining power. Instead of being more productive, small-scale farmers would rather produce to only feed their families, and as a result, they ultimately remain subsistence farmers. In their research on IMBs, the FAO (2010) identified the point that the IBM approach provides a blue print for how farmers could be linked to markets. This blue print represents the analysis of the linkages between farmers and the market that are required for understanding the potential for partnership, and it endeavours to identify where value can be added within this chain.

This blueprint was mainly driven by the rationale that when there is an opportunity that opens up in the market, private sector entrepreneurs will usually work towards factors that disable environmental factors in favour of their local businesses, in spite of a slow rate of return and with higher transactions costs (FAO, 2015a). Secondly, the FAO identified the point that small-scale institutional innovations with a focus on minimizing the various inefficiencies in the small-scale farmer-to-market transactions are more effective than macro trade and price policy initiatives, which are usually divergent from the reality (Barrett et al., 2011).

The FAO (2010) mentions a success story from Kenya which shows how poverty can be reduced using small-scale farmer linkages to small- and medium-scale agro-enterprises (SAMEs). It is interesting to note that three-quarters of Kenya’s population depends on SAMEs, and the majority of the population’s employment consists of small-scale farming and/or subsistence living (FAO,

2010). Schneider, Buehn, and Montenegro (2010) mentioned that between 2003 and 2009, the growth in the agriculture sector in Kenya more than tripled in percentage, and the number of people living below the poverty line had declined by 5 percent over the same period.

This Kenyan success story fuels a growing realization among most African countries that success in transforming small-scale agriculture into a competitive sector requires greater focus on small-scale agriculture as a public policy concern (Staatz, 2010). Together with this success story and the FAO's blue print, the FAO (2015) identified three concepts that drive the rationale of the IBM approach which is based on their experience in implementing this into a value chain approach. The first concept shows that small-scale inclusion strategies are more effective than macro trade- and price-related policies are (FAO, 2015b). The second and third concept relates to the fact that small-scale farmers have to offer something that commercial farmers cannot, and small-scale farmers will always enter into an agreement if the net profit is greater than the transaction cost is (FAO, 2015b).

Different models for connecting small-scale farmers to agro-industries and dynamic markets have emerged over the past decades. Within the next few paragraphs, short explanations on inclusion mechanisms, as adapted from Vellema (2015), will be discussed. However, before this discussion can follow, it is important to note that research based on concrete evidence shows that current supply chains are not explicitly excluding small-scale farmers, but that buyers more often prefer doing business with commercial farmers and corporate agribusinesses, which operate in existing export channels (Vorley et al., 2008). Thus, to turn this phenomenon around, proactive and innovative approaches are needed to develop business models which provide a sustainable inclusion mechanism for small-scale farmers and small- and micro-enterprises (SMEs) (Vorley et al., 2008). The main fundamental principle of all IBMs is the way in which, and degree to which, these farmers are organized (Vorley et al., 2008). Given this, IBMs can take on the form of contract farming, certifications and cooperatives, and as Vellema (2015) states, studies involving these topics are becoming more frequent in agricultural economics. In the below three paragraphs a short description of these topics will be discussed.

Contract farming is a term often used in agriculture and is defined by Vellema (2015) as an *“agreement between a firm and a farmer which gives the firm exclusive buying rights to the contracted crop.”* A similar definition by Will (2013), in the “Contract farming handbook”, defines contract farming as *“forward agreements specifying the obligations of farmers and buyers as*

partners in business.” Contract farming legally entails that, given the specific agreement, the farmer must supply the buyer with the specified quantities and which is followed by the buyer’s agreed payment being made to the seller. Despite this basic definition, contract farming has sometimes been far from straightforward, when compared across different cases. According to Eaton and Shepherd (2001), there are five broad models into which contract farming can be classified, which usually depends on the particularly product to be marketed, the capabilities of the buyer, and finally, the connection between the farmer and the final consumer. These five models of contract farming, although different in structure, share a similar focus, which is to include the farmer and limit their transaction costs. The five models can be classified as informal, intermediary, multipartite, centralized, and nucleus estate (Eaton & Shepherd, 2001). According to Bardhan (1989) and Key and Runsten (1999), cited in Vellema (2015), contracts reduce transaction costs by overcoming market imperfections and reducing the constraints faced by small-scale farmers when entering the value chain. A final thought on why small-scale farmers enter into these types of contracts highlights the numerous advantages they might receive. Small-scale farmers enter into contracts because they usually receive a more stable income, they have a broader access to markets, credit and latest technologies in inputs, and farmers who produce under contract receive extension services, which minimize their long-run production risk (Will, 2013).

Certification can be defined as *“the action or process of providing someone or something with an official document attesting to a status or level of achievement”* (OED, 2008). In agricultural literature, this means that when an organization gives certification to farmer, it guarantees that certain conditions have been met in the production of the product, and that it has met all the required standards (Vellema, 2015). These requirements are of utmost importance and may include almost any aspect of farming activity, from reducing, or abstaining from, the use of any chemicals in production or processing phases, to the way that certain documents should be handled, to the specific premiums received by the producer. It is noted in Beuchelt and Zeller (2012) that food production and processing aspects, which follow environmental, social, quality and safety standards, have become extremely important among value chain players, and these desired attributes have shifted from niche markets to industrialized, advanced markets. Policy makers and non-governmental organizations (NGOs) are all encouraging the production process of agricultural products to be shifted towards supplying high-value markets, due to the increasing shift in demand from consumers towards certified/high-quality products (Beuchelt & Zeller, 2012). Vellema (2015) stated that consumers are willing to pay higher prices in the market for certified

products, in exchange for the guarantee that products are produced under certain specified conditions.

Cooperatives are important in the process to *“facilitate farmers’ access to these vertically integrated food supply chains”* (Beuchelt & Zeller, 2012). The ICA (2005) defines the term ‘cooperative’ as *“an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise”*. According to Beuchelt and Zeller (2012), cooperatives play an important role in connecting producers to markets, especially in developing countries where they tend to offer multiple services. The main goal of a cooperative, and especially a market-orientated cooperative, where the structure is characterized by a group of economically active individuals with one main goal, is to derive benefits for themselves as cooperative members (Beuchelt & Zeller, 2012).

In conclusion, contract farming, certification and cooperatives can be viewed as forms of IBMs, aiming to improve the livelihoods of those involved. Given the influences that global trends have on the agricultural environment, and especially on small-scale farmers, organizations such as those mentioned above should intervene. Although big businesses prefer engaging with larger-scale commercial farmers, it is important for the IBMs to cater for how small-scale farmers do business and provide for how to engage them. In the next section, a brief discussion on transaction cost theory and other types of mechanisms to link small-scale farmers to markets will be discussed. This is an important part of the literature, because the aim is to give the reader an overview on what transaction costs entail and how these can affect the small-scale farmers at their operational levels. There is a distinctive correlation between high fixed transaction costs, small landholdings, financial constraints and the exclusion of many small-scale farmers from modern supply chains (Vellema, 2015).

2.4 TRANSACTION COST THEORY IN AGRICULTURE AND DIFFERENT TYPES OF MECHANISMS TO LINK SMALL-SCALE FARMERS TO MARKETS

2.4.1 Transaction cost theory in agriculture

During the 1930s, the term ‘transaction cost’ had not yet been defined, but John R. Commons recognized that after a transaction (e.g. *“exchanging nuts for berries on the edge of the forest or buying a can of coke at a vending machine”*), the continuity of an exchange relationship was often important (Tadelis & Williamson, 2010). Ronald Coase identified certain costs when he introduced the idea that there is no frictionless economy, and when using a market, there are costs involved (Coase, 1937).

Tadelis and Williamson (2010) noted that transaction cost theory in economics dates back to a series of developments between 1930 and 1970, like those made by John Commons in 1932, Ronald Coase in 1937 and 1960, Friedrich Hayek in 1945, Herbert Simon in 1951 and Arrow in 1969. In summary, the concept of transaction costs has been around for more than seven decades and it has been used to explain every economic aspect that does not fit within standard neoclassical understanding (Cuevas, 2014). Upon reading the paper on “Transaction Costs of Exchange in Agriculture” by Cuevas (2014), it becomes clear that many of the definitions of transaction costs that have surfaced through literature are often fragmented, and only a few have been used by scholars. Many economists have different interpretations of transaction costs. Table 2-1 below sets out an overview of different definitions regarding transaction costs, which is derived from (Cuevas, 2014).

Table 2-1: Historical development of transaction costs

Author	Definition	Date
Hicks, J	Cost involves brokerage fees and investing in financial markets	1935
Coase, R	Price mechanism costs	1937
Stigler, G	Cost involving searching for markets	1961
Arrow, K	Economic system costs	1969
Foley, D	Informing buyers and sellers of the existence of a supply or demand	1970
Niehans, J	Term for costs involved in transferring of ownership from seller to buyer	1987
Williamson, O. E	Comparative costs of planning, adapting and monitoring task completion under alternative governance structure	1996
Barzel, Y	The term used for the transfer, capture, and protection of rights	1997
Allen, D	Property rights stream and the neoclassical stream	2000
Furubotn, F & Richter, R	Term for resources utilized for the creation, maintenance, use, and change of institutions	2005:40
Furubotn, F & Richter, R	Identifies market transaction cost, managerial transaction costs, and political transaction costs, as well as fixed and variable transaction costs	2005:43
Hardt, L	Used the umbrella of transaction cost economics, divided into three complementary branches: exchange, governance, and measurement.	2006

Source: Cuevas (2014)

Each of the above definitions gives a different, yet fundamentally similar, approach towards understanding transaction costs. However, there is one definition, or stream of literature, that can be viewed as constituting a more analytical approach (Cuevas, 2014). Looking at the approach by Allen (2000), it is noted that he mentioned that the neoclassical or the new institutional economics (transaction cost economics) take into consideration the efficiency and the productivity where the firm/farm usually models transaction costs in a more systematic and logical way, similarly to “*transport charges and taxes*” (Cuevas, 2014). Allen (2000, 902), quoting Stavins

(1995), provides a neoclassical approach to transaction costs in that it is universal in market economies due to their nature of transferring property rights between parties involved. These property rights can be transferred through the following:

- *“Parties must find one another, communicate and exchange information*
- *Parties sometimes need to inspect and measure goods*
- *Parties often need to draw up contracts and consult with lawyers”.*

Given this, it is fair to say that the cost of doing business can take one of the two forms, inputs and resources (Allen, 2000, 902).

Considering the above interpretations of transaction costs, it is apparent that the broader idea of transaction costs have become, as Cuevas (2014) puts it, in economic terms, the *“theoretical equivalent of the notion of friction.”* With this underlying “notion of friction”, different authors in different spheres within the industry have published a myriad of definitions and interpretations about transaction costs as a means of providing structure to the literature. Yet, these definitions prove to have evidence of a typological nature, and they vary from author to author, and in some instances, contradict one another.

An increase has been noticed in global concerns and efforts to reduce the prevalence of poverty. Cuevas (2014), citing Pingali, Khawaja, & Meijer, (2005), reports that they argue that high transaction costs prevent small-scale farmers from entering commercial markets, thus depriving them from any benefits of economies of scale. For the purposes of this dissertation, transaction costs will be viewed according to the definition by Will (2013), who used a similar approach to that of Williamson in 1996:

“Exchange of goods at every stage of the value chain: e.g. search costs for suppliers or buyers, for market and price information; costs for monitoring of producers and quality control, for logistics and distribution, for security services for cash payments, for bribery and for dealing with contract breach.”

Transaction costs, to a major extent, determine whether a farmer will enter into a transaction with a counter partner; hence, making transaction costs and the application thereof a key determining factor for the wellbeing of small-scale farmers. Agriculture is an industry full of uncertainties and

challenges, and is plagued with different transaction cost applications, “*ranging from the monetary to the relational to the institutional.*” Cuevas (2014) identified the fact that there are numerous troubling issues in agriculture, such as incomplete markets, biased information, risk and uncertainty, linkages between production and consumption (which cannot be separated), and weak institutional systems, which lead to incomplete property rights and contractual arrangements between parties involved.

These issues lay siege to agriculture, thereby rendering the agricultural industry a perfect environment for increasing transaction costs to take their course. From literature, such as Cuevas (2014), it becomes clear that transaction cost theory can be applied to agriculture to its full-most potential, and according to Masten (2000), “*agricultural transactions provide a rich area for application and refinement of transaction cost theory.*” Applying this to agriculture, Silva, Ratnadiwakara, and Soysa (2008) state that a key element in reducing poverty and stimulating agricultural growth would be to lower transaction costs within the supply chain. Market institutions could serve as a mechanism to reduce transaction costs within the agricultural supply chain, as well as to reduce time and money spent in searching for trading partners, in determining the quality of the products, bargaining contract agreements, and monitoring the performances.

2.4.2 Alternative mechanisms to link small-scale farmers to markets

In the preceding sections, three IBMs were discussed; contract farming, cooperatives and certifications schemes. In this section, alternative/informal linkage mechanisms will be discussed. There are numerous mechanisms that link small-scale farmers to markets, namely: “farmer to domestic trader, farmer to retailer, through a leading farmer, farmer to exporter and finally farmer to agro-processor”. The farmer to agro-processor component forms part of the research question and objectives of this dissertation. More in-depth research and analysis will be discussed in Chapters 4 and 5. Thus, this section will briefly discuss these five linkage mechanisms and their roles in reducing transaction costs of small-scale farmers. It is important to remember that these linkages do not represent the whole range of market linkages available to farmers. Governmental marketing boards and institutional systems play an important role in the above farming structures (FAO, 2007).

Table 2-2 below shows the various alternative mechanisms that small-scale farmers can use to handle their produce. Shepard (2007) states that production within the value chain can range from farmers right thought to traders, using a range of direct and indirect market linkages.

Table 2-2: Various alternative mechanisms for small-scale farmer linkages

Type	Driver	Objective
Producer-driven	Small-scale producers	New markets
		Higher market price
		Stabilize market position
	Large-scale farmers	Extra supply volumes
Buyer-driven	Processors	Assure supply
	Exporters	
	Retailers	
Intermediary-driven	Traders, wholesalers and other traditional market actors	Supply more discerning customers
	NGOs and other support agencies	Make markets work for the poor
	National and local government departments	Regional development

Source: Vorley et al (2008)

Following from Table 2-2, a summary on each alternative mechanism will be discussed below.

2.4.2.1 Farmer to domestic trader

This has been the traditional way of farmer-buyer interaction, and is generally driven by the buying intentions of traders (FAO, 2007 & DAFF, 2012). The fundamentals of trading are important, such as purchasing surplus stock and transporting it to downstream markets at an affordable transport rate (FAO, 2007).

2.4.2.2 Farmer to retailer

As noted in Vellema (2015), Vorley et al (2008), and FAO (2007), large supermarket chains and agribusiness organizations would prefer to work with larger-scale commercial farmers on a long-term basis, rather than with small-scale farmers. For small-scale farmers to engage with retailers, the institutional environment should undergo transformation (Weinberger & Lumpkin, 2005). Small-scale farmers are linked directly with retailers in numerous developing countries, such as India, Uganda and Indonesia. In South Africa, a model like this has proven to be non-replicable elsewhere given to individual preferences of the supermarket owners (FAO, 2007). Models that have proven to be successful have highlighted important issues concerning the numerous

constraints faced by smallholders, and this is the case even in processes where these smallholders receive technical assistance from larger companies (FAO, 2007).

2.4.2.3 Linkage through a leading farmer

Leading farmers open up opportunities for other smaller-scale farmers that would not have been there. The leading farmer often opens up new marketing opportunities through innovative ideas, which previously was non-existing (FAO, 2007).

2.4.2.4 Farmer to exporter

This category is very similar to the trader approach, but examples in case studies from Myanmar and Ecuador stress the high level of trust involved in global business transactions (FAO, 2007).

2.4.2.5 Farmer to agro-processor

Agro-processing can be seen as a type of market institution that small-scale farmers can engage with and thereby enter mainstream markets, and reducing their high transaction costs. According to a discussion paper prepared by UNIDO, FAO, & IFAD, (2008), the “*agro-industry, i.e. the processing, preservation and preparation of agricultural production for intermediate and final consumption, performs a number of crucial functions that support development and poverty alleviation.*” DAFF (2012) states that agro-processing is a set of “techno-economic activities, applied to all the produce, originating from the farm gate to handling and value addition to make them usable for human consumption”.

Value addition after the farm gate is one thing; however, the importance lies in the effective engagement between the farmer and the firm, and in how these products are sourced. Sautier, Vermeulen, Fok, and Bienabe (2006) identified the main reasons why small-scale farmers struggle to progress into these commercial value chains and add value to their produce: they lack support from institutions, cannot transform with the same rate as larger-scale farmers ac, and cannot meet the regulations set by agro-processing organizations. DAFF (2012a) stated that this linkage between small-scale producers and processors remains weak under local conditions, and innovative institutional intervention is required.

Thus, it becomes of high importance to understand the procurement process by which bigger businesses engage with small-scale farmers. However, this procurement process can be challenging, when taking into account the high operating costs, lack of quality in raw materials, and the inconsistent demands for the processed produce. In the next section, examples of successful agro-processing case studies within the South Africa context will be discussed. It is important to note that the linking of small-scale farmers to markets in South Africa, via processing, has been well recognized and is seen as supplementary to seasonal gluts and associated price crashes (DAFF, 2012d). In the next section, two examples of market linkages within South Africa will be discussed. These two examples focus specifically on agro-processing linkages.

2.5 SMALL-SCALE FARMING IN SOUTH AFRICA – CASE STUDIES OF LINKING SMALL-SCALE FARMERS TO MARKETS

Small-scale farmers in South Africa, as identified in Chapter 1, face similar challenges to those of other small-scale farmers in developing countries. As identified by Mkhabela (2013), *“there is a consensus that the South African agricultural and agro-food market landscape is changing in line with changes occurring internationally as a result of globalization and market liberalization.”* The positive outlook is that contractual arrangements, such as *“contract farming, cooperatives and specific growers associations”*, do not totally ignore the inclusion of small-scale farmers, and they have certain policy structures and standard measurements in place to support small-scale farmer inclusion into markets (Mkhabela, 2013). Two successful case studies within the South African agro-food environment will be discussed, namely:

- *National Red Meat Development Programme (NRMDP)*
- *Linking small-scale communal wool producers in Kwa Zulu – Natal and the Eastern Cape to markets.*

In the next few paragraphs, these two success stories will be briefly discussed.

2.5.1 The National Red Meat Development Programme (NRMDP)

Previously the NRMDP was known as the Eastern Cape Red Meat Project and only focused on red meat development within the Eastern Cape. This project was established to address the fundamental issue of the limited small-scale farmer participation in the market. Prior to the project development, Mkhabela (2013) had stated that 65% of the cattle within the Eastern Cape were owned by small-scale farmers, while 43% of the households owned cattle. Initially, the main objective of this project was the “*conversion of the desire to partake in formal markets into active involvement in formal markets*”, with the specific idea to increase the wellbeing (turnover) of the farmers involved. Subsequently, the National Agricultural Marketing Council (NAMC) took control of the project, and the NRMDP currently aims to create feedlot capacity for communal farmers in the rural areas through enhancing livestock productivity in communal areas and farmers’ returns (National Agricultural Research Council, n.d.). Together with this, the NRMDP primarily focuses on connecting farmers to formal markets and systemizing the informal markets (Moatshe, 2016).

This project benefited the small-scale livestock farmers (who previously followed traditional ways of farming) in numerous ways, one of them being the introduction of a focus on informal, village-level marketing. Initially in the project, cattle-buyer days, auction pens, searches for new market entrants, pre-slaughter sale agreements, and a feeding programme were introduced within the small-scale livestock environment in the Eastern Cape (Mkhabela, 2013). Since the NAMC took complete ownership of the programme, 11 custom feeding facilities are operational, 12 in Eastern Cape, 2 in Kwa-Zulu Natal and 2 in the North West (National Agricultural Research Council, n.d.). The main purposes and advantages of the project are set out below.

The purposes of the NRMDP (Mkhabela, 2013; Moatshe, 2016) are to:

- Provide access for small-scale farmers to entry points into formal markets
- Act as market signals for vital information
- Act as a contract for secure future market
- Develop a programme to understand the structure, operation and requirements of formal red meat markets
- Develop marketing channels to increase participation in formal red meat markets
- Act as a training and practical assistance learning curve to align the age, health and breeding of animals more closely to anticipate market demand.

The advantages of the NRMDP (Moatshe, 2016; National Agricultural Research Council, n.d.) are in:

- Increasing income from raising cattle
- Developing livestock farmers throughout South Africa.
- Creating employment opportunities in local communities, through raising cattle.
- Using the livestock production and marketing activities to increase the incomes of these farmers
- Shortening the supply chain for farmers, i.e. eliminating the middleman
- Pioneering custom feeding programmes
- Facilitating pre-slaughter sales negotiations.

The achievement of these purposes, which created advantages, did not come without any failures. Historically, this mode of cattle production has always relied on local, informal village-level marketing, but with intervention of this project, cattle-buyer days have been set up, auctions have been introduced into the community, and there is a continuous search for new markets for these small-scale farmers.

Highlights of the project (Mkhabela, 2013; Moatshe, 2016) are:

- Gaining the trust of the small-scale cattle farmers in surrounding areas
- Mentorship and training programmes have been implemented
- Building key relationships with external stakeholders
- Establishing successful auction pens
- Establishing successful feedlots in six different provinces:
 - Eastern Cape feedlots – 17 feedlots planned and nine are operational
 - Kwa-Zulu Natal feedlots – 10 feedlots planned and two are operational
 - North West feedlots – five feedlots planned and one is operational
 - Mpumalanga feedlots – two feedlots planned, and but none are yet operational
 - Limpopo feedlots – two feedlots planned, but none are yet operational
 - Northern Cape feedlots – two feedlots planned, but none are yet operational.

All the above-mentioned points reflect on the positive outcomes that this project has had on the community of the Eastern Cape communal cattle farmers, as well as in all the other provinces where feedlots have been established.

2.5.2 Linking small-scale communal wool producers in KwaZulu-Natal and the Eastern Cape to markets

Before this project started, evidence about the constraints faced by small-scale farmers and traditional stock-keepers in the communal parts of the Eastern Cape already existed. Farmers in these regions struggled to make use of their assets, and could not make any investment decisions with regard to their small businesses (Mkhabela, 2013). This project, driven by the National Wool Growers' Association (NWGA), mainly focused on how to promote sheep wool in a profitable and sustainable manner in South Africa, through achieving the following strategic objectives mentioned by Mkhabela (2013):

- A better policy situation with more informed institutional decisions
- Improving the market and production environment
- Training programmes
- Establish a producer organization.

It is important to discuss the above information, together with the main purposes and advantages of this project. The need existed to increase the efficiencies of these farmers and improve their livelihoods, because most of the farmers in this region are small-scale, and lack competitiveness.

The purposes of the above-mentioned programmes, as included in Mkhabela (2013), are:

- Development of the infrastructure
- Providing training and mentorship
- Resource management
- Improving the different genetics of sheep flocks in rural areas.

The advantages of the above-mentioned programmes, as mentioned by Mkhabela (2013), are:

- Achieve a steady growth in wool output
- Production increase in quantity and quality
- Prices received by wool farmers improved
- Improvement of social indicators.

The achievement of the above purposes, which led to the advantages, did not happen without encountering challenges. One main challenge mentioned in the case study was the limited capacity to reach all farmers in remote villages. Together with this, the funding for financing projects like these remains a main issue. However, working with these rural, small-scale and communal farmers gave the interactors who worked with them a better insight into their living conditions, and they have gained valuable experiences. This experience can translate in future success and future relationship building in such communities.

2.6 CONCLUSION

The linking of farmers to markets with various linkage strategies has been the focus of increased attention in recent years. According to Nelson, Ishikawa, & Geaneotes (2009), commercially viable linkage strategies, where small-scale farmers are linked to large corporations, can play a pivotal role in the creation of jobs, livelihood improvements, the increase of options for economic growth, transferring skills, technologies, quality management and sound business standards along value chains. Not only can these models be seen as constituting a ‘win-win’ strategy, they can also be seen as being innovating solutions for revitalizing stagnant agricultural development, particularly in small-scale and emerging farming enterprises (DAFF, 2013; EDD, 2011; NPC, 2011; Vink, 2014).

In conclusion, one can undoubtedly say that small-scale farmers face different kinds of constraints to entering markets, while agro-processing, as an “inclusive business model”, can be seen to provide an efficient tool to include small-scale farmers in market opportunities. Although studies on agro-processing as a possible tool for including small-scale farmers exist, not many comparative studies between different cases have been done, thus making this study relevant.

CHAPTER 3

VALUE ADDING AS AN IMPORTANT LINK BETWEEN UPSTREAM FARMERS AND DOWNSTREAM MARKETS

3.1 INTRODUCTION

This chapter forms an important link in this dissertation by discussing the importance of value addition between up and downstream counterparties in the supply chain. Following this chapter, a case study analysis section will follow in Chapter 4, which will address some of the important attributes of a functional value-adding link between counterparties. The objective, as stated, is to identify how a small- and medium-scale agro-processing enterprise can be seen as an inclusive mechanism for assisting small-scale farmers to enter markets. In this chapter, the aim is to provide a benchmark for developing case studies on the effective interdependent relationship between small-scale farmers, agro-processing enterprises, and downstream markets. With this chapter and the analyses of the case study, an attempt is made to highlight the opportunities that small-scale agro-processing enterprises could offer to small-scale farmers.

The chapter commences with a literature review on High-Value Agricultural Products (HVAP) and agro-processing as markets for small-scale farmers. This will then be followed by the status of HVAP and small-scale farmer participation. Current opportunities and constraints for small-scale farmer participation in HVAP will then be discussed, concluding with a few successful business models, which link small-scale farmers to markets through HVAP.

3.2 HIGH-VALUE AGRICULTURAL PRODUCTS AND AGRO-PROCESSING AS A MARKET FOR SMALL-SCALE FARMERS

As noted in previous chapters, there is a phenomenon that agri-food systems in developing countries are diversifying into high-value markets (Imami, E. Zhllima, & Bokelmann, 2013; Reardon, C.P., & B., 2012). These changes lead to a higher share of processed food in overall food consumption (Trade & Industrial Policy Strategies, 2016). Agro-industrialization, liberalization and globalization are some of the changes that need to be addressed to convert these changes into opportunities (Masakure & Henson, 2005; Temu & Temu, 2006). For small-

scale farmers, this phenomenon could lead to opportunities, such as higher returns on land and productivity, while it could also lead to challenges such as meeting the increased standards required for products (Maspaitella, Garnevska, Siddique, & Shadbolt, 2018). According to TIPS (2016), this phenomenon opens up opportunities for job creation in food processing, as well as confirming the growing importance of agro-processing as a market for smaller-scale agricultural producers. However, the question can be asked as to whether small-scale farmers would benefit from producing HVAP in high-value agro-processing markets.

Inevitably, small-scale farmers will benefit from producing in high-value markets. Small-scale farmers are usually included in higher-value markets to supply produce to those markets, using a business approach (TIPS, 2016). For small-scale farmers to be included in these markets, they have to take note that traditional crops, such as cereal grains, do not have such a high market value as HVAP do (Temu & Temu, 2006). High-value agro-processing is defined as “*a network of food-related businesses through which products move from production to consumption, while gaining incremental value in the marketplace*” (Stevenson & Pirog, 2013). The diversification into high-value agricultural processing markets could benefit small-scale farmers and landless labourers in developing countries (Weinberger & Lumpkin, 2005). These benefits would come from increasing both production and employment, while stimulating growth in the rural and urban non-farm economy, and by making food available that is high in nutrients (Weinberger & Lumpkin, 2005). HVAP, which are generally high in nutrients, are defined as “*products that are typically perishable, that are of specific high-value, and that are sold through specialized markets*” (CGIAR, 2004). According to Temu and Temu (2006), HVAP are “*products with high monetary value with emerging and expanding markets.*” Literature suggests that HVAP markets in specified countries within Asia, the Pacific and Sub-Saharan Africa could be beneficial to small-scale farmers, due to their high growth in both the domestic and export markets. With this demand growth for HVAP in these continents, it is also evident that the majority of these countries have many marginalized, small-scale farmers who fall within the low- to middle-income brackets and they lack in basic needs (Weinberger & Lumpkin, 2005).

Globally, an increasing number of agribusiness multinationals recognize the economic potential of small-scale farmer inclusion in growing markets in Africa, Asia and Latin America, and have introduced plans and strategies to source more produce from these farmers (Sjauw-Koen-Fa, Blok, & Omta, 2016). The demand for HVAP and high-value agro-processing is increasing, especially in low- and middle-income countries with unstable institutional environments. High-value agro-processing in HVAP markets requires a set of institutional changes to be made to

allow small-scale farmers to compete in markets (Sjauw-Koen-Fa et al., 2016; TIPS, 2016; Weinberger & Lumpkin, 2005). TIPS (2016) identified the fact that certain agri-system features limit growth for farmers producing HVAP for smaller agro-processing entities. A change in these agri-systems will determine how economic rent is allocated among system participants (TIPS, 2016). Encumbered with weak agri-system features, small-scale agriculture in emerging economies faces several entry barriers in terms of production, transactions, productivity and transactional barriers in the effort to access high value-adding food markets (Sjauw-Koen-Fa et al., 2016). These barriers to entry include varying production quality and quantity, increased transaction costs, and a poor institutional structure (London et al. 2010; Wiggins et al., 2010; IFAD 2012; Hazell et al., 2010; Sjauw-Koen-Fa, 2012). Therefore, Vellema (2015) has stated that small-scale agriculture in developing nations could fill the yield gap to take advantage of this changing agri-food system. Together with this, TIPS (2016) noted that the development of the agro-processing sector would have high potential to create new market access for small-scale farmers, thereby improving their dispersed production, low productivity, variable quality, and inaccessible rural financial system.

Successful models of small-scale farmer inclusion in high-value agricultural product markets will be discussed in a later section, but to conclude this section, an example in Asia shows that market liberalization and globalization cause transformation in agriculture and agri-food markets (BIRTHAL et al., 2007). With these changes, it becomes evident that consumer preferences are changing towards high-value food products, and that agriculture is simultaneously diversifying. Although this new demand, together with new dynamic markets for small-scale farmers, offers many opportunities, challenges that could prevent consistent production of high quantity and quality produce by small-scale farmers do exist. Rural farming households often live in remote villages and cannot deliver the required produce to the market. As stated by Weinberger and Lumpkin (2005), for small-scale farmers living in remote rural areas, transport can lead to both opportunities and threats, especially if limited to no attention is given to it. If the threats and constraints can be limited, then farmers are likely to benefit from diversification into HVAP (BIRTHAL et al., 2007).

3.2.1 Status of HVAP markets and small-scale farmer inclusion

As mentioned in Chapter 1, the UN Population Division (2014) has stated that the world population is rapidly expanding, and estimates are that by 2050, world population will reach 9.6 billion, 6.3

billion of which will live in cities. It is evident that the demands for agricultural products are increasing, that the global population is expanding rapidly, and that food systems are transforming (Vellema, 2015). The main concern is how small-scale farmers could benefit from the growth in population and how food can be processed meet the growth in demand.

According to Weinberger & Lumpkin (2005), an influx of people into cities requires mass quantities of food being produced far from where it is consumed, which has an effect on the processing and value-adding activities. Urbanization is one of the main drivers for HVAP markets, because a growth in the urban population means that fewer people rely on subsistence farming, and more people depend on the market as a source for food. As Temu and Temu (2006) state, there is a corresponding increase in disposable income that comes with urbanization, and greater numbers of people then depend on the market. With urbanization, comes knowledge of market information. With consumers becoming more health conscious, HVAP markets attract more participants within the agricultural value chain. An example from Kenya's HVAP markets (adapted from Xinshen et al., 2003) shows that Kenya's HVAP markets are operated by almost all types of farmers; large- and small-scale, rich and poor. According to the World Development Report (2008), trends such as rising incomes and urbanization open doors for demand in higher-value products, which ultimately increase the consumer's attention to food safety and quality.

In Sub-Saharan Africa (SSA), Asia and the Pacific, HVAP have increased rapidly over the past 30 years, but there has been unequal growth across regions and across products (Weinberger & Lumpkin, 2005). An example from India shows that, although the farmer sector is mainly comprised of small-scale farmers, the share of high-value food commodities in the value of agricultural sector output increased from around 35% in 1980s to around 47% in the early 2000s (Birthal et al., 2007). This is not only the case in India, as elsewhere in Asia and the Pacific, production, consumption and trade in HVAP have increased. Notably, greater numbers of consumers prefer processed, ready-to-eat convenience foods, in both developed and developing countries (Weinberger & Lumpkin, 2005). The change in consumer preferences is accounted for by an increase in high-value crop production. Notably, over the past 30 years, production and trade flows of high-value food products have increase significantly. Studies have indicated exponential flows of exports of high-value food products from developing to developed countries (Aksoy, 2005; Diaz-Bonilla & Recca, 2000).

Markets for HVAP are growing across the continent, with specific niche markets in SSA, Asia and the Pacific. HVAP markets are growing swiftly, and are becoming more capital- intensive and vertically integrated (Weinberger & Lumpkin, 2005). HVAP niche markets such as micronutrient-

rich meats, fish, fruits and vegetables have all been part of new markets which created new opportunities for smallholders (Temu & Temu, 2006). Trends as mentioned above stimulate market opportunities for higher value agricultural products and improve the marketing structures in developing nations (World Development Report, 2008). In the next section, opportunities and constraints involved in participation in HVAP markets will be discussed.

3.2.2 Opportunities and constraints for small-scale farmers' participation in HVAP markets

The following section will summarize the opportunities and constraints associated with the participation of small-scale farmers in HVAP. There is a long line of discussions concerning the impacts of contract production, specifically for HVAP, within developing nations and their role in poverty alleviation mechanisms (Masakure & Henson, 2005).

A large range of opportunities exists for small-scale producers to become part of a changing market structure, which is mainly driven by changes in consumer demand. Changing consumer demand is also a key determining factor in the growth of the food processing and food service industries (World Development Report, 2008). The first opportunity comes from the dynamic structural changes in the value chains of the importing countries in the world (Temu & Temu, 2006). According to Masakure & Henson (2005), Zimbabwe developed an out grower scheme, "Hortico Agrisystems", which *"sources from over 4 000 small-scale producers, which predominantly farm on communal land and range in size from 0.5 to 10ha, with an average land holding of around 2.3ha."* Sourcing directly from small-scale farmers predominantly means that there are fewer links within the value chain. Temu and Temu (2006) note that the supply chains of HVAP, particularly in the horticultural market, have evolved in such a way that only large retailers and supermarkets purchase from countries within the SSA region. Secondly, HVAP markets that are suitable for small-scale farmer participation are beneficial in terms of the value adding process. Most of the farmers within rural, developing communities in SSA, Asia and the Pacific face post-harvest losses and lose control over value addition after the farm gate. Small-scale farmers and small agro-processing firms often lack knowledge with regard to post-harvest management, technology and infrastructure (Weinberger & Lumpkin, 2005). This is often the case in developing countries and they struggle to compete against commercial farmers who have managed the skills of post-harvest management and value addition. Most HVAP are characterized by a combination of high transaction cost to final products, and this causes low-

income households to struggle to engage in the production of these products, compared with wealthier households (Goletti, 1999). Examples of the above-mentioned benefits can be seen in the cases of milk, broilers and vegetables in India (Birthal, Joshi, & Gulati, 2005) and broilers in Indonesia (Patrick, 2004). In these examples, evidence exists that there is increased vertical coordination through linking supply chain actors through contracts, strategic alliances and other government modes, which reduced the transaction costs and risk substantially (Weinberger & Lumpkin, 2005). A third benefit of HVAP markets is that small-scale farmers have a production profitability and advantage over medium- and large-scale entities (Temu & Temu, 2006). Together with this, they also have an advantage in terms of their management, labour relations and disease management, but on the legal side of compliances, commercial farms are favoured (Temu & Temu, 2006).

As noted above, small-scale farmers clearly benefit from their participation in HVAP markets, but HVAP markets prove to be risky to operate in and can pose a set of constraints to these farmers. Usually, HVAP markets are characterized by the handling of fresh fruit and vegetables and cut-flowers, as noted by Temu and Temu (2006) and Weinberger and Lumpkin (2005). Constraints, such as access to capital, quality of inputs, lack of productivity and economies of scale, prohibit small-scale, poor farmers from competing in these HVAP markets.

The lack of access to capital and the high-risk environment are two fundamental factors that limit the participation of small-scale farmers in HVAP markets because, due to their nature, these crops are more costly to produce per hectare than staple crops are (Ali, 2002; Ali & Hau, 2001; Key & Runsten, 1999b). Most growers require credit to finance their production, and small-scale farmers do not always have access to these financial resources, as commercial farmers do. Small-scale farmers often lack human capital, because they only operate according to small, family farm traditions. High-value crops are labour intensive and technology driven, the requirements of which cannot be met with family labour alone (Weinberger & Genova, 2005). The key to minimizing the risk of not being able to access capital and to strengthening smallholders' participation in HVAP markets would lie in the improving of market information systems for high-value crops (Weinberger & Lumpkin, 2005).

Another critical constraint to the participation of small-scale farmers in HVAP markets is improving their input-sourcing market in terms of quality and quantity. High-value agricultural crops require more inputs to be used than other crops do, and access to inputs, specifically seeds, is often limited (Weinberger & Lumpkin, 2005). Examples out of the fruit and vegetable markets of Asia and the Pacific show that small-scale farmers in those regions experience a lack of access to

quality seeds. Part of the lack of sufficient access to quality inputs arises from the constraint of economies of scale. Usually, small-scale farmers cultivate small-pieces of land, which constitute a disadvantage to these small-scale farmers in entering HVAP markets (Temu & Temu, 2006). According to Carter, Barham, Mesbah and Stanley (1995), factors that work against smallholders are:

- *“the need to use large amounts of inputs*
- *the requirement for managerial skills*
- *certification and quantification requirements*
- *vertical coordination to deliver perishable products to markets or processing facilities in time*
- *product gestation periods are long for several fruits crops*
- *access to future markets or insurances to withstand the price and supply fluctuations associated with many high value crops*
- *requirements for quality labour”.*

Literature suggests that the above-mentioned factors all work against small-scale farmers, which influences the quality of small-scale farming labour. High-value crops require quality, intense labour, and smallholders should give special attention to these crops, because they do not have economies of scale.

In the next section, the effective link between farmers, agro-processing, and markets will be addressed, following a case study of fresh vegetable small-scale farmers in India.

3.3 EFFECTIVE LINKAGES BETWEEN SMALL-SCALE FARMERS, AGRO-PROCESSING AND MARKETS

Business linkages are not new concepts, and there has been an intensive shift towards this topic in recent years. There is increasing evidence that commercial business linkages between small-, medium- and large-scale farmers/business can play a vital role in creating an improved future for the smaller-scale counter parties (Nelson et al., 2009). Effective linkage between small-scale

farmers, agro-processing and downstream markets is crucial for the improved interdependent relationships between these up and downstream players in the markets.

This section focuses on agro-processing and the effective link between upstream farmers and downstream markets as constituting a type of an inclusion mechanism to include small-scale farmers in markets. The FAO (1997) defines agro-processing as the *“transformation of products originating from agriculture, forestry and fisheries.”* According to Owoo & Lambon-Quayefio (2017), *“agro-processing firms are characterized by crucial backward and forward linkages.”* The terms “backward” and “forward” linkages are important to define, and Owoo & Lambon-Quayefio (2017) have defined upstream industries as *“those engaged in the initial processing of agricultural commodities, such as rice and flour milling, leather tanning, cotton ginning and fish canning, among other.”* The FAO (1997) defines downstream industries as those *“involved in more complex processing of intermediate products made from agricultural materials, including the making of bread, biscuits, textiles, paper, clothing and footwear.”*

In the next few paragraphs, examples of market linkages will be discussed through certain case studies. Although this example is not specifically related to agro-processing, it can be seen as an important linkage in the value chain of HVAP, and agro-processing can flow out of this. The USAID conducted a project, which focused on methods to effectively link small-scale vegetable farmers to competitive value chains. The Growth Orientated Microenterprise Development program (GMED) in India developed a project that focused on the fresh vegetables value chain in India, which was mainly comprised of small-scale farmers cultivating an average of 1.3 hectares (Dunn, Schiff, & Creevey, 2011). This project is representative of many similar programmes that aim to include smallholders in a commercial value chain. The GMED followed a two-pronged approach that provided technical assistance to farmers, and they established mutually beneficial vertical relationships, i.e. connecting small-scale farmers to domestic supermarket chains (Dunn et al., 2011). The GMED wanted to stimulate new market relationships and improve the quality of the products in order to facilitate the development of competitive value chains, improve economic growth, and produce wealth in low-income communities (Dunn et al., 2011).

Before the start of the GMED project, India’s traditional system was dealt with under the Agricultural Produce Marketing Committee Act (APMC) for agricultural trading, initiated during the 1960s, which involved small-scale farmers selling to various types of intermediaries through the government-mandated wholesale system (Dunn et al., 2011). The main goal of this Act was to ensure that small-scale farmers received fair prices for their produce. Initially, this system was enacted to ensure that farmers could not legally engage in contracts directly with buyers and

traders, but the *“lack of regulation and oversight by the government has reduced transparency in the system”* (Dunn et al., 2011). This is often the problem with small-scale farmers in developing nations, where their regulative environment does not give the necessary support to these farmers, and consequently a lack of confidence develops within the farmers’ mind-sets towards their governments.

Owoo and Lambon-Quayefio (2017), who conducted a study in Ghana on the agro-processing sector, note that *“although Ghana’s agricultural sector continues to contribute positively to the country’s GDP, there remains a weak linkage between agriculture and industry.”* It is noted in other SSA countries, as well, that little government intervention exists in the domestic HVAP value chain (Temu & Temu, 2006).

Referring back to the GMED project study during the early stages of 2006, various Indian states began to discard the APMC regulations that restricted contract farming. This was a significant occurrence for the design and implementation of the GMED project, since its focus was on the fruit and vegetable component, aimed to link small-scale farmers directly with corporate buyers in the growing organized retail sector. Figure 3-1 below depicts the Indian fresh vegetable supply chain, prior to the intervention of the GMED project. It is significant that this value chain exhibited limited efficiency in the aggregation of small-scale farmers’ production, and there was inefficient government intervention in the marketing of this produce and uplifting the poor production standards of the small-scale farmers.

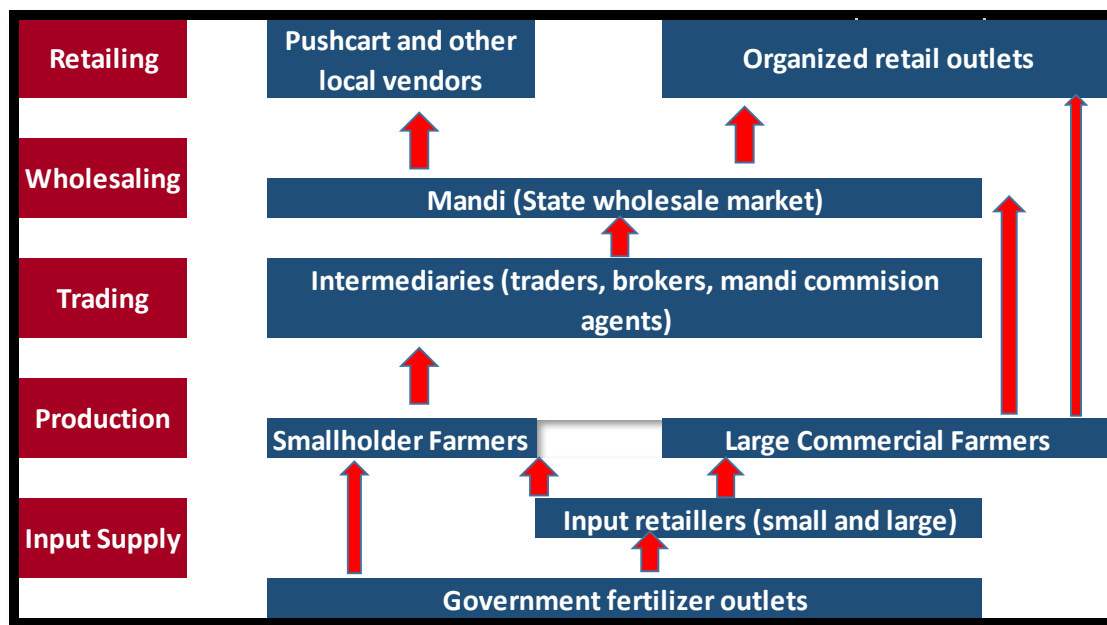


Figure 3-1: Simplified Indian Fresh Vegetable Value Chain Map

Source: Dunn et al. (2011)

The GMED project created a direct channel for small-scale farmers to promote their produce to organized retail markets within India. From this downstream benefit, the GMED also limited the constraints faced by small-scale farmers in getting quality inputs from upstream suppliers and gaining access to efficient irrigation systems (Dunn et al., 2011). Table 3-1 below depicts the effective casual model for the vegetable value chain in India. The crucial element of this model was the effective development and strengthening of new vertical linkages, with the focus on technical assistance at the farm level and facilitation of market linkages, so that the sector could increase in competitiveness and poverty be reduced (Dunn et al., 2011). What is very important to note in this model is that it will not only increase income in the short term, but it will change the *“fundamental rules of the game by giving farmers a viable alternative market, over the previous government regulated system”* (Dunn et al., 2011).

Table 3-1: Causal Model for GMED Fresh Vegetable Component

Activities	Outputs	Outcomes	Impacts
Train extension workers to assist small-scale farmers in improving product quality and postharvest handling processes.	Training materials developed	Farmers adopt new techniques and varieties	Value Chain Level Increased small farmer participation in domestic market for higher value vegetables
	Demonstration plots established	Increased productivity Increased product quality	
Facilitate small-scale farmer access to embedded extension and training services from corporate buyers	Farmers trained in new production technologies, quality standards and post-harvest processes	Increased investment in productive inputs and Reduced post-harvest losses	Firm Level Increased profits from vegetables
Facilitate formal and informal commitment between small-scale vegetable farmers and corporate buyers	Memoranda of understanding signed with corporate buyers	Corporate buyers establish new collection centers and retail outlets	Household Level Increased household
Develop and establish systems for reducing the costs and risks of incorporating small-scale farmers into organized retail supply chains	Commitments made by farmers, farmers' groups, and buyers to implement new business models linking farmers to corporate buyers	Increased sales from small-scale farmers to corporate buyers and Strengthened business relationships between small-scale farmers and corporate buyers	Improved housing conditions and access to basic services Reduced poverty

Source: Dunn et al. (2011)

The goal of the GMED was to provide technical assistance to farmers with the aim to “upgrade” the farmers and to establish mutually beneficial vertical relationships. In effect, they wanted to connect small-scale farmers to vegetable markets. The study was successful in a sense that certain interventions by the GMED in the Indian value chain were achieved and provided to farmers. Although the GMED had an intact effective linkage model, the project failed to achieve its targeted scale, both in the volume and duration of sales to corporate buyers, and in the adoption of new technologies by farmers. According to the authors of the study, Dunn et al., (2011), the two-pronged approach was successful in fostering both technical improvements and market linkages, and farmers expressed a high degree of satisfaction. A final note on the GMED project is that many farmers stated that they had been able to upgrade the quantity and quality of their produce, and the subsector as a whole had benefited. Most of the farmers involved with the GMED project indicated that they had experienced an increase in sales of fresh vegetables and profits because of those upgrades and effective market linkages.

With the above project proving to be successful, further examples of small-scale farmers' innovative abilities to supply to HVAP markets will be mentioned below, followed by the effective linkages in the South African farming complex. Examples of small-scale farmers' innovative abilities are:

- The Hortico Out-grower model in Zimbabwe serving over 300 farmers;
- Home-grown in Kenya operating with 900 farmers;
- Fresh Produce Exports Association of Kenya;
- Capespan Group in South Africa with 3 000 producers

To conclude this section, it is noted that Temu and Temu (2006) have mentioned that, given the above innovative examples, no assumptions should be made that small-scale farmers ought to engage with similar organizations such as those above mentioned in order to produce in larger scales. Before any type of organization were to engage in a joint venture with small-scale farmers, with the thought of doing it successfully, the following research questions should be carefully addressed (adapted from Temu & Temu, 2006);

1. *“What market organizations are most efficient for low-resource-endowed producers at the varied localities?”*
2. *What are the costs of establishing and maintaining the desired market organization?*
3. *What are the strengths, weaknesses and sustainability potential of the proposed organization at different micro-ecological locations?”*

3.4 THE EFFECTIVE LINKAGES IN THE SOUTH AFRICAN AGRO-PROCESSING COMPLEX

In an article on small-scale poultry production, Wynne and Lynn (2003) state that *“in the developing areas of South Africa, like in other developing countries, small-scale farmers find it difficult to participate in commercial markets due to a range of constraints”*. These constraints, described by numerous authors are as follows:

- *“High transaction costs*
- *Lack in skilled labour*

- *Weak liquidity - limited access to credit and saving facilities*
- *Lack to reliable market information*
- *Inefficient growth linkages”*

As mentioned in Chapter 1, South African agriculture has a dual nature, being divided between subsistence and larger-scale farmers. Thus, these small-scale farmers often find it difficult to participate in some commercial markets. According to Groenewald (1993), *“a lack of entrepreneurship, expertise, tenure security, access to product and factor markets, small farm size and inappropriate technology are the major bottlenecks to agricultural modernization in third world agriculture.”* DAFF (2012) noted that small-scale farmers struggle to compete in any effective value chain and downstream links. Lack of access to land, poor physical and institutional infrastructure, reliable markets, human capital, inconsistency in production and a lack of bargaining power cause farmers to be excluded from the value chain (DAFF, 2012b).

Considering these specific constraints faced by small-scale farmers in South Africa, it is important to create effective linkages within the agro-processing sector and the downstream farmers and ensure value addition throughout the process. According to Hill (2000), Fig (2002) and a working paper by TIPS (Mather, 2005), the South African food processing sector is highly concentrated, with major listed companies controlling both production and sales in the majority of the food categories. This concentration in the South African food processing sector is a consequence of both the apartheid regime and the technological barriers to food processing (Mather, 2005). Following this concentration within the agro-processing market, certain statements can be made about these concentrations (Mather, 2005):

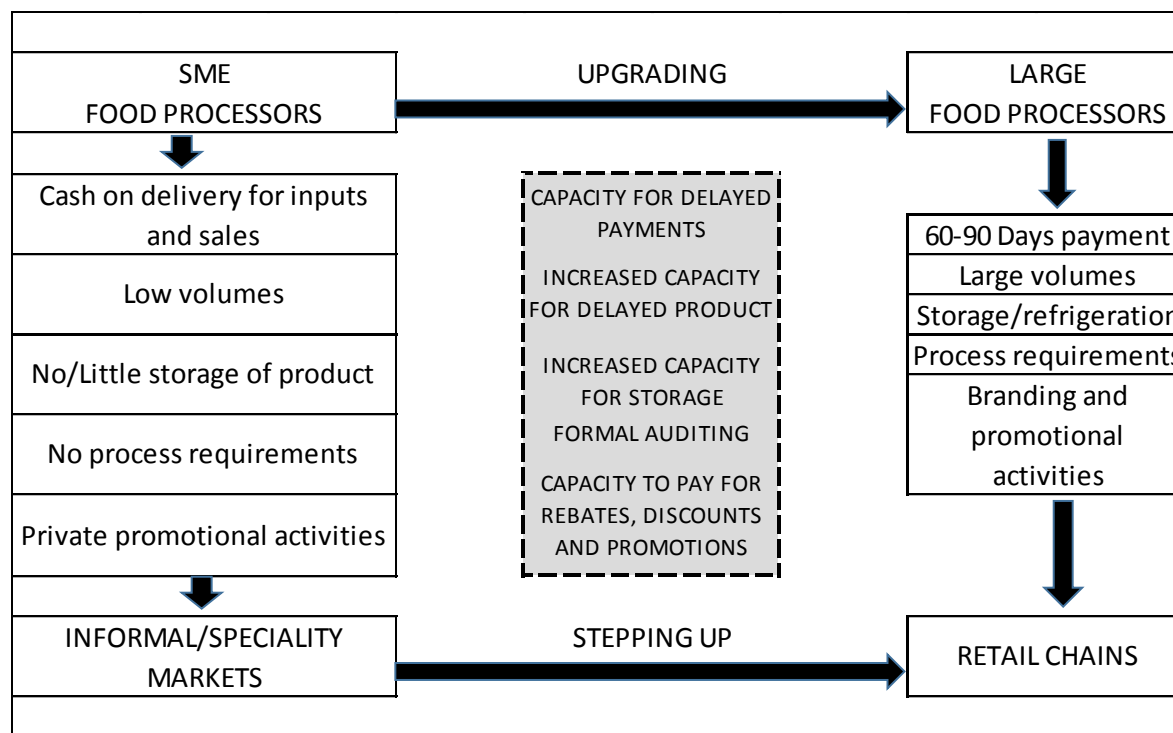
- There are variations that exist within this concentrated food sector;
- The level of concentration by food sector plays an important role in the extent to which firms are involved;
- Evidence exists that both market concentration and fragmentation have been increasing since 1996.

Since 1996, new opportunities have opened up for small- and medium-scale processors to enter the agro-processing sector (Mather, 2005). Inevitably, the market share has remained with the larger processing companies, although they have recently faced more notable competition from

many small- and medium-sized processors (Mather, 2005). Ultimately, this has increased the competitive nature of the companies involved in the retail sector, and Weatherspoon and Reardon (2003) have stated that the “South Africa’s retail sector is characterized by intense competition for market share.”

The apartheid-era legislation that controlled agricultural marketing had presented an obstacle for the development of SME food processors, and after the deregulation of the marketing boards from the mid-1990s, many new SME agro-processors have emerged (Mather, 2005). An example in the Lacto Data report by Coetzee (2003) showed that before market liberalization, only 40 dairy processors had existed, while six year after liberalization, this figure had increased to over 500 dairy processing organizations. The removal of government control over agricultural marketing makes it more likely that small-scale agro-food processors would focus on niche products, like honey, chili sauces, and increasing production of high-value agricultural products mentioned in previous sections in this chapter (Mather, 2005). Table 3-2 below reflects a typical value chain for SMEs, and shows the effective linkages between the value chain partners.

Table 3-2: SME food processor markets



Source: Mather (2005)

Since the formation of SMEs, various characteristics have separated them from the larger-scale food processing organizations. Mather (2005), in the working paper for TIPS, provided a set of characteristics by which we can classify these SMEs. Small- and Medium-sized Enterprises can be characterized as follows:

- Selling produce to local, informal markets;
- More often they supply to local and regional markets;
- SMEs consist of a higher competitive nature than other processors and they guarantee higher quality, which is associated with higher prices;
- Traditionally, SMEs seldom make use of any promotional efforts and they often rely on a word-of-mouth marketing mechanism.

Succeeding this chapter on effective linkages, the first part of Chapter 5 will discuss a South African agro-processing case study, Fruitlips, to focus on the structures behind the effective linkages between the suppliers, the agro-processing component, and the final downstream consumers, and on how value can be added throughout this process. Fruitlips is a perfect example of how this interdependent relationship between farmers, agro-processing and markets can eradicate poverty, through job creation and observing ethical business principles.

3.5 CONCLUSION

Chapter 4 is an important linking chapter within this dissertation. In Chapters 1 to 3, the reader's attention is directed towards small-scale farming around the world, with a focus on South Africa's small-scale farming environment. An important problem with small-scale farming is highlighted for the reader to indicate the importance of understanding the need for inclusive business models. Examples are then briefly discussed with regard to these business models and their success within small-scale farming communities.

Chapter 4 emphasized the importance of value addition, and in effect, agro-processing as an effective link between upstream farmers and downstream markets. The aim of this chapter was to provide a benchmark for developing case studies on the effective interdependent relationship between small-scale farmers, agro-processing enterprises, and downstream markets. It is

important to note that small-scale farmers in developing countries usually have incomplete information, and lack access to credit and extension services, while facing highly integrated markets, together with a weak institutional environment. With this said, the interdependent relationship between small-scale farmers and an agro-processing case study, for example Fruitlips where the focus is mainly on poverty reduction through job creation and ethical business principles, indicates that farmers and workers within the processing plant can be linked to either upstream farming enterprises or downstream markets.

This chapter highlights the importance of HVAP markets for small-scale farmers. HVAP markets in low-income countries create the opportunity for farmers to increase both production and employment, while stimulating growth in the rural and urban non-farm economy, and to make food available that is high in nutrients (Weinberger & Lumpkin, 2005). With the consumer basket changing all around the world, it becomes increasingly important for institutional arrangements through government innovative plans and private organizations to include small-scale farmers into their value chain to promote and produce high-value products as an opportunity to meet the changing consumer demand. This can assist to alleviate the poverty and unemployment figures in developing nations and stimulate entrepreneurial thinking within the small-scale farming communities.

CHAPTER 4

CASE STUDY ANALYSIS

4.1 INTRODUCTION

This chapter will focus on two types of analyses. The first section describes a qualitative analysis of the Fruitlips case study. This will focus on the role that value addition plays in establishing a functional link between small-scale producers and mainstream markets. This will form an integral part of this dissertation in terms of the current problem statement and objective. The second section sets out a quantitative analysis of the data gathered through the questionnaires and interviews conducted with all the selected respondents from two case study projects (A & B). Case study A is the case of Abalimi Bezekaya / Harvest of Hope (HOH) and case study B is the case of Timbali Technology Incubator (TTI). For the rest of this dissertation, case study A will be referred to as HOH, and case study B as TTI.

4.2 THE CASE OF FRUITLIPS

This section addresses the importance of value adding as linkage mechanism between up and down stream counterparties within the value chain. This case study should provide a benchmark for other small- and medium-scale agro-processors as to how an effective agro-processing inclusive business model should be formulated.

The agro-processing model of Fruitlips is on the Achtervlei farm, which is nearly 150 kilometres from Cape Town. The farm is a third-generation, family-owned farm of the Eigelaar family, who farm deciduous fruit. The farm, with fruit trees in the valleys and marshes, forms an integral part in creating jobs for more than 26 families, and is involved in secondary agriculture with a focus towards improving a poverty-stricken community. Fruitlips began in February 2014, with the aim to position the business through developing people, creating new offset points, and improving the financial situation of people involved. Fruitlips had a vision to create a link between a fruit business and people. Fruitlips is an agro-processing company, delivering processed fruit products to selected retail stores. The focus of Fruitlips is to create fresh, hand-made jams, while retaining the highest quality standards. One of the key distinguishing factors of Fruitlips is that they rely on fruit that is not exported. The generation currently operating on the farm and the business have

collectively gained valuable knowledge on how to continue the success of the family. Building a sustainable future is important for agricultural growth, especially in rural communities. Small-scale farmers are responsible for most of the food consumed in the world and most of the investments made in agriculture (CSM International, 2016).

In Chapter 1, the problem statement for this dissertation is discussed and it is noted that small-scale farmers in South Africa face numerous constraints before they can enter markets. These constraints often lead to higher transaction costs, and ultimately minimize the farmers' profit margins. With high entry barriers to entry to commercial markets, farmers are then forced to produce only for subsistence use, without having any knowledge of consumer needs and wants (Mkhabela, 2013). In light of the problems that small-scale farmers face in South Africa, the inclusion that Fruitlips facilitates for small-scale farmers provides an efficient link between poorly endowed farmers and downstream counterparties. Although Fruitlips does not engage with small-scale farmers, their blue print, which is sustainable development through the connection of people to markets with an agro-processing model, can be used for small-scale farmer value addition through the effective linkage between farmers and markets.

For a case study analysis, it is important to ask 'how' and 'why' questions. Fruitlips started because there was a need to create jobs within the farming sector in which Fruitlips is situated. Fruitlips started their agro-processing unit because they needed to find a market which added value to the third-class fruit that they were producing. This created an opportunity for Fruitlips to develop an agro-processing model, which provided a platform to add value to third-class fruit and create jobs within the agri-workers profile. Through this platform, Fruitlips manages to serve three distinct markets where value is added throughout the chain. These markets are:

- Retail – under private labels
- Special occasion products (for special requests from the supermarket, they only produce a certain amount)
- Their own Fruitlips brand, which can be purchased at their facilities in the Piket-Bo-Berg district.

Throughout the start-up process and within the current markets they serve, challenges are inevitable. Fruitlips faced numerous challenges, which is typical for any other new start-up business. A Likert-scale method was used to rank the challenges they previously faced and are

currently facing, with one being a major challenge and five being minor challenges. The constraints faced during the start-up process, and currently, are shown in Table 4-1 below.

Table 4-1: Constraints faced by Fruitlips

Constraints faced during start-up	Constraints faced currently
1 - Cash flow	1 - Cash flow
2 - Finding a market for processed products	2 - Renovations and upgrading
3 - Consistency in the processing plant	3 - Keeping up with growing demand
4 - Pricing advantages within the market	4 - Shortage of skilled labour (need to train new staff)
5 - Finding 'sweet spots' with market potential	5 - Accurate marketing to meet target market

Source: Personal communication, Fruitlips Management (2017)

These constraints faced by Fruitlips can be seen as opportunities to improve the linkage to downstream markets. As mentioned above, although this case study does not actively involve small-scale farmers, the constraints and opportunities are similar to those of other small-scale inclusion linkages. Fruitlips management were requested to identify on a scale of one to five which constraint is the most important to them to minimize. The Likert-scale analysis identified poor cash flow as the most important constraint currently, and during the start-up process. Literature states that the benefits of participating in such linkages are generally associated with cash-flow stability, generating employment, and increasing technical assistance (Glover and Kusterer, 1990; Grosh, 1994; Humphrey et al., 2004). This corresponds with the Fruitlips business model, where farmers and individuals involved generate greater income, numerous families are employed, and technical assistance is provided to farmers and workers working in the agro-processing plant.

Figure 4-1 below sets out an illustration of the Fruitlips business model, where effective communication, trust and ethical business principles are key to the value addition in the linkage between up and downstream members.

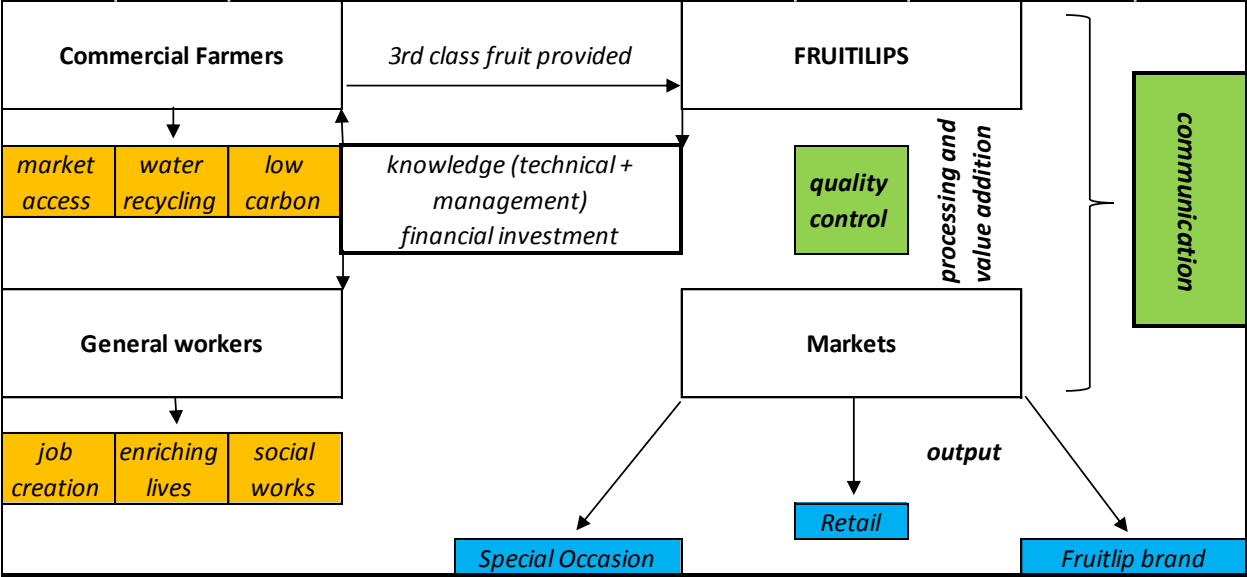


Figure 4-1: Fruitlips Business Model

Source: Author

The following section is adapted from the Fruitlips website, as well as personal interviews conducted with the Fruitlips management. When interviewed during June 2017, Ms L Jacobs stated that effective communication and quality control throughout the value chain are critical success factors for them to ensure the successful linkage between up and downstream members. Fruitlips, (n.d.) states that together with this, characteristics such as water recycling, low carbon footprint, job creation, enriching lives and community developing establishes a competitive advantage for Fruitlips. Using this competitive advantage, Fruitlips serves three distinctive markets, namely special occasion markets, retail markets and their own in-house brand. This model can be adapted as blueprint for an effective link between small-scale farmers, agro-processing and commercial markets.

In the next section, two cases studies will be analysed using a quantitative analysis approach.

4.3 THE CASES OF ABALIMI BEZEKAYA / HARVEST OF HOPE (HOH) AND TIMBALI TECHNOLOGY INCUBATOR (TTI)

In the following section, demographic characteristics on the two case studies will be analysed and displayed. Before their demographics are discussed, a short introduction on each case will be given.

Harvest of Hope was established to function as an agricultural system which would offer support to the struggling community and through this, create a link for “*Abalimi farmers*” and downstream markets (Abalimi Bezekaya, n.d.). The main aim was to create a business with a social awareness within the Cape Flats that supports and preserves the community gardens for now, and the future (Abalimi Bezekaya, n.d.).

As a non-profit organization, Timbali Technology Incubator supports small-scale farmers to develop sustainable businesses (Timbali Technology Incubator, n.d.). They provide business development services such as business management, accounting and sales (Timbali Technology Incubator, n.d.). The technical skills, technology and clustering of farmers together, gives small-scale farmers the opportunity to compete with commercial farmers (Timbali Technology Incubator, n.d.).

In the Subsection 4.3.1 below, demographic characteristics of the sample group will be presented, including the respondents’ genders, ages, marital statuses, qualifications and respective positions within the organization. The sample sizes are relatively small, being eight farmers from each case study. Although there were limited numbers of farmer interviews, the results can be used as representative of the population.

4.3.1 Respondents’ genders, ages, marital statuses, qualifications and positions

It is important to frame a description of the sample group before analysing the various responses. Figure 4-2 and Figure 4-3 below reflect the frequencies and percentages representation of the genders, ages, marital statuses, and qualifications of the respondents.

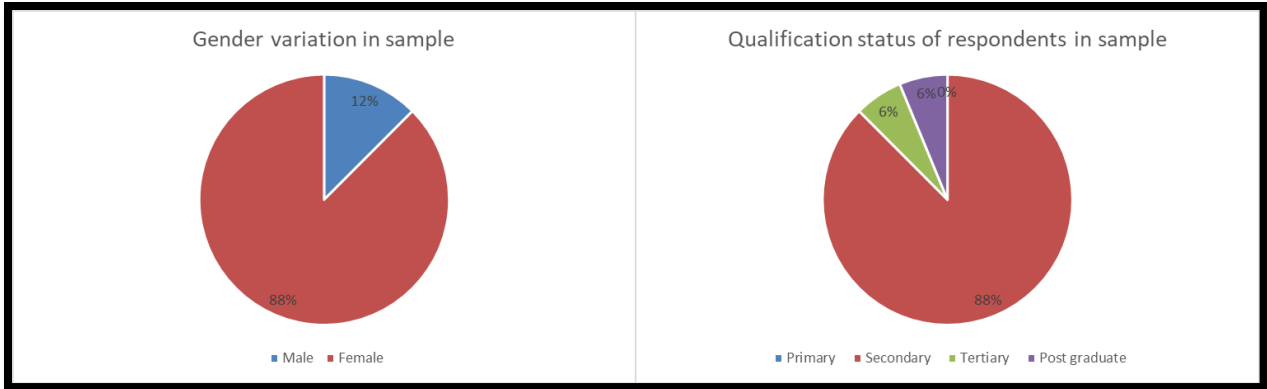


Figure 4-2: Gender variation and qualification status of respondents in the sample analysed

Source: Author

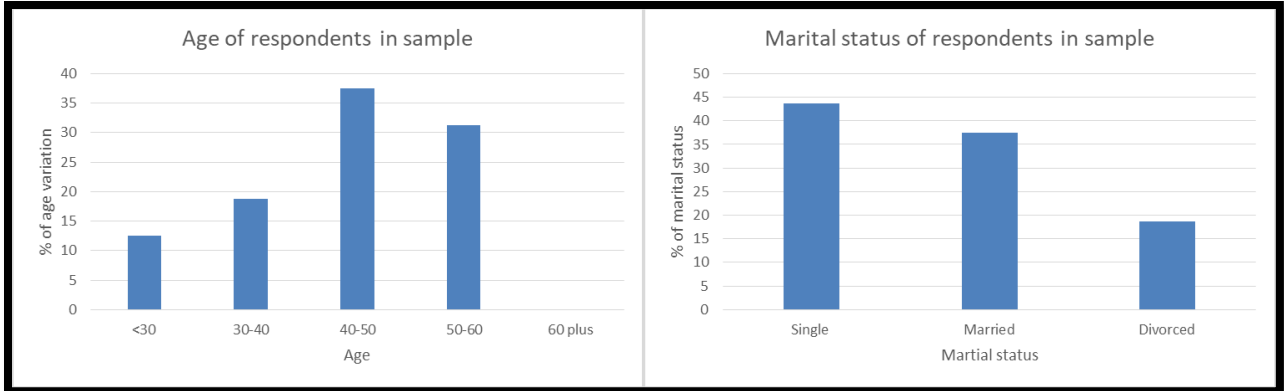


Figure 4-3: Age and marital status of respondents in the sample analysed

Source: Author

Figure 4-2 and Figure 4-3 indicate that 88% of the respondents are female, and only one of the eight farmers interviewed was a male, in both case studies. The ages of the respondents vary from below 30 to 60, with most of the respondents being between 40 and 50 years of age. Around 43.75% of the respondents are single, and they have attained at least a secondary qualification. It is interesting to note that only one respondent had a tertiary degree and one had a post-graduate degree, and this was within case study one, HOH.

The positions of the respondents within the organizations are not of high importance, and because of time constraints, interviews could only be arranged on four separate dates during the last four months of 2017. During the first two dates, farmers from HOH where interviewed, who comprised four farmers/field managers and four farmers. During the last 2 dates, 10 farmers where

interviewed from TTI, but only 8 of the 10 will be analysed and discussed. This is a small sample from a large population, but as mentioned earlier, due to limited time and resources, only 16 farmers were selected for this specific case study.

4.3.2 General case study related questions and discussion sessions

The general questions and discussions were important for gaining an understanding of the sentiments of the farmers regarding the two business models. The respondents were asked whether their business model assisted them in the functions of production, processing and selling of their products. In both case studies, 100% of the respondents replied that their models assisted them in the above functions.

During a discussion session with HOH farmers, one important concern stood out. Although HOH assists the farmers in the production, processing and selling of their produce through their own specified market, the farmers still struggle with post-harvest losses. Quoting directly from one of the farmers, *“We are too dependent on the model and we struggle to find alternative markets for our surplus produce”*. TTI farmers stated that they enjoy the cluster and incubation benefits of TTI and that they can sell produce to commercial and export markets. However, TTI farmers made a similar remark, to the effect that the farmers are too dependent on the model, and they cannot find other incubation models such as TTI, because they cannot visit alternative models. In the next section, value-added related aspects will be discussed to understand how value is added using these inclusive business models.

4.3.3 Value adding related questions

The questions below focus on capturing the value-adding process of HOH and TTI regarding the farmers involved. During the discussion and interview sessions, it became clear that the focus on poverty reduction and the value adding principles within their communities are important. All of the HOH farmers who were interviewed stated that they did not farm before joining HOH and that through the technical and legal assistance provided by this project, they had obtained land under a lease agreement. The one farmer mentioned that she had farmed on a very small plot before joining HOH, but finding markets had been a major challenge for her. The four important value-related questions set out below measured the extent to which each business model added value to the farmers involved. These value-added related questions are important in terms of addressing

the general objectives, which explore whether small- and medium-scale agro-processing is useful as an enhancing mechanism in inclusive business models for small-scale farmers. Once the major advantages, disadvantages, lessons learned, and challenges experienced are examined, they will correlate to the constraints that the farmers are facing, and how these constraints are eliminated when small-scale farmers take part in such an agro-processing model. The importance of these value-adding related questions is that they aim to capture the individual responses of each farmer involved in the corresponding case study.

4.3.3.1 Major advantages

The respondents were asked what the major advantages were regarding the agro-processing model. Figures 4-4 and 4-5 below clearly indicate the major advantages listed by the various respondents.

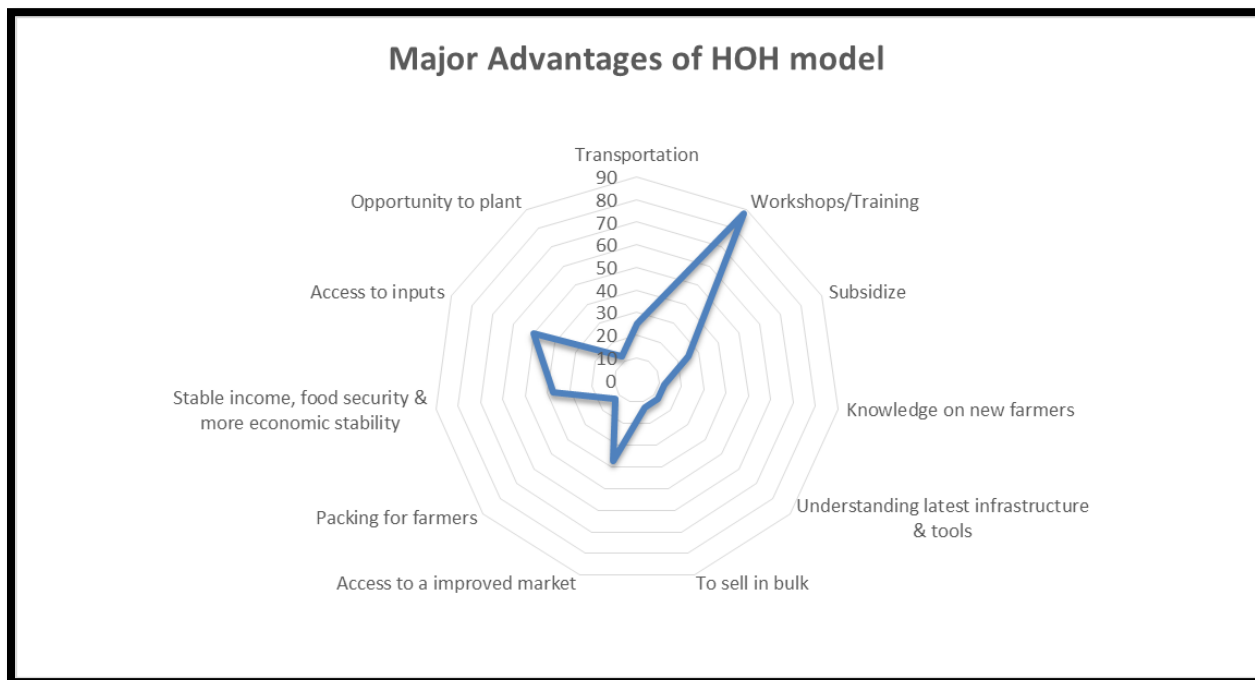


Figure 4-4: Major advantages of agro-processing, HOH

Source: Own calculations

Figure 4-4 above reflects all the responses from the HOH case study, of which “Workshops/Training” is the most frequent answer (87.5%) to the question of what the major

advantage of HOH is. It is important to note that seven out of the eight respondents stated that the training they had received through the workshops presented by HOH constituted the most important advantage. The second most-frequent answer (50%) is shared by three different advantages, i.e. “Access to inputs”, “Stable income” and “Access to an improved market”. These findings correlate well with the findings in Henson et al. (2008) where small-scale farmers were asked what the most positive impacts were out of a list 21 possible impacts arising from participating in higher value food markets. Henson et al. (2008) reported that the most positive impacts were “*understanding of market requirements*”, “*level of technical/agronomic learning*”, and “*access to technical assistance and returns per unit of household labour*”.

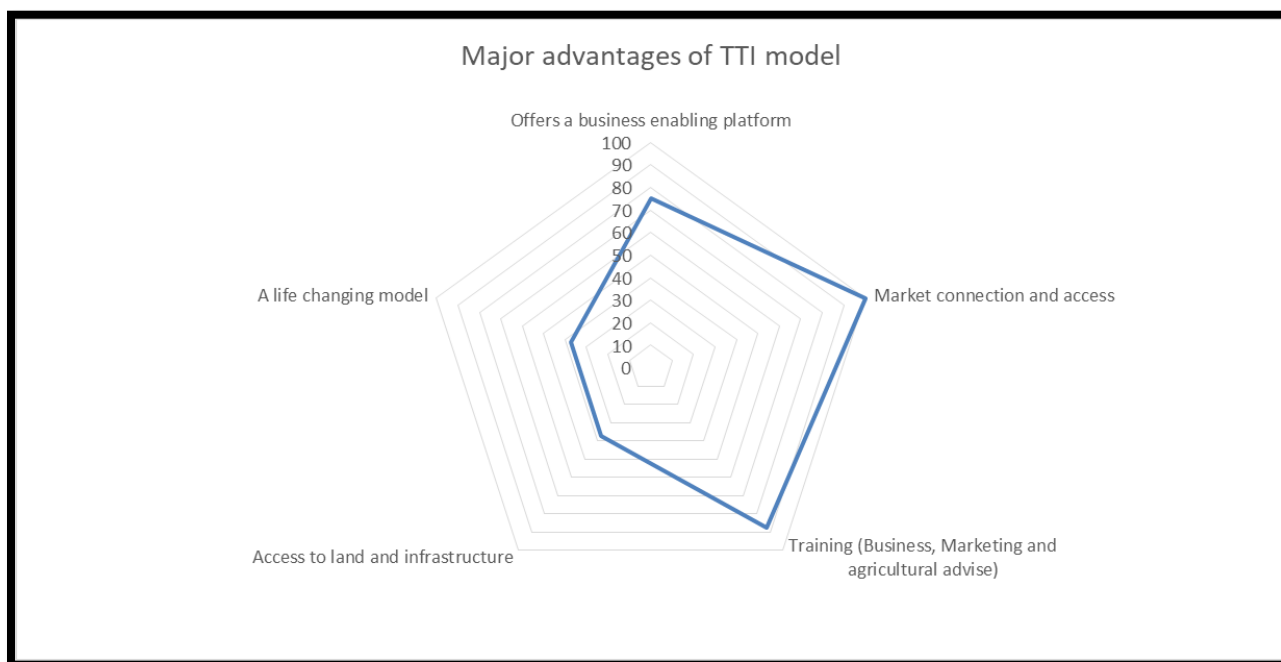


Figure 4-5: Major advantages of agro-processing TTI

Source: Own calculations

Figure 4-5 above reflects all the responses from the TTI case study, of which “Market connection and access” is the most frequent answer (100%) to the question of “what the major advantage of TTI” is. This clearly highlights the single most important advantage for the farmers involved. The second most-frequent answer (87.5%) is that TTI provides “Training (Business, Marketing and agricultural advice)” to all the farmers involved in TTI.

When comparing the two cases with one another, it is important to note that 87.5% of HOH and TTI farmers stated that the training they received in terms of business management, marketing of produce, and technical agricultural advice are important issues.

4.3.3.2 Major disadvantages

The respondents were asked what the major disadvantages were regarding the agro-processing model. Figures 4-6 and 4-7 below clearly indicate the major disadvantages listed by the various respondents.

Figure 4-6 below reflects all the responses from the HOH case study, of which “Dependency” and “Not buying all the produce after harvest” are the most frequent answers (38%) given to the question of what the major disadvantage of HOH is. The second most-frequent answer (25%) is shared by two different disadvantages “Lack of access to new markets” and the rest of the farmers said there are no disadvantages.

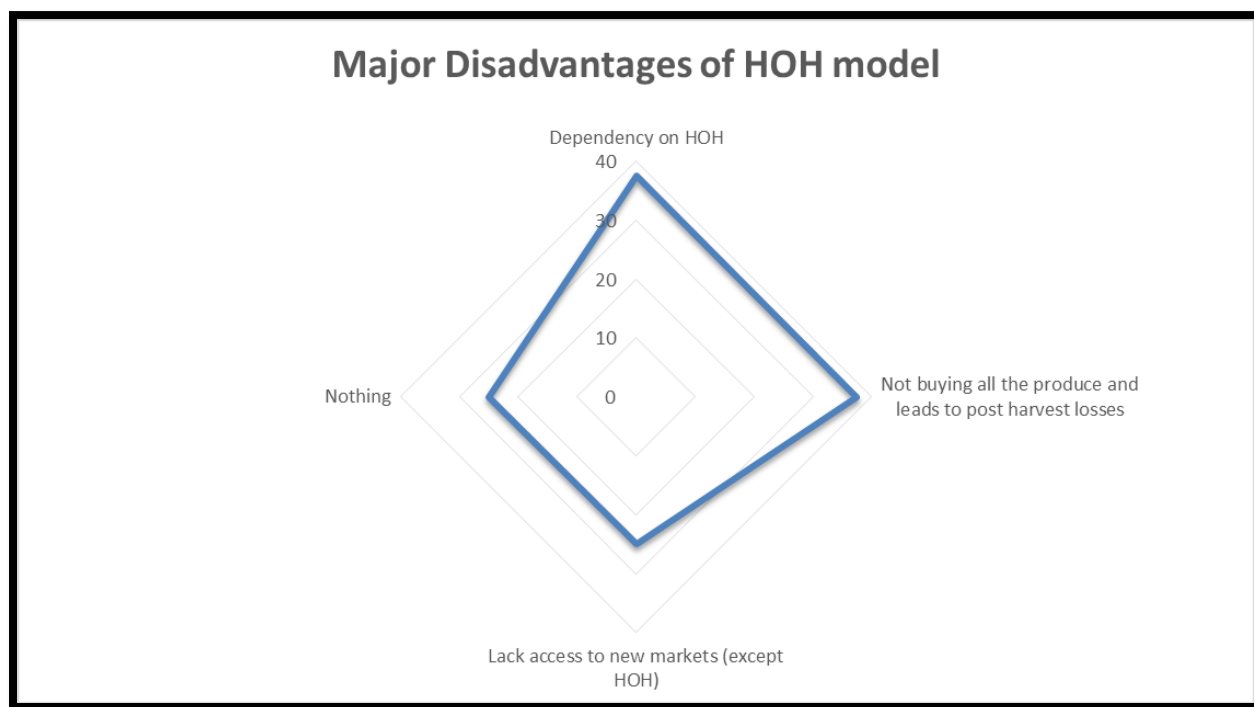


Figure 4-6: Major disadvantages of agro-processing, HOH

Source: Own calculations

Figure 4-7 below reflects all the responses from the TTI case study, of which “Limited growth after graduation from TTI” is the most frequent answer (50%) to the question of what the major disadvantage of TTI is. The second most-frequent answer (25%) is shared by seven different advantages: “TTI is too dependent on external funding”, “Limited access to equipment”, “Age limit (18-35)”, “Incubation phases too long (Training too long)”, “Do not have access to other incubation models”, “Farmers in TTI cannot visit the market”, and “No life-cover for us”. However, one farmer mentioned that there are no disadvantages.

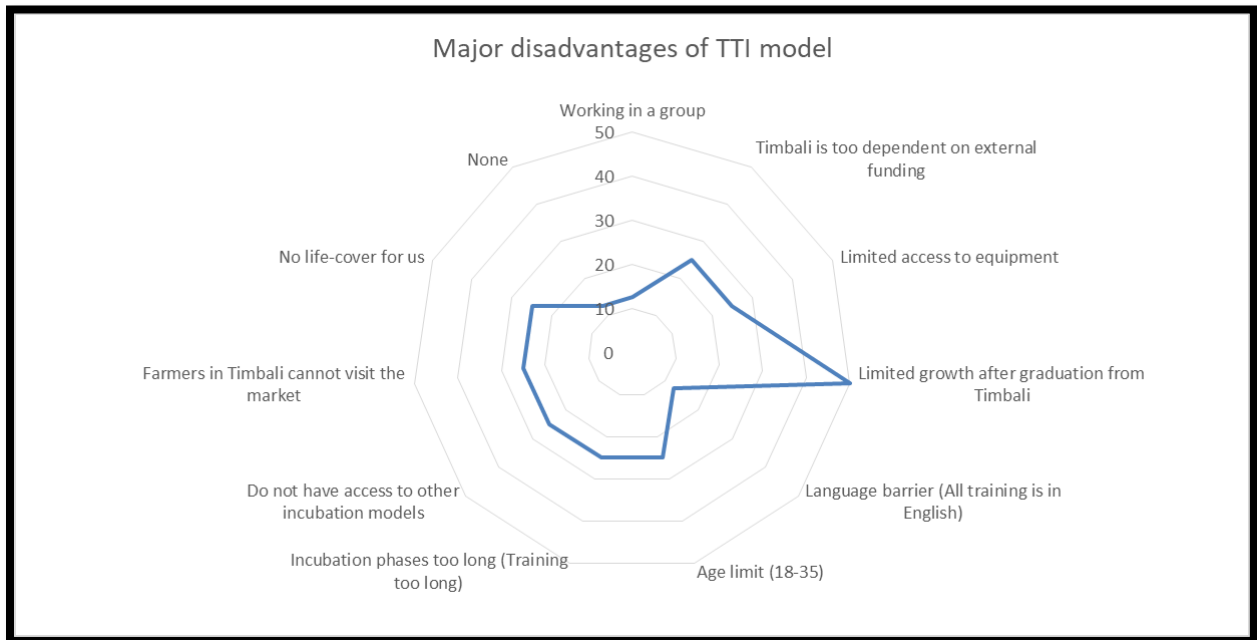


Figure 4-7: Major disadvantages of agro-processing TTI

Source: Own calculations

When comparing the two cases with one another, it is important to note that within the HOH model, farmers stated that dependency and the lack of new markets are the major disadvantages, while in the TTI model, the major disadvantage is the limited growth possible after graduation. This sheds light on the problem, revealing that these farmers are too dependent on these agro-processing models, although most of the farmers do not realize this problem while actively engaging in the model activities.

4.3.3.3 Major lessons learned

The respondents were asked what lessons they had learned since the start-up of the agro-processing project and what any new project should take note of. Figures 4-8 and 4-9 below reflect the major lessons learned by the respondents through the years of operation and participation in the agro-processing model.

Figure 4-8 below reflects all the responses from the HOH case study, of which “Working with people” is the most frequent answer (62.5%) to the question of “what the major lessons learned of participation in HOH are”. The second most-frequent answer (50%) is “Gaining marketing skills” during their participation with HOH.



Figure 4-8: Major lessons learned during participation in agro-processing HOH

Source: Own calculations

Figure 4-9 below reflects all the responses from the TTI case study, of which “The technical training of farming and farm management” is the most frequent answer (87.5%) to the question “What the major lessons learned of participation in TTI are”. The second most-frequent answer (75%) is “Financial independence” during their participation with TTI.

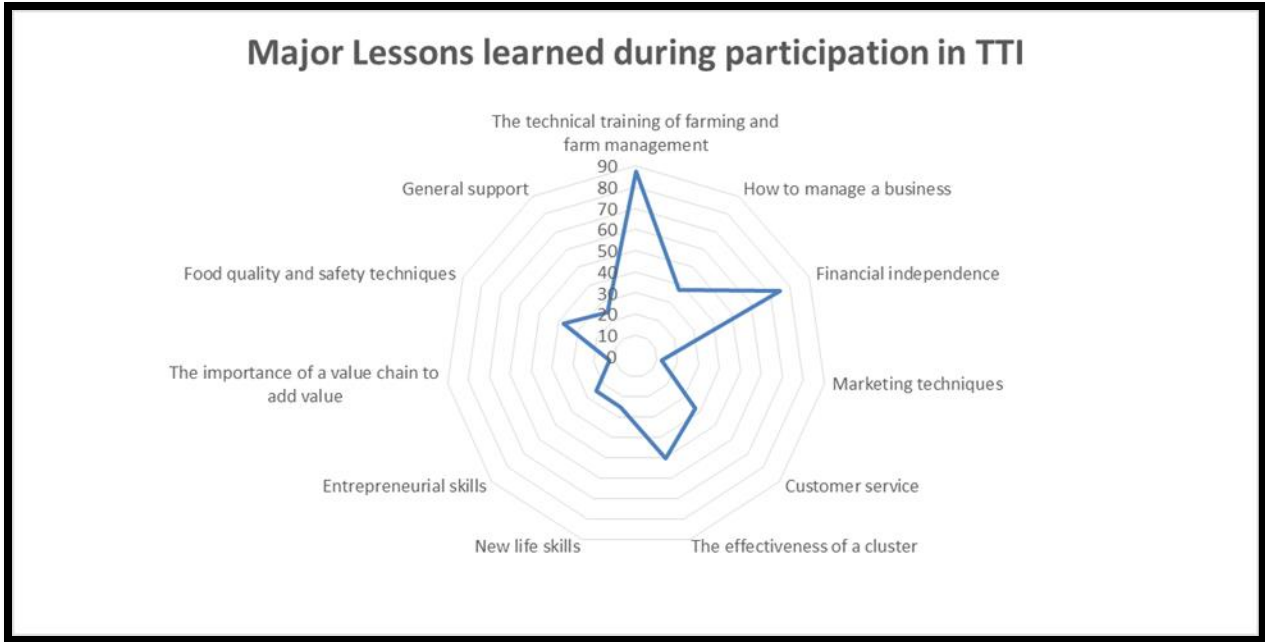


Figure 4-9: Major lessons learned during participation in agro-processing TTI

Source: Own calculations

When comparing the two cases with one another, one can identify that the major lessons learned in both cases are business management lessons, technical farming lessons, entrepreneurial lessons, and different marketing techniques. Table 4-2 below shows a summary of the major lessons learned while partnering with these two different models.

Table 4-2: Summary of major lessons learned

Major Lessons Learned	% of Harvest of Hope	% of Timbali Technology Incubator
Business management (Marketing, Financial and Human Resources)	100	100
Technical farming lessons	37.5	87.5

Source: Author

4.3.3.4 Major challenges experienced

The feedback from respondents on the question regarding major challenges experienced serves as valuable information for any new/start-up project. Figure 4-10 and 4-11 depict the major

challenges that the various respondents experienced during the implementation and operations of the agro-processing business models.

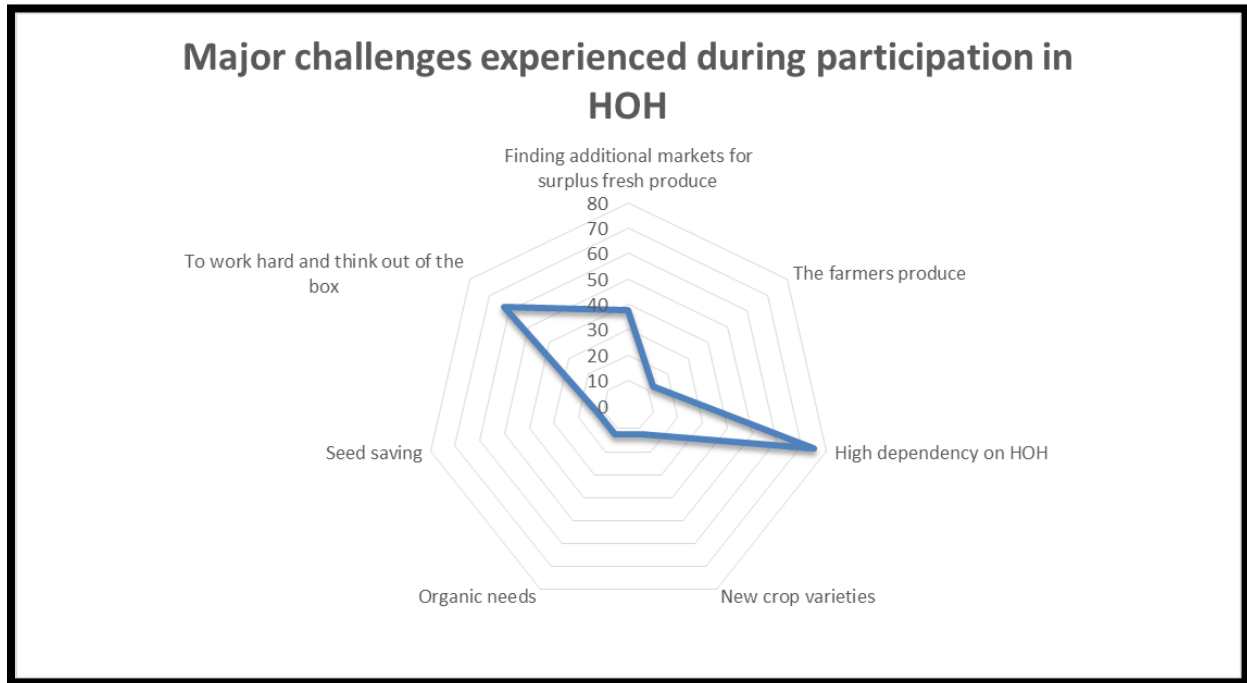


Figure 4-10: Major challenges experienced during participation in agro-processing HOH

Source: Own calculations

Figure 4-10 above reflects all the responses from the HOH case study, of which “High dependency on HOH” is the most frequent answer (100%) to the question of “What the major challenges are of participation in HOH”. The second most-frequent answer (83%) is “To work hard and think out of the box” during their participation with HOH.

Figure 4-11 below reflects all the responses from the TTI case study, of which “Fluctuating economic conditions”, “Climate changes”, “Pest and disease outbreaks” and “Lack of infrastructure and equipment within the model” are the most frequent answers (37%) to the question of what the major challenges are of participation in TTI. The second most-frequent answer (25%) is “Limited growth capacity during their participation with TTI”.

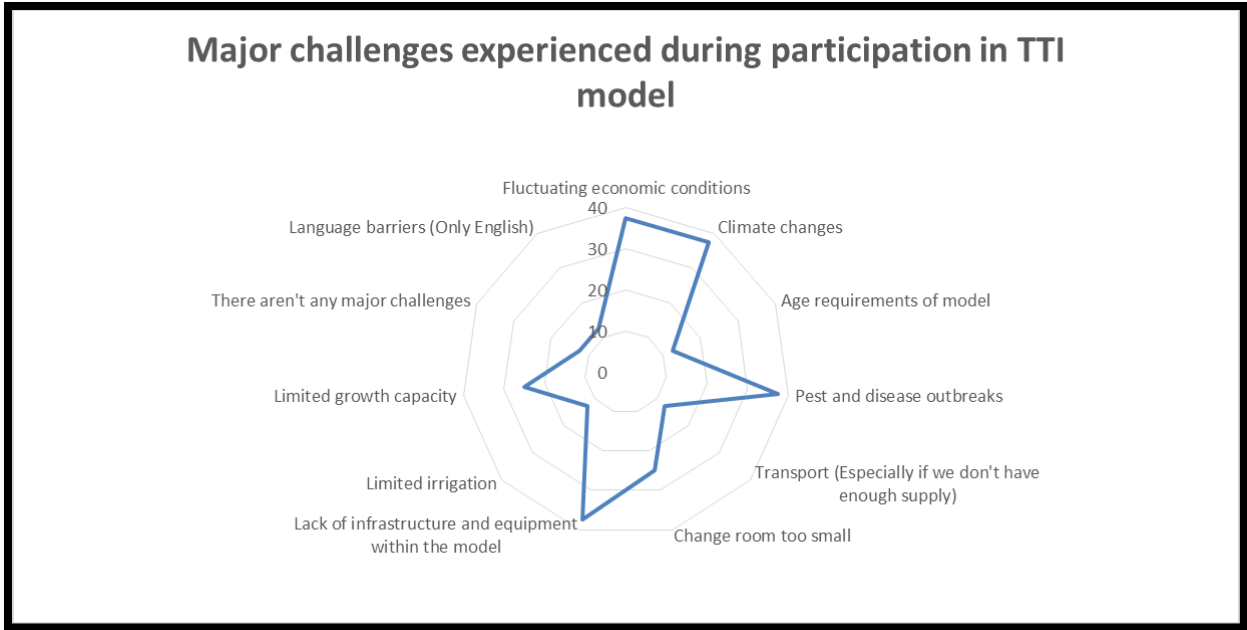


Figure 4-11: Major challenges experienced during participation in agro-processing TTI

Source: Own calculations

The major challenges experienced during participation in HOH and TTI are difficult to compare. Nevertheless, a comparison can be drawn in terms of the high dependency revealed in each model. Throughout the interview and discussion process, it became clear that farmers are too dependent on the models, and that these farmers will be worse off without these inclusive models.

From the Harvest of Hope business model, it became clear that the farmers are too dependent on the model for assisting them in basic business and agricultural needs and functions, but it remains unclear whether or not these farmers truly understand the importance of what such a model offers them in terms of linkage to a formal market. A similar trend was picked up during Timbali Technology Incubator interviews, and this could be a troublesome area in the development of similar models. It is extremely important for farmers who are involved in an inclusion mechanism to learn, grow and achieve success from being part of a model such as the above models. As stated in Chamberlain and Anseeuw (2017), these models have been created to represent innovative set-ups and stimulate production growth, as well as ensuring market access and growth for small-scale farmers.

In the next section, constraint-related questions will be addressed, using a quantitative approach.

4.3.4 Constraint related questions

This section first focuses on the constraints the small-scale farmers had faced before they participated in the agro-processing model. This section then addresses the impacts this agro-processing model has had on the various farmers, and then the constraints they faced after they had started participating in the agro-processing model. This section will then discuss some of the current risks that the farmers face in their environment, and will then analyse the current roles that the government and other agribusiness firms play in this competitive farming environment. This section will be concluded with a description of the general sentiments and opinions of the farmers concerning Harvest of Hope and Timbali Technology Incubator.

4.3.4.1 What are the constraints that inhibit your participation in higher-value supply chains?

The respondents' feedback on the different constraints they had faced before entering a high-value supply chain will serve as valuable information for measuring the impact that a model such as HOH or TTI might have on the respondents' constraints.

Table 4-3: Constraints faced by farmers before joining Harvest of Hope (HOH) model

Constraints faced before joining the HOH model	% of Farmers that faced this constraints before entering HOH				
	Very Important	Important	Average	Unimportant	Very Unimportant
Weak/inadequate rural transport infrastructure	100.00	0.00	0.00	0.00	0.00
Non-competitive/high cost transport services	100.00	0.00	0.00	0.00	0.00
Weak/inadequate rural marketing infrastructure	87.50	12.50	0.00	0.00	0.00
Lack of scale (Small-scale)	25.00	12.50	50.00	12.50	0.00
Weak/limited availability of technical advisory services	87.50	0.00	12.50	0.00	0.00
Lack of access to competitively priced finance	62.50	25.00	12.50	0.00	0.00
Lack of Market information (Standards, Quality)	87.50	0.00	12.50	0.00	0.00
Lack of timely access to improved inputs	87.50	12.50	0.00	0.00	0.00
Lack of pertinent market information	75.00	12.50	12.50	0.00	0.00
Weak or high cost services of market intermediaries	75.00	12.50	12.50	0.00	0.00
Limited technical knowledge of farmers	87.50	0.00	12.50	0.00	0.00
Limited commercial skills of farmers	87.50	0.00	12.50	0.00	0.00
Lack of/limited capacity for irrigation	87.50	12.50	0.00	0.00	0.00
Distrust/weak bargaining power vs commercial agribusiness entities	75.00	12.50	12.50	0.00	0.00
Access to land	25.00	12.50	25.00	12.50	25.00

Source: Own calculations

Table 4-3 above reflects the two major constraints faced by the farmers before they became part of a model such as HOH. **“Weak/Inadequate rural transport infrastructure”** and **“Non-competitive cost transport services”** are the most frequent answers (100%) to the question on

what constraints inhibit participation in higher-value supply chains. The second most-frequent answers were “**Weak/inadequate rural marketing infrastructure**”, “**Lack of farmer technical skills**” and “**Lack of access to improved inputs**” (87%). The least frequent answers were “**Lack of scale**” and “**Access to land**”, which seems to validate the fact that the majority of the farmers interviewed did not have access to land, and the farmers that did have access to land, had very small areas. It is interesting note that a similar study on “Linking African smallholders to high-value markets” identified that the major constraints faced by the smallholders are constraints related to “access to resources and knowledge”. According to Henson et al. (2008), “*constraints considered most important were all related to infrastructure and logistics followed closely by a set of factors related to (weak) other support services (for example ‘weak/limited availability of technical advisory services’, ‘lack of access to competitively priced finance’ and ‘lack of pertinent information on prevailing standards’).*”

Table 4-4: Constraints faced by farmers before joining Timbali Technology Incubator (TTI) model

Constraints faced before joining the TTI model	% of Farmers that faced this constraints before entering TTI				
	Very Important	Important	Average	Unimportant	Very Unimportant
Weak/inadequate rural transport infrastructure	62.50	37.50	0.00	0.00	0.00
Non-competitive/high cost transport services	75.00	25.00	0.00	0.00	0.00
Weak/inadequate rural marketing infrastructure	75.00	12.50	0.00	12.50	0.00
Lack of scale (Small-scale)	37.50	50.00	12.50	0.00	0.00
Weak/limited availability of technical advisory services	75.00	25.00	0.00	0.00	0.00
Lack of access to competitively priced finance	87.50	12.50	0.00	0.00	0.00
Lack of Market information (Standards, Quality)	75.00	25.00	0.00	0.00	0.00
Lack of timely access to improved inputs	50.00	50.00	0.00	0.00	0.00
Lack of pertinent market information	62.50	37.50	0.00	0.00	0.00
Weak or high cost services of market intermediaries	100.00	0.00	0.00	0.00	0.00
Limited technical knowledge of farmers	87.50	12.50	0.00	0.00	0.00
Limited commercial skills of farmers	62.50	37.50	0.00	0.00	0.00
Lack of/limited capacity for irrigation	62.50	25.00	12.50	0.00	0.00
Distrust/weak bargaining power vs commercial agribusiness entities	50.00	37.50	12.50	0.00	0.00
Access to land	75.00	25.00	0.00	0.00	0.00

Source: Own calculations

Table 4-4 above reflects the total score that the farmers gave to each constraint that they had faced before entering the TTI model. Table 4-4 reflects the one major constraint faced by the farmers before they participated in a model such as TTI. “**Weak or high cost service of market intermediaries**” was the most frequent answer (100%) given to the question on what the constraints are that inhibit participation in higher value-supply chains. The second most-frequent answers were “**Lack of access to competitively priced finance**” and “**Limited technical knowledge of farmers**” (87.5%). The least frequent answers were “**Lack of timely access to improved inputs**” (50%) and “**Lack of scale**” (37.5%). As mentioned above, this correlates with

the study conducted by Henson et al. (2008), where the most important constraints were a set of factors related to (weak) other support services. This relates to “*weak or limited availability of technical advisory services*”, a “*lack of competitively priced finance*” or a “*lack of information regarding prevailing standards*”.

4.3.4.2 What are the impacts/benefits of participation in Harvest of Hope / Timbali Technology Incubator?

The respondents’ feedback on the impacts of participation in HOH/TTI will serve as valuable information towards the successful nature of HOH and TTI. Table 4-5 below identifies the respondents’ responses regarding the different impacts of HOH model.

Table 4-5: Impacts on the farmers of participation in Harvest of Hope (HOH)

Impacts of participating in HOH model	% of How farmers score different impacts on them since participation in HOH				
	Very Positive	Positive	Average	Negative	Very Negative
Access to improved technologies	87.5	0.0	0.0	12.5	0.0
Understanding of market requirements	75.0	12.5	0.0	0.0	12.5
Level of technical/agronomic learning	62.5	12.5	12.5	12.5	0.0
Access to technical assistance	75.0	12.5	0.0	12.5	0.0
Returns per unit of household labor	50.0	25.0	12.5	12.5	0.0
Access to inputs	87.5	12.5	0.0	0.0	0.0
Long-term agricultural income	25.0	0.0	75.0	0.0	0.0
Access to finance	37.5	0.0	0.0	12.5	50.0
Business management skills	37.5	37.5	12.5	0.0	12.5
Economic impacts on wider community	62.5	12.5	12.5	0.0	12.5
Ability to adapt to changes in market conditions	62.5	0.0	25.0	0.0	12.5
Short-term agricultural income	12.5	12.5	50.0	0.0	25.0
Social standing in the community	75.0	12.5	12.5	0.0	0.0
Stability/predictability of income	87.5	0.0	12.5	0.0	0.0
Food security	62.5	37.5	0.0	0.0	0.0

Source: Own calculations

Table 4-5 above reflects the total score that the farmers gave to each individual impact that HOH had on them. Table 4-5 reflects the three major impacts that the farmers specified during their participation in HOH. The three most-frequent answers were “**Access to improved technologies**”, “**Access to inputs**” and “**Stability/predictability of income**” (87.5%). The three second most-frequent answers were “**Understanding of market requirements**”, “**Access to technical assistance**”, “**Social standing in the community**” (75%). It is again important to note that the study conducted by (Henson et al., 2008) highlighted the similar importance of the same impacts. According to Henson et al. (2008), the most significant and “*positive impacts were*

judged to be access to improved technology, understanding of market requirements, level of technical/agronomic learning, access to technical assistance and returns per unit of household labour.”

Table 4-6 below reflects the three major impacts that the farmers reported experiencing during their participation in TTI. The three most-frequent answers were “**Access to improved technologies**”, “**Returns per unit of household labour**” and “**Food security**” (100%). The four second most-frequent answers were “**Understanding of market requirements**”, “**Access to technical assistance**”, “**Access to finance**” and “**Business management skills**” (87.5%). Again, these findings correlate with the findings in the study by Henson et al. (2008).

Table 4-6: Impacts on the farmers of participation in Timbali Technology Incubator (TTI)

Impacts of participating in TTI model	% of How farmers score different impacts on them since participation in TTI				
	Very Positive	Positive	Average	Negative	Very Negative
Access to improved technologies	100.0	0.0	0.0	0.0	0.0
Understanding of market requirements	87.5	12.5	0.0	0.0	0.0
Level of technical/agronomic learning	100.0	0.0	0.0	0.0	0.0
Access to technical assistance	87.5	12.5	0.0	0.0	0.0
Returns per unit of household labor	100.0	0.0	0.0	0.0	0.0
Access to inputs	75.0	25.0	0.0	0.0	0.0
Long-term agricultural income	75.0	25.0	0.0	0.0	0.0
Access to finance	87.5	12.5	0.0	0.0	0.0
Business management skills	87.5	12.5	0.0	0.0	0.0
Economic impacts on wider community	50.0	50.0	0.0	0.0	0.0
Ability to adapt to changes in market conditions	75.0	25.0	0.0	0.0	0.0
Short-term agricultural income	75.0	0.0	25.0	0.0	0.0
Social standing in the community	75.0	25.0	0.0	0.0	0.0
Stability/predictability of income	75.0	25.0	0.0	0.0	0.0
Food security	100.0	0.0	0.0	0.0	0.0

Source: Own calculations

4.3.4.3 The constraints that the farmers still faced after joining Harvest of Hope / Timbali Technology Incubator

The respondents’ feedback on the constraints that they still faced after joining HOH/TTI will serve as valuable information regarding the successful nature of the model and how important this model is for limiting the current constraints within the small-scale farmer environment. Tables 4-7 and 4-8 below identify the respondents’ responses regarding the different constraints they faced after joining the HOH and TTI model.

Table 4-7 below reflects the major constraints faced by the respondents after they had joined the HOH model. On average, 47.5% of all the respondents said that they did not experience any of

the constraints described below in Table 4-7, 21.7% of all the respondents said they sometimes experience the above-mentioned constraints, and 19% of the respondents said that the above-mentioned constraints are still major constraints in their farming activities. It is important to note that the two major constraints, **“Weak/Inadequate rural transport infrastructure”** and **“Non-competitive cost transport services”**, seem to be addressed by HOH. According to 63% of the respondents, **“Weak/Inadequate rural transport infrastructure”** remains an issue, but only sometimes, and 38% said that this is no longer a constraint for them. Fifty percent of the respondents also stated that **“Non-competitive cost transport services”** remain an issue, but only sometimes, and 50% said that these are no longer a constraint for them. The second major constraints account for 87% of the respondents, and these are **“Weak/inadequate rural marketing infrastructure”**, **“Weak/limited availability of technical advisory services”**, **“Lack of Market information (Standards, Quality)”**, **“Lack of timely access to improved inputs”**, **“Limited technical knowledge of farmers”**, **“Limited commercial skills of farmers”** and **“Lack of/limited capacity for irrigation.”** After noting the aforementioned second major constraints, 63% of all the respondents went on to say that there were no longer any constraints after they had joined HOH.

Table 4-7: Constraints faced by farmers after joining Harvest of Hope (HOH)

Constraints after joining HOH model	% of Farmers still struggling with certain constraints				
	Major Constraint	Constraint	I don't know	Sometimes	Not at all
Weak/inadequate rural transport infrastructure	0	0	0	63	38
Non-competitive/high cost transport services	0	0	0	50	50
Weak/inadequate rural marketing infrastructure	0	0	0	38	63
Lack of scale (Small-scale)	13	38	0	25	25
Weak/limited availability of technical advisory services	25	0	13	0	63
Lack of access to competitively priced finance	63	0	13	13	13
Lack of Market information (Standards, Quality)	13	0	0	25	63
Lack of timely access to improved inputs	13	0	13	13	63
Lack of pertinent market information	25	0	13	0	63
Weak or high cost services of market intermediaries	25	0	13	38	25
Limited technical knowledge of farmers	0	0	13	25	63
Limited commercial skills of farmers	13	0	13	13	63
Lack of/limited capacity for irrigation	25	0	0	13	63
Distrust/weak bargaining power vs commercial agribusiness entities	25	0	25	0	50
Access to land	13	0	63	13	13

Source: Own calculations

Table 4-8 below reflects the major constraints faced by the respondents after they joined the TTI model. On average, 84.17% of all the respondents said that they did not experience any of the below-mentioned constraints, 14.17% of all the respondents said they sometimes experienced the below-mentioned constraints, and 1.67% of the respondents said that the below-mentioned

constraints were still major constraints in their farming activities. As noted in the case study analysed above, TTI seems to address similar constraints as HOH does. The major constraint that TTI farmers mentioned is the “**Weak or high cost service of market intermediaries**”. Looking at Table 4-8 below, one notices that 87.5% of all the respondents said that they no longer faced a constraint, and 12.5% of the respondents said that “**Weak or high cost service of market intermediaries**” remained a constraint in doing business, but only sometimes.

The second most-frequent answers were “**Lack of access to competitively priced finance**” and “**Limited technical knowledge of farmers**” (87.5%). The least frequent answers were “**Lack of timely access to improved inputs**” (50%) and “**Lack of scale**” (37.5%). In the table below, it is evident that 100% of the respondents said that “**Lack of access to competitively priced finance**” is no longer a major constraint, and 88% of the respondents said that “**Limited technical knowledge of farmers**” is no longer a major constraint. “**Lack of timely access to improved inputs**” and “**Lack of scale**” seem to be addressed by the respondents, 100% and 75% respectively.

Table 4-8: Constraints faced by farmers after joining Timbali Technology Incubator (TTI)

Constraints after joining TTI model	% of Farmers still struggling with certain constraints after joining TTI				
	Major Constraint	Constraint	I don't know	Sometimes	Not at all
Weak/inadequate rural transport infrastructure	0	0	0	0	100
Non-competitive/high cost transport services	0	13	0	38	50
Weak/inadequate rural marketing infrastructure	0	0	0	0	100
Lack of scale (Small-scale)	0	13	0	13	75
Weak/limited availability of technical advisory services	0	0	0	13	88
Lack of access to competitively priced finance	0	0	0	0	100
Lack of Market information (Standards, Quality)	0	0	0	25	75
Lack of timely access to improved inputs	0	0	0	0	100
Lack of pertinent market information	0	0	0	0	100
Weak or high cost services of market intermediaries	0	0	0	13	88
Limited technical knowledge of farmers	0	0	0	13	88
Limited commercial skills of farmers	0	0	0	13	88
Lack of/limited capacity for irrigation	0	0	0	0	100
Distrust/weak bargaining power vs commercial agribusiness entities	0	0	0	63	38
Access to land	0	0	0	25	75

Source: Own calculations

Table 4-9 below shows the comparison between the constraints faced by the farmers before joining the agro-processing model, and after they have joined the agro-processing model. This table also shows how the model impacted positively on the constraints faced before participation in such a model.

Table 4-9: Comparison between constraints faced before and after the impacts of the model

Rank	Constraints before joining	Scale %:		Impacts	Scale %:		Constraints after joining	Scale %:	
		HOH	TTI		HOH	TTI		HOH	TTI
1	Very Important	77	69	Very Positive	60	83	Major Constraint	17	0
2	Important	8	28	Positive	13	15	Constraint	3	2
3	Average	12	3	Average	15	2	I don't know	12	0
4	Unimportant	2	1	Negative	4	0	Sometimes	22	14
5	Very Unimportant	2	0	Very Negative	8	0	Not at all	48	84

Source: Own calculations

Table 4-9 above and Figures 4-10 and 4-11 below reflect the average impact of HOH and TTI on the constraints that these farmers faced before they joined these models. The table indicates that 77% of all HOH respondents and 69% of all TTI respondents ranked the constraints that they face as being “*Very Important*”, which in effect means that they want to limit these constraints. Looking at the impacts of participation in higher-value supply chains after joining HOH and TTI, the average response rates are 60% and 83%, respectively, which indicates that both HOH and TTI have a positive effect on the farmers, but that TTI is much more satisfying according to the respondents’ answers. After the impacts, these constraints were limited in their effect, because HOH and TTI both reflect a 48% and 84% response rate, respectively, on constraints that are still an issue after experiencing the impacts of the model. Respondents (HOH, 22% and TTI, 14%) said that these constraints still affect them, but very infrequently. Figures 4-12 and 4-13 below reflect R-Square values of 93.8% and 60.16%, respectively. Both R-square values are positive and more than 50%, which clearly indicates that the limiting of the constraints in each model can be explained by the impacts of the two different models. Although one can clearly read from the above results that TTI has a much more positive effect on the respondents’ constraints than HOH does, the R-square of HOH is much larger than that of TTI, due to the extreme values of TTI. The impacts that HOH has had on the farmers are spread between “Very positive” to “Very negative”, whereas with TTI, the impacts are only classified between “Very positive” to Average”.

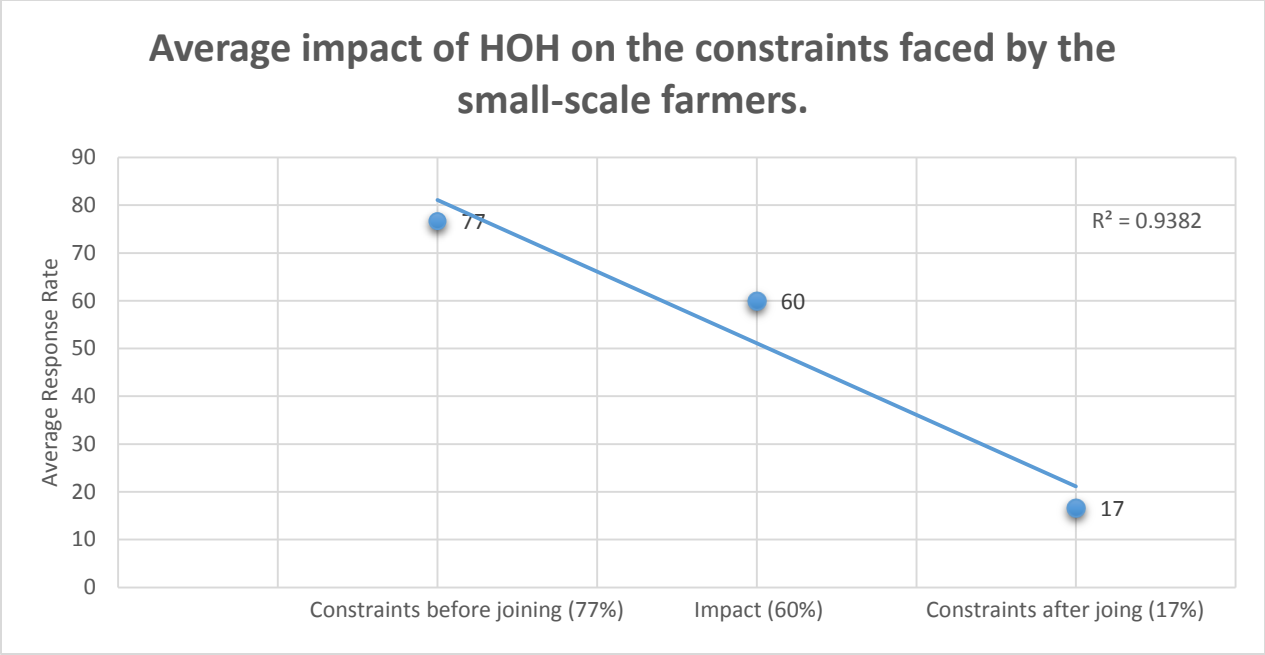


Figure 4-12: Average impacts of HOH on the constraints faced by the small-scale farmers

Source: Own calculations

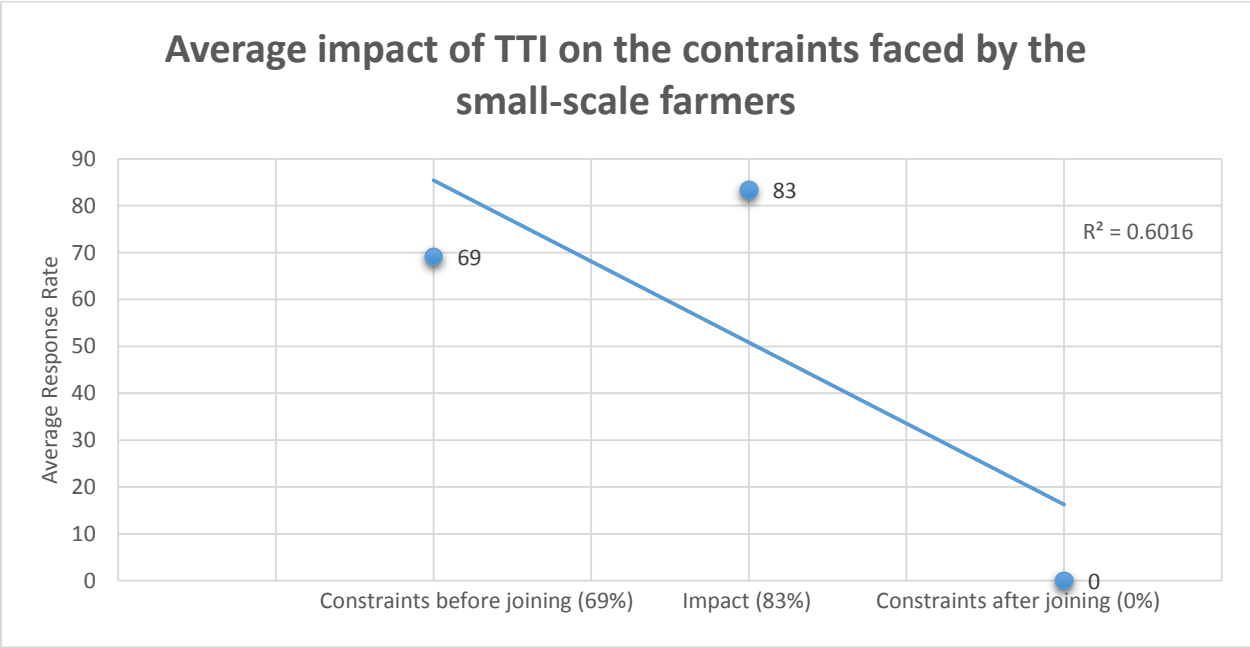


Figure 4-13: Average impacts of TTI on the constraints faced by the small-scale farmers

Source: Own calculations

Figures 4-12 and 4-13 above clearly show, with the downward sloping of the lines, that 77% and 69% of the respective groups of farmers reported that they faced major constraints, and regard it as important that these constraints be limited. The 60% and 83% of responses, in the middle of the respective lines, reflect the positive impact that HOH and TTI have had on limiting their constraints, which in effect leads to the low numbers of 17% and 0% of all the respondents who mentioned that the constraints they had faced previously are still major constraints.

4.3.5 Identifying the current risks respondents faced in their environments

Once the questions on the constraints and the impacts of HOH and TTI were completed, it was important to identify the current risks within these farming communities. Each individual respondent was asked to rank the different risks described in Table 4-10 below, between one (Fully agree) and five (Fully disagree). One should keep in mind that the HOH farmers operate in a high-risk and dangerous environment, when compared with the environment of the TTI farmers. HOH is situated in Phillipi, Cape Town, which can be associated with high crime and is a very difficult environment to do business in. The poverty-stricken, criminal gang-afflicted environment of HOH proved to be more challenging than was initially expected. Tables 4-10 and 4-11 below depict the different answers received from the respondents when they were asked about the challenges within their environment.

Table 4-10: Current risks faced within the HOH farmers' environment

Risk	Fully Agree 1	Agree 2	Indifferent 3	Disagree 4	Fully Disagree 5
Limited trust among Harvest of Hope farmers	12.5	0.0	37.5	37.5	12.5
High competition after joining the Harvest of Hope model	37.5	12.5	12.5	0.0	37.5
Less freedom after joining the Harvest of Hope model	50.0	0.0	0.0	12.5	37.5
Fear of not performing and get kicked out of the program	25.0	0.0	12.5	12.5	50.0
There is a big risk of theft in the community	62.5	0.0	12.5	12.5	12.5
Abalimi and Harvest of Hope does not provide a secure income	0.0	50.0	12.5	37.5	0.0

Source: Own calculations

Table 4-10 above indicates that there is less freedom (50% of respondents) for the HOH farmers after they joined the HOH model, and the risk of theft remains a major risk within the community (62.5%). Less freedom means that before the farmers became part of the business model, they

had more time for themselves and the pressure of performing was not a constant pressure. However, after joining the model, they experienced constant pressure to perform and less personal time. It is interesting to note that 50% of the respondents stated that HOH does not provide a secure income, and 15% of the respondents said that they are indifferent and cannot comment on this.

Table 4-11: Current risks faced within the TTI farmers' environment

Risk	Fully Agree	Agree	Indifferent	Disagree	Fully Disagree
	1	2	3	4	5
Limited trust among Timbali farmers	0.0	25.0	37.5	12.5	25.0
High competition after joining the Timbali Model	75.0	25.0	0.0	0.0	0.0
Less freedom after joining the Timbali Model	37.5	0.0	0.0	25.0	37.5
Fear of not performing and get kicked out of the program	0.0	25.0	0.0	37.5	37.5
There is a big risk of theft in the community	12.5	0.0	12.5	0.0	75.0
Timbali does not provide a secure income	0.0	0.0	12.5	12.5	75.0

Source: Own calculations

Table 4-11 above indicates that there is high competition (75%) between the farmers after they joined TTI. It is important to note that 37.5% of the farmers reported that they experienced less freedom after they joined TTI. Only 12.5% mentioned that there is a substantial risk of theft within the community, while 75% of the respondents said that there is no risk of theft within the community; and 75% mentioned that TTI is a model that provides a secure income.

4.3.6 Institutional roles in facilitating the connection between small-scale farmers and markets

Following from the responses discussed above, it is apparent that there is a lack of sufficient and effective institutional/governmental and other interventions from local agribusiness organizations within these communities. The literature indicates that, almost two decades after the post-1994 reform policies were introduced, there has been too little visible change in the circumstances of small-scale farmers in South Africa (Van Schalkwyk et al., 2012). The barriers between producer and consumers transactions, lack of market information, the variable quantities and qualities of

products offered by small-scale farmers, and poorly structured and markets show the inefficiency of the reform efforts for smallholders (DAFF, 2012d).

The next question addresses the institutional roles that facilitate the connection between small-scale farmers and the local markets. Looking at the tables below, the picture remains bleak in terms of any intervention in these rural and poor communities.

In Tables 4-12 and 4-13 below, it is clear that there is only limited intervention in these communities from governments and other organizations. Looking at the **“National Government”** intervention, 62.5 % of the respondents mentioned that they received no assistance from the national government, 22.7% said they received assistance from the nation government, and 10.2% said they did not really know. The second question was related to **“Private Agribusiness Firms or Organizations”** and whether these bodies assisted the respondent farmers. The responses were similar to those above; as 63.9% of the respondents mentioned that, they do not get any assistance from any other agribusiness firms, except HOH. As few as 25% of the respondents mentioned that they do receive some assistance from other agribusiness firms, and only 2.8% mentioned they do not know and cannot comment on this.

Table 4-12: HOH farmers’ responses on institutional and other agribusiness firm interventions

% of Farmers that identified certain institutional roles in facilitating the connection between small-scale farmers and markets.			
National Government	Yes	Do not know	No
Development of logistics/infrastructure	37.5	12.5	50.0
Promote enabling environment	37.5	25.0	37.5
Legal framework/conditions for contract enforcement	25.0	25.0	50.0
Policy framework	12.5	25.0	62.5
Training/extension	37.5	0.0	62.5
Access to capital/finance	12.5	12.5	75.0
Macroeconomic management	25.0	0.0	75.0
Farm organization/group development	25.0	0.0	75.0
Law & order	12.5	0.0	87.5
Research	25.0	12.5	62.5
Other	0.0	0.0	50.0
Private Agribusiness Firms or Organizations	Yes	Do not know	No
Technical support/capacity-building	25.0	12.5	50.0
Creating market linkages	25.0	0.0	62.5
Access to fixed/working capital	12.5	0.0	75.0
Identification & dissemination of market opportunities	25.0	12.5	62.5
Compliance with food safety & quality standards	25.0	0.0	75.0
Input supply	37.5	0.0	62.5
Providing stable market demand & revenue	37.5	0.0	62.5
Relations with government	25.0	0.0	75.0
Other	12.5	0.0	50.0
Average feeling towards National Government	22.7	10.2	62.5
Average feeling towards Private Agribusiness Firms	25.0	2.8	63.9

Source: Own calculations

Looking at Table 4-13 below regarding “**National Government**” intervention, 80.7% of the respondents mentioned that they received no assistance from the national government, 4.5% said they received assistance from the nation government, and 14.8% said they do not really know. The second question was related to “**Private Agribusiness Firms or Organizations**” and whether these bodies assisted these farmers. The responses were similar to those above, as 75% of the respondents mentioned that they do not get any assistance from any other agribusiness firms, and 25% of the respondents mentioned that they do not know and cannot comment on this.

Table 4-13: TTI farmers' responses on institutional and other agribusiness firm interventions

% of Farmers that identified certain institutional roles in facilitating the connection between small-scale farmers and markets.			
National Government	Yes	Do not know	No
Development of logistics/infrastructure	0.0	25.0	75.0
Promote enabling environment	0.0	12.5	87.5
Legal framework/conditions for contract enforcement	12.5	0.0	87.5
Policy framework	0.0	12.5	87.5
Training/extension	12.5	12.5	75.0
Access to capital/finance	0.0	25.0	75.0
Macroeconomic management	0.0	25.0	75.0
Farm organization/group development	0.0	25.0	75.0
Law & order	0.0	25.0	75.0
Research	12.5	0.0	87.5
Other	12.5	0.0	87.5
Private Agribusiness Firms or Organizations	Yes	Do not know	No
Technical support/capacity-building	0.0	25.0	75.0
Creating market linkages	0.0	25.0	75.0
Access to fixed/working capital	0.0	25.0	75.0
Identification & dissemination of market opportunities	0.0	25.0	75.0
Compliance with food safety & quality standards	0.0	25.0	75.0
Input supply	0.0	25.0	75.0
Providing stable market demand & revenue	0.0	25.0	75.0
Relations with government	0.0	25.0	75.0
Other	0.0	25.0	75.0
Average feeling towards National Government	4.5	14.8	80.7
Average feeling towards Private Agribusiness Firms	0.0	25.0	75.0

Source: Own calculations

4.3.7 General feeling towards the two agro-processing models

This question focuses on the respondents' overall feelings towards HOH and TTI. Tables 4-14 and 4-15 below identified the general feelings towards the two models.

Table 4-14: General feelings towards HOH model

General feelings towards Abalimi and Harvest of Hope	Fully Agree 1	Agree 2	Indifferent 3	Disagree 4	Fully Disagree 5
Combat poverty by growing food sustainably	75.0	25.0	0.0	0.0	0.0
Unsuccessful and did not give me the opportunity to deliver my produce to a secure market	0.0	0.0	12.5	75.0	12.5
Not a good model, because the pressure of performing is too much	0.0	0.0	25.0	37.5	37.5
Good model and they provide the necessary training needed	50.0	50.0	0.0	0.0	0.0
Successful and gives me the opportunity to deliver my produce to a secure market	75.0	25.0	0.0	0.0	0.0
Very important to us as a small-scale farming community	87.5	0.0	12.5	0.0	0.0

Source: Own calculations

Table 4-15: General feelings towards TTI model

General feelings towards Timbali Technology Incubator	Fully Agree 1	Agree 2	Indifferent 3	Disagree 4	Fully Disagree 5
Connect Low skilled people to markets	87.5	12.5	0.0	0.0	0.0
Unsuccessful and did not give me the opportunity to deliver my produce to a secure market	0.0	0.0	0.0	25.0	75.0
Not a good model, because the pressure of performing is too much	0.0	12.5	0.0	12.5	75.0
Good model and they provide the necessary training needed	100.0	0.0	0.0	0.0	0.0
Successful and gives me the opportunity to deliver my produce to a secure market	100.0	0.0	0.0	0.0	0.0
Very important to us as a small-scale farming community	87.5	12.5	0.0	0.0	0.0

Source: Own calculations

Tables 4-14 and 4-15 above indicate that 75% and 87.5% of the respondents, respectively, fully agreed that HOH and TTI are combatting poverty in their respective communities. After analysing the two tables, it is clearly possible to make a statement that 100% of the respondents acknowledge the fact that HOH and TTI are combatting the poverty within these two communities. The respondents are very optimistic towards HOH and TTI, because 75% and 100%, respectively, mentioned that theirs was a successful model and that the models give them the opportunity to deliver their produce to a secure market. This was the initial objective: to identify whether this agro-processing model can serve as a form of an inclusive business model that creates market access for small-scale farmers. The responses also indicate that 87.5% of the respondents mentioned that HOH and TTI are very important to each of them, as a small-scale farming community.

4.4 CONCLUSIONS

In conclusion to this chapter, it can be stated that the information gathered from the respondents was extremely informative and inspiring. The three main determining factors in this chapter are supported by a similar study done by Henson et al. (2008). This specific study by Henson et al. mainly focused on experiences and perspectives of practitioners and researchers regarding intervention aimed at facilitating African small-scale inclusion in higher-value supply chains and/or diversified agricultural food markets.

The first measurement in this chapter was to determine what constraints the small-scale farmers faced before they enter an inclusive business model relationship. Using the methodology of Henson et al (2008), a list was set out of 15 possible factors that might constrain the abilities of small-scale farmers in participating, and respondents were asked to score each item on a five-point Likert scale, from “*very important*” (1) to “*very unimportant*” (5).

The second measurement in this chapter was to determine what the impacts of participation in higher value supply chains were for small-scale farmers. The specific focus was to determine the impacts of two business models that operate in higher-value supply chains, with the inclusion of small-scale farmers. Using the methodology of Henson et al. (2008), a list of 15 items was provided, against which respondents were asked to score each of the items on a five-point Likert scale, from “*very positive*” (1) to “*very negative*” (5).

The third measurement in this chapter was to determine what constraints small-scale farmers faced after they had entered into an inclusive business model relationship. Using the methodology of Henson et al. (2008), a list of 15 potential factors that constrain the abilities of small-scale farmer to participate was set out, and respondents were asked to score each item on a five-point Likert scale, from “*major constraint*” (1) to “*not at all*” (5).

In summarizing the findings in above analyses, it becomes clear that a correlation can be drawn with the study by Henson et al. (2008). During their study, Henson et al. identified four principal components that determine the constraints, and three principal components that determine the impacts. From the results above, the main principal components with regard to the constraints are prevailing farming structure and weakness of support services, in both case studies, which correlates with Henson’s study. Together with this, the impacts of the inclusive business model on the respondent farmers have had similar results to those of the study by Henson et al. Access to resources and knowledge are the dominant principal components in both studies.

In the next and final chapter of this dissertation, conclusions and recommendations will be discussed that follow from the quantitative and qualitative analyses of this study. The next chapter is important for mainly two reasons. The first reason is to identify potential benefits for industry players and to highlight beneficial synergies between small-scale farmers and industry players. The second reason is to highlight potential pitfalls and to identify further research areas within the spectrum of agribusiness management.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

There is a growing importance within economic research on the benefits and potential risks of including small-scale farmers in higher-value markets (Henson et al., 2008). It is interesting to note the fact that the World Development Report (WDR) 2008 identified the potential benefits of the “*emerging new agriculture*”. According to Henson et al (2008), this is “led by private entrepreneurs in extensive value chains linking producers to consumers and including many entrepreneurial smallholders supported by their organizations”. Across all spheres of markets, domestic, regional, and international, dynamic opportunities exist for inclusive business models to include smallholders within commercial value chains.

In this chapter, conclusions and recommendations will be formulated from the results obtained from the study. The conclusions will be accommodated within the framework of the study and the major outcomes obtained. Ultimately, the conclusions will be directed towards the study’s propositions, research question and further research to be made.

The study highlighted four major contributions:

- i. Individual responses to value-added related questions regarding two agro-processing business models
- ii. Addressing four underlying constraints, before and after entering the individual agro-processing business model
- iii. Addressing three underlying impacts of participation in the individual agro-processing model
- iv. Risks in current farming environment.

With these four contributions, the objectives of this dissertation and the proposition of this study can be justified. The dissertation’s proposition can be used to spur further research within this field and possibly contribute a method that can be seen as evidence to validate this link.

5.2 INDIVIDUAL EXPERIENCES SHARED BY RESPONDENTS

An interesting and key point that was picked up during the interviews and questionnaire process was that these farmers were very satisfied with their current inclusion in the model, although they do not recognize the model as being the reason behind their success. This could result in a problem, because it indicates that small-scale farmers cannot see the benefits available in an inclusion mechanism, but rather see the inclusion mechanisms as constituting just another way to achieve success.

The individual response data captured in Chapter 4 is not only valuable to this study, but also to any start-up project of a developmental nature. The above-mentioned constraints faced, and lessons learned, could easily be prevented with the start-up of a new development project, whether through private organization, NGO, or governmental intervention. The most frequent response per question for both case studies is given below:

- Advantages: Workshops/Training/Access to markets
- Disadvantages: Dependency/Limited growth
- Major lessons: Technical training/Farm management skills
- Major challenges: Lack of entrepreneurial skill/Lack of access to the model's infrastructure.

Taking a holistic view of the two cases, and adding the responses from the different respondent farmers, three fundamental value-added attributes are brought to light. Technical training, market access, and high dependency on the inclusive model are the three most frequent answers, and this corresponds with previous literature (Henson et al., 2008). Academically, this is very important, because studies such as DAFF (2012a, 2012b, 2012c) highlight the negative aspects of small-scale farmers not being included in value chains, and indicate that efforts should be made towards including them in higher value markets.

Looking at the two case studies, one can clearly see that farmers involved at TTI acknowledge the outcome of gaining access to markets more than the HOH farmers do. The HOH farmers only see the benefits of the training that they receive. This is slightly negative view regarding the model implemented by Harvest of Hope, because in their vision, they are connecting farmers to markets, but the HOH farmers only acknowledge that they receive training. However, there is no clear

evidence with regard to this observation, and the main assumption that can be made this outcome is attributable to their geographical differences.

As expected, the disadvantages are similar, and it became clear throughout the interview process that the farmers in both models are too dependent on the respective models. This could constitute a major threat to the individual models, because a high dependency culture could mean a lack of growth stimulation required for the farmers to become successful on their own. Major lessons learned, and major challenges experienced, were as expected. Previously, before the respondent farmers were part of HOH or TTI, they had worked on their own and lacked entrepreneurial skills. The two models prompted the farmers to think 'outside of the box' and to work with different people to establish a successful business environment. Academically, this means that the farmers were obliged to work in a trust environment, which is one of the building blocks for successful inclusive business models. From previous literature, such as DAFF (2012a); Henson et al. (2008); and Vellema (2015), it can be noted that farmers thinking outside of the box, given that the model provides a learning platform, could stimulate further growth and development.

These value-related questions led to mixed answers and, often, to confusing answers.. Academically, the purpose of these questions was to gain an understanding of the individual respondents' experiences acquired from being part of an inclusion business model. Together with this, these answers were intended to guide the reader towards a more in-depth analysis on the constraints and impacts of participating in the model.

In conclusion, to this value-added related section, it can be stated to some extent that the results obtained from the study confirmed what was highlighted by previous studies noted in the literature study. The information gathered through asking the questions on the advantages and disadvantages of agro-processing models, lessons learned, and challenges experienced should be considered when starting-up a new developmental project. Models, such as those analysed above, should take account of such information and be sure to minimize the disadvantages and challenges. A valuable recommendation for the Harvest of Hope model is to implement a post-harvest buy-back strategy, which could be helpful to farmers after harvest, and farmers would then know if they could deliver all their produce to the market, or not. Timbali Technology Incubator should implement further growth opportunities after the graduation process to ensure that they retain their farmers and that the farmers have the incentive to complete graduation from the incubation phase.

5.3 ADDRESSING THE FOUR CONSTRAINTS BEFORE AND AFTER ENTERING THE INDIVIDUAL AGRO-PROCESSING BUSINESS MODEL

The literature shows a correlation between small farmer inclusion in higher-value markets and income growth and stability (Henson et al., 2008). Like previous studies, the responses to the survey used in this study were most positive about the “*learning benefits*” (e.g. *acquisition of technical and business skills*) from small-scale farmer inclusion in higher-value supply chains.

In this study, following Henson et al (2008), a principal component analysis was used to identify 4 major constraints out of the 21 identified. These major constraints are:

- “*Weakness of support services*”
- *Prevailing farming structure*
- *Access to finance and risk management*
- *Producer knowledge*”.

In the current study, the two most important constraints addressed were “Access to finance and risk management” and “Producer knowledge”, which correlate well with the previous study by Henson et al (2008). These two principal constraints consist of other more basic constraints, such as lack of access to competitive-priced finance, risk management concerns, limited technical knowledge of farmers, and lack of quality consciousness by farmers.

Literature from the WDR highlights the relevant constraints on the inclusion of small-scale farmers in such markets, emphasizing poor infrastructure, mismatches in delivery scale or scope when supplying commercial food chains, and the difficulty in complying with emerging food safety and other standards. This study placed emphasis on two relevant principal constraints, with specific attention on the “Producer knowledge” constraints. Producer knowledge constraints, such as “*limited technical knowledge of farmers*” and “*lack of farmer quality consciousness*”, were identified as the major constraints experienced before farmers had gained access to an inclusive business model. Study respondents showed a 75.5% positive response to the model addressing this specific constraint.

This agrees with previous literature, as farmers in remote villages have limited access to any type of road or market network, and they often lack sustainable and technical farming knowledge. Responses noted by Henson et al. (2008) highlight the point that farmers’ knowledge about market opportunities and requirements, and about effective and market-acceptable production

techniques, is weak and requires attention. Mkhabela (2013) addressed the same concern and stated that small-scale farmers in remote villages often only conduct subsistence agriculture and do not have any form of market information. As stated above, a conclusion from the current analysis shows that 75.5% of the respondents stated that the inclusive business model in which they partner limits the risk of producing without any knowledge, and gives farmers the opportunity to produce according to market needs.

5.4 ADDRESSING THREE IMPACTS OF PARTICIPATION IN THE INDIVIDUAL AGRO-PROCESSING MODEL

Similar to the method dealing with above constraints, a similar approach was followed to identify three underlying impacts that the agro-processing model has on the small-scale farmers involved. Similar to Henson et al, (2008), a principal component analysis was used to identify three major constraints out of the 21 identified. These major impacts are:

- *“Access to resources and knowledge*
- *Economic and social gains*
- *Environmental and health impacts”.*

The data analyses of the major impacts in small-scale farmers’ participation in these inclusive businesses show that “Access to resources and knowledge” is the most important impact on the farmers. Data analysis shows that 79% of all respondents stated that access to resources and knowledge is the area where there is the greatest impact. This correlates well with the above-mentioned constraints that are addressed by the agro-processing model. Resources and knowledge involve multiple impacts relating to the understanding of market requirements, “*level of technical advice*”, “*access to improved technologies*”, “*business management’s skills*”, “*enhanced ability to adapt to the changes in the markets*” and “*access to finance and inputs*”.

In conclusion, to this section, resources and knowledge are important for the development of small-scale farmers. According to Vellema (2015), most of the agricultural land lies in the hands of the small-scale farmers, and accordingly, the impacts that these models can have are of the utmost importance for their development. It becomes increasingly important for big business to engage in transactions with small-scale farmers. The critical impacts on small-scale farmers that are achievable through inclusive business models will be beneficial to small and rural

communities, they will improve food security on the small and commercial scales, and unlimitedly lead to the development of agricultural land that was previously not utilized or under developed.

5.5 CONCLUSIONS – ADDRESSING THE PROPOSITION

Can a small- or medium-scale agro-processing model be accepted as an alternative inclusion mechanism that will effectively address the constraints faced by small-scale farmers in entering high value food markets? This proposition, as stated in Chapter 1, can be answered, but further research is recommended, based on the experience reported in this dissertation.

5.6 FURTHER RESEARCH RECOMMENDED ON STUDY RECOMMENDATIONS

The findings call for certain recommendations to be made, which are discussed in the following subsections.

5.6.1 Assisting start-up projects

It is crucial that any start-up, like an inclusive business model, should take account of the challenges experienced with the implementation of the model and the lessons learned from the operation of the inclusive business model. Table 5-1 below gives a summary of the major lessons and challenges experienced by respondents during participation in the inclusive business models.

Table 5-1: Ranking the most frequent lessons and challenges learned

MAJOR LESSONS LEARNED		MAJOR CHALLENGES LEARNED	
Harvest of Hope	Timbali Technology Incubator	Harvest of Hope	Timbali Technology Incubator
Marketing skills	The technical training of farming	Finding additional markets	Fluctuating economic conditions
Business Management skill	Farm management	High dependency on HOH	Climate changes
Agronomic techniques	Financial independence	To work hard and think out of the box	Lack of infrastructure
Work with people	The effectiveness of a cluster		Pest and disease outbreaks
Work with people			Lack of equipment

Source: Author

Although Table 5-1 depicts the lessons learned and challenges experienced based on the agro-processing models, these could be adjusted for any developing small- and micro-enterprise. One should be able to customize it for any type of developmental project where there is a joint venture between small-scale/emerging farmers and/or commercial farmers and agro-processing enterprises.

The lessons learned and challenges experienced that are listed in Table 5.1 above should play a prominent role in the conceptualization stage of any development project. Technical farming techniques, the main lesson learned by all, should be one of the main building blocks when organizations similar to HOH and TTI are planning to engage in an inclusion business model or start-up project. To develop the farming skills of small-scale emerging farmers, technical farming training should be prominent throughout the process of conceptualization and implementation. The necessary budgeting for training should be allowed for at the business planning stage, as the farmers involved will have to improve their business acumen and be trained on basic business and farming principles. It is critical that they should understand the basic business. To gain a proper understanding of capital re-investment in developing a project, and not paying out all the profit to the beneficiaries, is a crucial concept.

5.6.2 Governmental interest

In conclusion, the respondents were approached with a division of public and private sector responsibilities currently assisting in the linking of farmers to markets. In a well-developed institutional environment, government will be seen as the driver in providing the economic, political, and infrastructural conditions that stimulate investments. In conjunction with this, there is a responsibility on the private sector to drive the linkage of farmers with higher-value markets through effective relationships and provision of access to information and technical advice. Currently, in the environments in which these respondents surveyed in the study function, they lack any support from governmental or private organizations, apart from HOH and TTI.

As noted from the study of Henson et al. (2008), similarities can be seen in the findings of the current dissertation. What became clear is that external development agencies, such as Timbali Technology Incubator and Harvest of Hope and other project implementers, are expected to balance their responsibilities, ranging from supporting governmental efforts to being the intermediaries between a buyer and a seller. In an environment such a developing agricultural system, trust remains critical, and certain suppliers can be viewed as superior, public/private

partnerships are highly valued, and benefiting from reduced transaction costs is of prime importance.

Finally, given the current study, all government departments involved in development work or projects should take cognizance of the ability of the inclusive business model to resolve the four underlying constraints. Tables 4-12 and 4-13, in Chapter 4, clearly highlight the point that governmental institutions, agribusiness firms and other organizations do not facilitate the linkage process between small-scale farmers and markets. These agro-processing models could be referred to as constituting an inclusive business model and government could use this model and its advantages to construct a reliable developmental model for appropriate investment of taxpayers' money. Achieving sustainable rural development and poverty reduction through job creation should be the key drivers in developmental projects such as these.

5.7 SHORTCOMINGS OF THE RESEARCH

Conducting research has never been undertaken without encountering shortcomings. However, it remains the researcher's responsibility to perform the research to the highest level of his or her capability.

According to an internet source (n.d.), shortcomings represent something over which the researcher did not have control. There could be arguments against this, but in the case of this dissertation, the following shortcomings were noticeable during the course of the study:

- Difficulty in accessing the farmers led to a small sample size
- Difficulty in communicating questions in an understandable way
- More in-depth quantitative analysis was not achievable.

One of the major shortcomings of this dissertation, and which led to the other shortcomings, was the difficulty in accessing the farmers, which mainly resulted in the small sample sizes. Data could be biased, thus resulting in a misinterpreted answer, due to the nature of data collection. In the case of HOH, all eight farmers were interviewed, and questionnaires were filled in on the spot, whereas with TTI, 50% of the questionnaires were filled in on the spot, while others were filled in by the farmers, without an in-depth explanation on the questions. As a result, the findings and conclusions are limited by these shortcomings.

Sample sizes were selected randomly by the management team of each organization visited. Another valid reason behind the small sample size is mainly that only eight farmers were chosen to represent them in the study. The exact reason behind this is not known, but could be because the organizations viewed these farmers as being their top model farmers and wished to present only the best examples of their business model.

The quantitative analysis in this dissertation is based on a Likert-scale analysis and Excel STAT operations. Although software such as SPSS and SAS could have been used, the small sample size and lack of complexity in the data sets indicated that simple Excel statistics were suitable for use in the analyses. The accuracy of the analyses might be debatable, and possibly not as reliable as using SPSS or SAS, and this could have been a limiting factor in getting desired results. Thus, further research on similar topics would have to include the latter software, if more in-depth analyses are to be done.

5.8 CONCLUSION

Small-scale farming around the world remains an important field of discussion among many researchers and organizations. Sjauw-Koen-Fa et al. (2016) show that multinational food organizations positively contribute to the livelihoods of small-scale farmers through increasing their transactions with them to include the presence of higher-value crops in markets with a higher value. Two small- and medium-scale agro-processing case studies were analysed in this dissertation, and it became clear that small-scale farmers lack a form of market access. This dissertation has highlighted the point that the respondent small-scale farmers faced numerous constraints before they became part of an inclusive business model. This dissertation simultaneously highlighted positive impacts experienced by these small-scale farmers after they entered into ventures with inclusive business models.

The dissertation's proposition that small- and medium-scale agro-processing models can function as an alternative inclusion mechanism, which would effectively address the constraints faced by small-scale farmers when entering high-value food markets, was answered through the analyses of the specific objectives. The specific objective was to evaluate the potential of the two agro-processing models as constituting an inclusive business model for introducing small-scale farmers into formal markets. The method behind the specific objective was adapted from Henson et al (2008) who identified two aspects for evaluation, namely the impacts of participation in higher-

value markets, and the constraints faced by small-scale farmers before and after entering into higher-value food markets. Analyses using both these methods proved to be positive and attained similar results to those of Henson et al.

A final remark on this dissertation is that positive results can be seen when small-scale farmers are included in higher-value food markets, given that their constraints are limited and farmers are included only to improve their livelihoods.

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