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Multidimensional lack of financial inclusion:

The case for agrarian value chain finance institutions in rural Eastern Cape

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by

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Abstract

The Eastern Cape region has a diverse composition of smallholder farmers that conduct operations, mainly in rural dwellings, within an informal trading context. The study found a composition of informal and formally composed smallholder farmers that operate within and outside of value chains. Generally, smallholder farmers that operate independently (outside of value chain formations) and informally within the Eastern Cape context remain excluded from the financial system as they are unable to attract external capital and/or investment and are unable to access a market beyond their close and surrounding areas. Then, in terms of the formally composed smallholder farmers that conduct farming operations within a value chain community context, these farmers are aided and supported by value chain coordinators to conduct efficient farm operations. Generally, within this context, the farmers are required to produce pre-determined production scales for an existing market, and whilst adhering to value chain farming requirements, they are skilled up and educated to operate sustainable food production systems. The study has restricted the analysis to the smallholder farmers that operate within value chains in order to investigate the contextual environment of these farmers as well as to examine the key components that make these value chains successful.

The Africa Intercontinental Free Trade Agreement and the South African government's investment in various strategic assets (i.e., ports in the Eastern Cape) has been a signal that the Eastern Cape has the potential to participate in significant value chains. Furthermore, the advent of the COVID 19 pandemic has caused major disruptions in traditional and existing value chains (in the agrarian sector as a whole) and given rise to more conscious and aware consumers (who prefer produce from environmentally friendly farming practices and distribution). This study provides a general analysis of the informal smallholder farmers and underlines the success factors needed for value chains to enhance the smallholder famer's context and the outlines the ways and means to enhance the farmer's production capacity and access to finance, through value chain finance and participation.The panel investigated within the study consists of a sample of smallholder farmers, value chain coordinators, stakeholders etc. that participate in successful value chains in the Eastern Cape, in order to determine the context of smallholder farmer environment and to define the success factors of these successful supply chains. The 17-member interview panel enabled the determination of the study's two objectives and the conference proceedings augmented the contextual understanding of the Eastern Cape smallholder farmer landscape.

Dedication

Thank you, my God, my wife and my children. God has been my YAWEH, the Lord of Lords and King of Kings, He has carried me and helped me to complete this work and He has allowed me to fulfil a dream He laid in my heart. I am nothing without Him and I thank Him for His sovereignty.

I dedicate this body of work to my late grandparents, uncle and aunt who were educators and health workers by day and traders, smallholder farmers by night, in the Eastern Cape.

I thank my parents (Bongani and Zandile Ntisana), my sister (Khanya Ntisana) and parents (Dennis and Gerda Gaffney) who have been very supportive through this process.

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1. Chapter 1

Introduction

1.1. Research Area and Background

This study seeks to outline the smallholder farming environment in the rural Eastern Cape, where it generally operates through informal operations of production, with limited access to finance and support activities. Currently, agriculture has not been exploited and as a sector it is designed to organize around wide value chains. However, limited access to finance and financial intermediation activities (those conducted through specialized financial institution framework) has been the reason the sector has missed out on the agriculture value chain finance opportunities, which are able to deal with the transaction costs associated with the current context (Neves & du Toit, 2007; Markelova & Mawangi, 2010; Fernandez-Sterk & Gereffi. 2011)..

The make-up of rural Eastern Cape consists of complex and unique district areas, some of which were once homeland government states. A bulk of the pastoral landscapes appear to be neglected hinterland; however, whatever the local context, the district areas of this province also at the same time appear to be intersections shaped by the community and family connections within other places and provinces (especially when people from these areas travel in and out from various urban stations, where they find employment) (Troskie, 2013).

In as much as unemployment and lack of investment in these rural regions (such as Centane, Ngqamakwe, Mount Frere, Qumbu, Idutywa, Butterworth, eQonce, Komani and eDikeni) are prevalent, this context also depicts a picture of survival within these communities, which relies on complex forms of reciprocity and delicate forms of informal activity and self-employment (including informal smallholder farming and production). This survival mode is also somewhat encouraged by the relevant financial contributions attained from outside urban areas of employment. Contributions tend to be from family members who are engaged in labour activities within these urban centres, and as they redirect some of their funds back to these remote and seemingly disconnected rural communities, they add to the economic activity of the rural smallholder farmer context (Bese et al, 2021; Neves & du Toit, 2007)..

Furthermore, the present-day situation of many of these rural districts presents a previously disadvantaged and disrupted agrarian sector, which suggests that the pre-1994 government

policies were designed to be counterproductive for agrarian activity in order to redirect the labour force in this region to mines in Gauteng and manufacturing plants in Cape Town, East London and other major city centres. As it is part of the history, that together, with the closure of many mines, factories and previous manufacturing plants that demanded the labour of this region has forced redundant workforce to be brought back in this rural economic context without prospects of finding employment in their context (Bundy, 1988; Bank, 2002; Bank and Minkley; 2005; Southhall, 1994; (Chakwizira, et al., 2010).

It must be noted that the post-apartheid regime has made efforts to resolve some of these issues through urbanization and infrastructure investment in these small towns; however, post-apartheid urbanization has not facilitated the repatriation of surplus labour in the Eastern Cape, nor has it facilitated an increase of local industries. Industries that currently occupy the Eastern Cape remain dispersed and not necessarily accessible to rural communities because of distance, and remain extremely thin with limited oversaturated sectors that cannot absorb all labour that is available. Another issue is the HIV/AIDS and COVID 19 pandemics, which have been highly prevalent amongst the working-age population of the province. This pandemic has been the major cause of loss of household income, leaving children and elders to cope with the demands of survival and escalating the burden of caring for orphaned children and dying relatives (WIPHOLD, 2017; Neves & du Toit, 2007).

In terms of the agrarian sector make-up of the Eastern Cape, the region has a large constituency of subsistence and smallholder farming. Together with this, there are numbers of commercial farmers that produce quantities to the bigger city centres and international markets, producing fruits (citrus, pineapple, apples, oranges), cattle, vegetable, and maize, etc. The current economic challenges (limited access to finance and capital, unskilled labour, skewed commercialization and excess labour) require the province to shift from being a primary consumer of food from other provinces to being the primary producer of food and agricultural products of the country (Reform, 2018).

1.2. Problem definition

The Eastern Cape is dominantly a rural province and studies suggest that about 60% (from 52% in 2012 to 60% in 2019) of the province is occupied by the poorest households in South Africa (Bese, et al., 2021); (Mujuru & Obi, 2020).

Most poor households employ a varied mix of strategies to locate income to maintain a livelihood; these include salaries/wages, social grants, pension remittances and other income, from family and trading. Despite all these strategies, the region has an expanded unemployment rate of 43.8%, an adult poverty rate of 67.3% and a 27.9% proportion rate of agricultural households (Mujuru & Obi, 2020).

So, with the dire unemployment and poverty rates and high dependence on high dependence on agriculture, it is evident that inclusive policies to promote agricultural activity will contribute to the eradication of poverty and reduction of unemployment (Kibirige, 2015) . Recent studies suggest that national governments in Africa need to deploy mechanisms that will enhance the productive capacities of their food systems through capacitation and the specialization of smallholder farms into sustainable agribusinesses. This will enable smallholder farms to become attractive sources of raw commodity supply, thereby modernizing their value chains (Mujuru & Obi, 2020) .

This study therefore focuses on the smallholder farmer transformation process in which individual farms are modified from highly subsistence-oriented operations towards more specialized production targeting entities, both for their input procurement and product supply (Kibirige, 2015) .

Generally, the Eastern Cape remains highly subsistence-based, maintaining low productivity resulting in very low incomes for smallholder farmers in the region. Though several government initiatives have been implemented to develop smallholder farmers, these have failed, mainly because of lack of managerial competency, farmer inexperience and slow uptake of technology at firm level (Mujuru & Obi, 2020).

Therefore, the first problem is the smallholder farmer's inability to maintain production as a result of lack of coordination (part of a fragmented value chain, without access to finance and support). These farmers remain significantly disadvantaged and also, new entrants into the smallholder farming sector cannot exit the poverty trap through smallholder farming operations, as they enter a fragmented system that is bloated with individual farmers that are not feeding into a structured system (Reform, 2018).

The second problem we see are smallholders who are constrained in the capability to access necessary investment as they do not have supplementary income or contributions from sponsors to smooth out their farming operations. As a result, smallholder farmers in the region are missing out on the opportunity to access multi-dimensional financial access (Bese, et al., 2021).

The smallholder farmer's obstacles and challenges of accessing capital enforce the important need and role of joint participation, in the form of producers and value chain members, to allow smallholder farmers to take advantage of the present value chains and opportunities from existing market imperfections (Markelova & Mwangi, 2010).

1.3. Research questions

The objective is to determine the role of agriculture value chain finance in addressing the lack of financial access, poor usage and poor quality of financial products to smallholder farmers in the region. The specific research questions include:

a) What are the general critical success factors of value chain finance models?
b) Which transaction cost aspects of the smallholder farmer context limit multidimensional financial access for smallholder farmers and value chain finance intermediary participation?

1.4. Research objectives

The overall objective of the study is to conceptualize a value chain finance framework that will enable multidimensional financial inclusion, through the use, frequency and quality of financial products, for smallholder farmers in the Eastern Cape. Specifically, for each research question, the study aims to:

explore the significant features that attribute to successful value chain finance models;

a) analyse the mechanisms available within value chain frameworks that foster multidimensional financial access for smallholder farmers in the Eastern Cape.

1.5. Scope

The study focuses on multidimensional finance in as far as value addition and participation, investment and partnerships. According to the study, the outstanding mechanism to scale up agrarian sector performance in this region, is to facilitate the requirements of multidimensional

financial access, with both public and private sector policy view. As a result, we focus on certain smallholder farmer communities that follow the assessed finance models, within their specific value chain structures.

The conclusion of the study will focus on value chain finance models that are constructed from the tailored financial products that currently exist in the context. Here, we outline that by integrating marketing, the application of certain financial instruments and technology, these value chain finance models become the "under pinners" of smallholder farmer transformation (Jones & Miller, 2010).

1.6. Purpose and significance of the research

The agrarian sector offers immense employment and empowerment opportunities through the use of technology and innovation. The growing numbers of food demands and the increasing poverty levels in emerging economies are some of the serious issues to resolve within the sector. The basis of the study is therefore the same and assumes that as the growing consciousness of consumers on food quality assurance increases, additional farmers will emerge and therefore a value chain framework, within the context of global value chain networks, will enable more demand, which can be supplied. The study follows that through growing consciousness, food production networks will improve and thereby enable infrastructure investment, etc. The obvious approach to be adopted by emerging economies such as South Africa, is to absorb the surplus labour supplied in rural communities using the agrarian sector to transform the informal smallholder farmer and integrate private and public-sector value chain partners into interrelated production chains. These chains will mitigate risk, promote sustainable agrarian development, provide access at finance and curb unemployment in the region (Van Zyk & Kirsten, 1998).

Furthermore, the Eastern Cape is faced with heightened poverty levels, lack of public and private investment, with a significant rise in informal trading, where fragmented smallholder farming ecosystems exist (Van Zyl & Kirsten, 1998).

In this instance, value chain financing promotes increased sustainable practices through certification and adherence to industry standards and norms that should inform asset maximization. Also, the promotion of risk sharing through a value chain limits the risks attached to each individual member and producer. The sharing of risk within an integrated chain

requires judicious internal controls to manage the flow and/or reporting and review of business risks. Furthermore, when insurance for assets is provided through micro-insurance mechanisms, this will generally protect low-income members to better manage risks and when income smoothing occurs through value chain systems, this will help producers save and smooth their income over the long term (Jordaan, et al., 2014).

The vast arable land and open land remain unused and inefficient in the Eastern Cape. In this context, value chain financing will promote economic development and facilitate significant inclusion by ensuring access to and usage of specific quality products. The study of a specific context and community nuances highlights the importance of understanding that it would be impossible or inefficient to replicate a single model across various smallholder farmer regions and/or groups, thus it is important to understand the extent to which development can take place in the Eastern Cape.

1.7. Organization of the study

The study is arranged in five Chapters, with Chapter One providing the background and introduction to the study. In this section, the themes, assumptions and purpose of the study and methodology used to investigate the research problem are outlined. Chapter Two outlines the literature review collated for the smallholder context, the value chain financing framework and the multidimensional aspects of financial inclusion. Here, we also include the theoretical framework which is presented to outline the context, financial instruments and the multidimensional aspects associated with transaction costs. Chapter hree outlines the methodology and research approach of the study that informs the data and analytical review. Chapter four draws out the findings from the data collated and discusses the major phenomena associated with the context. Chapter five includes the conclusions of the author and outlines the overall multidimensional issues associated with a context depicted by the attached findings from the data.

2. Chapter 2

Literature Review

2.1. Introduction

The study adopts a broad multifaceted definition of financial inclusion; this definition moves beyond the assumption that inclusion will inevitably be achieved by simply offering enough access points. Within this definition, we see value chain access points being organized within free trade regional area or common union level (Development, 2017). In terms of this definition, we cannot limit how frequently clients use certain financial products and how agriculture value chain financing will categorize their actors and the activities that will transform the agricultural production cycle within this province (IFC, 2012) .

The value addition aspects of the production cycle are viewed through the distribution of investments, loans, capital and financial products, including chain participation (Jones & Miller, 2010); (Ismail, 2017); (Fernandez-Stark & Gereffi, 2011).

More importantly, the study aims to highlight the overall hinderances that limit smallholder farmers as a result of the type of "firm" requirement and formal trade service requirements imposed by financial institutions and/or formal financial systems, within this context. The Eastern Cape is within a construct that aims to depict an unfavourable farming landscape that is perpetuated by the losses as a result of the transaction costs (created by the type of financing models the smallholder farmer adopts in the province (IFC, 2012).

2.2. Definition of concepts

The study formulates a view of multi-dimensional financial access by drawing from Fernandez-Sterk (2011), who suggests that inclusion and development should be measured as the increase in size and frequency of transactions, as well as the extent of participation of the poor and their access to financial services, in a particular context (Fernandez-Stark & Gereffi, 2011).

2.2.1. Multidimensional financial inclusion

So, in terms of value chains, this study aims to highlight their ability to improve smallholder farming practices, enhance their ability to attain price discovery and upgrade their farming value to a higher value option (Jordaan, et al., 2014).

In essence, authors such as Jordan suggest that value chain coordination needs to facilitate business development, enable progressive domestic trade policies and assist smallholder farmers to cope with the stringent agri-processing and commercial agricultural value chain rules (Jordaan, et al., 2014).

In terms of participation and inclusion, the study attests that when examining the extent of participation of the poor, there seems to be a better understanding of the daily financing activities of the poor and a realisation of the welfare and growth impacts of financial underdevelopment. Therefore, this participation cannot happen without financial institutions and as Robbins (2011) and Knoop (2013) highlight, financial intermediaries operating in this context need to be institutions that will not just make finance available, they also need to develop ways of dealing with the information gaps and the inability to offer standardized solutions to smallholder farmers in these areas such as the rural Eastern Cape (Robbins, 2011); (Knopp, 2013.2); (Jones & Miller, 2010).

In terms of the financial services, products and services are viewed within a context of a chain to address the needs and constraints of those within the agrarian value chain ((KIT and IIRR), 2010).

So, whilst there is a need to understand all aspects of the value chain, value chain finance is defined in terms of two broad aspects of its financing, the first aspect being the internal financing within the chain and production stages, and secondly, the external finance that is made possible by the chain mechanisms and relationships ((KIT and IIRR), 2010).

Essentially, value chain financing allows for the integration of players in the agrarian production, marketing and processing. The roles, scope and purpose of partnerships are defined and established within the framework of the chain. Generally, value chain integration in the agrarian sector has predominantly been associated with its ability to increase efficiency and value through the reduction of wastage, price discovery, increased income and preservation of food security. These actors are organized within the scope and regulated by a framework to

sequence the value-adding activities involved in bringing a product from production to a finished good, which is consumed by the targeted market (Jones & Miller, 2010).

Agriculture is the livelihood of most of the emerging economies and majority of the world's poorest communities, those similar to the Eastern Cape (Sartorius & Kirsten, 2002; Neves & du Toit, 2007).. Finance is one of the key elements required within the value chain, as it is able to increase scale (outreach), and reduce the level of transaction costs and risks farmers and relevant stakeholders are expoaed to. The livelihood model is essential in a triad model that consists of the following three elements: livelihood financial services (savings, credit, insurance, fund management and financial development), institutional development services (establish links with markets and producers, formalization, operational support and legal compliance) and agriculture business development services (enhancing productivity, non-insurance risk mitigation, value addition, input and sales linkages) (Jones & Miller, 2010; Sartorius & Kirsten, 2002).

In principle, any chain's financing framework will have a pretext of defining price takers and securing demand for supply. The value chain finance frameworks, models, scope and etc. can get mixed up where there are various financial products within the chain, as a result literature has limited the analytical definition of value chains financing frameworks by categorising them into typical business models, which include producer, buyer and facilitator-driven value chain models. (IFC, 2012); (Bank, 2013).

So, the ability to migrate informal smallholder farmers to formal groups then becomes difficult when viewed as dependent on education or cultural norms. The aptitude and financial awareness of these farmers then plays a significant role in this analysis. The study supports the view that credit embedded into market access increases rural income and facilitates an increase of rural savings and thereby reducing the poverty levels (Jones & Miller, 2010).

This is true, especially when norms and standards created by the cultural environment, underpinned by tradition, encompass the rules and principles that would intend to create order to protect individuals against opportunistic behaviour (Milagrosa, 2007); (Jordaan, et al., 2014). Therefore, in theory it is also understood that the motivations that guide the conduct of these farmers, the transacting agents, participants and organizations can support the farmers to overcome a number of constraints that currently limit the financial inclusion of smallholder farming and value chain participation. Thus, the societal and established environments have a significant influence on the behaviour of all of the value chain participators that are willing to

contribute to smallholder farming and its value chain to successfully overcome constraints and barriers to financial inclusion (Jordaan, et al., 2014). "The informal constraints of the institutional environment include norms of behaviour, conventions, self-imposed codes of conduct (North, 1994), and non-political, non-economic and unwritten conventions such as taboos and traditions (Milagrosa, 2007)"; (Jordaan, et al., 2014).

So, institutions make a significant contribution when participating and are a part of informal activity, especially in Africa. "According to Chamlee-Write (1998), opportunities for promoting local activity have been missed because the cultural specificity in which institutions emerge has been ignored" (Jordaan, et al., 2014). This leads us to believe that additional opportunities and greater success is attainable when policies that allow traditional establishments to work to their full potential are implemented (Jordaan, et al., 2014).

The lack of financial inclusion within the smallholder farming sector shows us that households tend to depend upon what they can produce from informal activity. This is obviously unsustainable in the long term for a number of reasons, the main reason being the continuous growth of households and general increase in poverty. This trend then needs to move toward a sustainable strategy that views smallholder farming production as a proponent fit into the competitive markets system. This will solve the lack of financial access and inclusion problem in the long term. For the smallholder, financial inclusion will allow production of agrarian products in higher yields, enable diversification and better positioning to participate in a competitive market. The transfiguration of smallholder farming informality and lack of financial access will then lead to the formalization of these groups and thereby exposing them to additional risks from these opportunities. A risk management strategy therefore needs to form part of the collective's business decisions in order to facilitate the maximization of resources and activities on a year-a-round basis, thus incrementing their revenue, decreasing expenditure and allowing them to provide continuous employment (Jones & Miller, 2010).

Lastly, as far as sustainable financial access and inclusion, institutions therefore play a significant role in shaping events at the downstream levels of governance and resource allocation. Good institutions and good governance structures contain efficient information transfer mechanisms, which result in better informed decisions among parties involved. Well-managed and efficient institutions foster a favourable environment for economic growth, as "economic development and good institutions are mutually occurring reciprocal phenomena".

On the one side, economically developed areas demand and contribute to good institutions and then on the other, a good institution creates economic development" (Jordaan, et al., 2014).

2.2.2. Value Chain Finance

The market arrangement of the agrarian sector seems to be changing drastically as a result of numerous forces, which include the formation of food production systems. Production units seem to be consolidating and coordinating arrangements among the production stages, tightening the production and supply factors and thereby altering the financial relationship between producers, suppliers, firms, etc. ((KIT and IIRR), 2010).

Food production presents in vertically sequenced stages that channel raw inputs into agricultural production, with successive value add and processing of commodities in order to produce a final product for targeted consumers as expressed by their preferences (KIT and IIRR, 2010; Van Zyl & Kirsten, 1998).

The system stages also present an operating process at each stage of production in order to transform marketable goods into saleable products (Barry & Ellinger, 2012).

Value chain financing has often been adopted as an approach, viewed as the set of tools and activities that systematically organize the actors, processes and markets of the chain and not necessarily based on an individual lender-borrower within the system. Generally, financing decisions are weighed against the general health of the chain, which includes the supply and demand factors that impact the system. This means that the chain is built not only on the linkages within the value chain but also through knowledge integration. Conventional financing often relies heavily on the creditworthiness of farmers, in this context, whereas value chain financing adopts an approach that considers the payments to be received by farmers from activities (these often include the production and transactions from value-added services).

The real benefit with this view is that farmers have access to finance without having to adhere to stringent collateral requirements but through the predictable flow of goods and the strength of partnerships within their chain (Bank, 2013); (Development, 2017).

As a result of this, the key considerations of value chain finance are the strength of the chain, the risks and challenges within the chain, technical and financial support services available and the business model for value chain finance (Jones & Miller, 2010); (Sartorius & Kirsten, 2002).

Institutions that aim to adopt value chain financing as an approach need to consider the environment they operate in, as value chain financing will flourish in enabling environments to allow for regulation and enforcement of contracts (Development, 2017). The overall macroeconomic policy, general level of intermediation services and organized local farming groups are considered as the country environment factors of value chain finance (Dunaway, 2014) . The other environment factors include the vertical and/or horizontal relationships (in terms of the linkages between competitors, interests and commitments), financial and non-financial services, and more importantly, the market potential (consumer demand factors) (Robbins, 2011); (Jordaan & Grové, 2013).

Secondly, institutions need to identify the value chain model that currently exists (lead actors, strategy and business model), and thirdly, to identify the transaction process within the chain in order to determine the entry and critical points for finance (flow of funds and financing needs). Fourth, they need to design financing options that will complement the strengths of the chain and address the risks associated with financing at each participation level of the chain. The broad analysis of value chain finance approach leads us to believe that by design, it seeks to deal with numerous issues as a priority. These include expansion of agriculture and rural finance policy environment to include financial products, support and technologies; review and access of policy improvements that will enhance warehousing services and warehouse receipt financing; expansion to facilitate expenditure of rural infrastructure in the agricultural sector; facilitation of an enabling environment for private section participation and investment, improved tax reforms and concessions; facilitation of financial stability in the sector through effective policies; enhance smallholder farmers' access to markets and financial services; enforce agrarian sector transparency and fair trade; and to capacitate value chain participators to meet relevant quality and compliance standards and other relevant regulations (Jones & Miller, 2010). Institutions adopting value chain financing as an approach have to also consider that as much as an existing chain may exist in a specific context, chains are also developed, especially in emerging economies with smallholder farmers, and are integrated into a livelihood model. (Sartorius & Kirsten, 2002); (Barry & Ellinger, 2012).

As transactions occur over a period of time and occur when a good is transferred across one stage of activity to another, the transfer terminates one stage of activity (in this instance production) and on the next or another stage, activity begins (Barry & Ellinger, 2012).

The interface that facilitates the transfer, especially in a smallholder farming context, needs to be an efficient mode of a smooth, harmonious flow of funds (Gumede, 2019).

In terms of the design and mode of value chain financing approach, transaction cost analysis should follow an interdisciplinary approach to provide a unified interpretation for a disparate set of organizational singularities in an institution of this nature (Williamson, 1981); (Barry & Ellinger, 2012).

Smallholder farmers tend to be the most vulnerable in the general agrarian sector and industry organization within value chain networks. These groups often tend to be the weakest links (Markelova & Mwangi, 2010). The model of the value chain finance needs to address its mandate and the environment within which it operates. Though there are many ways to formalize the value chain finance institution and the extent of support services provided, there needs to be a consideration of the real transaction cost attached with the operation of the such an organization, which would affect the decision on model and approach (Bank, 2013); (Barry & Ellinger, 2012).

Economic organization regards transaction cost as a basic unit of analysis and maintains that an understanding of transaction cost economizing is central to the study of such economic organizations (Williamson, 1981); (IFC, 2012) .This means that transaction cost within an organizational frame needs to be categorized into the dimensions in relation to the organization's governance structures.

These dimensions apply to the determination of efficient boundaries between the firm, markets, the organization of internal transactions and the design of employment relationships (Fernandez-Stark & Gereffi, 2011) .

Generally, as economic theory would suggest, transaction cost analysis tends to focus on efficiency. To understand the efficiency of value chain financing, there would need to be a measurable way to make the transaction, rather than commodities, the basic unit of analysis and by assessing governance structures, in terms of their capacities to economize on transaction costs. Also, when assessing efficiency, the analysis must occur at three levels of the organization (institution): the overall structure of the organization, the operating activities and the organization of human assets (Williamson, 1981; KIT and IIRR, 2010).

In terms of the first level, generally, the general enterprise in the agrarian needs the operating parts and units are related to one another, within the "efficient boundaries" of an operating unit.

Then, the enterprise should link up internal governance structures with the attributes of work groups in a discriminating way (Williamson, 1981; KIT and IIRR, 2010).

This may be true because human agents are subject to bounded rationality and that at least some agents are given to “opportunism”. It is therefore essential to measure the uncertainty, the frequency with which transactions reoccur, the degree to which durable, transaction-specific investments are required to “realize least cost supply and asset specificity” (Williamson, 1981). The South African context presents a challenge to address, and by adopting a model approach, to product design and financing mechanisms, these will form part of investment and credit strategies to address aspects of uncertainty, the frequency of transaction and durability of the transaction (Jordaan, et al., 2014); (Williamson, 1981).

Then, in terms of asset specificity, this is known to be one of the best describers of transactions and in terms of the analysis, asset specificity should seek to outline large fixed investments determine and whether such investments are specialized to a particular transaction (Williamson, 1981); (Barry & Ellinger, 2012).

Generally, items that are unspecified among users may cause issues as buyers can easily turn to alternative sources and suppliers can sell output intended for one buyer to other buyers without difficulty. Asset specificity can be analysed in three ways, by site specificity (in terms of proximity of key points of trade and transportation), physical asset specificity (in terms of the required specialization of equipment at each production phase) and the human asset specificity that arises from learning by doing (Barry & Ellinger, 2012); (Williamson, 1981).

It is important to note that once an investment has been enacted, actors such as buyers, sellers and suppliers are effectively operating in a bilateral exchange relation for a considerable period thereafter and basically the supplier is effectively "locked into" the transaction and thereby creating a symmetrical relationship should be maintained. Also, the buyer is unable to seek alternative sources of supply and obtain the item on better terms, since the cost of supply from unspecialized capital is seemingly great; the buyer is thus committed to the transaction as well. .“Accordingly, where asset specificity is great, buyer and seller will make special efforts to design an exchange that has good continuity properties, and where there are strong governance structures that have better transaction cost economizing properties, these will eventually replace those that have worse, other things being equal” (Williamson, 1981).

2.3. Overview of financial inclusion in South Africa

Firstly, financial intermediation remains a key element in the developmental path of emerging economies but remains constrained, especially in a context such as rural Eastern Cape. (AgriSETA, 2010)

The following Figure 1 depicts the savings and investment culture in

South Africa between 2014 and 2015.

Category	Examples	2014	2015
Income source	Proportion of adults who receive income from salary/wage or own business	34%	33%
Income level	Number of adults earning more than R3 000 per month	47%	52%
Cellphone usage	Proportion of adults using cellphones	90%	88%
Infrastructure, i.e. access	Proportion of adults without electricity	6%	5%
Financial inclusion	Proportion of adults that are financially included	86%	87%
Banked	Proportion of adults that are banked	75%	77%
Insurance	Proportion of adults that are insured	60%	50%

Extracted from FinMark Trust 2015: FinScope South Africa

(FinScope, 2015)

The inability to effectively measure the real creditworthiness of borrowers, in real time, remains one of the key factors of the slow rate of development in this region (Kodongoa & Ojah, 2013) (FinScope, 2015).

There needs to be an understanding of the existing limitation (information and lack of infrastructure), in order to increase intermediation competition at local levels and perhaps reduce transaction costs associated with the region (Robbins, 2011); Neves & du Toit, 2007).lso, at a wider, regional perspective, the features of the financial system in Sub-Saharan Africa generally shows that the liquid liabilities and the ratio of liquid liabilities to Gross Domestic Product represent a small financial services sector (Bank, 2013) . Commercial banks tend to not undertake large-scale investment into technology, especially those that come with high fixed costs. When measuring the financial depth through private debt to GDP, this is also low (Bank, 2013). Added to this, the South African market depicts poor saving trends and shows significant levels of financial exclusion, including a large portion of consumers who do not access the credit market.

For the Eastern Cape and South Africa in general, some would say the reasons for poor access to credit access are perhaps that there is no general economic, socio-political certainty and changes in government policy reduce the incentives of financial institutions to provide long term lending to smallholder farmers. Added to this is the lack of documentation and/or formal contracts between households and/or with firms, which perpetuates information asymmetry and excludes smallholder farmers and microentrepreneurs from trade and credit markets.

However, whilst we can agree with all the above-mentioned and settle that the weak contractual frameworks, high levels of corruption, lack of intermediation competition (leading to high banking costs) and the dominance of the commercial banking sector in South Africa, only makes short-term credit available and limits the potential to access long-term financing (Neves & du Toit, 2007); Bank, 2013). The limited or unavailable long-term investment in this context shows how financial inclusion and development have a direct impact on economic growth. The absence of mechanisms to enable efficient allocation of resources, to reduce transaction costs (through risk reduction) and to increase savings and investment have a direct impact on the extent of inclusion and development in the Eastern Cape (Neves & du Toit, 2007).

Secondly, for the smallholder in the Eastern Cape, the reality of limited access to information is translated into lost market access and therefore, we can assume that there are fixed costs attached to export activities. Understandably, there are market entry and exit barriers into the agrarian value chain; however, any existing value chain should provide a substantive explanation for the coexistence of homogeneous and heterogenous producers within a sector (Development, 2017) .Therefore, the study access to information is enhanced by technology and thereby becomes an enabler for the farmer to increase market spread and share (Bank, 2013).

Thirdly, the context of any value chains includes cultural nuances, trade off (producer and consumer), food management and various philosophical aspects and most frameworks for value chains are designed to deal with governance and context (Bank, 2013). The cultural context, along with all the labour inequalities, especially for women in the Eastern Cape, tends to present various barriers to entry. Women in this context are often faced with empowerment-related matters along with family labour-associated issues (AgriSETA, 2010).

2.4 Conceptual Framework: Agricultural Value Chain Finance

As much as a value chain framework, within a context, may explain the behaviour of firm operations and market access, generally, these frameworks seek to mitigate value chain participator risk caused by the value chain's context. The theoretical framework defined is for farmers who aim to participate actively in value chains, thereby maximizing asset valuation and return. The theoretical framework for value chain financing is simple and enables the coexistence of homogenous and heterogenous producers to leverage on market access through risk sharing and efficient allocation of resources. So, we start by looking at Jones (2010), who presents a diagnostic framework that encapsulates and provides a holistic analysis of a farmers' value chain, whilst presenting mechanisms to limit transaction costs for value chain participators (Jones & Miller, 2010).

When assessing the core components of agriculture value chains, we see the formation to be as depicted in three components or streams, as it is in the graph below, where the streams are occupied by various stakeholders. Here we see the financial services stream (generally occupied by what is termed as value chain supporters), value chain supplier stream (generally occupied by product, is termed as value chain players) and value chain support service stream (generally supported by value chain supporters and influencers). There tends to be crosspollination between the financial and supporting services and generally will see finance providers also offering some form of specified and specialised training. However, in as far as the make-up of the three streams, the chain supporters of the chain are responsible for the capital allocation within the chain, so that it can function. The value chain actors range according to the dispersion of participators needed to bring the product to life and to market. Then, the chain influencers work to ensure that the production process and all various tasks and activities performed by actors, at each stage of value addition, are carried out within the ambit of the necessary legislation and requirements as dictated by the market participation requirements.

This simplified and uniform value chain framework depicted below shows the standard structure and functions of these core components/stream within a typical chain. Though each feature is independent, there is an interlinking that takes place in the chain to minimise transaction costs whilst enabling cooperation, partnership and dovetailing of services and actors to maximise chain profits (Maloba, 2018); (Jones & Miller, 2010).

Figure 2: Overview of a value chain framework

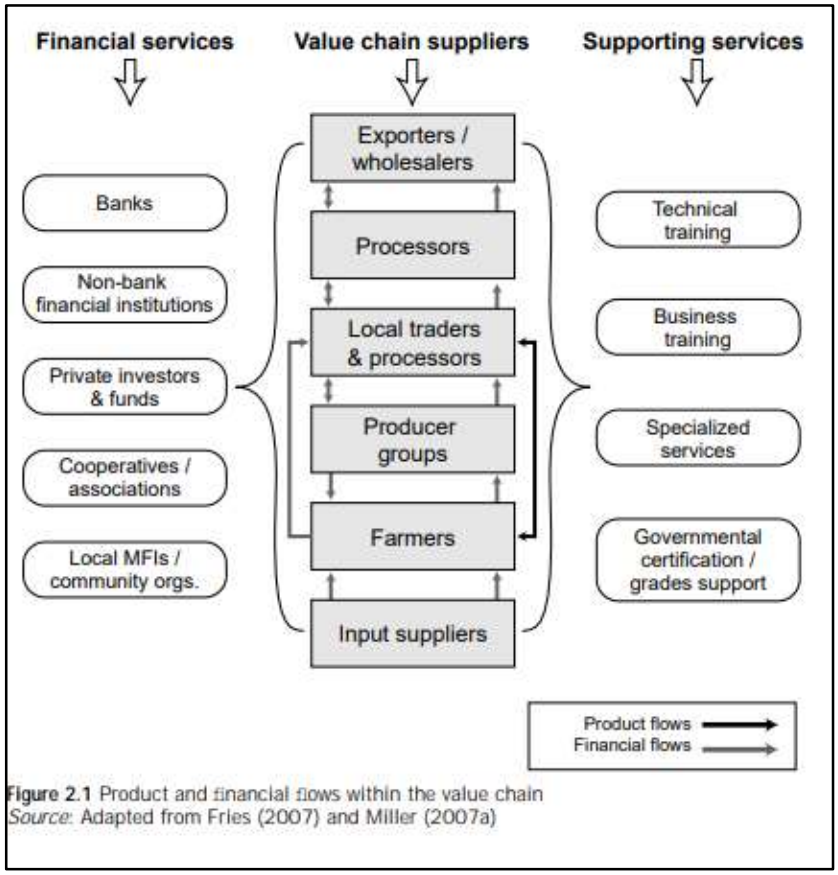


Figure 2.1 Product and financial flows within the value chain
Source: Adapted from Fries (2007) and Miller (2007a)

2.4.1 Financial services

The services offered in these chains enables the banks to gain access to new customers, and at times, own all the financing of the entire chain. These financial support systems enable financial institutions access to gain knowledge of and assess producers', suppliers', etc. behaviour and trends. Smallholder farmers in this context do not pose serious risks or high default rates as the farmers generally also tend to bank (Jones & Miller, 2010).

2.4.2 Value chain suppliers

Value chain suppliers are the actors who are directly involved with transforming the physical product into the final product, and would be defined as value chain players, as also depicted in the previous diagram (Jones & Miller, 2010). The internal relationship between these players is very important, as the players do not act or operate in isolation. The players are subjected to a number of regulations and rules and need to comply with these whilst operating within the

value chain. According to Jordaan (2013), these are the individuals that drive the rules and regulations of the value chain (Jordaan & Grové, 2013).

2.4.3 Supporting services

The actors who provide support services are known as value chain supporters, responsible for providing specialized support services and key information to support the value chain players. The role of these supporters is to support value chain players and ensure that they adhere to chain regulations (Jones & Miller, 2010).

Over time, various frameworks have been developed and though there are certain extensions and inclusions, the fundamental core (already defined as financial, support services and value chain suppliers) remains and the inclusions to this basic framework aim to take care of the value chain suppliers' unique environment and/or limitations imposed on financial service support capacity. So, when looking at value chain frameworks for a developing country context, there tends to be a need to incorporate the social structures and financial institution limitations.

One such framework, as seen below, seems to move beyond the core streams as previously discussed and incorporates sub-components and additional flows of interconnectedness.

Figure 3: Conceptual value chain framework (Jordaan, et al., 2014)

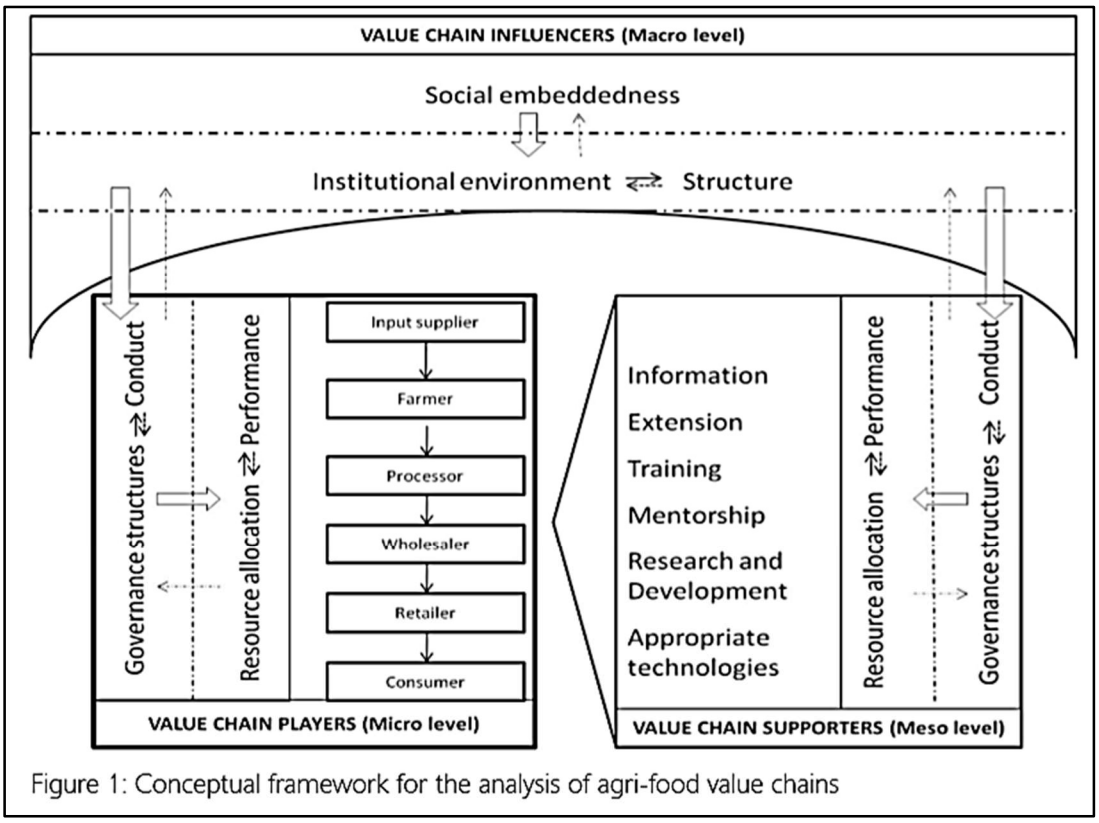


Figure 1: Conceptual framework for the analysis of agri-food value chains

The framework above was designed by Jordaan (2014) and here we see that it is made up of the New Institutional Economics (NIE) and Structure-Conduct Performance (SCP) frameworks. These two frameworks have been incorporated into the value chain framework of Roduner (2007) to bring to existence a depiction of Jordaan's value chain conceptual framework, as seen above (Jones & Miller, 2010); (Jordaan, et al., 2014).

This conceptual framework presented by Jordaan (2014) allows for a comprehensive analysis of the three streams by further incorporating an analysis of the chain's society at four levels (social embeddedness, institutional structures – environment, governance structures – conduct and resource allocation – performance). From the diagram we can see that value chain influencers should be interested in addressing risks and social factors that will constrain the institutional environment. As depicted in the diagram above, there should be constant feedback between the social embeddedness and institutional structure so that the interests and objectives of the value chain influencers are attained (Jordaan, et al., 2014); (Bargawi, 2016).

In terms of the value chain players and supporters, this framework incorporates the governance structure and resource allocation and from the players' perspective, special attention is awarded to the relationship between the farmers and their buyers to identify the appropriate coordination strategy that will minimize transaction costs. Ultimately, what we see is that both players and supporters have a direct role in the way they deploy resources in order to attain a certain level of performance within the chain (Jones & Miller, 2010).

Within the framework is an incentive structure presented by Jordaan, and though it may be general and nationalized in terms of views, culture and association, the Eastern Cape has a significant concentration of smallholder farmers in South Africa and therefore, the principles of the analytical framework are important in our discussion (Troskie, 2013).

According to Jordaan (2014), Roduner (2007) argues that an efficient value chain system is one that is organized systematically to integrate the already-mentioned components (Jordaan, et al., 2014) .This confirms the fundamentals of the chain as being uniform and standard, and with the inclusion of subcategories, the chain matures into a system that also depends on the incentive structures of the chain. So, over and above the dependence on the three components, the subcategories enhance the chain by creating another core, the incentives of the chain. Here we see these chains adopting a financing framework largely influenced by the incentive structure of the chain (Jones & Miller, 2010).

For us, this framework encapsulates the theoretical aspects of financial inclusion (in terms of usage, frequency and quality of financial products), the fundamentals of global value chain theory (and the heterogenous agrarian commodity financing models defined by the International Finance Corporation (IFC); (IFC, 2012).

2.5 Typology and basic characteristic of value chains

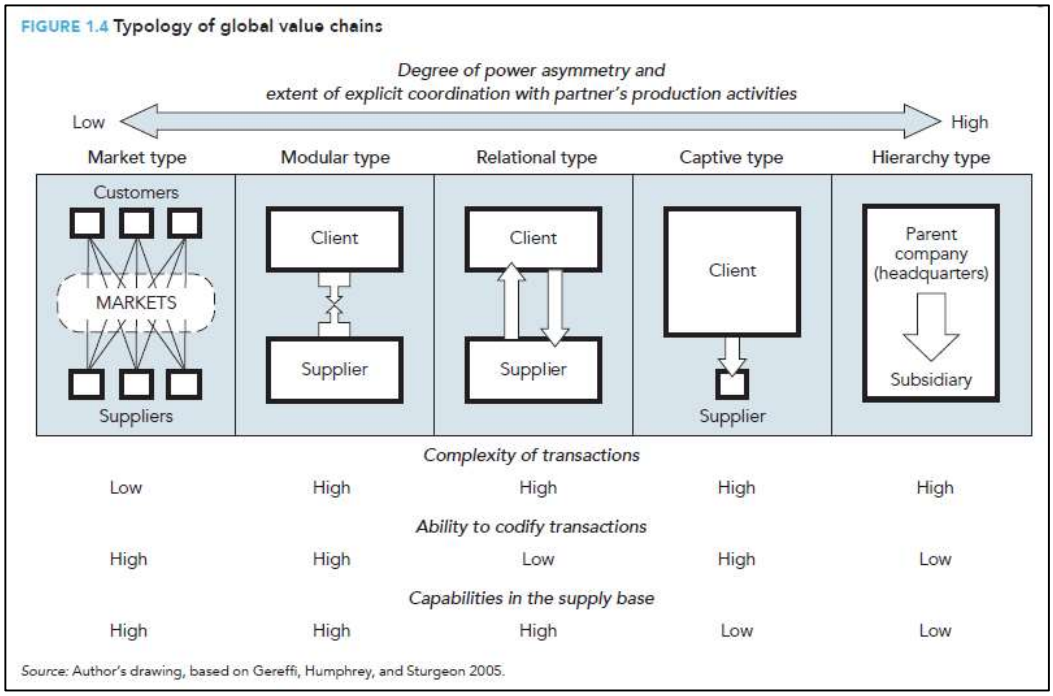
According to Dunaway (2014), over time, value chains (within a global context) have been developed around three schools of thought, the first and second being the radical world systems approach and the third school of thought being mainstream global commodity chains (Dunaway, 2014).

The two schools of thought were developed in accordance with the existing value chain approaches, the underlying principle in all approaches, being that trade occurs at a point in time. This means that all value chain partners are able to enforce a contract, obtain price discovery and seek to maximize asset valuation (Dunaway, 2014).

The third school of thought is known to be industry-centric and, in the case of this study, can present farmers with centric global value chains. These schools of thought speak to different eras of international trade behaviour and maturity and it is without a doubt that we cannot limit value chains to one school of thought (Development, 2017).

So, according to the literature published by various institutions, value chains can be limited to five types of chains in terms of how they are governed; these are market transactions, modular value chains, relational value chains, captive and hierarchy value chains. These value chain types are summarized in the diagram below (IFC, 2012).

Figure 4: Typology of value chains



Extracted from International Finance Corporation 2012: Innovative Agricultural SME Finance Models ce: (IFC, 2012)

Above is a pictorial presentation of the value chain formation, organization and general structure. Any value chain would want to follow an approach, have a blend of the above or can seek to employ value chain specifics for their industry and in this study, we seek to understand the levels of coordination, the value chain lesson and use of technology in the smallholder farming sector. Below is a summary of each type of value chain approach, as defined by financial instructions and form part of this research.

2.5.1 Market transactions

First, here we see a market type value chain, which features market transaction chains that are solely linked to the existence of any relationship between buyers and sellers (IFC, 2012).

Generally, beyond the buying and selling of goods and services, production and product specifications for goods and services demanded in this chain do not warrant complex relationships and interactions between buyer and seller and the information exchanged throughout the chain is relatively not material. Here we generally tend to see producers creating products with little or no interaction with buyers (Development, 2017); (Orlando, 2013).

2.5.2 Modular value chains

Secondly, here we see a modular value chain, which is characterized by an existing market of buyers that require specific products, and suppliers (producers) using generic production

mechanisms to produce these predetermined buyer specifications. Essentially, buyers across different locations' borders may require similar goods and services (specific product) and as a result of the scale of demand, will enable a generic production process (which indirectly limits a firm's ability and flexibility to undertake specific and or partake in other investment activities) . Generally, firms maximize on the generic economies of scale, as well as the use of technology as this asset tends to be a significant income stream when firms are efficient (Development, 2017) .

2.5.3 Relational value chains

The third type of global value chain we see is the relational global value chains, and these are some of the most complex chains defined. The relationship between buyers and sellers is underpinned by the demand for specialized goods and services on the one hand and on the other, by the extent to which suppliers offer buyers the incentive to outsource additional functions to suppliers, as a result of the complex products and services. In other words, because products and services provided are complex, buyers tend to outsource some of their business activities and offer suppliers "wider" scope within the production process. Essentially, some providers of specified machinery or equipment may be given additional functions to support the "back office" activities of firms, improve efficiency and for buyers to benefit from complementary capabilities that the suppliers have developed and offer. As a result, relationships between suppliers and buyers are complex (Development, 2017); (Orlando, 2013).

2.5.4 Captive value chains

The fourth type of value chain is known as the captive chain and just like the makeup of the short-term insurance services sectors, underwriters offer risk cover through a captive market system to decrease risk of loss through the spread of significant scale. Here we see a small number of suppliers that offer low-capacity products and solutions to a captive, large base of buyers. The key ingredient for success in this type of chain is in the ability to create large size and high-level production specifications, whilst maintaining transparent reporting for ease of monitoring. Generally, though the suppliers may have low capabilities, buyers in this chain tend to be vigilant in monitoring production cycles and supplier quality (USAID, 2012); (Development, 2017).

2.5.5 Hierarchy value chains

The last type of global value chain is characterized by vertical integration, known as the hierarchical chain (IFC, 2012). Here we see the buying and selling of goods and services

occurring within a similar network, firm, group of companies, etc. Generally, management and governance are standardized and managed by parent, subsidiary, affiliate companies and or managers (subordinates) within the firm group. Holding companies with multiple factors of productions formalise around parent and subordinate firms to distribute the flow of production in order to attain full asset maximisation through the production process. (USAID, 2012); (Orlando, 2013).

The ascension of value chains (especially in a globalization context) has made allowance for significant changes in the world and has somewhat disrupted the world economy (Development, 2017).

This has changed the measurement of trade indicators as they limited the trade growth and global trade measurement and as a result of the market access, perpetuated by technology, the world economy can now decompose country, sector GDP and final goods production into global value chain and non-value chain activities (Mahlati, 2011); (Development, 2017).

2.6 Value chain types summarized

So, as literature provides, the operational theory of governance frameworks state that by outlining three factors and the possible combinations that will and can enable decision makers to predict the type of value chain governance in any global value chain. These three factors include the complexity of information that is to be transmitted (exchanged) between buyers and sellers, the extent of information codification "(i.e. transmitted as a non-transaction specific body of information by buyers to suppliers and then internalized as a generic, coherent system of knowledge by suppliers)" (Orlando, 2013) and the capabilities of suppliers (in terms of the transactions undertaken (Orlando, 2013); (Development, 2017).

Generally, captive global value chains' buyers have to intentionally and explicitly coordinate suppliers the same way hierarchy global chains have coordinated their affiliate (subordinate) managers and companies for administrative control. The high degree of coordination infers a high degree of power asymmetry to parent companies (buyers) as the dominant actor within the chain. (Development, 2017); (Dunaway, 2014).

Though relational global value chains also present a high degree of intentional coordination, here we see buyers and suppliers to be mutually dependent and as a result, these parties tend to form strong channels of close communications with chain stakeholders as buyers and sellers.

This form of coordination infers a more fluid distribution of power balance across the chain (Development, 2017).

Modular value chains do not require explicit coordination as the generic production process makes it relatively easy for suppliers and buyers to switch as both can find multiple working partners and as such, here we see a relatively low degree of power asymmetry; (Orlando, 2013).

So, when considering these factors, decision makers can attribute a value as illustrated above (with respect to any global chain) and will be able to predict the type of governance, as well as the degree of power asymmetry that will develop in any value chain (Orlando, 2013).

Furthermore, Jordaan (2013) encourages financial institutions to incentivize smallholders to form cooperatives that will allow them attain high levels of firm efficiency and enter agriculture specialized chains. More importantly, Jordan (2013) further explains, that over and above value chain formations, stimulating collective action should be in line with the developmental goals of the financial institution's country of origin and or operation (Jordaan & Grové, 2013).

2.7 Critical framework features for successful value chains

The primary features of a value chain that enable success are underpinned by value chain dimensions and systems of integration. According to Boehlje (1999), the dimensions and systems of integration include production-distribution process; production flow; financial health and cash flow across the chain; flow of information; incentive systems within the chain and chain governance and coordination system (Boehlje, et al., 1999).

The effective management of these integrated systems and dimensions within a value chain is the major feature of success for these value chains. In order to explain these critical success features, this study focuses on the dimensions outlined above and delves into more analysis to explain how effective management of these integrated systems enable successful value chain operations.

2.7.1 Production-distribution process

According to Terleckyj (1975) and (Dunaway, 2014), a major key determinant of success within a value chain is when participators recognize and realise the extent of linkages and how markets are intertwined across geographical locations. In terms of the value chain dimensions, here we

see these chains intentionally aligning and linking the production and distribution processes (structure of linkage dimensions), to fit into their production flow dimensions (logistics and production movement). Studies suggest that all chain participators consider all nuances and links associated with the chain and thereby have a broader and deeper understanding of how these factors of production overlap. The understanding of structured relationships between factors of production within a value chain enable chain participators to be effective in their risk sharing and transaction cost-saving endeavours at each point in the chain (Clough and Halley 2007); (Dunaway, 2014). Here we see value chains that have a framework that is simplified enough to design elements of production cycles, goods distribution, storage, packaging, transportation and marketing. These frameworks generally simplify an integrated system of risk management, information needs, differentiated production and interdependent farmers (Bank, 2013); (Jordaan, et al., 2014); (Aghion, 2014); (Development, 2017). This means that collective action incentives must go beyond mass production and quality aspects of chain participation and must consider collective action in terms of the gains from working together to adequately cover additional costs. Therefore, chain leadership structures are the key to ensuring skills transfer to individual farmer (Jordaan, et al., 2014); (IFC, 2012) The collation of skills and abilities within the chain enables the execution of tasks and activities that can structured and intended to complement the chains market link aspects to production and logistic imperatives (Boehlje, et al., 1999).

2.7.2 Production flow

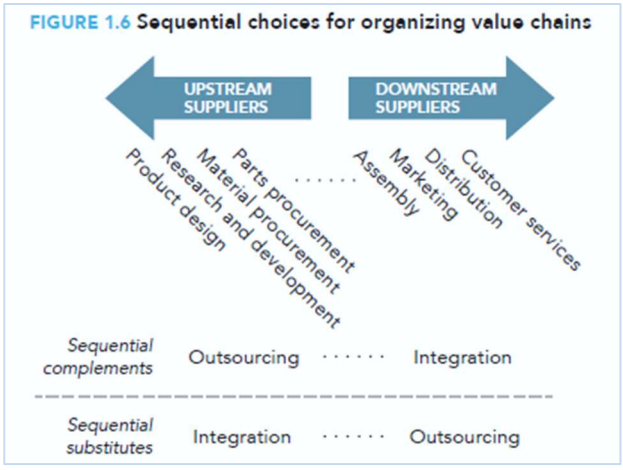
The production flow in the value chain is closely linked to how the production-distribution process has been defined and how activities are carried out at each stage of production and value addition. At the centre of the production flow process are the production ordering sequencing and stages. Considering technology available, value chains have to initially decide on the make or buy decisions when it comes to certain inputs or factors of production (specifically for product transformation). The make or buy decision is largely influenced by the nature of the final product and generally, value chains can consider structuring themselves sequentially along production substitution or production complements (IFC, 2012); (Boehlje, et al., 1999).

Generally, in terms of the sequential complement approach, the value chain will integrate downstream suppliers while outsourcing the upstream production stages. Consequently, for the

sequential substitute approach, the value chain integrates suppliers vertically, whilst transactions with downstream suppliers are carried out at "arm's length" (Boehlje, et al., 1999).

As depicted below, Jordan outlines that a central indicator and true measure of value chain efficiency is the extent of alignment between buyers and suppliers (Jordaan, et al., 2014); (Fessehaie, 2012).

Figure 5: Value chain sequential choices



Extracted from Agricultural Economics Research, Policy and Practice in Southern Africa: Conceptual framework for value chain analysis for poverty alleviation among smallholder farmers (Jordaan, et al., 2014)

Generally, the sequential choices for organizing value chains are influenced by the extent and capacity of upstream and downstream suppliers, including the complements and substitutes that inherently exist as a result of that organization (Development, 2017).

So, in terms of this dimension, successful chains are able to ensure efficient movement and availability of stock/production/inventory at each stage of the production and value addition process. These chains have mechanisms that will monitor value addition needs at each stage, whilst monitoring production stage levels across the chain to avoid accumulation of excess inventory. Over and above this, a major determinant of success is ability to maintain and enhance quality of product transformation, whilst ensuring the full utilization of property, plant and equipment, limiting downtime and/or bottlenecks, in all stages. At the same time, value chains need to adapt quickly to changing environments and be able to accommodate unplanned events, disruptions, interruptions (Boehlje, et al., 1999).

The mechanisms used to monitor production flow within these chains are bolstered by concepts of statistical process control, logistic and inventory management tools, and thus the overall sequential organization of the chain has to be aligned to the internal flow capacity, as well as

the market imperatives of the chain's trading environment (Jordaan, et al., 2014); (Boehlje, et al., 1999).

2.7.3 Financial health and cash flow across the chain

In terms of the third dimension (financial health and cashflow of chain), we have considered a study undertaken by the International Finance Corporation (IFC), which examined innovative ways and mechanisms that would enable and enhance smallholder farmer participation and agriculture SME financing in Africa. In their analysis of finance models, these smallholder farmers were grouped based on the sources of repayment or collateral on which they can rely (i.e., personal farmer finance, movable collateral and buyer financing). (IFC, 2012) This study and analysis highlighted many gaps in the financial services sector of many African countries and drew us to a smallholder farmer who was unable to participate in the sector. However, since many smallholder farmers are able to maintain operations and since there are varied financing models across many continents in Africa, with many barriers to entry, the IFC resolved that the best way to categorize smallholder farmers is by their main secondary source of repayment of loans and financing (IFC, 2012).

This categorisation provides information that a key feature of a successful value chain, which is the ability to maintain operations through secondary income source, hence the financing model is a key determinant of a value chains success (IFC, 2012) This feature falls within the dimension of financial and cashflow health of the value chain and therefore, as studies suggest, secondary income source of finance to maintain operations enables longevity through the chain and releases pressure to fund operations through primary sources of income (Boehlje, et al., 1999).

Though different financing models can exist at many different points along a given agriculture supply chain (which would be specific to value chain participator), it is important to note that financial instruments within a chain are meant to enhance the chain's ability to maximise on market share (especially the smallholder farmer's). As a result, a value chain should consider factors associated with a modified system of international trade that is centred around comparative advantage and the six-stage regional integration process (Ismail, 2015).

2.7.4 Flow of information

As mentioned in the beginning of this section, the fourth dimension and feature of a successful chain, is the extent to which accurate information flows efficiently within the value chain. Generally, this dimension is associated with the speed of information, the cost of mssaging, the strength and accuracy of messaging, etc. (Boehlje, et al., 1999).

Here, the study assumes that the non-existence of structured chain communication channels indicates smallholder farming chains and marketing channels have not reached a point of formal organization. Chains with poor communication and marketing channels tend to keep supply chains informal, limited their surrounding communities, not progressing beyond as it is understood (Jordaan, et al., 2014) . Lack of communication and marketing channels seem to be influenced by the cultural context and level of education between chain participators. Research also points out that "that the degree of success with which a group of smallholder farmers will operate collectively is determined by the social wealth of the individuals (Putnam, 1993) and the social characteristics (i.e. customs, norms and traditions) within the community" (Louw et al., 2006); (Jordaan, et al., 2014). So, successful chains have efficient communication and marketing channels, which will enable chain participators to gain fundamental control and power within the chain. In essence, control and power within the chain are gained from the ability to negotiate based on coordinated food production and distribution system (Boehlje, et al., 1999). So, within the chain, knowledge is power and successful chains have participators that leverage on the information to understand from a food production and distribution system base, what the consumer requirements are, as well as understanding the contribution made by raw materials to the production/distribution process. Generally, knowledge of customer needs, wants and buying capacity is a source of power and provides one point of control in the food production and distribution system. However, when it comes to raw materials and inputs of production, these are diverse and can be complex in as far as how control and power is shared across the chain. Ultimately, information flow within the chain will be the key determinant of how chain members are empowered and how control and power are shared across the chain (Boehlje, et al., 1999).

2.7.5 Incentive systems within the chain

In terms of the fifth dimension, another feature we see and as studies suggest, successful value chains are underpinned by frameworks that offer incentives (farmer technical assistance, loans etc), penalties and constraints (legal limitations) for multiple actors to integrate and certainly,

limited to only those actors involved with the production, movement and delivery of the products (goods and stock); (Fernandez-Stark & Gereffi, 2011).

Over and above the chain incentives associated with monetary, contractual, production benefits etc., Dunaway (2014) draws us to also consider the historic systems of oppression within value chains and suggests that successful value chains are those that have followed modern approaches to rethink and revisit the five aspects associated the principles of labour reproduction, which include, the reproductive sphere, the production and reproduction (material and social base) sphere, the reproductive and productive activities, the commodification of traditional reproductive functions and the contradictory narrow space between reproductive sphere and workplace (Dunaway, 2014). There are strong views that old value chain approaches may have been underpinned by racism, sexism and classism, so scholars like Hopkins and Wallerstein have advocated for a value chain concept that encapsulates all aspects of labour and production forces. Their concept emphasised the "intermingling of several forms of waged and non-waged, free and unfree labour; extraction of visible and hidden surpluses from households; gendered and racial exploitation of workers; and economic devaluation of household-based work, especially that of housewives" (Dunaway, 2014).

Without getting into much detail of the historical make up of global value chains and the nuances attached to the different historical periods, in the context of smallholder farmers, this study follows the view that successful chains in this modern era, highlight general inequalities and exclusion of certain groupings. Through governance approaches and chain incentive schemes, the posture of successful chains condemns general exploitation smallholder farmers, promotes vulnerable, empowers and protects chain participators from avaricious firms (Dunaway, 2014).

2.7.6 Chain governance and coordination system

The last aspect and sixth dimension of value chains and success factor relates to the governance/coordination system. Here, coordination relates to the leadership aspects of the chain, forms of contracts, alliances, networks, ownership, etc. (Boehlje, et al., 1999).

The study covers an in-depth analysis of value chain formations and typologies in the previous section and thus we have resolved that governance types and formation are really informed by the context of chain participators and the financial institution's frameworks, operational models and value chain business model objectives (Boehlje, et al., 1999).

As time progresses, we will see successful value chains as those that consider the aspects of agrarian value chain financing and financial inclusion to the processes of regional integration. We can see that greater inclusion for smallholder farmers is needed and as a result, the market participation (as actors) is now necessary for these farmers, especially after the advent of the COVID19 pandemic (Jordaan, et al., 2014) . Driven by world trading behaviour, it is clear that technology is a key driver in connecting producers and suppliers, as well as linking financial intermediary firms to producers. These linkages will enable coordinated access to a market share that can be occupied, as a result of the shared capacity within the value chain (Boehlje, et al., 1999). Also, as supply chains mature, based on the various value chain formations, it is evident that value chains will provide the most efficient way for smallholder farmers in rural economies to transform into specialized producers and advantage of economies of scale (Development, 2017).

2.8 Summary of the literature

The study aims to simplify the extent of inequalities and the effects of transaction cost (as a result of the lack of price discovery) associated with the context. (Development, 2017); Neves & du Toit, 2007). The framework that has been analyzed is the basis for the conceptualized multidimensional aspects of financial inclusion in the Eastern Cape (Fernandez-Stark & Gereffi, 2011); (Bolaños, 2016).

The Eastern Cape context provides a large contingent of unskilled labour, excess land and thin labour absorption markets, which the advocates for innovate finance mechanisms to increase scale and facilitate better market allocation. The overall aim of the study is to highlight mechanisms that may be present to relax smallholder farmers' (in the Eastern Cape) barriers to entrance into existing global value chains. The literature presents a case for the review of financial inclusion to be undertaken within a multidimensional framework to encompass the aspects of access, usage and product quality (Bolaños, 2016).

This study therefore leads into an analysis of a conceptual financial framework that defines chain participators and then articulates the principles that underpin the functions of each participant. The financing framework is general and generic; however, it simplifies farmers' approach for value chains and enhances smallholder farmers' integration into the chain. The definitions of the five types of value chains essentially, fall in to deal with the transaction costs associated with their industry or context. Here, the study links the aspects of integration and

inclusion (from a value addition perspective within the chain and the provision of relevant financial products (services)). The value chain approaches defined are essentially to link the transaction cost aspects and is within context, we conclude on the possibility of the extent to which smallholders can be absorbed into a chain that will enable them to upscale and adopt a certain level of formalization.

The study outlines that for the context, transaction costs must be viewed in terms of quality and the extent to which formalization will facilitate reduced transaction costs, such as the principles of transaction costs and management thereof. The study outlines value chain model best practices for chain integration and participation, and has an elaborate focus on the existing nature and smallholder farming definition and environment. This highlights the challenges to date and articulates the need to utilize and absorb the excess labour into a formalized farming activity that has access to capital and markets. Then, the labour supply aspects for the smallholder farmer are discussed to highlight some of the oppressive farming practices and business cultures, in as far as women are concerned.

The study sets out that in rural Eastern Cape, if incentives are correctly aligned and the financial benefit for the smallholder farmers is significant, the smallholder farmers will find a way to cope with the requirements to successfully participate in the formal market (Neves & du Toit, 2007).

The study supports the proclamation made by the African Development Bank, which suggests that smallholder farmers have immense opportunities to participate in the global markets, to compete in international trade and to lower food prices. However, the literature also identifies that some emerging economies moved the smallholder farmer to a semi-commercial farmer now specializing in specific crop production/farming activity. This level of trade and participation allows the farmer to compete in active markets whilst deploying a full range of financial instruments to facilitate transactions of goods and services (Bank, 2013). This body of work highlights that it will go a long way in facilitating and enabling an environment for private sector participation through macroeconomic, financial governance, regulatory framework reforms, as well as through economic competitiveness, SME and women entrepreneurship (Bank, 2013); ((KIT and IIRR), 2010).

The literature also identifies that the strict rules and regulations associated with participating in commercial agrarian food chains often contribute to the exclusion of smallholder farmers from the formal market. This study would suggest that instead of viewing the rules and regulations

as incurable stumbling blocks, smallholder farmers can create additional rules and regulations to help them cope with the strict requirements of participation (Markelova & Mwangi, 2010); (Jones & Miller, 2010). The framework presented identifies that smallholder farmers and smallholder market development require increased identification of products presenting a high-to-intermediate demand growth in order to offer smallholder farmers an opportunity to retain market share. Secondly, it identifies that collective action is critical for participation but it is more effective to have the required skillset to formulate strategic collective market entry and thereby ensuring sustained market entry (Markelova & Mwangi, 2010).

Lastly, in terms of the global value chain framework, market access and asset specialization (the main components of the study), smallholder farmers need financial products that will enhance their ability to occupy multi-level transaction costs. More importantly, the study advocates that smallholder groups and or farming cooperatives should target women participation to establish women as effective and competitive producers and traders in their own right ((KIT and IIRR), 2010); (Jones & Miller, 2010).

3. Chapter 3

Methodology

3.1 Introduction

This chapter outlines research methodology and design that is used to explore the targeted research questions of this study. The study us exploratory and aims to present preliminary understanding of agrarian value chain financing framework and approaches available for smallholder farmers in the Eastern Cape. Though research on smallholder farmer value chain seems to be in its infancy and not researched, the framework and approaches researched as part of this study provide useful insight regarding lack of collective participation and financial exclusion for smallholder farmers in the Eastern Cape. The study also seeks to explore from the vantage of key stakeholders, what the secondary sources of finance are for smallholder farmers and to identify specific strategies to improve current context.

3.2 Research Approach

This study comprises a mixed methods research approach to explore the research problem. According to Creswell (2009), there are three general research approaches available for researchers to follow, these are open and closed ended (qualitative and quantitative) methods, as well as mixed methods (which is a mix of qualitative and quantitative techniques (Creswell, 2009).

3.2.1 Mixed Methods Research (explanatory sequential)

Since the study aims to identify critical features of successful value chains and the factors that limit smallholder farmer access to investment, a mixed method of research seems logical approach to analyse the context and the theoretical aspects of this topic. The theme and pitch of this research is designed to enable future research into the topic, as well as to gather more data (qualitative and quantitative) for future research and study.

The mixed method approach to research analysis has developed over time and gained popularity as many scholars come to find that the techniques used to analyse research question can only be addressed through a mixed use of qualitative and quantitative techniques. By incorporating

a mixed approach to address research questions, for some studies, seems to be effective than using qualitative and quantitative approaches independently (Johnson & Onwuegbuzie, 2004); (Ramlo & Newman, 2011).

Also, because smallholder farm and value chain finance data is limited in the Eastern Cape, the mixed method approach seems to be a better approach to incorporate all these aspects into a single analysis and discussion.

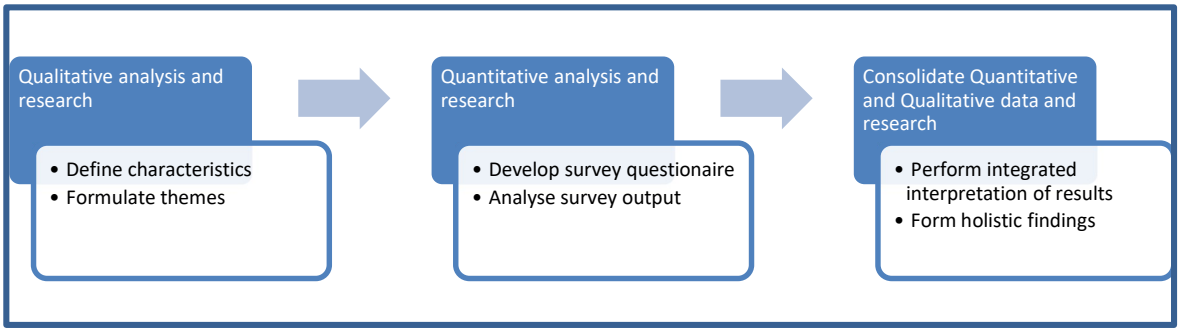
3.3 Research Design

Generally, there are three main types of research approach and designs for conducting mixed methods research, these include convergent parallel, explanatory sequential and exploratory sequential (Creswell, 2009). The first design approach involves the collation of both the quantitative and qualitative data and converging these datasets simultaneously to provide a holistic and much more inclusive assessment of the research problem. This is known as convergent parallel. Then, the second and third design approaches, which are explanatory sequential and exploratory sequential, involves the collation of data in a sequential format. Generally, here we see the analysis and findings of one method are elucidated, expounded or constructed upon using another method (Creswell, 2009). So, for this research and study, we have adopted an exploratory sequential design.

3.3.1 An Exploratory Sequential Design

The research design and approach were informed by the overall objectives of the study, the research questions, as well as the overall context of value chain financing and smallholder farmer environment in the Eastern Cape. According to Creswell (2009), exploratory sequential design research method tends to be used in instances where the intention is to explore relationships where very limited research and or no theory exists (Creswell, 2009) The sequential structure followed by the research method for this study is simplified in graphic form in the figure below:

Figure 6: Exploratory sequential design for the research study



The first qualitative phase was used to attain an in-depth understanding of the smallholder farmer context, in as far as access to secondary sources of income and to identify success factors from value chain finance approach adopted. The success factors acknowledged in the first phase process were then used to create a survey instrument in order to determine which factors, from the identified success factors, are perceived to be the most critical. Here we ranked the factors and took into consideration the rankings assigned by the each of the different stakeholder and where rankings differed. The primary benefits of using the exploratory sequential design are that the it aids in forming a holistic overall finding as the first phase is more context centric (as we unpacked the farmer and finance contextually), whilst the second phases drives a quantitative representation of findings that can be seen as more generalized.

3.4 Qualitative Design

The following segment seeks to articulate the sampling, data collection and data analysis techniques used for the qualitative phase of the study.

3.4.1 Sampling

The targeted sample population for this study was smallholder farmers who form part of a value chain, classified by their secondary source of income (self-finance, collateral and value chain finance). The farmers are all part of a value chain, whether the participation is direct or indirect as value chain actors and or contributors. The farmers under review range from the interior of the Eastern Cape, starting from Cradock, through to Komani, Keiskamahoek, Centane and Ngqamakwe. There is a diverse mix of sizes, extent of organisation and all with some relative level of informality. The cultural nuances, age, gender, operational capacity, are also different and help us to deal to unpack the human aspects of the value chain. The sampling method in this study used was criterion based purposive sampling, also referred to as non-probability

sampling. This type of sampling (Purposive sampling) is used to select sample participants based on the intended objectives of the study, research questions and outcomes. The sampling is intentional, directed, coordinated and not all random. The sample criterion strategy used to select sample candidates is based on the characteristic(s) or trait(s) that varies within the sample (Palys, 2008).

Moustakas (1994) emphasises that researchers should obviously start by identifying phenomenon and subject matter, isolate their experience from the subject under review and collate information from multiple sources who participate or have experience with subject matters or phenomenon. Then, by analysing the data collates, the researcher must reduce the data to significant statements, facts and combine these into themes to form textual and structural descriptions of statements (conditions, context situation of phenomenon). These structural descriptions are meant to convey the participants experiences and thereby convey the overall essence of the phenomenon (Creswell, et al., 2007).

Therefore, the participants were selected on the basis that they have the necessary knowledge and experience for the study and are able to sufficiently reflect upon the subject under investigation. As a result, interviews were conducted with the most senior representatives of each stakeholder grouping in terms of role in the organization and years of experience in the industry.

A relatively adequate sample was selected for the interviews and a total number of seven interviews was conducted, as well as an attendance of a regional conference. According to Guest, Bruce and Johnson (2006), the number of interviews in a study can range between six to 12 candidates for a qualitative study (Zunguze, 2016). Therefore, an interview sample of seven participants, conference proceedings with six speakers and a 17-member sample for a survey questionnaire are adequate to attain research saturation when the candidates are highly knowledgeable about the topic under research.

The candidates were selected based on their access to capital and forms of trade and financial services available to them. The underpinning principle of the study is that farmer operations are highly influenced by how credit access is granted, how products are consumed and the degree of quality of finance product. As a result, when we consider aspects sustainability, as part of the study, it is imperative that we focus attention to the return on asset, equity and cost of debt as the key measurements of the farmer. Over and above the secondary source of farmer income's impact on operations, critical aspects of value chain participation (level informality,

gender and ethnicity within groups, farm technologies and market access) are addressed in the interview questions part of this study. The sample candidates were selected across a wide region of the Eastern in order to cover a wide context and base, as well as to obtain more generalized findings of the phenomenon. The breakdown of interviewees by stakeholder grouping is shown in the diagram below.

Table 1: Interviewee breakdown

Stakeholder Grouping	**Classification private or public**	**Number of Respondents**
Value chain coordinator	Private company	2
Project Financier	Private company	1
Public Officials - Farmer support and trainer	Private company	2
Farmers	Private company	2
Total		**7**

3.4.2 Data Collection

The data collection process used to identify the different successes and benefits from adopting these three finance models within a farmer's value chain, was mainly structured interviews. Generally, in any study or analysis, a researcher can use open-ended interviews or structured interviews. Limited to only two forms of interview types, the researcher can either prepare all questions in advance, before the interview commences (structured interviews) and tend to be structured and responses to the questions tend to be standardised to follow some uniformity. On the other hand, unstructured interviews tend to be open-ended with no structured format to questions or answers. What informs researchers in as far as extent of structure in interviews is the type of research questions (i.e. chronological oriented, in-depth/descriptive, process, essence or community action questions). Depending on the narrative search, case study, theory etc. underpinning phenomenon, the researcher will adapt interview style to fit into desired results (Creswell, et al., 2007).

For this study, structured interviews were preferred mode of data gathering as it is not as onerous as unstructured interviews nor are they restrictive or limited like structured interviews.

The study includes a second phase of data analysis, the quantitative phase of investigation, which endevours to further validation of the interview findings. Although the interviews were semi-structure, the interview process was confined to a framework, where a number of questions were selected from the literature review on value chain, finance models and value chain frameworks. Most of the interviews were conducted face-to-face and due to COVID19 restrictions and concerns, some interviews were conducted electronically and telephonically. The interview information has been captured electronically, stored in a secure hard drive to be kept as long as needed. Also, permission to perform research study on humans was obtained from the University of Cape Town's Ethics Committee prior to commencing the study.

3.4.3 Data Analysis

Within the study's theoretical framework and research objectives, the interviews and data collated was analysed using a systematic process of analysis. According to Zunguze (2016), McCracken (1988) developed a five-step process with the aid of NVivo7, for flexible and rigorous analysis of qualitative data, which includes analyzing and studying the interview transcriptions with the goal of identifying essential and or relevant data in the records and making own interpretations on the findings. Then, after the analysis, the next step includes creating themes and categories from the interviews and literature review that has been used as part of the research. Important in this step is the identification of patterns and formation of patterns and or connections within the identified categories and themes. Once the basic themes and commonalities have been determined, across all the interviews and responses submitted, they are separated and grouped into components and features to formulate broader and encapsulating thems (Zunguze, 2016).

3.5 Quantitative Design

The following segment seeks to articulate the sampling, data collection and data analysis techniques used for the quantitative phase of the study.

3.5.1 Sampling

As already mentioned above, the research contains a two phased analysis to this exploratory sequential approach in order to create conceptual dimensions (from the themes obtained in the qualitative analysis) that are carried over to develop survey instrument (from the quantitative review). Generally, exploratory sequential research is useful in situations when exploration occurs to analyze a phenomenon in depth, with a few individuals, where findings can be expanded to a larger population (Munce, et al., 2020).

The targeted population for the sample used in the second phase of data collection was within the same population used in phase one, although different sample, this sample consisted of a larger selection of sample members.

In terms of the first sampling, the study looks at the smallholder farmer context, then the value chain finance context and then summarises the interworking between these two, through coordinated interviews and questions. Here, study analyses an existing value chain, a legal entity that operates and obtains the success factors. Then, in as far as the limitations of investment for the smallholder farmer, the study analyses data from interview and conference proceedings and essentially, a dispersed set of smallholders confirmed the findings discussed in the conference proceedings.

Then, for the second sampling, the approach included the targeting of a sample that consisted of individuals that engage in smallholder farming activity (including smallholder farmers), within a value chain community (including value chain coordinators) and finance smallholder farming projects and value chains (including project financiers), in the Eastern Cape. The Eastern Cape consists of numerous state-funded community development and smallholder farming projects (funded by the private sector) and a limited number of coordinated value chain financed smallholder farming projects. Though value chains are limited (including value chain financing projects for smallholders), these chains tend to have a significant number of smallholder farmers participating (i.e. averaging approximately 20 smallholder farmers per chain, with most chains being financed and coordinated by one company or individuals). The general norms for the smallholder farmer tend to be the same between these chains (as the chain financier and coordinator provide capital and market and also set the target output per period for the farmer). For the study, the aim was to have a general view of the smallholder farmer

environment (and limitations within their context), as well as broad view of the financial inclusion aspects and value chain finance mechanics.

Now, the Eastern Cape has a number of smallholder farmers operating across different crop and livestock production. A significant amount of these smallholder farmers will provide certain crops and products for their value chains, whilst another significant sum remains excluded out of certain value chains as their farm operations do not meet the value chain participation requirements (i.e. pork/beef/lamb value chains). So, limited crop production is available for the smallholder participation (i.e. maize, essential oils etc.) and so value chain finance companies have taken advantage of this by formalising smallholder farmers into chains that are not so restrictive and or require stringent chain participation requirements. Generally, in the Eastern Cape, these value chains are formed by subsidiaries or as projects financed by financial institutions and thus the make-up of the value chain actors consists of farmers, bankers, project managers, agriculture economists, etc.

Since the Eastern Cape has a limited number of value chain finance projects (specifically for smallholder farmers – i.e. East London to Mthatha has approximately four value chain finance project companies operating in the area), the sample was selected on the basis to extract the broad issues in as far as farmer context and value chain success factors. The number of stakeholders that make up the formation of certain value chains was assessed and excluding the farmers, these chains have approximately five actors (service providers or chain companies) operating in the chain, including the chain coordinator. The various professionals and labour coordinating the chain was assessed from three value chain projects in the Eastern Cape, with a total of 12 actors (excluding the smallholder farmers – who range between five and 35 within a chain). Using these value chain formations as a base, certain individuals, companies and stakeholders that participate in value chains (providing value at different stages) were targeted in order to extract general norms and understanding of the Eastern Cape smallholder context, as well as the indicators of successful value chains.

A sample of 17 respondents, mainly consisting of financial institutions, agriculture value chain coordinators, as well as policy implementors (at local and provincial government) and a few smallholder farmers was deemed sufficient to enable the gathering of pertinent patterns, norms and general themes of the study. In addition to this, supplementary data was collated and gathered from attending an Eastern Cape Agriculture Indaba (conference) forms part of this

research and in terms of the general themes of study, these proceedings amplify the data collated from the first and second sample (i.e. interview responses and survey questionnaire).

3.5.2 Data Collection

The research instrument used to collate data was a self-administered structured survey questionnaire. For this study, this method was deemed effective as it enabled the collation of standardised information from a sizeable mass sample and limited any bias or subject views from the researcher. According to Creswell (2009), a survey questionnaire was adequate for this type of study and enabled the researcher to build upon the findings from the qualitative first phase findings (Creswell, 2009).

The format and template of the questionnaire is found in Appendix C of this research. Due to COVID 19 and other constraints, some of the participants completed the survey on an online platform using Survey Monkey. A significant sum completed the survey off line, on printed copies that were submitted to the participants, along with a covering note to explain the contents of the survey. The survey was designed to capture essential elements of the smallholder environment in order to build in the questionnaire questions, as well as to capture some of the working arrangements of smallholder farmers within value chain finance framework. The chain actors tend to range between provincial, national departments, local government, public entities, entrepreneurs and big business. The formation and themes to capture the information, included assessing three constructs (financial inclusion – usage/frequency/quality, farmer context and financial inclusion limitations). So, the survey includes a section that required general information about the participants (i.e., basic background details and farm operation information). The survey used was a 5–point Likert scale to collate participants perceptions regarding the agricultural sector in the Eastern Cape, the importance and ranking of success and risk factors identified in phase one (Creswell, 2009). Since the research explores the attributes of successful value chain finance models, as well as to analysis the mechanisms that foster multidimensional financial access, there are certain constructs formulated within the study as a result. These include, the smallholder farmer's context to enable financial inclusion, the value chain's ability to facilitate growth and financial inclusion for the smallholder farmer and the financial exclusionary factors that limit financial institution's ability to invest in smallholder farmer activities. The first construct assumes that smallholder farmers should thrive in an enabling environment, where there is access to markets and demand for products. In such a

context, financial reporting and other financial institution requirements should be the limited barriers to increased financial access. The second construct assumes that value chains are coordinated to provide the necessary support mechanisms that enable smallholder farmers to participate in formal marketing channels, as well as enhance and harmonise their production capabilities. The study assumes that poorly coordinated value chains will fail and thus, successful chains should follow a clear set of guided rules of operation. The questionnaire was developed to include specific questions to cover each of the two constructs, in separate sections of the survey (namely sections Six, Sixteen and Seventeen).

3.5.3 Data Analysis Approach

The research and data methods applied in this study were guided by the study's research questions and by the researcher's endeavour to ensure the validity and reliability of the results. The approach is designed to gather descriptive data for the context and to have an informed understanding of the financial inclusion aspects. The interview questions and survey questionnaire are the outputs and by calculating the critical index and obtaining rank and agreement analysis, we are able to interpret the accuracy and reliability of the questions. Ultimately, the endeavour of this research is to pose refined questions that will assist in the articulating the phenomena. The desire is to continue with this study, to refine the questions as the context and financial system in the region evolves, so that root cause barriers suppressing multidimensional financial inclusion and smallholder farmer investment can be understood.

3.5.3.1 Questionnaire Reliability Test -- Cronbach's Alpha Coefficient Reliability and Validity

Cronbach's Alpha is classified as a mathematical measurement and not necessarily a statistical test. This measurement tool is generally used by researchers to calculate and measure the level of internal consistency within a group of items, such as of questions on a survey (Emerson, 2019). Though there is no consensus among statisticians on what an acceptable level of alpha is, generally, an alpha within range of 0.65 and 0.80 is often considered adequate. (Emerson, 2019)This is because the research aims to improve the questionnaire that has been developed and with the output from the qualitative research data, the survey questionnaire has shown reliability and validity.

Also, according to Emerson (2019), the Cronbach alpha ranges from 0 to 1 and for values deemed significantly high, these must fall within a 0.7 or 0.8 range. It must be noted that a high value does not indicate that all items under review measure the same, it just means that the way respondents responded to the survey was correlated (Emerson, 2019).

3.5.3.2 Descriptive Statistics

In order to articulate and provide a basic description of the research data, the mean score, variance, standard deviation and coefficient of variation was calculated. Generally, the distribution of data will determine the statistical analysis that can be used for the data and where the data in normally distributed, a parametric analysis will be the obvious tool used. Then, data that is not normally distributed, the opposite happens and non – parametric analysis would be adequate form of analysis. So, researchers have to test the distribution of data and commonly used, is the Shapiro-Wilk test, which has been used in the study (Zunguze, 2016).

3.5.3.3 Criticality Index

In order to determine the critical success factors of agrarian value chains, as influenced and impacted by the farmer's finance model, we have used the mean score and the relative importance index as the measures of these success factors. According to Kaasem (2020), the Relative Importance Index (RII) approach is generally used to define the certain effects and causes based on the likelihood of occurrence, using a Likert of five scales (Kaasem, et al., 2020).

The equation for the RII is given as:

$$RII = \frac{\sum W}{(A*N)} \qquad 0 \leq RII \leq 1$$

where ***RII*** is the Relative Importance Index,

W is the weight given to each factor by the sample participants, ranging from 1 to 5 (1 – being very low and 5 – being very high),

A – is the highest weight (i.e. 5), and

N – the total number of participators or respondents (Kaasem, et al., 2020).

3.5.3.4 Rank Analysis

In terms of the study, the factors that limit smallholder investment were ranked according to their respective RIIs, here the factor with the highest RII was ranked the highest and vice versa for the factor with the lowest RII. The rankings were captured from the overall responses from the participating respondents (ranging from smallholder farmers, asset managers, commercial bankers etc.).

3.6 Research Validity

The study has been intentionally designed to be a mixture of qualitative and quantitative analysis as this will offer us the flexibility to collate information and assess the unit of study. The goal is to conclude on the principal aspects with financial inclusion and smallholder formalisation aspects. This will require the interpretation the context and interpretation of theories associated with financial inclusion (ultimately the dimensions within a transaction cost framework) about the smallholder farmer context.

Therefore, in order to place reliance and validity of the work, the initial measure would be viewed in the Findings and Conclusion chapters of this study. Ultimately, the study endevours to determine the causes that hinder smallholder farmers to participate in value chains and also understand the typical success factors of value chain addition frameworks, how these value chains facilitate inclusion for smallholder farmers in the Eastern Cape.

3.7 Research Limitation

Ultimately, the context of this research limits the definition of an institutional environment to be all the formal rules and informal constraints that regulate the way transactions are carried out within the research's context (Jordaan, et al., 2014).

According to (Jordaan, et al., 2014), institutions form the incentive structure of a society, as such, the political and economic institutions (as a result) are the underlying determinants of economic performance (North, 1994).

The societal aspects for the farmers also include a view into the employment, gender, age aspects and articulates barriers of entry from both a financial system perspective and an operating environment context. The significance of this exploratory component is just as crucial as the descriptive component.

4. Chapter 4:

Discussion of Research Findings

4.1 Introduction

This chapter presents and analyzes the findings from semi-structured interviews conducted with experts in the sector on a wide range of issues associated with smallholder farmer financial inclusion and value chain financing. Furthermore, the findings from a conference that was attended (the Eastern Cape Agriculture Indaba, held in August 2021), are presented and analysed in this chapter. Firstly, here we see consistent messaging from various sector partners, experts and smallholder farmer entrepreneurs. The findings are presented to give an overview of the context of the Eastern Cape and the limiting factors that impede smallholder farmers from attracting investment and or capital. Secondly, we see the attributes of successful value chains in the region and lastly are able to understand the factors that limit financial inclusion for smallholder farmers in this region.

4.2 Qualitative findings

4.2.1 Description of participants

For the qualitative analysis part of this research, farmers, traders and various value chain participators were interviewed. These face-to-face interviews were successfully conducted and additional data was gathered from attending a conference with various specialists and leaders in the agriculture, finance and economic sector. The make-up of the selected participants interviewed included the panel of seven (7) stakeholders, already mentioned in Chapter 3, with full profile as follows:

Table 2: Description of interviewees

Interviewees	Stakeholder Grouping	Classification private or public	Function	Qualification/Training	Number of Years' Experience
Respondent 1	Project Financier	Private company	Managing Director	MBA, Agriculture Economics	10 years plus
Respondent 2	Value chain coordinator	Private company	Chief Executive Officer	Finance	10 years plus
Respondent 3	Value chain coordinator	Private company	Managing Director	South African National Defence Force	15 years plus
Respondent 4	Public Official - Farmer support and trainer	Public sector	Director - EC Department	Agriculture Economics	25 years plus
Respondent 5	Farmer	Private company	Managing Director	South African Police Service	10 years plus
Respondent 6	Farmer	Private company	Lead Farmer of State Funded Farming Consortium	Law	10 years plus
Respondent 7	Public Official - Farmer support and trainer	Public sector	Manager - Local Government Community Services	Community Development/Administration	20 years plus

As is to be seen from the participants above, there is a mix bag of sectors, companies, providers, traders etc. which give insight to the mechanics at each level of value addition within chains or formations. Generally, within chains you have limited types of actors and the inclusion of a diverse panel of paricipants enables a review of the complex requirements attached to different roles of actor in these chains. Informed by the literature which suggests that value chains require complex arrangements, the participants represent all the typical actors that could be represented within a chain as actors, across some spectrum of financial institutions and value chain facilitators. Within a national or provincial level, these stakeholders represent some of the chain formations within the Eastern Cape, as well as representing chains that fall within the defined five best practise management approaches (modular, hierarchy, captive, etc). The experience within the panel shows that participation within the sector can start as early as youth and the sector can retain individuals and participators over the long – term. Though some participants have other industry experience, we can see that smallholder farming can also enable the transition into farming sector from other sectors (either from retirement or from a career pivot decision). From the above, we can deduce that each actor's skills are linked to their level of

participation and value addition within a chain (i.e. finance practitioners functioning as finance managers)

Furthermore, additional data was collated from relevant conference proceedings, the make-up of individuals who were speakers is included in the total profile of respondents, which is as follows:

Table 3: Description of conference speakers

Conference Attendee	Conference Speaker	Classification private or public	Stakeholder Grouping
Attendee 1	Policy maker: Minister of Agriculture, Land Reform and Rural Development	Public sector	Project Financier /Policy Maker
Attendee 2	Policy maker: MEC Eastern Cape Department: Rural Development and Agrarian Reform	Public sector	Project Financier /Policy Maker
Attendee 3	State owned enterprise: CEO Transnet	Public sector	Project Financier /Policy Maker
Attendee 4	Chamber of business: Agriculture South Africa	Public sector	Policy Maker
Attendee 5	Farmers Association: Grain Farmer Development Association	Public sector	Value chain coordinator
Attendee 6	Research Commission: Water South Africa	Public sector	Farmer support and trainer
Total			6

Since the study is following a thematic analysis, coupled with some statistical tests, the theme as a result of the state of the sector and then as a result of the contex of the Eastern Cape, this conference provided insight to both the sector and context of the Eastern Cape. As a once off Indaba that sought to map an “As – Is” and “ To be” conference approach for the sector, the panelists stem from chain partner organisations, to farming research specialists that facilitate projects for smallholder farmers. As seen from the analysis, the participants agree that the agrarian sector in the Eastern Cape is slow and the investment in infrastrure (ports) by the Government is an indication of the need value chain finance services and through technology, there is possibility of a multiplier effect. This confirms the theoretical assumptions of value chain finance models and that production through scale, targeted marketing and value addition participation, the smallholder farmer has access to financial products that enable multidimensional financial inclusion.

Also, the policy makers that presented in the conference, as well as all the paricipants agree that trade through ports and value chain formations will be the result of such investment by Goverment. This investment decision affirms the value chain finance theoretical frameworks that argue and advocate for the use transport infrastructure to access a wider market segment. Theoretcically, proximity to connection and transport distribution access points enhances a chains ability to move products efficienctly and cost effectively. Therefore, access to this working infrastructure should complement the activities of successful chains within the region should have a catalytic effect on the agrarian production sector of the region.

Lastly, the proceedings also seemed to indicate that lack of data shows lack of appetite to invest in the sector and as already mentioned in the study, conference speakers are recorded to sight that land tenure, lack of formalisation and inability to consolidate, leaves smallholder farmers being unable to access multidimensional financial inclusion.

4.2.2 Factors limiting investment in smallholder farming in the Eastern Cape

From the qualitative data analysis of the responses from the conference attendees and the interviews, the respondents, from conference proceedings, the main factors that limit investment in smallholder operations in the Eastern Cape to include; land ownership structure and size, undefined market, poor specialisation, lack of commodification, low output numbers. In line with Troskie (2013) and Mujuru & Obi (2020), these five limiting factors tend to hinder smallholder farmer operations from transforming into modified operations and limit their capacity to remain as subsistence oriented operations. The general view from the participants is that, as a result of these limiting factors, price discovery within the region cannot be attained, and this will limit any possible growth and potential.

4.2.2.1 Land ownership structure and size

Land ownership structure and size in terms of the study is limited to the land tenure and title (ownership structure) and the size of the allocated piece of land. In rural Eastern Cape, where most of the smallholder farmers dwell and run operations, but do not have legal title to the land they occupy. Generally, land in these rural communities is held by the state, distributed and managed by the relevant official and representative of the local House of Traditional Leaders, within the relevant jurisdiction. Though the right of control, use and benefit are transferred to

the benefitting community member when the asset is handed over, the legal title remains with the relevant traditional authority and the state. Since the land owner does not have the legal title, they are unable to enjoy the full benefits from occupying land and ability to use this underlying asset for collateral to attract capital or borrowings. Then, in terms of size, the relevant authority in the rural context will allocate land portions of a certain size to eligible community members. These land parcels tend to be at most 1 Hectare and thus limits a beneficiary who desires to utilise the transferred land for smallholder farming operations. to challenges that exist for the smallholder farmer as a result of the ownership structure and size of land, particularly communal land. Generally, when a farmer is unable to produce a title deed for land that accommodates the farm operations and/or is unable to expand farming operations to more than 1 hectare of land. The land ownership and size when the unfavourable make up of work with community projects (Attendees 4, 5 and 6) seemed to project that structure of land ownership in the Eastern Cape is not attractive for private investment, as land is under custodian of a King/Chief and available to a community. When providing lending, the finance provider must ensure accountability and responsibility. "*Lending into a group is difficult and therefore there is a need for us to look for a model where bon fide entrepreneurial farmers are empowered and they are able to take accountability and responsibility for the funds that have been advanced, that would enable growth in the sector". Attendee 5.*

According to the conference speakers that are involved with community projects, intermediation and participation of project managers is not necessarily around financial instruments but also services. Here, financial services act as an enabler and transform a weaker asset, enhancing service potential and distribution of financial instruments.

Also, the trend in the Eastern Cape is that smallholder farmers tend to cultivate small land parcels to conduct their operations and thereby leaving a significant portion of land in the province underutilised. There is about 40% of total land used by smallholder farmers, which is small plots of farming land, dispersed across the province. The land sizes are so small that individual smallholder farmers are unable to engage potential market adequately, stifles their overall productivity capacity and potential and do not enable the expansion of smallholder operations.

According to Troskie (2013), land tenure uncertainty limits access to finance and investment from financial institutions and when finance is available, the transactions costs for both investor

and smallholder farmer tend to be high. The size and legal issues of land tenure means that the smallholder will largely be limited to the state as a donor and investor. Though there are significant government programs for the smallholder farmer, these government supported programs can only really go so far and at some point, smallholder farmer formations and value chains desire to be more organic and to be more empowered as independent land owners. In terms of this, we can deduce from the study that within this context, value chain formations will have limited capacity (no independence and title for farmers) and will largely require participation of organs of state within the chains.

4.2.2.2 Undefined Market

In terms of the meaning of undefined market, in terms of the study, this simply means that the market and clientele for these farmers has not been segmented, developed or managed by themselves as producers. Generally, these smallholder farmers will produce as much crop their space allows them to, will transport the produce to nearing urban areas (that have some congestion – i.e. a taxi rank or area in a town) and will endeavour to sell all they can (sometimes even at discounted value). This means that the farmers is unable to predict the amount stock to be sold daily, unable to communicate with market (most of the time, because of costs attached), unable to formalise a relationship with client segment. The relationship between producer and client remains informal, unpredictable and unstable.

Paraphrased response: Generally, where there are defined markets, the community has been able to formalise around the creation of stock and produce for the predetermined market. The community plays a role and the community needs to make sure assets are protected from theft or negligence (i.e. from their cattle eating crops) and at times, scale of each project needs to be significant enough to reach most of the members in the community.

This is supported by *Respondent 6*, who indicates that due to market fragmentation, there is competition in the same places for a small market share and often limited by location as operations have to be close to transportation, input units, funding and finance to grow scale. The market is limited and because of poor use of technology and we are not able to extend to reach other markets and so we need be part of value chains that will link us to global markets.

There is consensus that the Eastern Cape is an area that should enable smallholder farmers to operate thriving farming production systems and be able to service a defined and segmented market. Through the use of technology, training and by taking advantage of the existing port infrastructure, smallholder farmers can realise significant growth potential and attain the identification of a defined market that exists for them.

"Its location, size and ports available make it a suitable contender from a logistical perspective. According to the Eastern Cape Department of Economic Development, the province is about the size of Uruguay. Situated in the middle from the main market centres of South Africa. It is connected to those centres by a modern network of air, roads and railways. More importantly and significant is that the province is situated between two of South Africa's major economic hubs, the Western Cape and KwaZulu-Natal provinces, which offers easy linkages from a logistical perspective. The Eastern Cape is the only province to have three harbours (the Port of East London, Port Elizabeth and Ngqura). The Port of Ngqura is the country's only transhipment hub which allows for easy access to global markets for local investors"- Attendee 3

The undefined market phenomenom, according to Mujuru & Obi (2020) and Reform (2018) and (Reform, 2018), is that it limits the ability to grow sustainable production systems as the market segments are not properly defined and remain limited. Hence, access to information and training will enhance smallholder behaivour and improve norms that otherwise limit the farmer's view of who their market is (culture and context). According to Development (2017), value chains are typically organized around planned production stages, value addition processes to target a market segment with relevant preferences and requirements. This means that the value chain operations are centred around the efficient distribution of food and products for their customers and therefore an undefined market means that customer preferences and choices are not consistent, predictable or defined and the cost of doing business is expensive.

Therefore, from the findings, this means that the smallholder farmer in the Eastern Cape has limited data to make significant market assumptions and will most likely not even be able to influence market behaivour. More importantly, an undefined market simply means that there is an inactive competitive market and goods are not transformable or tradable to an adequate scale. In a context of underdevelopment, heightened poverty and unemployment, the literature

reviewed suggests that value chain formations should facilitate and enabling environment for competitiveness and growth in the sector and region.

4.2.2.3 Poor Specialization

In terms of this study, poor specialization simply means that the smallholder farmer's choice of farming operation's location is generally limited to their rural homesteads and the choice of crop and or stock to farm is generally limited to the crop or stock that is generally farmed in the area. The tends to be no in-depth research about location and crop grouping (selecting the best area for the crop or stock) but rather a sharp focus on the type of crop/stock to produce in the rural homestead area. This is generally as a result of the costs associated with starting a fresh in a designated area, location, village, as opposed to having operations within a communal context that is known and familiar.

According to one of the respondents, the dispersion of smallholder farmers in the Eastern Cape is perpetuated by what they term to be "rural migration", which at times duplicates the product offer to the already exiting and limited market. Generally, what shrinks the sector, is whilst investment increases, there is no increase of market and customer base because of the poor management of market segments. This tends to lead to erosion of farm profits as there is over supply in the market and no concerted effort to grow the market and no potential to commercialise into specialist agribusinesses.

In terms of this rural migration, the new entrants will generally consider conducting operations in areas they have regard as ancestral homes, or where there a family ties or areas they regard as rural homestead areas. This means that the location and choice of operations, at times, is not based on the crop or produce that will be cultivated but on the area with the most "political cushion" and or familiarity. Generally, there may be market research, or trading and certain niche market segments, but in as far as support service and input area proximity, these are not necessarily considered. This means that individuals who have the means to participate in agriculture value chain, as a result of proximity, are not able to transition quickly into the sector because there is no framework allocated for smallholder farming value chains in the Eastern Cape. The Conference speakers seemed to all agree that the losses incurred as a result of poor specialisation are catalytic and are a significant contributor to transaction cost deficiencies in the current system. The current market is inefficient and from the interviews

with stakeholders sampled, it is clear that smallholder farmer transition is a long process, current pricing market seems to be distorted be and a large for it is displacement and uneven distribution of financial intermediation.

Generally, when inputs and support services are far away, it becomes a challenge for farming operations to become specialised farming entities and as a result of poor planned locations and saturated market, these farms will not grow beyond a certain point.

According to the participants, as a result of the lack of training and education, there is a significant sum of smallholder farmers in the Eastern Cape that manage unsustainable operations as result of poor planned farm location. This means that these operations will be stifled of growth as they remain unbankable, high risk investments and inefficient operations that will not transcend to specialised production outputs.

"Producers are in a position to grow their scale by accessing external credit and accessing new customers (which they would have otherwise been unable to identify or link with) to increase formal finance by providing financial services in rural areas that may have previously been deemed poor and costly areas in which to provide these services".

Attendee 5

In line with Markelova & Mwangi (2010), the study suggests that smallholder farmers who are unorganized, operating by themselves, may have tend to have a one-dimensional view of their market (linked to proximity) and have a limited view of production and diversification capacity. As mentioned by Majuru & Obi (2020) and as the study suggests, efficient farm operations are those that can reach some level of specialisation or production systems that produce to specific market requirements. The size of operations, market segment, cost of production and return on investment will generally be some of the factors influencing specializing and as the study suggests, smallholder farmers seek maximum from their operations.

According to Dunaway (2014), a business strategy and approach adopted by the farmer is the initial step to specialisation and commodification and this business strategy to improve value and operations can be imbedded in the value chain finance framework adopted by the farmer as an actor, as suggested by the literature.

Markelova and Mwangi (2010) suggest that it is inefficient for the smallholder to remain unorganised as value chain participation will enhance scale and move beyond jurisdictions planned by the smallholder farmer and thereby enable broader and niche market access.

So, from the finding and as articulated by IFC (2012) and Boehlje et al. (1999), we see that the smallholder farmers need to follow a targeted and structured chain approach to specialization, mostly linked to the supply and delivery of goods and services. This specialization will be largely influenced by the crop, region, size of market, etc., and so the lack of structure or poor targeted farming practices to drive specialization operations demonstrates that value chain services need to include training and development. This will enable the smallholder farmer to right size and form a balance sheet with managed risks and rewards.

4.2.2.4 Lack of Commodification

In terms of this section, the study limits the definition of commodification to being, the ability to transform a primary stock item into multiple tradable goods (through processing – i.e. livestock being sold as meat and leather products separately). In this context, the smallholder is unable to add value to their product and thereby is limited to supply at a primary level and is unable to take advantage of additional revenue generation from transforming a primary stock item into other goods and services.

Also, in terms of this section, when surveying the Eastern side of the Eastern Cape, you will find at least two value chain finance companies that have upscaled smallholder farmers operations by providing machinery and equipment, build a client base and meet market demand. Certainly, from all participants, it is clear that they believe that most of the smallholder farming operations in the Eastern Cape have not reached full mechanisation or efficient levels of output, in as far as farming methods and production output. This means that, most smallholders operate small production outputs and are not in a position to use farm resources for non-agriculture activity, such as raw commodity distribution. The use of support services will be essential as value chain finance companies continue to provide machinery and equipment to the various needs and asset transformation opportunities available in the market.

According to respondents, their food production systems tend to be new and have not formed secondary levels, where farm resources are comparatively measured to assess the market options available for such resources.

Smallholder farmers need to transform their operations into small modernised agribusinesses that will exploit the comparative advantages of the resources used in farming operations.

Generally, specialization will tend to lead to improved productivity and reallocation of resources leads towards non-agriculture activities and where productive labour exists.

"None to the poor infrastructure in EC is a significant handicap. Alternative transport (diesel price) and silo infrastructure. The infrastructure demanded are delayed by poor public service delivery (road maintenance). The other infrastructure demanded is not met because of poor private sector participation (farm equipment – irrigation, silos, technology). Therefore, there is a need for broad collaboration needed with farmers, private sector and public sector". Attendee 6

Accoriding to Boehlje et al. (1999), value chain formations cannot succeed if they cannot maintain value addition and smallholder farmers will not succeed if they are not linked up to thriving value chains. Also, as mentioned by Mujuru and Obi (2020), smallholder farmers operating within an organised context can grow their operations from being mere chain participators to being agribusinesses that supplement their farming operations or transform operations to supply raw commodities (iron, coal, steel) to wider and broader market segments. The study suggests that a smallholder farmer within a chain will be exposed to various industries, sectors that will enable value addition for their production or growth or transformation of their smallholder farm operations.

In line with Mujuru and Obi (2020), the study suggests a process a staged growth process to become these agribusinesses and therefore, the starting point for the smallholder farmer should be able to operate specialized farming operations that will facilitate the staged growth process.

Therefore poorly planned farming operations limits the farmers ability to link farm operations to available Government funding. The irony of the smallholder farmer in the Eastern Cape is that whilst the farmer may not succeed to attract private capital and unable to participate within a chain, from the existing the Government programme, farming operations can be transformed into agribusinesses through various incubation programmes and not by their size/growth potential of operations. Therefore, when the smallholder farmer decides on specialisation, they demonstrate understanding of their operating environment, economies of scale, market segment etc. and provide confidence that existing operations can grow or be transformed from the available funding and support sources available.

4.2.2.5 Output numbers

Generally, due to the size of the smallholder farmer operations and general limited market access, there tends to be inadequate yields and low outputs being produced by these smallholders. According to participants, there seems to be an inherent neglect of smallholder farmers as they remain largely undercapitalized, with limited mechanization. More importantly, the smallholder farmers seem unable to detect or utilise mechanisms that would aid in enhancing their yield and seem to not have access to technology that would increase productivity in production.

As mentioned by IFC (2012) in the research and noted by respondents, there is a significant sum of these smallholder farmers who do have adequate farm infrastructure and a result experience low production output because there is lack of certain infrastructure. As a result, in many instances, low agricultural output in the region is somewhat perpetuated by the significant post-harvest losses from not having adequate storing facilities and/or other post-harvest tools and equipment.

In essence, this limits processing capacity, as well as the opportunity for value addition within existing chains and thus limited the ability to create significant employment.

In most areas of the Eastern Cape, the production output numbers and the potential for value chain financing remains limited as these rural areas would need significant investment in physical infrastructure to improve transport access to those areas, as well as to increase the use and promotion of yield-enhancing technologies

4.2.3 Critical success factors of value chains

Critical success features that attribute to successful value chains include the ability to have predictable and well-planned value chain activities that will enable chain actors to participate at each level. These predictable and well-planned activities require certain value chain actors to perform duties/responsibilities at each level of the chain, from governance/legal structure, strategy and marketing approach etc. Below are the attributes successful chains have across the different levels, where actors are delegated responsibilities and fiduciary duties.

a) Clear chain governance and accountability

In terms of the studies by Markelova and Mwangi (2010) and Orlando (2013);, the processes and functions of the chain exhibit efficient reporting and accountability of the chain and enables the chain to function in a coordinated manner. The chain governance approach is aligned to the chain strategy, market approach and chain coordinated approach (Development, 2017). Linked to this are the value chain stages that requires certain accountability and reporting frameworks, the chain governance and accountability systems enable efficient reporting at each stage and here, the stakeholders are incorporated into the reporting methods, etc.

The overall function of the chain, the financial health and incentives in the chain are influenced by the governance styles and certainly labour-efficient operations.

One of the participatants had the following to say:

"The employment opportunities would span from urban to rural area, commercial to subsistence farmers, warehousing staff, security, transport, food processors and etc. The structure that comes to mind would be creation of warehousing hubs in four major centres within the province. These hubs would be responsible for sourcing produce, matching food need to producer, monitor contracts and manage logistics between themselves and Industrial Development Zone where processing and distribution would take place." Respondent 4

b) Maintain real time measurement of financial health across the system

According to the study, the use of financial reporting systems seems to be a significant differentiator when it comes to success and failure of value chains (IFC, 2012). Here we see chain income and investments received for chain operations being used to manage chain operations, which includes the production, supply of inputs, logistics, warehousing etc. So, the extent of receivables and cashflows versus the liabilities and obligations (at each phase or value addition stage) can be intricate to manage when using accrual basis of accounting.

As mentioned in the literature (Sartorius & Kirsten, 2002); (Barry & Ellinger, 2012), a key component in the timing is thedifference between income received and servicing of debt and obligations.

At times, some chains are viewed to be “slow payers” or “slow to pay” deliberately, as the perceptions is that financial cashflows within chains are being managed. This is not always the case and certain chains have policies in place that may dictate a 30- or 60-day payment cycle to suppliers or creditors and at times, suppliers are not always aware of this.

Another key ingredient is the ability to maintain a certain percentage of previous year profits into a “financial reserve fund” to deal with unplanned or unexpected disruptions. Also, having a reserve facility with a commercial bank will also enable some earning of interest and enhance the chain’s ability to access additional lines of credit.

Ultimately, at each level of the chain there needs to efficient recording of revenue and expenditure (in the correct financial period), factoring in timing differences and must be consolidated into monthly management accounts (Williamson, 1981); (Barry & Ellinger, 2012). Financial flows can be managed centrally or they can be decentralised, however, it seems that there are significant controls needed for a decentralised systems and there tends to be significant delays within chains when systems are centralised. Depending on the size of the chain, certain functions can be delegated and a decentralised process can be maintained or larger chains, payment and invoice cycles can be built into the financial system.

Lastly, the inclusion of prudential regulation will go a long way in ensuring that mechanisms such as lending requirements, capital adequacy, lender of last resort and etc. are in place to protect the financial system from exposure and risks. The inclusion of qualified and competent staff in these value chains is essential to have adequate controls and regulation in place.

c) Collate and share accurate information within the chain

In terms of the study, this is certainly the challenge for many value chains, as the extent of information flow and to fully share information depends on the users of data to dichotomise the information to enhance their stage/level of chain participation. According to Boehlje et al. (1999), in any chain approach, where there is market access and financial inclusion imperatives, those chains will tend to have intricate formations and accountability structures that are managed by various stakeholders and chain participators. In the rural area of the Eastern Cape, the level of technical understanding of agrarian value chain processes, farming methods, record keeping, financial statement reporting shows that the area is in need of additional education and

training. The value chain actors are required to integrate into a system that will enable cross – border trade and consolidated financial reporting. Generally, initially, value chains will form on a small reporting base and as the chain grows, the growth structures will enable better inclusion and result in efficient use of financial products, as usage and frequency increases). The frequency and usage of the products are generally linked to the incentives provided in the chain (Williamson, 1981). So, in terms of the study, the incentives of the chain aim to promote financial inclusion through the use financial products provided to conduct operations at each stage of the chain. An example of this would be a differed income investment approach, here chains receive investment from value chain sponsor to disburse to beneficiaries for farming operations, the value chain coordinator will delay disbursement pay out over a duration – i.e. 5 – 10 years. In interim, the value chain production – distribution process will be designed to create enough revenue and make disbursements to beneficiaries over the agreed contract duration. In essence, the differed payment, rights and obligations of the chain are transparent and accountable for all those participants and the information flow needs to empower stakeholders at each chain level.

d) Utilize appropriate and relevant incentives of the chain

In terms of the study, incentives within chains are not just limited to the context and cultural environment but are also linked to the extent to which smallholder farmer will have to use own income for operations. Generally, the ability to fund smallholder farm operations through the chain and support smallholder farmers in terms of required tasks and activities, at each stage of value addition and participation, is significant and relevant (Dunaway (2014); Mahlati (2011).

Added to this, there seems to be view that value chains that have their own culture (in terms of work ethic expectations and reward systems), through internal systems of operations, seem to be more successful and do show better integration value chain actors.

e) Promote efficient product flow

In terms of the study, the production flow, the logistics and the chosen forms of value addition are linked to the regulations, certification, accreditation etc. that dictate the operation of the

value chain. Generally, successful chain seems to have location of operations as key component of distribution process (Boehlje, et al., 1999). The location to production, storage, transportation and market access is also influenced by some of what we have termed as factors that limit smallholder farming investment, in the Eastern Cape. These factors, as seen in the previous section, include stock theft, public infrastructure capacity and specialisation requirements. Another factor of success, within efficient product flow, value chains who have relevant asset management monitoring capabilities are able to define cash generating and non-generating assets, define optimisation levels/useful lives and frequency of maintenance and replacement of assets (Jordaan, et al., 2014); (Fessehaie, 2012). The recording of mileage in vehicles, the maintenance of silos and capitalisation needs of storage and warehousing requires asset users to quickly transition into asset management functions or have transversal support services across to manage asset needs.

Essentially, the product flow defines the asset allocation across the chain and requires users to take due care and diligence in as far use and preservation of assets used within the chain. More importantly, successful chains have asset users that have the capacity to detect some form of asset risk and seem to be to report impairments and permanent declined as a result of obsolete operations and or change in technology. Value chain coordinators tend to have a coordinated value of the chain as they also seem to place technical individuals at the coordinator level and support them with managerial support, reporting and various market measuring tools. These technical individuals tend to have a broader view of the assets used for production and generally, within successful chains, these individuals are able to have some inherent ability to have a view of the risks at each value addition phase and the chain support simply enhances their view and ability to build in additional internal controls within the chain and enhance reporting.

f) Maintain defined production distribution processes

This critical success factor includes the overall the value chain make-up, governance, industry, warehousing, standards, transportation and all aspects of the value chain approach. According to IFC (2012), the production-distribution process the informs the governance and accountability requirements, as well as the limitations of the chain.

So, according to Jones and Miller (2010), the ability to legally enforce contract provisions is a critical component of this factor and simply put, the inability to enforce contracts (at each stage of the value chain) is counterproductive and does not support the smallholder farming sector. Then, in terms of the skillsets and labour that exists within the chain will inform the extent of tasks and activities that are outsourced to external partners and or service providers, considering the overall cost implications in terms of insourcing or outsourcing. The overall success of chains, in terms of this study is highly dependent on the right type of governance structures and internal controls that will support and enhance the operational imperative of the chain.

Considering all the dimensions and aspects of value chains, the operational plans of the chain would seek to employ efficient mechanisms that deal with the prerequisites of the chain dimensions and have governance oversight structures that will monitor the performance and efficiency of functions performed per these dimensions. Furthermore, a holistic governance approach to the chains production-distribution process seems to enable risk spreading and efficient allocation and flow of information.

4.2.4 Summary of Qualitative findings

When participants made comments about the type of intermediaries that should be formed and how they should provide services, it was evident that there is consensus to protect individual's property rights, limit and eradicate corruption and maintain proper regulation. It seems to be common knowledge that the Eastern Cape region has a large constituency that reside in rural lands, where subsistence farming is a common practise. In these regions unemployment is rife and casual work is not always sufficient to sustain families. Together with this, smallholders have to compete in an environment with a significant number of commercial farmers that produce in large volumes to the bigger city centres, producing fruits (citrus, pineapple, apples, oranges), livestock, potato, maize, etc. Therefore, it is agreed from the sample that smallholder farmers have not realised their potential and existing opportunities and remain unable to tap into new markets, using technology. There is consensus that structured coordination of smallholder farmers will enable the formation of decentralised warehouses for produce and stock to be gathered, packed and transported. Furthermore, participants seem to concur that the value chain formations are the starting points to enable growth that is needed sector and

move smallholder farmers to processors of products/stock to final goods and participate in a wide value chain.

4.3 Quantitative Research Findings and Analysis

4.3.1 Questionnaire Rate of Response

For this research, 18 individuals were targeted and surveys were distributed and 17 responses were received and collated to form part of the analysis. The response rate was approximately 94%.

4.3.2 Summary of Participants' Demographics

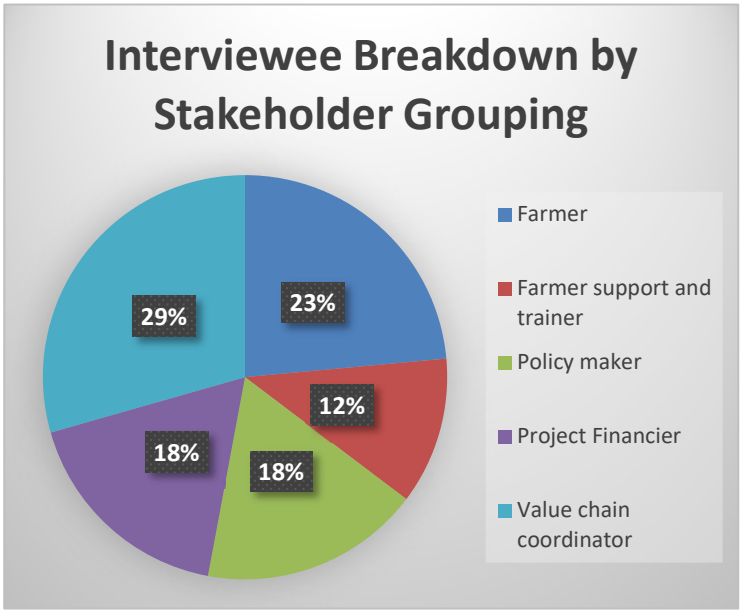
As can be seen from the table below, most of the participants are below the age of 40 and hold some tertiary education and with a limited number that have less than five years of experience in the agrarian sector. As mentioned before, the make-up of these participants enables a broad view and analysis of the levels of participation that occur within value chains: 29% of the participants are value chain coordinates, either for private sector, the state and others working in a hybrid state and private sector context. The reason for this was to enable an in-depth view of the types of chains that form in the Eastern Cape, as well as to assess whether chain formations are limited to the five chain types as defined by the IFC (2012). Then, the other significant number of participants was the smallholder farmers, which conduct operations in different districts of the Eastern Cape and engaged in differing production systems. This enabled the analysis of a broad spectrum of farmer types, their conditions and differing chainges within the Eastern Cape. The policy makers and chain financiers where equal in number and since the Eastern Cape smallholder farmer sector is significantly funded through state programs, it was interesting to assess the level of private sector interest in the development of smallholder farmers. In terms of chain support services, training and education, it was clear that there is a need for additional labour required to reach the vast number of smallholder farmers to offer them training and support programs. The different types of organizations that can be seen below indicate the extent of diversity that occur within chains and the complex relationships that can form between sectors, industries, etc., to fund agrarian value chains. The diverse arrangements in the Eastern Cape tend to include some organ of state as various districts and municipalities seeks to complement the investment made by Provincial and National Government into the sector. The demographic profile of the respondent is presented in Table 4.

Table 4: Demographics of survey participators

Organisation	Years of Experience	Educational Background	Role - refined	Gender	Level of Education	Age
Agri Business/ Development Company	Less than 5 years	Agriculture/Farming	Consultant	Male	Tertiary	Below 40
Agriculture Venture Capitalist	Less than 5 years	Business Admin/Business Management	Executive Management	Female	Tertiary	Below 40
Asset Management	10 years' experience	Accounting/Finance/Economics	Senior Management	Male	Tertiary	Below 40
Asset Management	More than 5 - less than 10 years	Accounting/Finance/Economics	Senior Management	Male	Tertiary	Below 40
Commercial Bank	10 - 15 years' experience	Accounting/Finance/Economics	Senior Management	Male	Tertiary	Over 40
Commercial Bank	More than 5 - less than 10 years	Accounting/Finance/Economics	Senior Management	Female	Tertiary	Over 40
Development Finance Institution	More than 5 - less than 10 years	Accounting/Finance/Economics	Executive Management	Female	Tertiary	Below 40
Farm	10 - 15 years' experience	Agriculture/Farming	Farm owner	Male	Secondary school	Over 40
Farm	10 - 15 years' experience	Business Administration/Business Management	Farm owner	Male	Secondary school	Over 40
Farm	10 - 15 years' experience	Other	Farm owner	Male	Tertiary	Over 40
Farm	10 years' experience	Agriculture/Farming	Farm owner	Female	Tertiary	Over 40
Financial Advisory	More than 5 - less than 10 years	Business Administration/Business Management	Senior Management	Male	Tertiary	Below 40
Other - Policy Maker	More than 5 - less than 10 years	Accounting/Finance/Economics	Executive Management	Male	Tertiary	Below 40
Other - Policy Maker	More than 5 - less than 10 years	Accounting/Finance/Economics	Middle Management	Female	Tertiary	Below 40
Public Entity	Less than 5 years	Business Administration/Business Management	Executive Management	Male	Tertiary	Below 40
Public Entity	More than 5 - less than 10 years	Business Administration/Business Management	Executive Management	Male	Tertiary	Below 40
Retail/Market Outlet	10 - 15 years' experience	Business Administration/Business Management	Middle Management	Male	Tertiary	Over 40
GRAND TOTAL						**17**

Though the participants seem to point out that the sector is dominated by males, it was interesting to see women occupying strategic positions, either as chain financiers/sponsors or policy makers. The years of experience for most of the participants, seems to speak to the reputation the sector holds, which is that it participation turnover is low as individuals engaged in the sector are generally committed to it for a long-term period.

Figure 8: A statistical breakdown of survey participators



4.3.3 Descriptive Statistics of Survey Data

The descriptive data to show the mean, standard deviation, variance, skewness and kurtosis, using the SPSS system of analysis. The aim was to test normality for the two constructs, which are the smallholder farmer context limitations, value chain finance ability to facilitate financial inclusion and financial institutions limitations to investment in smallholder farmer operations.

4.3.3.1 Smallholder farmer perception (SHFP) and Value Chain Finance Context (VCFC)

In terms of the descriptive analysis of the data collated in as far as smallholder farmer context, we see from the mean statistic that the participants results range between 2.1 and 3.7, indicating that most of the responses (approximate mean of 3) indicate the total response to be neutral. There seems to be differing views in as far as four out of the nine questions and an

approximately equal response rate for those who agree and disagree for these 4 questions. Then, there are two questions where the mean is less than 3, showing a collective response of being in agreement with the statements and 3 questions that indicate that respondents to be in disagreement. When analysing the questions where respondents generally agree and generally disagree, we can deduce that the data corroborates our analysis from the interviews (i.e. financial institutions find it challenging to offer finance to smallholder farmers – Q4 with a result of 2.1).

In terms of the descriptive analysis of the data collated in as far as value chain finance ability to facilitate financial inclusion, we can deduce that the interview responses and survey feedback are aligned in terms of the general perception of value chains and their usefulness in empowering smallholder farmers and being a vehicle to facilitate inclusion. When analysing the questions and the mean statistic (which is between 1.5 and 2.6), we can see some responds are neutral and most respondents seem to agree with the statements on the Likert scale. In this instance, from an overall perspective of the data, Question 4 seems to yield significant statistical results.

Table 5: Summary of Descriptive Statistics – SHFP and VCFC

Descriptive Statistics	Mean	Std. Dev	Min	Max	N
SHF Perception	2.96	1.27	2.17	3.76	17
VCFC	2.00	1.22	1.55	2.67	17

4.3.4 Reliability results

The data collected from the different sections of the survey questionnaire (per construct) gave a different Cronbach Alpha value for each construct. The first construct (SHFP) gave a Cronbach Apha of 0.818, whilst construct 2 (VCFC) gave Cronbach Alpha values of 0.929. All the values given, for each of the constructs, reflects acceptable ranges of reliability and internal consistency. Another consideration was made to gain more comfort on the reliability of the survey questions and their efficacy. Over and above the Cronbach Alphas, additional statistical tests to ensure reliability and internal consistency of the survey, the study tests the Composite Reliability and Average Variance Extracted. In total, sixteen questions from the survey show internal consistency and reliability as CR values for all these questions (for the two constructs) is above 0.5. However, when considering additional statistical analysis from the Average

Variance Extracted, we see that the output value for the first construct to be below 0.5. Though the first two tests of reliability seem to favour and prove internal consistency of questions within the survey, the last statistical test shows that there is improvement needed (perhaps in the ordering and rating) in the questions that assess the first construct.

Table 6: **Summary of Reliabilty results – SHFP and VCFC**

Constructs	Factor Loading	λ	Mean	CA	CR	AVE
SHF Perception	SHFP 1	0.246	0.426	0.818	0.696	0.2872
	SHFP 2	0.065				
	SHFP 3	0.937				
	SHFP 4	0.658				
	SHFP 5	0.887				
	SHFP 6	0.056				
	SHFP 7	0.559				
	SHFP 8	0.305				
	SHFP 9	0.12				
VCFC	VCFC 1	0.812	0.886	0.929	0.962	0.78
	VCFC 2	0.949				
	VCFC 3	0.901				
	VCFC 4	0.818				
	VCFC 5	0.903				
	VCFC 6	0.903				
	VCFC 7	0.918				

Note: SHFP=Smallholder farmer perception; VCFC=Value Chain Finance Context Source: Estimates from research data

So, in terms of the overall analysis of the two constructs, for the purposes of this study, the general perceptions about the first construct (the smallholder farmer context) are also informed by the conference proceedings that have already been analysed in the previous section. Since

there is a base (besides the above statistical analysis) to form generalised views, the AVE results only point to the improvement of the questionnaire and do not indicate differing views in terms of generalization of perceptions of the smallholder farmer context.

Then, in terms of the second construct, we can see that the value chain finance construct indicates reliability and internal consistency of questions.

4.3.5 Overall perceptions about the smallholder farmer context, value chin finance and financial inclusion in Eastern Cape

Since all the necessary descriptive analysis has been completed, the study moves to further analyse the overall perceptions associated with the two constructs under review. Each of the following sub-sections will deal with each construct separately. In terms of the two constructs, our survey questionnaire enabled the collation and ranking of the context factors that limit the smallholder farmer's financial inclusion, the value chain financing aspects and limitations from financial institutions.

4.3.5.1 Smallholder farmer context and factors that limit their financial inclusion

Table 5 presents the overall ranking on the smallholder farmer context and factors causing limitations. The table below includes statements made in the survey questionnaire and the responses made by participants. Here, respondents expressed the statements they disagree with the most and thus the ranking of results measures the statements that had the highest to the least disagreements. As we can deduce from the and responses made, the results depicts that a significant and most weighted response with strong disagreement and general disagreement to the statement that "smallholder farm data is readily available and financial information is easily interpreted by financial institutions". As mentioned by Jones and Miller (2010) and Jordaan et al. (2014) in the literature, the interview data, as well as the notions posed by the participants confirm that smallholder farmers do not have the necessary ancillary supporting information needed to apply or attract funding. This shows that smallholder farmers are not geared up to facilitate their own financial inclusion and thereby limit financial institution's ability to finance their operations. The study also depicts that these farmers are also unable to interpret the necessary financial reporting information and understand the financial reporting requirements that will enable them to access finance. Furthermore, as confirmed by (Knopp, 2013)the results show that financial institutions are not the major stumbling block (as per general narrative) that

limits funding and access to finance for the farmer but rather, smallholder farmers have not created an enabling environment for themselves (unable to produce financial information or understand investment and finance requirements of financial institutions). Another important summation from the table below is that smallholder farmers do not have enough intermediaries to support their endevours and enhance their operations.

Table 5: **Overall perceptions of smallholder farmer context – statements participants disagree with, ranked from high to low**

CONSTRUCT 1 – smallholder farmer context limitations			
	Total	**Score**	**RII**
6e) Smallholder farm data is readily available and financial information is easily interpreted by financial institutions.	68	85	0.8000
6c) Smallholder farmers in the Eastern Cape understand the financial reporting requirements needed by financial institutions to access capital.	64	85	0.7529
6g) There are enough financial intermediaries in the Eastern Cape to support smallholder farmers to access capital from financial institutions.	61	85	0.7176
6b) Smallholder farmers in the Eastern Cape have defined value chains.	53	75	0.7067
6a) Smallholder farmers in the Eastern Cape have defined markets.	56	85	0.6588
6f) Financial intermediaries are needed to bridge the gap between smallholder farmers and financial institutions.	43	85	0.5059
6h) Smallholder farmers remain unorganised and informal in their operations.	43	85	0.5059
6i) The primary source of income for smallholder farm operations is mainly the farmers personal finance or personal access to credit.	38	85	0.4471
6d) Financial institutions find it challenging to offer finance to smallholder farmers in the Eastern Cape.	37	85	0.4353

Source: Candidate's estimates from Research data

Once again, when looking at the overall perceptions, as ranked by smallholder farmer context, there is general agreement that financial institutions find it challenging to offer smallholder farmers with finance. This means that when reporting and institution finance requirements are adhered to, extending finance to these farmers should not be a problem (hence the need to formalize).

Also, what we see is that there is also general agreement, even though ranked least, that the primary funding mechanism for farming operations is not always from farmer's personal

finance or access to credit. As mentioned in the study (Reform, 2018), here we see that smallholder farmers are generally not always salaried individuals or have access to credit and savings to finance and fund their operations. It is peculiar instances or limited examples where smallholder farmers are able to use secondary income sources to fund their operations and generally, it is the farm's operating revenues that fund the existence of the farm. In line with Mujuru and Obi (2020) and Reform (2018), the above table confirms that, generally, operations will be undertaken, to move individuals out of poverty trap (food produced to feed themselves and their families) and the excess production is sold for profit, which is then used to continue operations.

4.3.5.2 Value chain finance and their ability to facilitate financial inclusion for the smallholder farmer

This section presents the result for quantum 2, which relates to statements made about value chain finance and its ability to facilitate financial inclusion. The participants expressed their opinion with of the statement by selecting from a 5-point Likert-scale, choosing from "Strongly Disagree" to "Strongly Agree", with the statements.

Here we have the statements ranked according to the scores obtained from the responses made by participants, where the highest score presents the statement participants most and strongly agree with, which is "*The domestic financial market does not have appetite to participate in value chain financing for smallholder farmers"*. This confirms the study by Bank 92013) and Neves and du Toit (2007) that the statements made from the interviews and conference proceedings that, generally, the domestic market needs to have a targeted approach in organising farmers and incorporating them into successful value chains.

Table 6: **value chain finance and need for intermediary between financial institutions and smallholder farmers**

CONSTRUCT 2 – value chain finance and need for intermediary	TOTAL–	SCORE–	RII
The domestic financial market does not have appetite to participate in value chain financing for smallholder farmers	30	35	0.86
Typical certification and accreditation costs for value chains are generally high	25	35	0.71
Many value chains fail to maintain profitable smallholder farmers in their chain	24	35	0.69
Financial intermediaries enable price discovery for smallholder farmer and financial institution.	24	35	0.69
The licensing and permitting process for value chain participation, for smallholder farmers very difficult	21	35	0.6
Development and training services offered to smallholder farmers are very crucial to farm operation success.	19	35	0.54
Access to information and intermediation will increase financial institution participation in smallholder farm sector.	19	35	0.54

Source: Candidate's estimates from Research data

Whilst there may be a view that Value Chain Finance capitalists should have a targeted approach, the reality is that smallholder farmers are unable to provide financial reporting information or conduct their operations in a way that enables them to maintain ancillary financial information that is much needed for sourcing capital and investment.

The smallholder farmer's inability to maintain financial records is simply a direct hinderance and a suppressor of the value chain finance capitalist's appetite to provide the necessary capital and investment to the farmer. The results from the interviews, the analysis of the descriptive statistics above, as well as the review of the data of the first construct above, it can be deduced that financial exclusion for the Eastern Cape smallholder farmer is perpetuated by their inability to maintain financial records and pertinent ancillary information of their operations.

4.3.6 Summary

Seventeen out of the 18 submitted surveys was completed and here we saw responses to aspects of value chain finance and smallholder farmer showing a significant rate of reliability through the Cronbach Test conducted. Then the general descriptive results suggest the normal distribution of relevant questions, which formed the first part of the survey.

Then, the study sought to understand the factors that keep the smallholder farmer excluded from financial services. In the first part of the chapter, the study outlines the risks of investing in smallholder farmer operations (as understood by the interviewed financiers and farmers), these risks are outlined by AgriSETA (2010) and Bank (2013); in later chapters, we identify the root factors that inherently keep the smallholder farmer excluded, which have been cited by Jordaan et al. (2014) and Troskie (2013). Here, these factors are ranked and to test the efficacy and concordance, an agreement analysis test was the last test conducted.

What the study shows is that the data collated and presented seems to concur with the findings from the qualitative analysis.

5 Chapter 5:

Conclusion and Recommendations

5.1 Introduction

This chapter will discuss the research findings outlined in the Chapters 4 and 5, and discuss the perspectives drawn from the data and the development needs of the smallholder farmer in the Eastern Cape, within the context of value chain participation and multidimensional financial inclusion.

5.2 Summary of the study

The purpose of the study was to evaluate the challenges faced by smallholder farmers in the Eastern Cape, as they remain financially excluded and are unable to attract investment or raise capital for their operations. The results in this study show that smallholders will benefit by participating in value chains as actors, where they are more likely to access capital and investment. The second purpose of the study was to evaluate the functions of agriculture business value chains and determine the critical success factors of these chains.

The results show that there are limited options available for smallholder famers to upscale by themselves and therefore support is necessary, furthermore, farmer support is needed to incubate new entrants into the smallholder farming sector.

The research follows an exploratory research design method, incorporating both qualitative and quantitative methods of analysis through a mixed-used research approach. The design and approach used is meant to facilitate an in depth understanding of the phenomena and to outline the high-level root causes of both the challenges faced by smallholders, as well as to determine the factors that make certain value chains successful. The focus of the study aims to explain that lack of information and coordination are the root causes of the lack of transformation in the sector, especially in the Eastern Cape.

Then, the study moves from there to show that the income levels of the farmers will enable certain excess, however, what is common is that secondary sources of income are a significant differentiator, as farm operations alone are not enough for smallholder farmer to access capital.

The results point towards the need for intermediation, especially in areas where there is absence of secondary income sources, because without intermediation, the poverty trap is perpetuated and the growth of the smallholder farming sector remains limited. From the research results analysis, it is clear that secondary sources of income for smallholder farmers are limited and the poverty trap is widening as a result of lack of information (title or credit history).

The root causes identified from that data are that the domestic market does not have appetite to invest in smallholder farmers as price discovery has not been attained, more importantly, smallholder farmers are unable to provide financial reporting information for their operations.

Lastly, the study clearly identifies that the growing demand for sustainable food production, access to the Africa Free Trade area and investment from government and private institutions into smallholder farming production activities in the Eastern Cape, needs smallholder farmers to be organised and for value chain coordinators to manage efficient food production systems.

5.2 Conclusions

The main conclusion from the study is that lack of price discovery and poor access to market are the main contributors to the slow growth and low production output of smallholder farmers in the Eastern Cape. Within this context, the study shows that smallholders farming activity is not significant in terms of participations and production output, to the point where the commercial farmers are able to supply to retail on two fronts, through the formal retail service line and through informal trader sector. At times, these informal traders also consist of entrepreneurs who endeavour to enter the smallholder farming sector and if the barriers to entry were equal, these informal traders could transition smoothly into sector and access financial products (usage and frequency). However, as depicted in the study, the skewed financial access eliminates inclusion, hence there is a need for intermediation for those who trade agricultural goods informally (cannot obtain price discovery). Intermediation through a medium such as a value chain would enhance smallholder access to markets and improve their capacity to service these markets, enable financial reporting and increase appetite for domestic market to disburse capital and investment in smallholder farming.

Also, from the study, it was revealed that when analyzing some of the government support programs (available or use by smallholder farmers), from the various spheres of government, there seems to be a mismatch in as far as jurisdiction in terms of beneficiation and infrastructure investment. Whilst smallholder farmers may receive certain support from government for

operations, there tends to be challenges in as far as service delivery of public assets to those beneficiaries. From the study, the impact of this mismatch, is firstly, there is no adequate recording of farm operations that receive or benefit from state funds as the organs of the state are not synchronised in terms of recording overall support they provide in certain jurisdictions. Secondly, service delivery inefficiencies and failures create further dependence on the farmer's use of secondary sources of income. As a result of additional costs (i.e. transportation costs tend to be higher in rural areas where roads are inadequate) and therefore farm operations take longer to move beyond the point of being "bankrolled" by the farmer.

The overall picture of this mismatch, in terms of this study, is that government duplicates investment (no coordinated support across government spheres) and as a result of slow or poor service delivery, the pace at which smallholder farmers can transform their operations into agribusinesses and efficient operations is slowed down significantly. Therefore, coordinated support and enhancement of services in the areas where supported farmers operate will facilitate significant growth of smallholder farmers in the Eastern Cape.

Also from the study, with the global trend and move towards sustainable agricultural practices (especially post the COVID 19 pandemic), studies suggest that farm operations will require smallholder farmers to operate as micro agribusinesses. In theory, this should enhance food production and supply chains and linkages will be exploited through financial intermediation, and so smallholders and other participators can obtain price discovery. Already in the province, as suggested by the study, there is currently significant government infrastructure investment to increase access to markets (i.e. the revitalisation of ports, rail and transport routes) and a process to gear up to take advantage of the opportunities presented in the Africa Free Trade Agreement. As a result, of the global demand for sustainable farming and the increased market, there is a need for a "fly wheel" approach to ignite the sector so that there are enough access points for value chain participators to use multiple financial products frequently to effectively meet their needs, and be better off as a result.

5.3 Policy Recommendations

Firstly, when we analysed the data, it was concluded that when looking at government support programmes, there is a mismatch between the farmer programmes and the public infrastructure (roads, rail, etc.).

Secondly, the features of the financial system in Sub-Saharan Africa generally shows that the liquid liabilities and the ratio of liquid liabilities to GDP represents a small financial sector and as a result, confirms that financial institutions remain traditional in their uptake of large investment projects.

So, the extent to which inclusion will take place, will be determined by the scale of usage and frequency and therefore value chains must be able to attract financial institutions, in order to be efficient. Political uncertainty and changes to policy are some of the risks as a result of the state and lack of private participation or lack thereof is a measure for financial institutions to participate.

In terms of this study, policy recommendations would be limited because the study assumes that existing policies are enough to facilitate required growth, as there is wide scale and depth to conduct value chain operations across the Eastern Cape, especially in areas designated as Special Economic Zones.

Furthermore, improved monitoring and oversight can enable enhancing incentives of financial institutions to lend in the long term and so government data that is available, which can limit information asymmetry must be accessible to financial institutions in an efficient manner. This will enable the limitation and exclusion of smallholder farmers and microentrepreneurs from trade and credit markets.

In terms of the study, policy is something a smallholder farmer cannot change for themselves and within a value chain, as an actor, are empowered to negotiate for the success of their operations. On the part of policy makers improved monitoring and evaluation mechanisms should enable ease to regulate and monitor the fairness and extent of inclusion of smallholder farmers within these chains.

Lastly, in terms of policy, the study points out that the Africa Continental Free Trade Agreement is a mechanism force public sector to create and enabling environment for business and financial institutions to participate.

5.4 Avenue for future studies

When we surveyed the financial inclusion aspects within a value chain, from the data it can be deduced that these value chain ecosystems can facilitate smallholders' integration into the broader market chains, enhance their production capacity and enable access to finance. In the

long run, it is possible for these smallholder farmers to be transformed into become depositors for raw commodity suppliers.

Furthermore, from the data and discussion, structural commercialisation and transformation of the agrarian sector requires supportive markets to enable greater division of labour (especially in rural Eastern Cape). These supportive markets need to be integrated with consumers and producers and allow them to engage in transactions that involve heterogenous goods and services produced across time and space.

Therefore, as sustainable food production systems move to cater for demand and as technology becomes more integral in the operations of these system, further studies need to be undertaken to unpack the mechanisms that should be in place to facilitate equitable financial inclusion. Smallholder farmers need to be integrated into this mainstream economy and not be neglected as it is generally experienced in many growing sectors, especially in the Sub-Saharan region, where certain groupings are excluded from economic gains. Further studies need to be undertaken to empower policies makers to enforce inclusive trade laws, practices and enable smallholder farmers to participate meaningfully in these supply chains.

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7 Appendices

Appendix A: Invitation and registration to attend Eastern Cape Agriculture Indaba virtually

EASTERN CAPE AGRICULTURE INDABA

TRANSNET

Unlocking the growth potential of the agricultural sector

Hi Malwande

Thank you for registering for the **Eastern Cape Agriculture Indaba**.

The details for the online discussion are as follows:
Link: Click here
Date: 20 August 2021
Time: 09h00 - 12h00

Add event to calendar

Kind regards,
Arena Events

Nascence ADVISORY financialmail SAB absa

Appendix B

Interview Framework

Multidimensional lack of financial inclusion: the case for agrarian value chain finance institutions in rural Eastern Cape

1) General Questions

All participants will be asked this set of questions regardless of stakeholder grouping.

A: General Information on Interviewee and Organisation

1. What type of organisation do you work for?

    a) Farm

    b) Agriculture Venture Capitalist

    c) Retail/Market Outlet

    d) Asset Management

    e) Commercial Bank

    f) Public Entity

    g) Development Finance Institution

    h) Agri Business/ Development Company

    i) Financial Advisory

j) Other (specify)

2. What is your position/role and job function in the organisation?

3. How long have you worked for the organisation?

4. What is your educational background?

   a) Agriculture/Farming

   b) Accounting/Finance/Economics

   c) Business Administration/Business Management

   d) Other (please specify)

5. Briefly describe your experience with smallholder farming and value chain participation.

B: General Questions on Value Chain Financing and Development in Eastern Cape

Country Level Perspective

6. What is your view on the level of private participation in generation in Eastern Cape? Prompt: How do you think it compares to other provinces/countries in the region?

7. What is the biggest hinderance to financing smallholder supply chains in the Eastern Cape?

8. What has been the impact of the review and possible Amendment of Section 25 of the Constitution?

9. What is your view on the current land and property rights issues (urban and rural)? Prompt: What are its strengths or shortcomings?

10. Do you think rural smallholder farming incentives?

11. Do you think there is adequate support for smallholder farmers by government?

12. What institutional or regulatory changes, if any, would you suggest to increase investment and the participation of private players in generation?

Value Chain Level Perspective

13. What stage of the development process do you think is most critical for the success of value chain – formation, structure/framework or operation.

14. How important do you think the scale/ size of value chain participators is for the success of a value chain?

15. What are the top five critical success factors that enable success for value chains?

16. What are the top three risks for smallholder farmers part of value chain?

The following schedules contain questions that will be asked to each stakeholder grouping separately.

2) Interview Schedule for Farmers

a) Is farming your primary occupation?

b) Is experience required for running efficient farm operations, do you have any?

c) Are you part of a co-op, savings group, value chain or independent smallholder farmer?

d) Are you able to conduct operations for the farm using revenues from the farm?

e) What is your secondary source of income (i.e. savings, debt or value chain finance)?

f) Do you have access to financial services and finance products (please specify)?

g) Do you participation in production value add within the chain?

h) Other than production of produce, do you perform other functions within your chain?

i) Do you have advisors, within your chain, that help you run efficient operations?

j) Do you have knowledge of financial reporting and business management?

k) Are there opportunities for you to partner with other farmers or certain value chain participators?

l) Do you have theoretical knowledge or formal qualification for farming?

m) Do you have a significant amount of youth part of the farm operations?

n) Do you conduct your operations within a rural or urban context?

o) Do you have any mechanisation in your farming operations?

p) Do you own machinery or is it shared amongst farmers within your chain?

General Questions

q) What influenced your decision on what crop and size to implement?

r) How would you rate the licensing and permitting process for value chain participation, moderate, difficult or very difficult? What kind of costs are involved?

s) How accessible is debt financing, both local and global, for smallholder farmers in Eastern Cape?

t) What difficulties if any did you experience in arranging the finance and security arrangements for the farm?

u) Do you have any other remarks you would like to make?

3) Interview Schedule for Advisors/Implementing Agents/

a) What does a typical smallholder farmer value chain in the Eastern Cape look like?

b) What in your opinion are the major reasons why some value chains fail to maintain profitable smallholder farmers in their chain?

c) Are typical certification and accreditation costs for value chains prohibitively high?

d) What farm/farmer characteristics do investors consider in assessing the financial feasibility of a Smallholder farmer value chain?

e) Does the domestic market have any capacity to participate in value chain financing for smallholder farmers? What, if any are those local financing sources?

f) What external financing sources are accessible to farmers/farmer chains? What are the main barriers to accessing external financing for projects in the Eastern Cape?

g) Do you offer marketing, logistic, finance services for smallholder farmers who are part of your chain?

h) Do you offer development services and training for smallholder farmers within your chain?

i) Do you serve farmer with have access to roads, electricity and or water?

j) What is the level of involvement of DFIs in the development of value chains and other smallholder farm projects in the Eastern Cape?

k) What are the typical financial and legal conditions precedent required by debt financiers or investors in the Eastern Cape?

l) In your experience, what kind of government support/guarantees are available to cover these

risks for smallholder farmers and chain participators in a value chain?

m) What market trends do you foresee for smallholder farmer and value chain space in Eastern Cape over the next 5 to 10 years?

16.What do you think are the top three enablers that must be established in order to increase

investment in smallholder farm activity/significant agriculture production?

Prompt: conducive laws, regulations, fiscal measures, steps towards acquiring a credit rating etc.?

17.Do you have any other remarks you would like to make?

4) Interview Schedule for Investors/Chain Sponsor

a) What is your organisation's investment mandate? Does your organisation have an appetite for agriculture projects in the Eastern Cape?

b) How many agriculture projects in the Eastern Cape, if any, have your organisation invested in? How many of those were in an existing chain?

c) What is the typical investment size your organisation makes?

d) Do you use equity instruments, debt instruments or both? If equity, what is the minimum equity stake you look for?

e) What project characteristics do you consider in assessing the bankability of a farm operation in the Eastern Cape?

f) What is the hurdle rate your organisation targets for investments?

g) Briefly describe the key components of your organisation's investment appraisal process

h) Briefly describe your organisation's investment approval procedures.

i) What are your key concerns when considering an investment in the agriculture projects in the Eastern Cape?

j) What in your opinion are the major risks associated with investing in agriculture projects in the Eastern Cape?

k) What measures in your opinion would reduce the risk of financing projects agriculture projects in the Eastern Cape?

l) What security arrangements do you expect, at the very minimum, when investing agriculture projects in the Eastern Cape?

m) Do you have any other remarks you would like to make?

6) Interview Schedule for the Off-taker

a) How many suppliers are actively supplying the chain?

b) What is the total amount of production supplied to the chain by smallholder farmers?

c) What has been the operational performance of those farmers in terms of availability?

d) What regulatory framework provides you, farmers and chain participators protection?

e) In your chain, who has the most bargaining power. Does this power change or shift once the farmer starts supplying the chain?

f) Do you have any other remarks you would like to make?

Appendix C: Survey Questionnaire

Multidimensional lack of financial inclusion: the case for agrarian value chain finance institutions in rural Eastern Cape

A. General Questions

1. What type of organisation do you work for?

- ○ Farm
- ○ Agriculture Venture Capitalist
- ○ Retail/Market Outlet
- ○ Asset Management
- ○ Commercial Bank
- ○ Public Entity
- ○ Development Finance Institution
- ○ Agri Business/ Development Company
- ○ Financial Advisory
- ○ Other (specify)

2. What is your position/role and job function in the organisation?

3. How long have you worked for the organisation?

4. What is your educational background?

- ○ Agriculture/Farming
- ○ Accounting/Finance/Economics
- ○ Business Administration/Business Management
- ○ Other (please specify)

5. Briefly describe your experience with smallholder farming and your participation in your value chain.

B. General Questions on Value Chain Financing and Development in Eastern Cape - To be completed by all participants

6. General Statements

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
6a) Smallholder farmers in the Eastern Cape have defined markets.	○	○	○	○	○
6b) Smallholder farmers in the Eastern Cape have defined value chains.	○	○	○	○	○
6c) Smallholder farmers in the Eastern Cape understand the financial reporting requirements needed by financial institutions to access capital.	○	○	○	○	○
6d) Financial institutions find it challenging to offer finance to smallholder farmers in the Eastern Cape.	○	○	○	○	○
6e) Smallholder farm data is readily available and financial information is easily interpreted by financial institutions.	○	○	○	○	○
6f) Financial intermediaries are needed to bridge the gap between smallholder farmers and financial institutions.	○	○	○	○	○
6g) There are enough financial intermediaries in the Eastern Cape to support smallholder farmers to access capital from financial institutions.	○	○	○	○	○
6h) Smallholder farmers remain unorganised and informal in their operations.	○	○	○	○	○
6i) The primary source of income for smallholder farm operations is mainly the farmers personal finance or personal access to credit.	○	○	○	○	○

7. What is the biggest hinderance to financing smallholder supply chains in the Eastern Cape?

8. Do you think there is adequate support for smallholder farmers from the government?

9. What institutional or regulatory changes, if any, would you suggest to increase investment and the participation of private players in generation?

10. General Statement

	Formation	Structure/Framework design	Operation
What stage of the development process do you think is most critical for the success of value chain	○	○	○

11. How important do you think the scale/ size of value chain participators is for the success of a value chain?

12. What are the top five critical success factors that enable success for value chains?

13. What are the top three risks for smallholder farmers in a value chain?

C. Questions for Farmers - To be completed by farmers

14. Please evaluate the degree of relevance or importance of each of the listed factors for smallholder farmers, using a scale of 1-5, where 1 is "Not critical for smallholder farmers" and 5 is "Most critical for smallholder farmers".
Should you wish to elaborate further

	Not critical	Less critical	Critical	More critical	Most critical
Farming experience					
Being part of co-op, savings group					
Having access to secondary sources of income (savings, debt or value chain finance)					
Access to financial services and financial products					
Knowledge of financial reporting and business management					
Formal farming qualification					
Youth participation in farm operations					
Running farm operations from rural areas					
Having a market in urban areas					

15. What influenced you decision on what crop and size to implement

D. Questions for Advisors/Implementing Agents - To be completed by Bankers, DFIs, Finance, Project Managers, Government **Entities**

16. General Statements

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The licensing and permitting process for value chain participation, for smallholder farmers very difficult	○	○	○	○	○
Many value chains fail to maintain profitable smallholder farmers in their chain	○	○	○	○	○
Typical certification and accreditation costs for value chains are generally high	○	○	○	○	○
The domestic financial market does not have appetite to participate in value chain financing for smallholder farmers	○	○	○	○	○
Development and training services offered to smallholder farmers are very crucial to farm operation success.	○	○	○	○	○
Access to information and intermediation will increase financial institution participation in smallholder farm sector.	○	○	○	○	○
Financial intermediaries enable price discovery for smallholder farmer and financial institution.	○	○	○	○	○

E. Questions for Investors/Chain Sponsor - To be completed by Bankers, DFIs, Finance, Project Managers, Government Entities

17. Please rank the following risks according to the degree of threat for smallholder farmer investments in the Eastern Cape. The
definition of each risk is given in italics below the named risk.
One (1) represents the highest/greatest threat and seven (7) represents the lowest/least threat. Use each number once.

Lack of historic data and credit information of smallholder farmers

The costs to develop and manage credit facilities for smallholder farmers in the context.

The lack of understanding and inability to leverage on organising and increasing scale.

Costs associated with training and development of farmers.

The high risks associated with lack of education and inexperience to run operations.

The costs associated with funding new chains.

Inability to enforce contracts

D. Questions for the Off - Taker - To be completed by Buyers, retailers, distributors

18. How many suppliers are actively supplying the chain?

19. What is the total amount of production supplied to the chain by smallholder farmers?

20. What has been the operational performance of those farmers in terms of availability?

21. What regulatory framework provides you, farmers and chain participators protection?