

Evaluating the efficacy of the New Generation Cooperative business model in uplifting smallholder farmers: A case study

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ABSTRACT

Smallholder farmers are afflicted by various social ills such as poverty, hunger and poor remuneration. Other factors that affect their ability to operate efficiently and hinder them from capitalising on the prevailing opportunities, are a lack of skills, knowledge and education, limited access to agricultural inputs, credit, mechanisation, marketing services, and poor institutional and infrastructural support. Worldwide, governments use agricultural cooperatives as a mechanism for improving the performance of smallholder farmers because of their bargaining power in competitive conditions and shared services of skills and resources, which increase smallholder farmers' efficiency and the efficient use of their available resources.

Unfortunately, a majority of agricultural cooperatives in South Africa have still not been able to yield enormous socio-economic benefits for smallholder farmers and communities, and they face similar challenges as those confronted by smallholder farmers. In the quest to promote smallholder farmers, the first New Generation Cooperative (NGC) was established in Vhembe District Municipality, Limpopo Province, South Africa, to improve the productivity, entrepreneurial capacity and marketing capabilities of smallholder farmers. The NGC also seeks to leverage cooperation and exchange of information among stakeholders, refrains from farmer-free rider behaviours, supports smallholder farmers as entrepreneurs, and provides them with the necessary skills and access to knowledge.

While conducting this study, little was known about the piloted NGC's positive impact. This study aims to evaluate the efficacy of the piloted NGC Business Model in uplifting smallholder farmers in Vhembe District Municipality and to discern whether or not the government should replicate the model for all the smallholder farmers across South Africa.

This study is a qualitative case study, blended with exploratory research design to engage in a constructivist social interaction and constructionism to elicit critical in-depth, real-world insights from smallholder farmers and the NGC implementing partners about all the dimensions of NGC implementation in Limpopo and South Africa

at large. All sixteen smallholder farmers that constituted the NGC pilot project and two implementing partners were included in the sample population. The collected two qualitative data sets were subjected to data analysis accomplished using the Morse and Field approach, Atlas.ti.8 qualitative data analysis software was used to analyse the data.

Despite limitations, the narratives of most of the smallholder farmers and NGC implementers signify that the NGC assists smallholder farmers with inputs provision, linkages with largescale commercial farmers and integration in the larger agribusiness value chains. They explained that the NGC created both the backward and forward links for them. Improved smallholder farmers' marketing capabilities, food security, employment creation and poverty alleviation among smallholder farmers and the surrounding communities indicate that, if given time, an NGC can contribute significantly to uplifting smallholder farmers.

Unfortunately, even if that is the case, it still emerged from the findings that a range of different challenges still mars NGC's efficacy in uplifting smallholder farmers. These challenges are poor farming skills, land dynamics and complexities, insufficient operational capital, NGC governance and management deficiencies and poor linkage with government agencies and other critical actors in the agricultural input and output markets. Hence, if the NGC is to be adopted and replicated across South Africa, these constraints could be ameliorated and new measures for improving NGC efficacy in uplifting smallholder farmers in South Africa be recommended. The study's contribution, therefore, offers the Eight Steps Business framework for NGC implementation that the government can replicate across South Africa. The framework encompasses Step 1: Determine the need for a cooperative and its potential for success, Step 2: Members' Recruitment into NGCs, Step 3: Designation of Standard Operating Rules and Regulations, Step 4: Coordination and Collaboration of Network Support, Step 5: Funding Mechanisms, Step 6: Mentoring Agricultural Cooperatives and Smallholder Farmers, Step 7: Measuring and Improving Performance of Agricultural Cooperatives for Smallholder Farmers, Step 8: Restructuring Choice.

For future research, it is recommended that the implementation of this framework in a new NGC must be evaluated and tested to better the framework if necessary. In

addition to the framework, policy development recommendations to the South African government are: to include women and youth in agricultural development programmes, to consider the transformation of land ownership policies and laws to enable women to hold land ownership to improve efficiencies and to boost the productivity of the agricultural sector, to consider giving incentives such as tax reduction to agro-processing companies and largescale commercial farmers that mentor NGC smallholder farmers, and to establish a central information system that updates farmers on current affairs related to market trends, disease and climate change forecasts and solutions.

Keywords: Agricultural productivity; Agri-support systems; New Generation Cooperatives (NGC); Smallholder Farmers; Socio-economic development.

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DECLARATION

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I, the undersigned, declare that this thesis entitled “**Evaluating the efficacy of the New Generation Cooperative business model in uplifting smallholder farmers: A case study**”, is my own work, and that all the sources I have used or cited have been showed and acknowledged by means of complete references.

I further declare that I have not previously submitted this work, or part of it, for examination at the North West University for another qualification or at any other higher education institution.

18 November 2022

Signature

Date

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LIST OF ABBREVIATIONS

ABSA	Amalgamated Banks of South Africa
AGBIZ	The Agricultural Business Chamber
AGRA	Alliance for a Green Revolution in Africa
AGRIS	Agricultural Science and Technology Information
AIMS	African Institute for Mathematical Sciences
APSP	Agricultural Production Inputs Support Programme
ASP	Agricultural Support Programme
BFAP	Bureau for Food and Agricultural Policy
BMC	BioMed Central
CASP	Comprehensive Agricultural Support Programme
CIASP	Crop Input Access Support Policy
CIPC	Companies Intellectual Property Commission
CK	Company Key number
CLCF	Cooperative Life Cycle Framework
CPA	Communal Property Associations
CSO	Civil society organisations
DAFF	Department of Agriculture, Forestry and Fisheries
DALRRD	Department of Agriculture, Land Reform and Rural Development
DARDLEA	Department of Agriculture, Rural Development, Land and Environmental Affairs
DARDLR	Department of Rural Development and Land Reform
DBSA	Development Bank of South Africa
DEA	Department of Environmental Affairs
DLRD	Department of Agriculture, Land Reform and Rural Development
DRDLR	Department of Rural Development and Land Reform
DSBD	Department of Small Business Development
DTI	Department of Trade Industry
EMC	Executive management committee
FAO	Food and Agriculture Organization
FSIN	Food Security Information Network
FSP	Farmers Support Programme

GAP	Global Agricultural Practices
GDP	Gross Domestic Product
GSARS	Global Strategy to Improve Agricultural and Rural Statistics
ICA	International Cooperative Alliance
ICSB	International Council for Small Business
ICT	Information and Communication Technology
ILO	International Labour Organization
IPMS	Improving Productivity and Market Success
LADA	Limpopo Agribusiness Development Academy
LADEP	Limpopo Agricultural Development Programme
LDA	Limpopo Developmental Agency
LRAD	Land Redistribution for Agricultural Development
MAFISA	Micro Agricultural Financial Institutions of South Africa
MDG	Millennium Development Goals
MERECAS	Mechanisation Revolving Credit Access Scheme
MLN	Maize lethal necrosis
MoA	Memorandum of Agreement
MoU	Memorandum of Understanding
NAMC	National Agricultural Marketing Council
NDA	National Department of Agriculture
NDAFF	National Department of Agriculture, Forestry, and Fisheries
NDP	National Developmental Plan
NGC	New Generation Cooperative
OECD	Organisation for Economic Cooperation and Development
PES	Provincial equitable shares
PLAS	Proactive Land Acquisition Scheme
RESIS	Revitalisation of Smallholder Irrigation Scheme
SADC	South African Development Community
SAM	Social Accounting Matrices
SDG	Sustainable Developmental Goals
SEDA	Small Enterprise Development Agency
SEFA	Small Enterprise Funding Agency
SLAG	Settlement Land Acquisition Grant
SME	Small and Medium Enterprises

SPS	Sanitary and phytosanitary
TA	Traditional authorities
TC	Traditional cooperatives
UN	United Nations
US	United States
VDPRC	Vaguely defined property rights constraints
WBWS	Willing-buyer willing-seller
WTO	World Trade Organisation

CHAPTER 1

CONTEXTUALISATION OF THE STUDY

1.1. INTRODUCTION

This chapter sets the scene for the present study. The background contextualises the study. It illustrates the importance of the agricultural sector and smallholder farmers to food security, employment and poverty alleviation. A brief review of some challenges confronting the smallholder farmers sector was discussed, highlighting the constraints that prevent them from accessing high-value markets and those that contain access to unsustainable markets. The issues combine to give a panoramic view and valuable background for understanding the context for establishing the New Generation Cooperative (NGC) used in this study. This study's rationale is explained before setting the main problem areas that influenced the research. The chapter then states the primary and secondary objectives, the research questions, and the methodology used to reach these objectives. The limitations of the study are listed after that. The chapter then concludes with an outline of the structure of this study.

1.2 BACKGROUND AND LITERATURE OVERVIEW

Governments are increasingly discerning how cooperatives can be best utilised to improve the performance of smallholder farmers because agriculture and global food security have currently gained more prominence on the international development agenda than at any time in history (Messerli *et al.*, 2019:38). This is because so far, more than 60% of the world's population depend on agriculture for survival to thereby signify improving the agricultural performance is critical for improving the overall welfare of the population (The World Bank, 2020:19). Besides welfare of the people, agriculture provides foreign exchange earnings, stimulates growth in other sectors, and contributes to employment, poverty alleviation and food security (Cichello & Rogan, 2017:33; Oluwatayo, 2019:484; Von Bormann, 2019:69). Whether from a production, value chain or human rights perspective, governments, agribusinesses, farmers' organisations, civil society organisations and donors are becoming increasingly determined to develop new strategies

according to their particular visions and interests (Messerli *et al.*, 2019:1; Waters *et al.*, 2021:3). However, despite progress, various burdens of hunger still exist worldwide with the effect that 795 million people still go hungry almost on a daily basis (Fan & Rue, 2020:9). At the same time, more than 2 billion people suffer from micronutrient deficiencies, and over 2 billion are overweight or obese (Fan & Rue, 2020:9).

The wake of increasing climatic variability, as well as the predominantly rain-fed agriculture farming systems continue to be a challenge in the course of achieving food security for the rapidly growing population in the world (Organisation for Economic Cooperation and Development (OECD), 2020:14; Food and Agriculture Organisation of the United Nations (FAO), 2018:32). Additionally, the market environment is also continuously exposed to a continuum and latitude of changes, resulting in uncertainty, barriers and opportunities (Kilelu *et al.*, 2017:269; Ola & Menapace, 2020:1). Globalisation and technology in particular, are rapidly changing trends in consumer behaviour and their evolving dietary needs, impacting on the way agribusinesses conduct their business (Cornelius *et al.*, 2019:86; Fan & Rue, 2020:46; Tegegne *et al.*, 2013:2). Such unfolding changes present opportunities for smallholder farmers to become integrated into a growing diversity of agrifood value chains and also drives farmers to consider market-oriented production (Greenberg *et al.*, 2018:12). Unfortunately, the facts suggest that despite the attempts made by smallholder farmers, they have also faced significant challenges and have not been entirely successful (Cornelius *et al.*, 2019:86; Fan & Rue, 2020:46). Based on this background, the subsequent section will concentrate on smallholder farmers in South Africa.

1.2.1. Smallholder Farmers in South Africa

Smallholder farmers contribute significantly to South Africa's economy because most people live in rural areas. Smallholder agriculture is a primary source of income, food security, and a driver of poverty alleviation (Cichello & Rogan, 2017:1; Greenberg *et al.*, 2018:42). Agriculture holds the position of the seventh most significant sector in the South African economy; however, its contribution to the Gross Domestic Product (GDP) is relatively low at 3.10%. The sectors with the

highest GDP contribution are the Services, Trade and Finance, with a GDP contribution of 22.20%, 21.00%, and 15.30%, respectively (Business Tech, 2019:1; Statistica, 2020:49). Although the GDP contribution of the agricultural sector is meagre, agriculture's employment contribution to the economy of South Africa is almost double its direct GDP contribution (5.2%). This is not the case with the other economic sectors (Business Tech, 2019:1). Therefore, boosting the agricultural sector could lead to higher sectoral employment. As smallholder farmers are part of the agriculture sector in South Africa, they also have the potential to contribute directly to the amelioration of the problems facing the agricultural sector. In other words, smallholder farmers play a significant socio-economic role in the South African economy. Smallholder farmers also play an essential role in economic development, particularly in ensuring food security, job creation, and poverty alleviation (Mutero *et al.*, 2016:40). In sub-Saharan Africa, an estimated 70% of smallholder farmers rely mainly on agriculture as the mainstay of their livelihoods (Kom *et al.*, 2020:2). Bryceson (2019:67), as well as Kom *et al.* (2020:2), agree that smallholder farming is the driving force behind rural economic development and welfare for poor communities. These smallholder farmers are therefore an instrument of food security, employment and poverty alleviation through the agricultural sector, as shown in the following sections.

1.2.1.1. Food security

South African agricultural sector provides affordable, healthy food to support local populations' nutritional needs, decreases household hunger, empowers women, and boosts livelihoods (Nwafor & Van der Westhuizen, 2020:2). Consequently, many of the poorest people in rural areas regard smallholder farming as an essential strategy to escape food poverty, making farming a primary livelihood option in rural areas (Oluwatayo, 2019:485). However, in 2017, 6,8 million South Africans still experienced hunger, and although it declined from 13,5 million in 2002, hunger still affects 1,7 million households across the country (Chakona & Shackleton, 2019:87; Stats SA, 2019b:8). Increasing smallholder farmers' productivity (and income) can improve food security. It also requires improving smallholder farmers' access to land, inputs, knowledge, financial support, markets and opportunities (Hanoman, 2018:27; United Nations, 2015:7). As smallholder farmers produce food to reduce

the risks of food insecurity, they also create employment opportunities for themselves, families and the surrounding communities.

1.2.1.2. Employment and poverty alleviation

In light of the massive unemployment situation in South Africa, which reached its peak of up to 32.6% in 2021 (Stats SA, 2021:7), one of the aims of the South African National Developmental Plan (NDP) of 2012 aims to create almost a million decent rural jobs in agriculture by 2030 (The Presidency National Planning Commission, 2012:8; Von Bormann, 2019:25). The Department of Agriculture, Forestry and Fisheries (DAFF) (2015:9) highlights that smallholder farmers largely engage in labour-absorptive production practices and therefore have the potential to employ many people. This can, in turn, contribute to reaching employment targets set by the government. Netshivhodza (2017:58) emphasises that farm workers earn the lowest wages among all formally employed individuals in the country. Despite their low earnings, the agricultural sector plays a significant role in poverty reduction (Cornelius *et al.*, 2019:9; Hanoman, 2018:27). Despite the low wages, there is a clear association between food security and poverty alleviation, which can be attributed to the agricultural sector (Bhuyan *et al.*, 2020:825; Mahadevan & Hoang, 2016:179). This association underscores the significant role of the agricultural sector in poverty alleviation and food security, particularly through the enhancement of smallholder farmers' performance and their employment contributions (Cornelius *et al.*, 2019:95; Kiprutto *et al.*, 2015:2; Oluwatayo, 2019:487). Unfortunately, despite the fact that the smallholder farming sector addresses socio-economic challenges of unemployment, poverty, and food security, empirical evidence suggests that the majority of smallholders struggle to achieve satisfactory performance and desired outcomes due to several dynamics and complexities (Ola & Menapace, 2020:1).

1.2.2. Smallholder Farmers' Operational Complexities

Most smallholder farmers in South Africa face enormous dynamics and complexities that constrain their seamless transition from subsistence to commercialised agricultural production (Nwafor & Van der Westhuizen, 2020:1; Zikhali *et al.*,

2020:45). The market integration processes can explain these complexities, globalisation and agro-industrialisation, which are supposed to benefit smallholder farmers. Instead, they exclude smallholder farmers from high-value markets (Fanadzo & Ncube, 2018:436; Ola & Menapace, 2020:1). Even amid such dynamics, there is still a consensus among government departments, agencies, donors and municipalities that smallholder farmers are a pillar of food security, employment, poverty alleviation and women empowerment (Dioula, 2014:6; Oluwatayo, 2019:492). Smallholder farmers are recognised further as critical for leveraging food production to lower food prices and improve food security by increasing access to food by lower income groups (Oluwatayo, 2019:492). Similar views are also shared by Mkhonto and Musundire (2019:47) and Nwafor and Van der Westhuizen (2020:2) who concur that agriculture, specifically smallholder farming, is a crucial driver of economic development in South Africa. However, smallholder farmers in South Africa face various constraints along the value chain, such as production and marketing difficulties, which prevent them from enjoying the benefits of agricultural commercialisation (Louw & Jordaan, 2016:286; Nwafor & Van der Westhuizen, 2020:3).

Even for smallholder farmers that manage to gain access to relevant markets, complexities still arise from the fact that smallholder farmers cultivate land sizes of 1 to 5 hectares. Land size of this average is very small and limits farmers in their quests to expand agricultural output (Deloitte, 2017:25; Fanadzo & Ncube, 2018:437; Von Loeper *et al.*, 2016:748). In contrast, commercial farmers, as counterparts of smallholder farmers, often utilise the most advanced production technology and operate on larger farms which are well organised and situated on prime land (Greenberg *et al.*, 2018:10; Khapayi *et al.*, 2018:376). These commercial farmers produce most of the marketed agricultural products on 82 million hectares, while smallholder farmers produce 14 million hectares of the former homelands (DAFF, 2020:5; Greyling *et al.*, 2015:2;). This signifies the inability of smallholder farmers to compete in lucrative markets is a significant cause for concern (Mutero *et al.*, 2016:52; Oluwatayo, 2019:486). Yet, in addition to challenges associated with access to good quality land, smallholder farmers also lack access to decent inputs, farm machinery and equipment, smart technologies and a good water supply source, including irrigation. Smallholder farmers also experience constraining

dynamics associated with electricity, access to capital markets, agricultural research, extension services, lack of transport as well as information and communication (Fanadzo & Ncube, 2018:48; Louw & Jordaan, 2016:290; Khapayi *et al.*, 2018:375; Nwafor & Van der Westhuizen, 2020:14; Oluwatayo, 2019:489). Such challenges limit the smallholder farmers' abilities to take risks and reduce the scope for realising a profit, thereby depriving smallholder farmers' aspirations to address issues of food security, poverty alleviation and unemployment (Mphafi *et al.*, 2019:6861).

Smallholder farmers' challenges worsen by their limited political voice in influencing agricultural policies, as well as other institutional biases that limit their market participation and thereby threaten the implementation of sustainable agricultural development (Kilelu *et al.*, 2017:270). By contrast, commercial farmers participating in high-value or modern markets show higher earnings per hectare or kilogram marketed than those participating in traditional markets (Louw & Jordaan, 2016:286). Since agriculture's role in poverty alleviation and food security works through employment creation, higher real wages, farm income, and stable food prices (Kirsten, 2016:17), it is hence imperative that smallholder farmers acquire substantial support so that they can sustain paying out decent wages (Musundire & Mkhonto, 2019:47). Such a view echoes NDP's (2013:225) estimation that agriculture can create 1 million jobs by 2030. Such estimation is based on the job creation potential of the high-value commodities and the accelerated productivity of smallholder farmers who largely engage in labour-absorptive production practices. The NDP for 2030 therefore put strategic plans in place to create decent employment for the agricultural sector (DAFF, 2015:33). Given the dynamics and complexities that hinder the substantial socio-economic contributions of smallholder farmers to the economy, South Africa has been actively formulating and implementing diverse programs since 1994. These initiatives aim to provide support and enhance the performance of smallholder farmers, with the ultimate goal of improving their economic impact.

1.2.3. Governmental Support to Smallholder Farmers

In the quest to address the agricultural and operational dynamics that smallholder farmers face, a series of government programmes have been adopted and implemented to support smallholder farmers. Such programmes include initiatives that aim to improve better market access by smallholder farmers (Zikhali *et al.*, 2020:45). Other programmes include the Farmers Support Programme (FSP) and the Comprehensive Agricultural Support Programme (CASP). In addition, other adopted and implemented land-related programmes encompass the Settlement Land Acquisition Grant (SLAG), Land Redistribution for Agricultural Development (LRAD), and the Proactive Land Acquisition Scheme (PLAS) (Fanadzo & Ncube, 2018:438; Greenberg *et al.*, 2018:66; Hanoman, 2018:27; Zikhali *et al.*, 2020:45).

Literature on FSP by the government states that it started in 1986 and championed to assist smallholder farmers or rural households in improving their agricultural production in the former homeland areas of South Africa (Greenberg *et al.*, 2018:49; Ntlou, 2016:11). It also aimed to rectify the imbalances of inequitable access of black farmers to agro-support systems and to provide fair access to the market, thus improving economic efficiency (Ntlou, 2016:11). However, FSP's implementation encountered many problems, such as outdated extension methods and not being adapted to changing international extension approaches. Through such extension approaches, farmers were encouraged to use inputs at a too-high level against their actual achievement to lure many into debt. These were also accompanied by the poor provision of extension services for them in which the extension programmes did not accurately respond to the needs of the smallholder farmers (Greenberg *et al.*, 2018:90; Majola, 2021:16; Ntlou, 2016:11; Rudolph *et al.*, 2021:46).

Following these problems, Comprehensive Agricultural Support Programme (CASP) was then initiated in 2004 to support land reform, restitution and redistribution beneficiaries. It also aimed to establish a financial mechanism to support farmers during their start-up phase, called the Micro Agricultural Financial Institutions of South Africa (MAFISA) (Greenberg *et al.*, 2018:15). During the early years of the CASP implementation, Fanadzo (2018:438) states that reports from Aliber and Hall (2012), as well as from Greenberg (2010), criticised CASP on the

basis that the beneficiaries that received support from CASP in 2009 accounted for less than 1% of smallholder farmers. Secondly, these focused support areas of the programme were not adequately explained to the farmers (Fanadzo, 2018:438; Xaba & Dlamini, 2015:153). They argued that this implies the bulk of state funding for smallholder farmers went to less than 0.02% of the intended beneficiaries. CASP also left many farmers who received its MAFISA indebted (Majola, 2021:16; Parliamentary Monitoring Group, 2008:3). However, recent reports of 2017 to 2019 by the DAFF show that farmers are happy with the CASP on the basis that through the extension services received on-farm infrastructure, farmers' incomes increased, and they were able to provide more jobs, and 85% of the CASP beneficiaries now have access to markets (DAFF, 2019:34).

CASP's implementation was accompanied with the implementation of SLAG, LRAD and PLAS programs that are policy initiatives to support smallholder farmers in relation to land restitution, land redistribution and the leasing of state land to beneficiaries led by the Department of Rural Development and Land Reform (DALRRD) (Dickinson, 2020:150; Grain SA, 2018:29; Greenberg *et al.*, 2018:66). SLAG was active from 1995 till 2000, LRAD was active from 2001 till 2010 and PLAS has been in action from 2006 to date (Netshipale *et al.*, 2017:58). The SLAG program was criticised for slow implementation and providing small grants of just R16,000 to beneficiaries to purchase land (Aliber, 2019:7). In response to such criticisms, LRAD which replaced the SLAG programme gave higher grants of R20,000 to R100,000. However, the programme still did not provide all the necessary support to poor rural farmers by offering grants to emerging farmers and neglecting farm support (Staal, 2019:21). Both the LRAD and the SLAG programs gave beneficiaries title deeds as contrasted to the PLAS programme where title deeds remained with the government and beneficiaries leased land from the government (Mukovhe & Moyo, 2019:70). There is a near-consensus that South Africa's land reform is unsuccessful. The South African programmes are widely criticised, and there is a notion that the government has adopted an agribusiness model that promotes only market largescale production (Fanadzo & Ncube, 2018:438; Kepe & Hall, 2018:133). Thus, for smallholder farmers to benefit, some critics argue that South Africa needs to improve land tenure policies (Cousins, 2013:117; Fanadzo & Ncube, 2018:438; Rusenga, 2020:383).

However, despite the criticism of SLAG, LRAD and PLAS programs, Communal Property Associations (CPAs) were still introduced and established to meet the challenges faced by the land restitution process (Parliamentary Monitoring Group, 2018). The CPAs are landholding institutions established by the DARDLR in all South African provinces. They are registered under the Communal Property Associations Act No 28 of 1996 as vehicles for land reform in South Africa. However, the Centre for Law and Society (2015:19) reported that these institutions face various challenges. Although the CPAs can do work, especially for poorer members, they experience socio-economic pressures leading to the poor implementation of the CPA Act (Parliamentary Monitoring Group, 2018; DALRRD, 2021:13). These challenges stem from CPAs being under-resourced legal entities when compared to sectional title estates and companies and also tend to receive very limited support and oversight from the government (The Centre for Law and Society, 2015:29; DALRRD, 2021:13). Furthermore, a lack of communication between government officials and CPAs hinders the exchange of insights regarding the successful implementation of agricultural programs initiated by the CPAs. In some areas, traditional leaders also tend to undermine the CPAs because they see them challenging their authority.

Despite these limitations, some studies commend the implementation of land reform programs in South Africa (Antwi & Oladele, 2013:281; Rusenga, 2020:383). At the same time, other studies highlight complexities that develop from providing land to beneficiaries without the necessary production support programmes. Such arguments highlight that commercial farms are too large for emerging farmers with little or no experience in commercial farming. This results in the underutilisation of the agricultural land resource and, subsequently, low productivity of emerging farmers (Dickinson, 2020:150; Gumede, 2014:53). This view is supported by Zantsi *et al.* (2021), who propose a methodology to determine a viable farm size for emerging farmers.

Although land reform programmes provide jobs and a source of income to the community members, these programs are still subjected to significant constraints like a lack of finance, reliable water sources, irrigation infrastructure, farming

equipment and machinery (Greenberg *et al.*, 2018:7; Gumede, 2020:2). There are also challenges as a result of poor fencing, poor-quality farm inputs and drought. All these tend to affect the quantity and quality of agricultural outputs produced by smallholder farmers and their capabilities to tap into high-value markets (Von Loeper *et al.*, 2016:747). In light of these consequences, Devaux *et al.* (2018:100) and Louw and Jordaan (2016:308) advise that promoting smallholder farmers' capabilities to tap opportunities from the high-value market could be a solution for the country's developmental problems. It can leverage quests to alleviate poverty and unemployment while enhancing food security. Studies conducted by Ahmed and Mesfin (2017:2), as well as Okem and Stanton (2016:15) suggest that government intervention through the establishment of cooperatives can serve as a means to promote smallholder farmers. This approach is seen as a strategy to address the existing socio-economic challenges faced by smallholder farmers and achieve positive outcomes. Agricultural cooperatives offer various benefits to smallholder farmers, such as enhanced collective bargaining power and resource sharing, which can mitigate market risks (Okem & Stanton, 2016:15). The socio-economic advantages initiated by cooperatives have increasingly motivated governments worldwide to embrace their establishment as a mechanism to improve the performance of smallholder farmers.

1.2.4. Cooperatives in South Africa

International Cooperative Alliance (ICA) defines a cooperative as “an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise” (Department of Small Business Development (DSBD), 2019:6). About 3 million cooperatives exist worldwide. These cooperatives attract a significant membership, with at least 12% of the global population belonging to one or more of these cooperative entities (International Cooperative Alliance (ICA), 2021:2). The majority of cooperatives operate within the agricultural sector (Eum, 2017:19; Merrien, 2014:1). Globally, cooperatives generate an overall annual revenue of US\$3 trillion (Merrien, 2014:1), and the three hundred largest

cooperatives and mutuals, generate 2,034.98 billion US dollars in turnover (Srinivasan, 2019:157).

Generally, cooperatives have always played a key role in promoting and developing small businesses (Francesconi & Wouterse, 2019:142). They are expected to provide jobs, mobilise resources, generate investment and contribute to the economy of a country (Berton *et al.*, 2018:61; Grashuis & Su, 2019:77). Uniquely, among all organisational models, the cooperative model is an effective way of doing business that involves and accounts for multiple human needs and values all individuals' decision-making through mutual self-help (Böhm *et al.*, 2020:338; Mushonga *et al.*, 2019:263). The establishment of cooperatives is a valuable means to poverty alleviation and development has been widely acknowledged, and it is for this reason that they have been promoted (Berton *et al.*, 2018:61; Mangnus & Schoonhoven-Speijer, 2020:99). The ICA (2017:2) stresses the economic importance of cooperatives as the institutional framework for local communities to gain control over productive activities from which they derive their livelihoods. This is based on their ability to help build stronger communities. Since most cooperatives are regionally and community-based, their surplus revenue and investments remain within the local communities (Cameron *et al.*, 2020:649). In other words, every rand invested in a cooperative has a significant multiplier effect within the community, and many people can gain employment from such unfolding opportunities (DSBD, 2019:196).

Additional to community development contribution, cooperatives have proven to be more stable and durable than private businesses, especially during economic crises, in which cooperatives show more resilience than other forms of businesses (Dave, 2021:1). Small enterprises form cooperative alliances to strengthen their position to compete with big businesses but also contribute to community development (Department of Trade Industry (DTI), 2012:22; International Cooperative Alliance (ICA), 2017:16; Van der Walt, 2002:459; Van der Walt, 2008:133). The global literature shows that under the competent leadership of cooperatives, smallholder farmers can pursue vitally important entrepreneurial programs that could enhance economic development and growth in a country (Böhm *et al.*, 2020:338; Mangnus & Schoonhoven-Speijer, 2020:99). Cooperatives

help combat smallholder farmer's challenges by providing agricultural inputs, output marketing and credit services to their members (Gundani *et al.*, 2018:105; Okem & Stanton, 2016:15). The expectation is that, farming cooperatives acting as agents would strategically be compelling partner organisations that otherwise facilitate aggressively viable economic advantages in the aggregate economy (Grashuis & Su, 2019:77).

Similarly, agricultural cooperatives in South Africa are instrumental in uplifting smallholder farmers and improving their productivity (Eum, 2017:32; Okem, 2016b:82). Cooperatives in South Africa further bolster smallholder farmers' capabilities, increasing their income, reducing rural poverty, and improving food security (Ahmed & Mesfin, 2017:2; Okem & Stanton, 2016:15). These cooperatives facilitate market expansion and value chain integration through engagement in agro-processing activities (Francesconi & Wouterse, 2019:142). Furthermore, they provide smallholder farmers with opportunities that would be otherwise inaccessible on an individual basis, such as helping them secure land rights and collectively negotiating better prices for seeds, fertilisers, transport and storage.

The majority of cooperatives around the globe are doing well. Empirical research shows that has not been the case in South Africa (Mangnus & Schoonhoven-Speijer, 2020:99; Okbandrias & Okem, 2016:71). While there are cooperatives that contribute to the development of small businesses, it is important to note that the majority of cooperatives in South Africa are survivalist start-up enterprises. These cooperatives often require significant support to ensure their sustainability and long-term success (Rena, 2017:2). The enabling legislative environment and government incentives increased cooperative formation from 4,000 cooperatives in 2004 to 132,000 cooperatives in 2016 (Mushonga *et al.*, 2019:259). However, the cooperative industry's growth pattern in South Africa has shown a rise and decline, raising doubts about these enterprises' overall effectiveness in promoting their members' economic well-being. This is reflected in a study by Mushonga *et al.* (2019:273) that highlights the cooperatives' mortality rate in South Africa to be very high and exhibits an average of 88%. DTI describes the causes of cooperatives' high mortality rate (2012:82), Thaba and Mbohwa (2015:23), Okbandrias and Okem (2016:78), Mushonga *et al.* (2019:259), as well as Van der Walt (2008:413) to arise

from poor levels of education and training, the age of their members and little opportunity to cross-pollinate with successful entrepreneurs. Mushonga *et al.* (2019:259) reveal other challenges associated with a lack of support and coaching among suppliers of products and services to enable cooperatives to be effective, non-awareness of government incentives and restricted access to finance and markets. Such constraints mutate with other impediments like lack of commitment to complying with legislation and lack of monitoring and evaluation to undermine the effectiveness of cooperatives. Thaba and Mbohwa (2015:23) insinuate other constraints arising from directors' lack of accountability and transparency and failure to match the available support with cooperatives' critical needs. As Mushonga *et al.* (2019:263) contend, all such impediments are often further exacerbated by the absence of clear direction or a mandate on cooperative development by provinces, lack of coordination between national and provincial departments, as well as other government agencies. Combined with a lack of technical inputs and institutional support, all these render cooperatives less effective for leveraging the effective performance of smallholder farmers.

Such cooperative challenges are also analogous to the challenges confronted by individual smallholder farmers to complicate thereby quests of using cooperatives to bolster the maximisation of their potential in uplifting smallholder farmers (Hutton *et al.*, 2021:20). Many cooperative members do not know what a cooperative enterprise is. They do not practice the values and concepts of cooperative enterprises because they do not know or understand them (Okbandrias & Okem, 2016:79), instead most cooperative members are concerned about receiving government support (Okem, 2016b:263). Therefore, unsurprisingly, these cooperatives fail shortly after the funds have been depleted by the members (Gotyi, 2019:45). The long-term viability of these cooperatives outside of government funding is questioned, with the majority of them only existing on paper with little substantial economic activity on the ground (Mushonga *et al.*, 2019:259). They suggest that to be sustainable, cooperatives should strive for complete implementation of cooperative movement concepts and aims through a bottom-up approach to cooperative establishment, thus removing their overdependence on government (Mushonga *et al.*, 2019:259). The decision to form the cooperative must be from the members and not imposed by the government (Okem, 2016a:ii). In other

words, cooperatives should be stand-alone organisations rather than government-dependent entities.

The government will always play a critical role to play in uplifting cooperatives, especially in coordinating these groups and for start-up funding (Von Loeper *et al.*, 2016:759; Gotyi, 2019:45). However, cooperatives' detachment from government control and handout mentality will mitigate the culture of entitlement and help them move towards the values of independence and self-reliance (Okem, 2016a:ii; Gotyi, 2019:45). Hence, quests to encourage individual farmers and strengthen cooperatives' production and marketing for their benefit may require government and other institutional organisations to seek new ways to promote the development of smallholder farmers through cooperation (DAFF, 2019:20; Wouterse & Francesconi, 2017:1). In addition, the government needs to address farmers' constraints along the value chain, and create an enabling environment that will empower smallholder farmers to produce high volumes of good quality products consistently and sustainably (Louw & Jordaan, 2016:304). These initiatives may require the establishment of a more supportive policy environment to remove the obstacles to the effective formation and management of cooperatives, infrastructure development, access to financial and credit services, improvement of markets, and the provision of effective training and extension to provide more extensive and dynamic opportunities for smallholders (Grashuis & Cook, 2017:5). It was largely for these reasons that DSBD and DTI developed the NGC framework which is now piloted in South Africa.

1.2.5. New Generation Cooperatives

The NGC is a widely adopted form of farmer-owned enterprise that originated in North Dakota and Minnesota, United States of America (USA), in the early 1970s (Schank & Fulton, 2015:3). These cooperatives were very active in the '90s, which this period was also known as the cooperative's fever as the USA government used them as a developmental strategy (Francesconi & Wouterse, 2019:142). The 1993 to 1997 period proved to be the height of cooperatives fever, with new NGC registrations surging up to 24 in 1995. However, the number of new NGC registration decreased to three in 1998 and seven in 1999 (Francesconi & Wouterse,

2019:142; Grashuis & Cook, 2018:629). Other NGCs could not even kick-off due to various reasons. Due to this limitation, there is not much literature on NGC including recent literature on NGC development. As a result, the majority of NGC statistics are available for the late 1990s to the early 2000s, reflecting the peak period of their prominence and data collection.

Nonetheless, Dwipriyoko (2018:56) describes the NGC as a business arrangement that encourages agricultural producers and processors to expand the scope of their businesses. It is a hybrid between traditional cooperatives (TC's) and limited companies' legally incorporated business arrangements (Grashuis & Cook, 2017:135; Van Dijk, 2015:1) that gives its members control of the business by using a system of delivery rights and obligations to encourage business loyalty and provide a form of vertical integration (Schank & Fulton, 2015:1; Dwipriyoko & Widjajani, 2020:3). The formation of NGCs constituted an attempt to deal with external pressures such as reduced commodity margins and increased income volatility in the agricultural sector (Dwipriyoko, 2018:56; Schank & Fulton, 2015:1). Moreover, producers who constituted NGCs were also interested in owning their production facilities to capture the value-added of processing commodities grown in their farms (Dwipriyoko, 2018:56).

The three most valuable advantages for producers involved in NGCs are to, firstly, achieve benefits such as wealth and market power for themselves and other farmers through the pooling of their resources (Dwipriyoko *et al.*, 2019:3), and also by adopting more marketing strategies for their products (Galatoulas *et al.*, 2018:38). Secondly, through collaboration, producers can access better resources to increase or maintain the number of jobs in the local community (Francesconi & Wouterse, 2019:142). Thirdly, the collaboration of producers also tends to lessen the individual risk by having it spread between all the members of the cooperative (Dwipriyoko, 2018:56). While all agricultural cooperatives traditionally focus on the raw commodities produced by farmers, NGCs can capture extra profit through the value-added processes that the cooperative carries out (Dwipriyoko, 2018:56).

The NGCs vertically integrate by, firstly, providing farmers with higher earnings by adding value to their basic raw commodities, and processing and forward linking to

the marketplace by selling processed products instead of raw commodities (Galatoulas *et al.*, 2018:38; Schank & Fulton, 2015:2). Secondly, NGCs are expanding into value-added businesses by establishing innovative joint ventures and strategic alliances with successful marketing firms (Grashuis & Cook, 2018:629). Converting a commodity into a value-added product was more profitable than selling it unprocessed. As a result, the focus was not only on promoting the products of the members but also on processing them to add value and provide the products with a competitive edge in the market (Gotyi, 2019:57). This needed a significant investment in processing infrastructure (Francesconi & Wouterse, 2019:144). Therefore, NGC is a “type of” cooperative created for farmers to achieve the same goals as a TC but has been known to integrate characteristics of corporations and other organisational structures such that the cooperative’s operations and marketing of products are a means of helping producers stabilise income and provide financial security (Cook, 2018:12; Galatoulas *et al.*, 2018:38).

Such similarities are reflected in the key attributes of NGC that are consistent with the TCs because both TCs and NGCs seek to satisfy members’ common economic needs and ambitions while respecting the seven principles of co-operatives. These principles include open and voluntary membership; democratic member control; members’ economic participation; autonomy and independence; education, training, and information; cooperation among cooperatives; and concern for the community (Koutsouris & Zarokosta, 2020:181). In both TCs and NGCs, earnings are distributed to members based on patronage and the board of directors is appointed by the members (Dwipriyoko, 2018:57; Schank & Fulton, 2015:2). In general, members of both TCs and NGCs play active roles in their cooperatives. They benefit by owning part of the cooperative, having control over investments through voting rights and sharing the profits, which are distributed in proportion to patronage or residual earnings from market transactions the cooperative undertakes (Schank & Fulton, 2015:2). However, the fundamental characteristics that distinguish NGCs from TCs are that in NGCs, members purchase delivery rights, also known as delivery shares, that require them to supply a fixed quantity of an agricultural product; membership is limited; and the value of delivery rights fluctuates in response to market forces (Dwipriyoko, 2018:2). NGCs also allow small businesses to grow and survive without government handouts by implementing self-help

measures. Nevertheless, as highlighted below, the significant challenge faced by the South African TC extends beyond these initiatives alone (Gotyi, 2019:45). The attempt of this study to employ NGC as a means to tackle these challenges serves as the underlying motivation for this research.

1.3 RATIONAL FOR THE STUDY

The study's rationale holds significant importance as it investigates an area that has received limited attention from previous research. Most studies examine the importance of improving smallholder farmers' performance (Bellora *et al.*, 2017:33; Hutton *et al.*, 2021:20; Khwidzhili & Worth, 2016:22; Kirsten *et al.*, 2019:5), but only a few assess how agricultural cooperatives can be used to achieve that. It is such a gap that this research addresses to render the study of significant importance for offering new insights on how cooperatives, specifically New Generation Cooperative business framework, can be used and improved to uplift smallholder farmers. Such a view is accentuated in the fact that cooperatives are trusted to be vehicles that can promote smallholder farmers that often face various challenges to undermine thereby their contribution to the overall socio-economic growth and development of the country (Nwafor & Van der Westhuizen, 2020:3; Von Loeper *et al.*, 2016:748).

Among the few studies conducted on cooperatives, Cameron *et al.* (2020:649), Grashuis (2020:205), Kanyane and Ilorah (2015:9) as well as Momo-Lekane (2016:63) attempt to broaden the understanding of cooperatives and the role they play in economic development and in promoting smallholder farmers. Other studies also explore improving production efficiency and solving market-related challenges facing smallholder farmers (Adeyemo & Silas, 2020:129; Mangnus & Schoonhoven-Speijer, 2020:104). However, none of these studies elucidates on how New Generation Cooperatives can be holistically used to leverage the sustainability of smallholder farmers under a cooperative structure (DAFF, 2019).

The quest to respond to such a gap constitutes the rationale of this study, for it will evaluate not only the impact of NGC but also its major impediments and the improvement measures that can be adopted. Such an approach will induce outcomes that will impact influence not only successful NGC implementation but

also its success in other countries around the globe that would intend to use NGC to improve the performance of their smallholder farmers. This is because the outcome of the study will improve the better understanding of NGC framework by offering a new framework that government and smallholder farmers can replicate in the formulation of cooperatives that can create the desired socio-economic values. It intends to do this by exploring the benefits and success factors of the newly-formed NGC in South Africa as it is being implemented.

The study also answers how the South African NGC uplifts smallholder farmers. The study further aims to describe key features of this NGC and to position all of these factors in the context of the co-operatives theory, thus contributing to the body of knowledge, most especially in entrepreneurship, smallholder farming, cooperatives development and the cooperatives theory. Such information will also offer critical insights that the implementers of NGC require for assessing whether NGC implementation is a success for it to be replicated across South Africa. This is because the South African and The Netherlands governments have contributed enormous resources, including monetary investment, to ensure that the NGC fulfils the intervention objectives.

Thus, this study is important because it will answer whether the NGC fulfilled such intervention objectives or not. In other words, the findings and recommendations of this study will be useful for policymakers in the DSBD, Limpopo Developmental Agency (LDA), as well as other cooperative and smallholder farmer developmental agencies in South Africa. The study's outcomes are also important to the South African Department of Economic Development, DTI, Department of Agriculture, Land Reform, and other stakeholders for discerning how the agricultural policy of using cooperatives to improve smallholder farmers' performance can be designed and implemented to initiate and catalyse rural socio-economic transformation. As the study influences successful NGC implementation, it will also influence the improvement of the performance of smallholder farmers to address issues of food security, poverty, unemployment and lack of decent work.

In addition to these reasons, the detailed rationale for this study is provided in the problem statement below.

1.4 RESEARCH PROBLEM

Not much is known about the impact of the NGC introduced to the Limpopo Province to improve smallholder farmers' performance and create jobs to catalyse rural socio-economic transformation. The Organisation for Economic Co-operation and Development (OECD) (2020:14) and Food and Agriculture Organisation of the United Nations (FAO), (2018) put much emphasis on the promotion of the agricultural sector with an argument that its success can stimulate rural development and create employment opportunities. In that context, the pursuance of economic development through smallholder farmers has been on top of the South African government's agenda for many years now (Messerli *et al.*, 2019:66). The South African government's past efforts to improve smallholder farmers' performance have been reflected in the implementation of farmer support programmes such as the FSP, CASP and MAFISA to achieve that. It also includes land programmes like SLAG, LRAD and PLAS. Unfortunately, these programmes have not yielded the much-desired outcomes to improve smallholder farmers' effective performance (Majola, 2021:16; Mapiye *et al.*, 2018:1711; Ntlou, 2016:11).

The initial rollout of MAFISA faced criticism for not being effective in creating jobs and for leaving farmers with high debts due to the unacceptably high interest rates charged on loans (Kirsten *et al.*, 2019:1). Such a view echoes Gwebu's (2018:55) revelation that the propagated positive impacts of microfinance are also contested by other stakeholders on the basis that it does not reach the poor and when it does, it rather destroys their resourcefulness. This is because of repayment difficulties which inhibit the acquisition of vital resources. However, Oladele and Ward's (2017:1) study concluded that microfinance significantly changes financial, social, natural, human, physical and social livelihood assets after MAFISA support. But to achieve that, DAFF (2017:8; 2019:11) suggests considering a holistic approach to offering smallholder farmer support. At the same time, there have also been evident efforts further made by the government and private donors who continue to invest a substantial number of resources, including cooperatives development in a concerted effort to stimulate socio-economic development in communities and enhance the impact they have in promoting smallholder farmers (Berton *et al.*, 2018:61; Okem & Stanton, 2016:10).

Despite such huge investments, it emerged that, instead of promoting smallholder farmers, cooperative enterprises tend to face the same challenges that are confronting the smallholder farmers (Mushonga *et al.*, 2019:259; Okbandrias & Okem, 2016:78; Thaba & Mbohwa, 2015:23). This causes more complexities because remedied challenges at the smallholder farmer levels often remain unaddressed at the cooperative level. The implication is that 88% of these cooperatives are reported not to be functional, and only 132 of the remaining 12% submit their returns to the Registrar of Companies (Mushonga *et al.*, 2019:259). The high levels of cooperatives' mortality continue to be a cause for concern and require an analysis of various strategies aimed at addressing them (Gundani *et al.*, 2018:110; Khwidzhili & Worth, 2016:22). Hence, to promote the smallholder farming sector, Devaux *et al.* (2018:100) emphasise that the environment in which smallholder farmers operate must be conducive to their participation in high-value markets. But Von Loeper *et al.* (2016:747) and Louw and Jordaan (2016:286) reveal that services that should be available to these businesses have not been fully accessible. On the other hand, Francesconi and Wouterse (2019:142) advise that if the government wants to promote the mainstream of smallholder farmers, it is critical to render services available by linking them with potential agricultural markets in the agribusiness value chain. In this way, it will revive the agricultural sector and turn it into a highly competitive sector in the country (Khapayi *et al.*, 2018:376).

Despite the potential adoption of these improvement initiatives, DAFF (2017; 2019) highlights that, in South Africa, there is currently no existing structure that offers holistic support to smallholder farmers. Instead, they reveal that different and various programmes devised to support smallholder farmers are often implemented in silos. Such a view is consonant with the arguments of Poole (2017:16) and Fanadzo and Ncube (2018:441) that although strengthening market linkages is an obvious strategic necessity, attempts to do so may only induce limited success if smallholder farmers' productivity levels are low. To reverse that, they propose that smallholder farmers' productivity and market linkages must be simultaneously improved and strengthened. Unfortunately, no significant efforts have yet been undertaken to do that to thereby imply if NGC is to be implemented throughout South Africa, it may still not induce many positive impacts on leveraging effective

smallholder farmers' performance. Linking farmers to high-value markets is of significant importance because it strengthens market linkages and aids the effective implementation of a developmental policy. Resultantly, the positive effects that high-value market participation has on the household income and productivity, support rural economic growth and development (Ola & Menapace, 2020:2).

Given such dynamics, most scholars like Hutton *et al.* (2021:20), Kirsten *et al.* (2019:1) and Bellora *et al.* (2017:33) agree with the proposal made by DAFF (2017; 2019) that the most efficient way to promote smallholder farmers is through a holistic approach that touches all the critical drivers of cooperatives as well as smallholder farmers' effective performance. As DAFF (2017; 2019) notes, such quests to improve the performance of cooperatives and smallholder farmers motivated the introduction of other institutional arrangements that can help. Such new institutional arrangements also entailed the formation of the first NGC in South Africa. This is because the unprecedented pace of NGC start-ups and their apparent success as developmental tool in the USA and Brazil have raised substantial interest in duplicating and tailor-making the phenomena in other countries as well as in South Africa (BFAP, 2021:6). NGC has been primarily used in agricultural production and by producers involved in emerging niche markets as well as in more traditional value-added activities with the desire to develop new value-added products and gain access to an increased share of the consumer's food dollar (Dwipriyoko, 2018:56). Unfortunately, as most smallholder farmers struggle to integrate into different value-adding activities seamlessly, it is such challenges that NGC seeks to address amongst the smallholder farmers in South Africa (Fan & Rue, 2020:3).

NGC's capabilities to address such challenges are accentuated further in studies conducted by Louw and Jordaan (2016:302), Khapayi *et al.* (2018:376) and Nwafor and Van der Westhuizen (2020:19). In such studies, they argue that farmers participating in high-value markets show higher earnings per hectare or kilogram marketed as compared to farmers participating in traditional markets. However, achieving that would still require smallholder farmers to be integrated into the value chain and supported to become competent to access and gain from high-value markets (Louw & Jordaan, 2016:308). In that context, Van Dijk's (2015:10) planning framework used to establish the first NGC in South Africa, clarifies that for NGC to

create the desired values for cooperatives and smallholder farmers in South Africa, it must be directed towards improving the productivity, entrepreneurial capacity and marketing capabilities of smallholder farmers. It must also seek to leverage cooperation and exchange of information among stakeholders, refrain free rider behaviours, support smallholder farmers as entrepreneurs and provide them with the necessary skills and access to knowledge. Van Dijk (2015:10) also emphasises the need for NGC to support market access for smallholder farmers' products, capital, land and other inputs. Such initiatives must also be accompanied by quests that emphasise the importance of joining forces with commercial farmers and market service companies to improve their competitive position and the advanced support to members in developing and maintaining a versatile cooperative business. Van Dijk (2015:10) further reiterates that members must be trained to contribute to the good governance of the cooperative. He also stresses the importance of creating a supportive environment and improving research and development, extension and vocational training to create new capabilities that can bolster the overall effective performance of cooperatives and smallholder farmers. However, at present, there is limited knowledge about the accomplishments, impact, and challenges associated with the introduction of the new concept of NGC in Limpopo, despite Van Dijk's (2015:10) and South African government's aspirations. In that context, this research analyses the efficacy of NGC business framework in uplifting smallholder farmers to discern whether or not it should be replicated and rolled out across South Africa.

1.5 RESEARCH QUESTIONS

The background and the research problem indicate that there is a holistic gap in smallholder farmer development. Intervention initiatives indicated that there is also a gap in understanding if the NGC that was piloted to uplift smallholder farmers was officious, or not. To therefore address such a research gap, the entire research process is directed towards answering the following research questions:

Main research question: To what extent does the NGC contribute to uplifting smallholder farmers?

Sub-questions: In the context of the main research question, the seven sub-questions that were formulated to assist in answering the primary research questions entailed the analysis of:

- What challenges are confronting South African smallholder farmers?
- What are NGC smallholder farmer members' perceptions of the challenges they were confronted with before the implementation of the NGC in South Africa?
- What are the key design and implementation features of the South African NGC?
- What are the views and perceptions of the NGC farmer members about the NGC framework and its contribution to uplifting their agribusinesses?
- What socio-economic impacts (income earnings, food security, employment and poverty alleviation) have emerged from NGC implementation?
- What is the level of the implementation of the NGC practices by the newly-formed NGC in South Africa?
- What needs to be done in the context of the emerging findings to improve NGC implementation in South Africa?

1.6 RESEARCH OBJECTIVES

To respond to the above research questions, the study will be directed towards the achievement of the primary and secondary research objectives outlined below:

1.6.1 Primary research objective:

The primary research objective was to evaluate the efficacy of the New Generation Cooperative business framework in uplifting the smallholder farmers in Limpopo Province.

1.6.2 Secondary research objectives

Quests to achieve the main objective required the study to research to the secondary objectives that are to:

- Identify challenges confronted by South African smallholder farmers in general through a literature review.
- Assess NGC smallholder farmer members' views on challenges they were confronted with before the implementation of the NGC in South Africa.

- Identify and describe the key design and implementation features of the South African NGC.
- Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses.
- Assess the socio-economic impacts (income earnings, food security, employment and poverty alleviation) that have emerged from NGC implementation.
- Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa.
- If necessary, formulate corresponding recommendations to improve the functionality and sustainability of NGCs in South Africa.

1.7. STRUCTURE OF THE THESIS

Quests to analyse the efficacy of New Generation Cooperative business framework in uplifting smallholder farmers necessitated the structuring of the thesis according to seven chapters that include:

Chapter 1: Introduction and Research Contextualisation: This chapter offers insights on the introduction and research contextualisation by highlighting the cooperative challenges and the challenges of smallholder farmers that motivate the study. In the context of such challenges, it is pointed out that the study aims to analyse the efficacy of the NGC business model in uplifting smallholder farmers. This is by identifying its impacts, success drivers, limitations and the remedial business framework that South Africa can replicate to ameliorate the challenges that mar the effective performance of cooperatives and smallholder farmers. Against that backdrop, the chapter elucidates on the research problem statement, aim, questions, and objectives used to accomplish primary research.

Chapter 2: International Perspective of Agricultural Landscape: This chapter examines the global and African agricultural landscape focusing on its orthodox food production approaches. It critically analyses theories and literature to explore the socio-economic contributions of agriculture.

Chapter 3: Overview of Agricultural Landscape in South Africa: This chapter is a continuation of Chapter 2, but specifically analyses theories and literature to gain an understanding of the agricultural landscape in South Africa. It does this by evaluating the fundamental concepts in agriculture, agricultural production, and its socio-economic contributions. Thus, based on the insights highlighting the failure of South African agricultural systems to create enormous socio-economic values that respond to the needs of all farmers, population groups and the entire economies in the landscapes in that such agricultural systems operate; the chapter also examines theories and literature on the methodologies and techniques for measuring and improving agricultural efficacy and productivity.

Chapter 4: Challenges Facing Smallholder Farmers in South Africa: This chapter analyses and reports on the challenges faced by smallholder farmers in South Africa. The analysis in the chapter is divided into four parts. The first part contains the definition of smallholder farmers and their characteristics, and the second part evaluates the challenges faced by smallholder farmers in South Africa are discussed. The third part examines the relationship between infrastructure development, agricultural output, agricultural employment and agricultural productivity, and the fourth part analyses the role played by the government in supporting smallholder farmers and agricultural development. The chapter concludes with an overview of the advantages of cooperating in business to improve agro-business value chains.

Chapter 5: Literature and Theories on Developing and Managing Agricultural Cooperatives: This chapter offers critical insights into the theories and literature for developing and managing more efficacious agricultural cooperatives. Such evaluation is structured according to four main sections. The first section examines theories and literature on contemporary notions of cooperatives. It evaluates the definition of cooperatives, historical evolutions of cooperatives, types of cooperatives, the emergence of New Generation Cooperatives, and the concept of New Generation Cooperatives as distinct from Traditional Cooperatives. The second section evaluates theories and literature on the critical success factors for developing and growing more productive, sustainable agricultural cooperatives. The chapter concludes by exploring theories within the cooperatives sector.

Chapter 6: Research Design and Methodology: It is highlighted in this chapter that interpretivism is adopted in this study not only to define its overall philosophical logic and reasoning as well as empirical design and methodologies. Instead, interpretivism is also applied to engage in social interaction and constructionism to elicit critical in-depth, real-world insights from smallholder farmers and NGC's implementing partners about all the dimensions of implementation of NGCs in Limpopo, and South Africa at large. However, to achieve that, it is elucidated that the study used a case study blended with an exploratory research design integrated with qualitative research (semi-structured interviews). The empirical design aided in-depth analysis to elicit all facets of the facts and to explain questions like who, where, how, why and when of the impact, drivers and complexities of NGC implementation and the probable solutions that can be adopted. Against that backdrop, the chapter describes the techniques and methods of sampling, data collection, interviews, data analysis, credibility and trustworthiness, and ethical considerations used in the study.

Chapter 7: Empirical Findings on NGC's Efficacy and Smallholder Farmers' Performance in Limpopo: This chapter still offers analysis and presentation of the empirical findings on smallholder farmers and NGC pilot project in Limpopo to discern whether it has contributed to uplifting smallholder farmers for it to be replicated across South Africa. Such analysis is in tandem with the fundamental research topic, aim, questions and objectives of this study that explore the NGC business framework's efficacy in uplifting smallholder farmers to determine whether it should or should not be implemented across South Africa. The analysis and presentation of the empirical findings are structured according to three sections, Part I, II&III that are not only extracted from the Interview Research Protocol but also aligned with the critical research objectives and questions for this study. Part I entails qualitative results from the in-depth interviews with the smallholder farmers. Part II discusses qualitative results from the in-depth interviews with the NGC implementing partners whilst Part III presents qualitative results from organisational documents reviewed.

The three parts are further structured based on four themes that are extracted from the Interview Research Protocol. Thus, Theme One provides a detailed discussion about the efficacy of the NGC in uplifting smallholder farmers in Vhembe District Municipality and their communities. Theme Two explores drivers of NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality. Theme Three analyses the challenges of NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality. Theme Four explores the measures for improving NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality. Findings from smallholder farmer interviews were compared and contrasted with the NGC organisational documents, and narratives from the interviews with NGC implementing partners that examined NGC implementing partners' roles in facilitating the implementation of NGC pilot project and the impact of NGC in uplifting smallholder farmers. Smallholder farmers' narratives were also compared and contrasted with NGC implementers' perspectives on the complexities of NGC implementation in South Africa and NGC implementing partners' proposals for improving NGC implementation.

Chapter 8: Conclusions, Limitations and Recommendations: This chapter reflects the general conclusions and recommendations of the study. Conclusions are drawn in the context of the research questions and objectives articulated in Chapter 1 of this study. It reflects a comparison, contrast and triangulation of key primary research findings with key secondary research findings on NGC's efficacy in uplifting smallholder farmers, drivers of NGC's efficacy in uplifting smallholder farmers and complexities of NGC's efficacy in uplifting smallholder farmers. From such analysis, it concluded with certainty that findings signify NGC not only impressed most smallholder farmers but also tends to induce quite enormously to the socio-economic development and growth of the country. Such findings are also construed to imply that this study has been able to respond to its main research question: to what extent does NGC contribute to uplifting the smallholder farmers? It also responded to the research questions and objectives that sought to examine NGC smallholder farmers members' perceptions on the challenges they were confronted with before the implementation of the NGC in South Africa. The findings of this study also answered the sub-questions and objectives that aimed to explore challenges confronting the South African smallholder farmers; assess and identify

the key design and implementation features of the South African NGC, the views and perceptions of the NGC farmer members about the NGC framework and its contribution in uplifting their agribusinesses and the socio-economic impacts that have emerged from NGC implementation. The study was also able to discern the level of the implementation of the NGC practices by the newly-formed NGC in South Africa as required in its research questions and objectives. Unfortunately, in the absence of a holistic business model, it is pointed out that it is still unlikely the kinds of discrete solutions proposed by the smallholder farmers and NGC implementers can be effective for leveraging the successful NGC replication for all the smallholder farmers in South Africa.

In lieu of the recommendations of Chapter 8, this study addresses the last secondary research question and objective that concerns the exploration of what needs to be done in the context of the emerging findings to improve NGC implementation in South Africa by offering an eight steps' business framework for NGC implementation that the government can replicate across South Africa, as the contribution of this study. This is followed by recommendations on policy development, limitations of the study and recommendations for future studies.

1.8. CHAPTER SUMMARY

Given the increasing challenges faced by smallholder farmers, agricultural cooperatives are increasingly emerging in most developing countries as critical strategic options for not only turning around the performance of smallholder farmers' performance but also as pivotal drivers of rural socio-economic transformation. This is because cooperatives are critical drivers of smallholder farmers' effective performance. Cooperatives leverage smallholder farmers' capabilities to pool and share resources to create the desired differential values for the associated agricultural entities (Wolz *et al.*, 2020:57). Through such initiatives, individual smallholder farmers gain capabilities to transform their performance and influence the country's overall pace and level of socio-economic development.

Cooperatives enable smallholder farmers to pursue a common goal, thereby rendering cooperatives suitable for combining resources and knowledge to bolster

the overall effective performance of smallholder farmers that often struggle with resource and operational challenges. Cooperatives improve small-scale agricultural entities' bargaining power as well as their lobbying capabilities to get integrated in value chains critical for them to extract the desired values from the agricultural markets (Gotyi, 2019:40). Unfortunately, it was still found that even if that is the case, empirical facts still imply smallholder farmers' usage of cooperatives in South Africa are yet to induce the desired outcomes that can transform the performance of smallholder farmers to spur growth of the agricultural sector as well as the overall rural socio-economic development in South Africa (Fanadzo & Ncube, 2018:438; Louw & Jordaan, 2016:290; Khapayi *et al.*, 2018:376). Capabilities of most cooperatives to achieve the desired socio-economic outcomes are often marred by governance and operational complexities arising from free rider problems, horizon problems, leadership and control problems, portfolio problems, influence cost problems and constitutional degeneracy (Fanadzo & Ncube, 2018:438; Louw & Jordaan, 2016:290; Khapayi *et al.*, 2018:376).

Complexities typically mutate with smallholder farmers' common challenges like inadequate skills and competencies, poor production management, and poor marketing and networking. They often induce undesirable scenarios that undermine cooperatives' capabilities to create the desired differential values for farmers, surrounding communities, agricultural sector and the country at large (Nwafor & Van der Westhuizen, 2020:14; Oluwatayo, 2019:489). Even though the concept of NGC business framework is used to respond to such constraints, the fact that NGC implementation is just in the pilot phase only in the Limpopo Province renders it difficult to discern how NGC can be utilised to ameliorate such challenges and turn around the performance of smallholder farmers and cooperatives nationally. Further compounded by inadequate research on the suitable cooperative business framework for improving the performance of smallholder farmers, all these constrain the availability of adequate information on how government can use cooperatives to turn around smallholder farmers' performance and catalyse the overall rural socio-economic transformation (Kanyane & Koma, 2014:124; Khapayi & Celliers, 2016:33; 2018, 2017:82; Khumalo, 2014:74;).

Thus, in that context, it is noted that this research analysed the efficacy of NGC business framework in uplifting smallholder farmers to identify its impact, success drivers and complexities, as well as the remedial framework that can inform government decisions on whether or not to replicate NGC across South Africa. In the quest to accomplish that, the chapter highlighted the research questions and objectives. The next chapter first examined theories and literature reflecting the overview of the agricultural landscape and its socio-economic contributions.

CHAPTER 2

INTERNATIONAL PERSPECTIVE OF AGRICULTURAL LANDSCAPE

2.1. INTRODUCTION

Chapters 2 and 3 comprise a brief reflection on the socio-economic role of agricultural development and its progress internationally. Chapter 2 particularly focuses on global and African agricultural development, whilst Chapter 3 focuses on the South African agricultural landscape.

The first phase of this chapter examines theories and literature reflecting fundamental concepts in agriculture concerning its core functions of utilising inputs to create outputs and how these production systems intertwine with backward and forward structures to either leverage or constrain production and operational efficacy. The first phase evaluates theories and literature on how the concept of agriculture inter-relates with the fundamental notions of agricultural science, agricultural economics and agribusiness management to create unique capabilities or heterogeneity that explain why different agricultural entities in different agricultural landscapes create different socio-economic outcomes for farmers and communities in the landscapes in which they operate. Against that backdrop, the second phase of theories and literature evaluations assessed trends on the efficacy of global agriculture as reflected in its overall quantity and quality of socio-economic contributions worldwide. It contrasted them against the efficacy of African agriculture as mirrored in its overall socio-economic contributions.

2.2. FUNDAMENTAL CONCEPTS IN AGRICULTURE

Agriculture conventionally connotes a seamless process of combining the available inputs like land, capital, labour and raw materials in crop or livestock production to generate outputs that create the desired socio-economic values for farmers and the surrounding communities. Agriculture also connotes the general national and global economy (Bene *et al.*, 2019:149). In crop or plant farming, agriculture is a strategic process through which different agricultural inputs like capital, labour, seeds, pesticides, machinery, and technology are utilised coherently to create the desired

outputs and values for farmers and the agricultural market (Bene *et al.*, 2019:149). As for livestock farming, McDermott *et al.* (2015:593) explain that agriculture entails the practice of utilising a combination of inputs, like breeding animal stocks, animal feeds, disease control measures and the required equipment, to expand the livestock population and to create products that satisfy to the needs and demands in the food market. However, Kubitza *et al.* (2020:22) caution that agriculture does not just deal with primary activities entailing the direct cultivation and harvesting of crops or the rearing of animals and extracting their products for the market. Instead, agriculture also integrates critical secondary activities from procuring agricultural inputs like seeds, machinery, equipment, pesticides and disease control products from relevant agricultural input producers and supplying them to farms (Iortyom *et al.*, 2018:243). Such a process requires some form of farmers' backward integration and linkages into the input market to access the required inputs. Secondary agricultural activities may include agricultural banks and insurance firms offering farmers relevant agricultural credits and insurance services (Lotter, 2019:6; Pettinger, 2019; Schafran *et al.*, 2018:1708). Poole *et al.* (2020:9) posit secondary agricultural activities also to integrate the process of securing agricultural products from farms and moving them to points where they are processed and manufactured or translated into finished products for distribution to the market.

As contrasted with primary activities, secondary activities require some form of a farmer's forward integration into the output market to access and reap the desired values from the output market (Iortyom *et al.*, 2018:243). Thus, agriculture is a conglomeration of actors engaged in producing and supplying agricultural inputs to farmers and the stakeholders involved in the actual crop and livestock farming. These actors engage in the production and processing of agricultural products to provide finished goods. Activities such as logistics, handling and distribution move the final products to the wholesalers, retailers, and subsequently, to the final consumers (Senyolo *et al.*, 2018:150). Such reasoning accentuates shared opinions of theorists like Santpoort (2020:19), Seekell *et al.* (2018:26) and Pingali (2015:583) that the concept of agriculture inter-relatedly cuts across the disciplines of agricultural science and agricultural economics.

Agricultural science is a multidisciplinary notion that integrates biology, natural science, economics and social science concepts to analyse and improve different plant and livestock farming practices and processes (Santpoort, 2020:19). It uses agronomy, plant breeding, genetics, plant pathology, crop modelling, soil science, entomology, agricultural technologies, pesticides, waste management, bioremediation and adverse ecological research (Pingali, 2015:583). Agricultural science seems to deal directly with the production of inputs and agricultural technologies for the primary generation of plant and livestock outputs. Seekell *et al.* (2018:26) point out that agricultural science is also interrelated with agricultural economics that studies the efficiency and effectiveness of the processes, practices and methodologies of supplying agricultural inputs to farmers and the primary agricultural outputs. This includes producing and distributing these agricultural outputs along the value chain to the final consumers.

In contrast to agricultural science, agricultural economics is more consonant with the research topic, aim, objectives and questions that seek to use the concept of NGC to analyse the overall efficiency of agricultural science to generate the requisite inputs and influence the efficiency and effectiveness of the agricultural production process to create the desired outputs that accurately respond to the socio-economic needs of farmers and the society at large (market). Agricultural economics also integrates agribusiness management as a critical subset that deals with evaluating and improving agricultural process efficiency. That is to integrate the inputs of production and supply to farmers and the actual plant and livestock production processes with the processes of moving the outputs from farms along the value chain to the final consumers (Mottaleb *et al.*, 2018:156). Agribusiness management, as integrated with aspects of agricultural economics and science, aids thorough diagnosis of the capabilities of all actors engaged throughout the entire farm input and output production to create values that respond to all the actors in the agricultural system as well as the markets (Mottaleb *et al.*, 2018:156). It measures critical skills, technologies, methodologies and strategies required for producing and supplying quality agricultural inputs to the farmers and how farmers utilise such valuable quality inputs to create the desired socio-economic values for farmers and the market (Rodríguez *et al.*, 2020:33).

Changing, transforming and improving agricultural inputs and production processes and output techniques involve studying the methodologies and strategies and the overall efficiency and effectiveness of agricultural entities creating these desired agricultural inputs and outputs (Rodríguez *et al.*, 2020:33). Agribusiness management is integrated with agricultural economics and science. It examines how a bundle of the existing technologies, resources, capital, machinery and equipment, among others, are combined to create agricultural entities and how such a bundle of inputs is optimised in generating the desired outputs (Tadesse & Bahiigwa, 2014:296).

However, in creating more value for farmers, agribusiness management also leverages evaluation of how different agricultural entities often position and reposition themselves using strategies to tap as much as possible the opportunities unfolding in the agribusiness market (Tadesse & Bahiigwa, 2014:296). These spawn the degree to which agricultural entities can be influenced to create the desired quantity and quality of socio-economic outcomes for the farmers and surrounding communities and the general national and global economy (Rodríguez *et al.*, 2020:33).

Unfortunately, due to the differences or heterogeneity of technologies, skills, competencies, established farming traditions, ideologies, climate, soil, poverty and political systems, the usage of agribusiness management methodologies is not seamlessly integrated with all the agricultural economics and science concepts. Many of these factors cannot influence some agricultural entities to generate the desired quantity and quality of socio-economic outcomes (Sanyang *et al.*, 2016:187; Stagnari *et al.*, 2017:13; Tadesse *et al.*, 2018:698). The implication is that as different agricultural entities induce different socio-economic outcomes, the entire global agricultural production industry has been able to only contribute differently to the creation of equally different levels of socio-economic outcomes across the globe.

2.3. GLOBAL AGRICULTURAL LANDSCAPE

Agricultural contribution to the global socio-economic sphere tends to vary from country to country. Therefore, as some countries perform poorly, extracting the best agricultural practices from the excelling countries is critical for improving the performance of the poorly performing countries (Kubitza *et al.*, 2020:22). These best-

performing countries are reflected in the global agricultural production patterns. They include China, Russia, Canada, Indonesia, Argentina, India, Germany, the Netherlands and the United States of America (USA) (Poole *et al.*, 2020:9). These countries have the world's highest grain production and agricultural exports (Poole *et al.*, 2020:9). Combined with the production and exports of agricultural products like hides, fish, molluscs and crustaceans. The high rate of grain production places China in the sixth place as one of the largest exporters of agricultural products in the world with the export value of \$63.49 billion. The USA is the second largest grain producer in the world with a total production of 516,4 metric tonnes (MT), constituting of maize 353,7 million MT, soybeans (91,4 million MT), wheat (58 million MT), rice (8,6 million MT) and barley at 4,7 million MT (Food Security Information Network (FSIN), 2020:6). The USA leads the entire world in the total agricultural products exported, amounting to \$149.12 billion. The USA also exports the most agricultural equipment units and machinery in addition to the aforementioned, grains, soybeans, livestock and horticultural products, surpassing countries like Canada, China and Mexico to the European Union region (FSIN, 2020:6).

India produces the third most grain with a total production of 289,7 million MT, comprising rice (159,2 million MT), wheat (93,5 million MT), maize (23,3 million MT), soybeans (11,9 million MT), and barley at 1,8 million MT (Poole *et al.*, 2020:9). However, despite its large grain production, India does not feature among the top global exporters of agricultural products because its large population domestically consumes almost all of India's grains. Instead, the Netherlands features second place as one of the top exporters of agricultural products (Rodríguez *et al.*, 2020:33). The Netherlands, in contrast with India, has a relatively smaller population and tends to have excess agricultural products to export. It is interesting to note that the Netherlands exports more agricultural products than any other country in the European Union. The Netherlands has highly mechanised agricultural production systems because its moderate farming climate and fertile soil entail the use of superior technologies, robotics and automation. The Netherlands, though a relatively small European country, generates exports to the value of \$92.85 billion from its agricultural products. The country exports poultry, beef, pork, flowers, and most grains (Rodríguez *et al.*, 2020:33). Yet, the Netherlands does not feature among the most prominent

global grain producers. Instead, Argentina produces the world's fourth most grain (96,9 million MT).

Argentinean grain production composes of soybeans (49,3 million MT), maize (32,1 million MT), wheat (9,2 million MT), barley (4,7 million MT) and rice at 1,6 million MT (Poole *et al.*, 2020:9). This high grain production combines well with other agricultural products beef, wine and mutton. Argentina is the eleventh largest exporter of agricultural products. Argentinean agricultural product exports are worth \$37.17 billion, and the main commodities are soybeans, wine, wheat, beef and corn (Rodríguez *et al.*, 2020:33). Indonesia produces the fifth most grain in the world (89,8 million MT). These grains are wheat (71,2 million MT) and maize (18,5 million MT). Indonesia, like India, does not feature among the leading global exporters of agricultural products because of its high domestic consumption (Rodríguez *et al.*, 2020:33). Instead, Germany is the third overall largest exporter of agricultural products (after the Netherlands).

Germany has a net worth of \$86.83 billion through the export of its agricultural commodities, leading to its leading production and export of other agricultural commodities like chocolate, baked goods, rolled tobacco and beef (Kubitza *et al.*, 2020:22). Germany, however, does not surface among the leading global grain producers; this honour belongs to Russia as the sixth largest global grain producer, with a total production of 81,7 million MT. These grains are wheat (52,1 million MT), barley (15,4 million MT), maize (11,6 million MT), soybeans (1,6) and rice at 934,9 million MT (Kubitza *et al.*, 2020:22). Except for substantial wheat exports, most of these agricultural products are consumed domestically by the large Russian population. Russia is not one of the top overall exporters of agricultural products.

Brazil is the fourth largest exporter of agricultural commodities (Poole *et al.*, 2020:9). Despite not featuring among the top global grain producers, Brazil still produces large quantities of other agricultural products like coffee, soybeans, corn, raw sugar and poultry meat to generate a total export value of \$78.82 billion. This contrasts with Canada, which has the seventh place among the top global grain producers with a total production of 67,3 million MT. These Canadian grains are wheat (37,5 million MT), maize (14,2 million MT), barley (10,2 million MT) and soybeans at 5,4 million MT

(Poole *et al.*, 2020:9). If aggregated with other agricultural products, Canada takes the seventh place as one of the leading exporters of agricultural products like soybeans and beef, valued at \$59 billion (Rodríguez *et al.*, 2020:33).

Other top global exporters of agricultural products include France, with an agricultural export value of \$74.29 billion, Italy (\$43.76 billion), Belgium (\$43.90 billion) and Spain (\$51.05 billion) (Kubitza *et al.*, 2020:22). Implication of all these is that in 2019, the world produced an estimated 2.7 billion tonnes of grain as the major diet of the population across the globe (Poole *et al.*, 2020:9). But instead, only 43% of the 2.7 billion tonnes were used for human consumption as the rest was used for animal feeds (Poole *et al.*, 2020:9). This causes challenges of how the existing global agricultural production can be scaled to respond to the needs and demands of the population that is increasingly going without adequate food. The Oxford Business Group's (2019:1) articulation is that the main concern of the world's agriculture is to feed a population of around 9 billion by 2050. Agriculture is gaining the attention of the new world but how it will boost the world economy is still much debated (Oxford Business Group, 2019:1). More than 60% of the world's population depends on agriculture for survival. As, a result, the agricultural sector has always been of utmost importance in any economy worldwide (Zavata, 2014). In 2020, almost 2.8 billion (42%) of the world's 6.9 billion people depended on agriculture for their livelihoods, either by being actively engaged as employees in the sector or as dependants (Poole *et al.*, 2020:9). More than half of the world's population lives in rural areas, of which three-quarters live in agriculturally based households. Some of these are smallholder farmers who depend primarily on agriculture for their livelihoods (Alston & Pardey, 2014:122; Zhou *et al.*, 2013:2599). Therefore, agriculture is essential in ending poverty at all levels and achieving sustainable food security. Agriculture is also an important tool for achieving economic development goals and is one of the main pillars of economies. Hence, despite challenges, agriculture is not only a contributor to GDP. Instead, it also contributes quite enormously to the overall global socio-economic sphere (Esfaghansary *et al.*, 2018:397; Rodríguez *et al.*, 2020:33).

2.3.1. Socio-Economic Contributions of Global Agriculture

Over time, it has been proven that global agriculture contributes enormously to leveraging the overall pace and level of global economic growth and development (Mottaleb *et al.*, 2018:156; Oelofse *et al.*, 2015:62; Rodríguez *et al.*, 2020:33; Tadesse & Bahiigwa, 2014:296). However, the contribution of modern agriculture as a tool to enhance food security, to act as an instrument to reduce poverty, and to contribute to overall economic growth, is discussed next.

2.3.1.1. Global agriculture as tool to enhance food security

Global agriculture is critical for offering different agricultural products that lead to the improvement of food security. Food security is the degree to which everyone around the world can have physical, social and economic access to the required amount of safe and nutritious food to respond to their dietary needs and food preferences for an active and healthy style of living (King *et al.*, 2017:160).

Food security is measured by four main pillars: availability, access, utilisation and stability. In such a process, global agriculture has responded to the global human need for food security. Agriculture succeeds in producing sufficient foods for nutrition and specific diets needed by the global population (Grashuis, 2020:79). As more role players globally engage in direct farming or agriculture to meet their food and dietary needs, others tend to engage in largescale commercial agriculture to increase yields and lower food prices (Holt-Giménez, 2019:3). Higher agricultural yields lower the prices of agricultural products as per economic supply and demand. Such lower prices imply low incomes groups can access affordable foods (Von Bormann, 2019:13). As some groups engage in direct farming and others engage in largescale commercial agriculture, they all gain an income which enables them to access other forms of foodstuffs and dietary products that they require but do not produce. As high global agricultural yield influences the improvement of food security, FAO (2021:5) reveals that overall hunger and poverty worldwide have significantly declined since the 1990s. This signifies an increment in global agriculture's responsiveness to the increasing food, nutrition and dietary needs of the global population. However, even if that is the case, FAO (2021:5) and Grashuis (2020:79) highlight that about 700 million of the global population still languish in poverty, undernourishment and poor nutrition and

health, as 800 million people are chronically hungry and 2 billion suffer micronutrient deficiencies. Thus, without new initiatives to improve agricultural production in conjunction with the usage of other pro-poor development programmes, the FAO (2021:5) estimates that about 653 million people will still be facing undernourishment by 2030. As a result, the target of the 2015 Millennium Development Goal (MDG) (to completely eradicate hunger and malnutrition from the face of the earth by 2030) is unrealistic.

The Sustainable Developmental Goals (SDGs) were formulated in 2015, superseding the MDGs that were formulated in 2000 with set targets and indicators for global poverty reduction (Adhikari, 2019:6). The SDGs focus on the concept of increased agricultural production as a means to meet the growing consumption requirements. These goals are also linked to SDG 2: to end hunger, achieve food security, improve nutrition and promote sustainable agriculture by 2030 (Chavez, 2020:1; King *et al.*, 2017:160). It also contributes to these goals by reflecting a large portion of the global population that still faces food insecurity, malnutrition, and pervasive inequality in some regions around the world. Pervasive inequality tends to negatively impact interventions to accelerate eradicating poverty though it is evident that poverty is gradually reducing across the world. Inequality also causes uneven distribution of land for agriculture worldwide (FAO, 2021:5). Thus, in some regions of the world, agricultural production is concentrated in the hands of a few, thereby depriving the rest of the population access to agricultural land. In contrast, land prices increase to a level that is beyond the affordability of the poor, making it difficult for them to access land (Malinga *et al.* 2018:236). Such a view is consonant with Feil *et al.* (2020:6) revelation that agricultural production processes ranging from input provision to food distribution are becoming capital-intensive, vertically integrated and concentrated among a few. Such a trend has resulted in the exclusion of small-scale producers from the value chain. This has forced them, along with males from landless rural households, to migrate to urban areas in search of alternative employment (FAO, 2017). The effect is that rural agriculture has been relegated to women and some limited percentage of youths that cannot generate the required agricultural productivity to produce food output that can address the unfolding food security issues (Feil *et al.*, 2020:1-11).

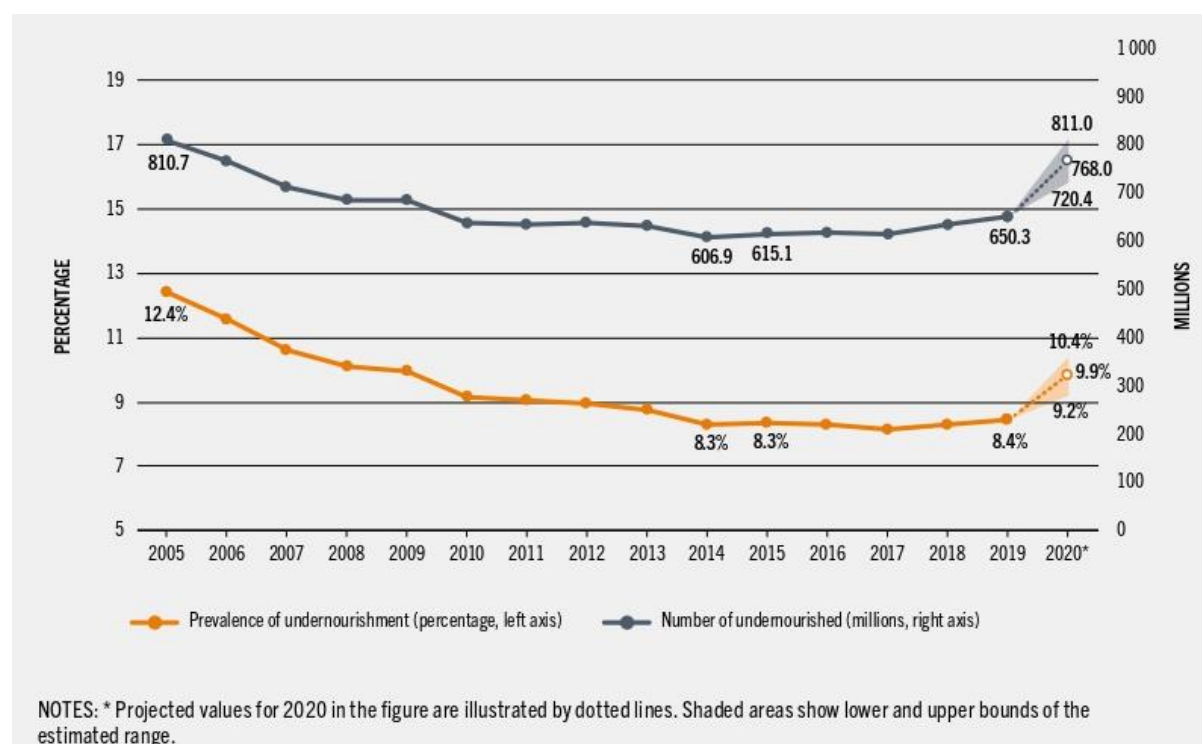
Following the outbreak of Covid-19 pandemic, FAO (2021:5) and Zambrano (2020:23) share similar views that complexities in global agricultural production have posed challenges that have, to some extent, reversed the overall trends of significant declines in hunger and poverty that were observed since the 1990s. Yet, as Elver (2019:347) notes that these undesired trends are also increasingly mutating with conflicts, climate change, antimicrobial-resistant pests and diseases, economic slowdowns, natural disasters and poor agricultural methods in some regions are undermining the overall capabilities of global agriculture in responding to food security issues. Increasingly, the characterisation of agricultural production by such complexities reduces food production and availability and distorts the value chain system. Resultantly, many drive several people into poverty, hunger, and distress migration and urbanisation. Urbanisation, in turn, only exacerbates the poverty and homelessness that already exist in the urban areas (Kirsten 2016:1, White, 2014:309). Elver (2019:347) notes these effects are reflected in the fact that the average proportion of undernourished people residing in the least developed countries falls in the range of 2.5 to 3 times higher than in developed countries.

Zambrano (2020:23) adds that the Covid-19 pandemic also exacerbated global hunger in 2020 as it disrupted supply chains, leading to job losses and reduced productivity due to frequent lockdowns worldwide. Overall, about 768 to 811 million people worldwide suffered from hunger in 2020. Consequently, Zambrano (2020:23) states that it is evident that although the malnutrition percentage remains constant for five years, it subsequently increased from 8.4% (2019) to 9.9% (2020). Combined with pre-existing variables that undermined agricultural production, Rautela *et al.* (2020:391) reveal that 418 million people, (representing more than 50% of the undernourished people worldwide) reside in Asia, while another 282 million people (representing more than 33% of the undernourished people worldwide), lives on the African continent. Contrasted against 2019 trends, Rautela *et al.* (2020:391) elaborate on these statistics, indicating that approximately 46 million more people in Africa, 57 million more in Asia, and 14 million more in Latin America and the Caribbean suffered hunger in 2020. Jarzebski *et al.* (2020:105) expand on these statistical narratives and add that the Food Security Experience Scale indicates a gradual rise in moderate and severe food insecurity since 2014. In 2020, insecurity increased to a level equal to the combined percentages for the past five years. In 2020, almost one in three people

(2.37 billion) worldwide did not have sufficient food. This data further suggest that approximately 12% (928 million people) of the global population (an increase of 148 million in comparison to 2019) faced some food insecurity.

Even without the Covid-19 pandemic in 2017 and 2019, the high costs of healthy diets combined with inequality and poverty were still noted by Jarzebski *et al.* (2020:105) to have put about 3 billion of the 7.753 billion world population out of reach of any dietary and nutritious foods in all regions of the globe. Such statistical narratives are unpacked by FAO (2021:5) in Figure 2.1 and Table 2.1, illustrating the prevalence of global undernourishment between 2005 and 2020. It is reflected in Figures 2.1 and Table 2.1 that although the prevalence of undernourishment among the world population had declined since 2005 and remained almost constant between 2014 and 2019, it subsequently increased from 8.4% to 9.9% in the period between 2019 and 2020. As the estimates range from 9.2% to 10.4%, Figure 2.1 also indicates 720 to 811 million people were worldwide affected by hunger in 2020.

Figure 2.1: Prevalence of Undernourished People in the World



Source: Extracted from FAO (2021:5).

The figure shows that, given the middle of the projected range of 768 million, 118 million people were affected by hunger in 2020 in contrast to 2019 (representing an increase from 70 to 161 million people). As Table 2.1 illustrates, 21%, which is about 1 in 5 people were affected by hunger in Africa, reflecting about a three percentage points increment in just one year as contrasted to any other region around the world.

Table 2.1: Prevalence of Undernourishment in the World 2005-2020

Prevalence of undernourishment (%)								
	2005	2010	2015	2016	2017	2018	2019	2020*
WORLD	12.4	9.2	8.3	8.3	8.1	8.3	8.4	9.9
AFRICA	21.3	18.0	16.9	17.5	17.1	17.8	18.0	21.0
Northern Africa	8.5	7.3	6.1	6.2	6.5	6.4	6.4	7.1
Sub-Saharan Africa	24.6	20.6	19.4	20.1	19.5	20.4	20.6	24.1
Eastern Africa	33.0	28.4	24.8	25.6	24.9	25.9	25.6	28.1
Middle Africa	36.8	28.9	28.7	29.6	28.4	29.4	30.3	31.8
Southern Africa	5.0	6.2	7.5	7.9	7.3	7.6	7.6	10.1
Western Africa	14.2	11.3	11.5	11.9	11.8	12.5	12.9	18.7
ASIA	13.9	9.5	8.3	8.0	7.8	7.8	7.9	9.0
Central Asia	10.6	4.4	2.9	3.2	3.2	3.1	3.0	3.4
Eastern Asia	6.8	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
South-eastern Asia	17.3	11.6	8.3	7.8	7.4	6.9	7.0	7.3
Southern Asia	20.5	15.6	14.1	13.2	13.0	13.1	13.3	15.8
Western Asia	9.0	9.1	14.3	15.0	14.5	14.4	14.4	15.1
<i>Western Asia and Northern Africa</i>	8.8	8.2	10.5	10.9	10.7	10.6	10.7	11.3
LATIN AMERICA AND THE CARIBBEAN	9.3	6.9	5.8	6.8	6.6	6.8	7.1	9.1
Caribbean	19.2	15.9	15.2	15.4	15.3	16.1	15.8	16.1
Latin America	8.6	6.2	5.1	6.2	6.0	6.1	6.5	8.6
Central America	8.0	7.4	7.5	8.1	7.9	8.0	8.1	10.6
South America	8.8	5.7	4.2	5.4	5.2	5.4	5.8	7.8
OCEANIA	6.9	5.3	6.1	6.2	6.3	6.2	6.2	6.2
NORTHERN AMERICA AND EUROPE	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5

NOTES: * Projected values based on the middle of the projected range. The full ranges of the projected 2020 values can be found in **Annex 2** in the report. For country compositions of each regional/subregional aggregate, see Notes on geographic regions in statistical tables inside the back cover of the full report.

Source: Extracted from FAO (2021:6)

The above table shows that after Africa, Latin America follows with 9.1% and Asia, with 9.0% which signify increments of 2.0 and 1.1 percentage points from 2019 to 2020. In other words, this overall decomposition of the percentage of food security

risks among the global population indicates the extent to which global agricultural production has not been responsive to the food security crisis. The committee on World Food Security (CFS) (2014:6), the FAO (2021:5) and Grashuis (2020:79) all share similar views regarding the mitigation of the global food crisis. They reason that a redirection of resources and financial support by international financial institutions, such as The World Bank, is needed to develop and improve rural agricultural production in the African, Asian, Caribbean and Latin American countries.

The CFS (2014:6) suggests that in regions where conflicts have affected agricultural productivity, governance improvement may also be required. Grashuis (2020:79) emphasises the need to improve small-scale farmers' accessibility to critical agricultural inputs like seeds, land, fertilisers, irrigation, equipment, and credit. He also stresses the importance of introducing agricultural cooperatives in rural areas, which enable small-scale farmers to pool their resources together and minimise the higher agricultural production costs that often discourage them. In support, the FAO (2021:5) advises developing countries to adopt population controls by educating the population about the essence of family planning. Such a move would check the constantly increasing population that renders women and children more vulnerable to hunger and poverty. FAO (2021:6) also notes that such initiatives must be accompanied by adopting measures that either mitigate or even completely prevent the devastating effects of climate change on agriculture. Yet, as all these signify global agriculture is not effectively playing its critical role as a tool for enhancing food security, it also seems there are limitations in facilitating its role in poverty reduction (Grote, 2014:6; Hefferon, 2015:3895).

2.3.1.2. Global agriculture as instrument to reduce poverty

Poverty is construed in similar views expressed in the three theories of poverty. These theories include welfarist, basic needs and the capability school of thoughts, and refer to situations where an individual or a group of people fall below the relative economic capability to consistently meet their basic needs (like shelter, food, healthcare, education and the overall basic social wellbeing) (Hutton *et al.*, 2021:20). The pro-poor growth theory highlights these poverty theories, and posits that poverty can be overcome through an increment of average incomes. If examined in the context of global agriculture, it can be deciphered that it offers the global population the requisite

average income to ameliorate poverty in their communities (Rudolph *et al.*, 2021:46). Global agriculture plays a significant role in poverty reduction among the worldwide population (Ciglovska, 2018:547; Hefferon, 2015:3895). It does this through direct and indirect contribution (Benes & Walsh, 2018:13). Through direct ways, global agriculture generates earnings for many people or farmers engaged in different agricultural activities. Farmers or households engaged in agriculture can earn a better income and alleviate their poor living conditions (Benes & Walsh, 2018:13). Smallholder farmers engaged in different agricultural activities like crop farming, livestock, fruits, and horticulture, can earn a liveable income from the increasingly attractive global markets. These higher earnings can change their living conditions by alleviating poverty and providing a better life (Comblon & Robilliard, 2017:22). However, it is not only the smallholder farmers that can earn sufficiently to reduce their poverty levels, but also the subsistence farmers. Subsistence farmers often produce agricultural products for household consumption and have the surplus sold to earn some income to reduce poverty (Fox, 2016:13).

Through the cultivation of land to grow their food, subsistence farmers can significantly reduce their household expenditures on foodstuffs (Fox & Thomas, 2016:6). This creates additional savings that can be spent in other areas like the construction of better houses, payment of school fees, access of better medical services and improvement of the overall standard and conditions of living (Fox & Thomas, 2016:6). Yet, as subsistence farmers gain such values from the production of their own foodstuff, similar values also tend to arise from the earnings gained from the sale of the surplus subsistence agricultural products (Poole, 2017:6). However, it is not only through subsistence and smallholder commercial farming that global agriculture has contributed enormously to reducing poverty levels around the world, but also through the activities of largescale commercial farmers (Herrera *et al.*, 2019:144). Largescale commercial farmers contribute to poverty reduction by offering earning opportunities to a multitude of people by creating employment opportunities in most rural areas. Largescale commercial farmers employ a multitude of farm workers as well as a range of different groups of people in the global supply chain (Koolwal, 2018:7). Such groups may include transporters, logistic handlers and workers who earn from different agricultural value-adding activities. It also creates many earning opportunities for those in global agricultural input markets to catalyse overall poverty reduction worldwide.

Such employment opportunities enable the different categories of workers to earn the requisite incomes to reduce their poverty levels (Lowder *et al.*, 2016:5).

Agriculture also creates advantages that indirectly lead to poverty reduction across the population in the world (Dawson *et al.*, 2016:204). One such indirect advantage arises from the multiplier effect of having different categories to earn from in global agriculture (Benes & Walsh, 2018:13). The multiplier effect is often reflected in the catalysation of the overall economic activities. This is also true for the communities where farmers live. An improvement in agriculture could multiply the general economic productivity of the country (Dawson *et al.*, 2016:204). These create spillover effects that enable some of the global population who are not directly engaged in agricultural production to earn and reduce their overall poverty levels (Fox & Thomas, 2016:6).

Similarly, global agriculture also reduces poverty levels at the country level by expanding the governmental tax base and positively impact on tax collections. In turn, this provides a source for financing socio-economic programmes such as education, healthcare and road infrastructure developments (Akudugu *et al.*, 2020:103). Good health of the population is in itself an asset that enables the population to work hard and come out of poverty. An educated community is also an investment (Koolwal, 2018:6) because income tax from agricultural activities and financing education of the poor by the government enables poor categories of the to acquire the required skills and access earning opportunities through employment to turn around their despicable conditions (Koolwal, 2018:6).

Agriculture also contributes to poverty alleviation among the population not engaged in agriculture. This is because the government can use the revenue obtained from agricultural taxes to invest in non-agricultural infrastructural development programmes (Comblon & Robilliard, 2017:22). Typical examples are infrastructural projects such as energy, roads, bridges and ports; all of which improve the overall attractiveness of the country for foreign investors. This instigates the proliferation of foreign investors worldwide to invest in a particular country, thereby creating employment opportunities that offer earnings opportunities to the non-agricultural population (Fox & Thomas, 2016:13). In the long run, this contributes to the reduction of poverty levels among the

population in some countries as well as the entire global population that are still languishing in poverty (Briones *et al.*, 2018:113).

At the same time, high levels of global agricultural productivity also lower the overall prices of agricultural products to enable low-income, and poor people access to food at relatively affordable costs. This could enable them to save money that can be used for other expenses (Fox & Thomas, 2016:13). This is attributable to the fact that the opportunities for people to spend minimally on the necessities for daily living translate into big savings for poor people to meet other needs (Lowder *et al.*, 2016:16). According to the FAO's (2021:10) analysis, only a few global population categories are directly engaged in agricultural activities. As a result, global agriculture contributes largely to reducing poverty among farmers, farm workers and workers in the global value chain. Indirectly, those not engaged in direct agricultural production also benefit from farm activities. This view is reflected in the statistical narrative in Table 2.2 which deals with agriculture and rural livelihoods in sixteen low-income and lower- to middle-income countries (FAO, 2021:10). This comparative analysis revealed that the larger part of the population in all sixteen countries live in rural areas where they largely engage in agricultural activities as the source of food, income and livelihood.

Table 2.2 Agriculture and rural livelihoods in low-income and lower to middle-income countries around the world

<i>Region</i>	<i>Country</i>	<i>Survey year</i>	<i>Share of rural population (%)</i>	<i>Share of agricultural households (%)</i>	<i>Rural female employment-to-population ratio (%)</i>	<i>Rural male employment-to-population ratio (%)</i>
AFRICA	Cameroon	2014	60	62	73	79
	Côte d'Ivoire	2008	59	57	64	81
	Ghana	2013	49	53	80	84
	Kenya	2005	80	70	62	65
	Mali	2014	77	66	82	90
	Mozambique	2009	70	86	95	92
	Niger	2014	84	82	69	91
	Nigeria	2013	63	54	51	60
	Senegal	2011	57	53	47	72
	Uganda	2016	77	80	75	75
	United Republic of Tanzania	2015	71	61	79	85
ASIA AND PACIFIC	Cambodia	2009	81	75	61	61
	Mongolia	2014	36	31	56	65
LATIN AMERICA AND THE CARIBBEAN	Bolivia (Plurinational State of)	2008	34	31	73	93
	Nicaragua	2014	43	65	30	88
CENTRAL ASIA	Kyrgyzstan	2013	66	63	42	67

Source: FAO (2021:17).

However, the difference was that only one-third of households are engaged in agriculture in Mongolia and Plurinational states of Bolivia (FAO, 2021:10). Variances were also reflected in the gender distribution patterns across different agricultural activities in such countries, with the effect that the rural male employment-to-population ratio ranged from 60% in Nigeria to 93% in Bolivia (FAO, 2021:10). In contrast, Nicaragua had the lowest rural female employment-to-population ratio of just 30% against the highest rural female employment-to-population ratios of 70% to 95% in sub-Saharan African countries like Cameroon, Tanzania, Uganda, Ghana, Mali and Mozambique (FAO, 2021:10). This suggests that there are more women than men involvement in agricultural production in most of these sub-Saharan African countries. This undermines the overall level of African agricultural productivity and earnings attained from agriculture. Yet, despite such disparities, Herrera *et al.* (2019:144) highlight that engagement in agriculture by different groups of the global population does not necessarily relate to earnings that can directly contribute to poverty reduction. Instead, they revealed that most groups are found to be engaged in agriculture based on own-account employment or contributing family labour. Own-account employment refers to individuals engaging in self-employment agriculture, where they till the land and cultivate for their food and earnings (Deutsch *et al.*, 2018:916).

Even if such groups tend to work hard, Herrera *et al.* (2019:144) reveal that such a group is often more characterised by poverty because of poor agricultural methods. However, they tend to take control of production and earnings from agricultural activities as compared to contributing to family labour. Contributing family labour is when an individual works in agricultural production for another family member, which may or may not be paid. Herrera *et al.* (2019:144) point out that as the few males engaged in agriculture tend to work based on own-account employment to generate food and earnings from different agricultural activities independently, females and youth tend to contribute as family labour mainly. The fact that they are not paid often causes high-income disparities among women, youth and men. It is such situations that Lowder *et al.* (2016:16) and Comblon and Robilliard (2017:22) reveal to constitute one of the factors that undermine the contribution of global agriculture to reduce poverty levels among rural communities around the world.

To redress such disparities, Fox *et al.* (2016:13) suggest improving land ownership policies and acts to enable women hold land ownership. Such initiative is critical for enhancing capabilities of a large number of women engaged in agricultural production most especially in developing countries where they depend on agriculture to generate earnings that enable them turn around their poor conditions and low standard of living (Adenle *et al.*, 2019:101). It is thus evident that as some farmers and households can generate good earnings from agriculture to change their conditions of poverty and destitution, many other farmers and farm workers cannot do so (Akudugu *et al.*, 2020:103). Amid such complexities, global agriculture does not only contribute to poverty reduction but also to economic growth of countries around the globe (Adenle *et al.*, 2019:101, Amirzadeh *et al.*, 2020:289, and Briones *et al.*, 2018:113).

2.3.2. Global Agriculture as a Method to Contribute to Economic Growth

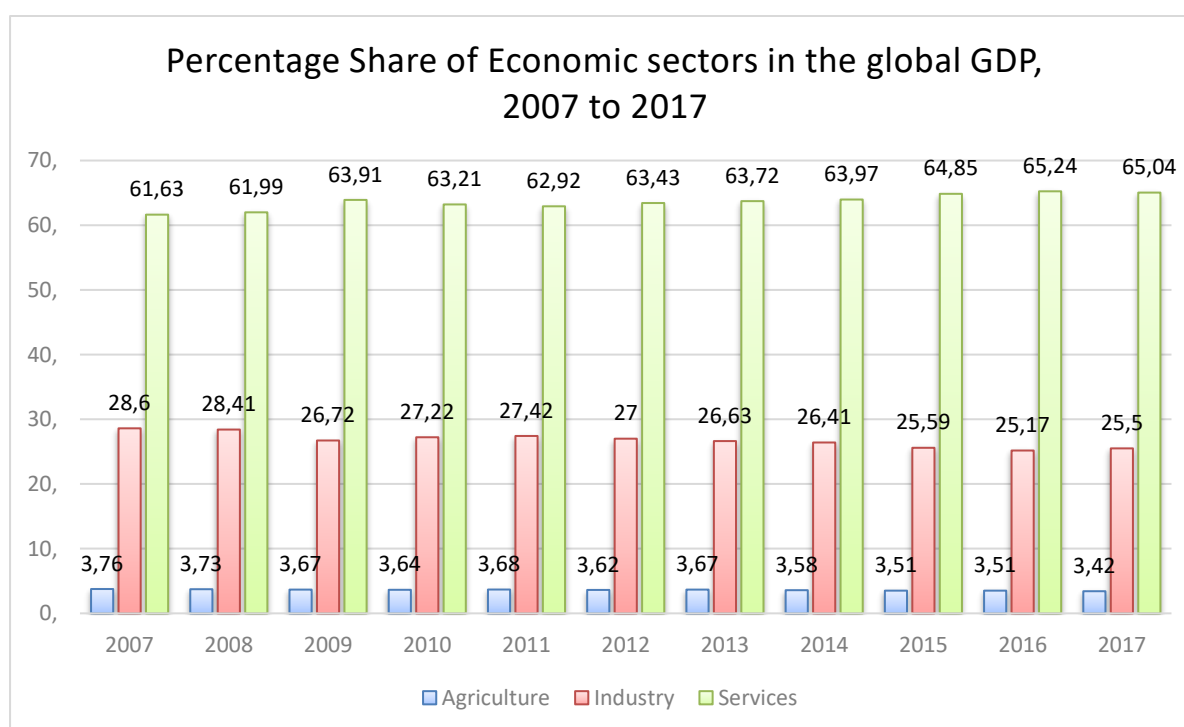
Global agriculture is one of the critical drivers of economic growth. Economic growth is the overall increment of the inflation-adjusted market value of the goods and services generated by an economy during a given period (Hellin *et al.*, 2015:151). It is measured as the positive percentage change in the real GDP, which is the financial measurement of the overall market value of all the goods and services generated by the country in a given period (Hellin *et al.*, 2015:151). The impact of the economic activity on economic growth is calculated using the national accounting system that reflects the level of the overall production and incomes generated by that particular economic activity vis-à-vis the contribution from other sectors to the national accounting system and GDP share (Hefferon, 2015: 3895).

Even if that signifies economic growth, it has been proven over time that agriculture is a major contributor to GDP that determines a country's overall level of economic growth (Esfaghansary *et al.*, 2018:397). Since agriculture generates a lot of goods and services in the agricultural sector and related industries such as the manufacturing and transport sectors, it tends to increase the overall per capita income, which is the ratio of GDP contribution to the population (Courtois & Subervie, 2015:953). This suggests agriculture catalyses economic activities in the agricultural sector and related sectors to spur the overall pace and level of economic growth. Economic growth is

often reflected by an improvement in the population's condition and standard of living (Carmona *et al.*, 2019:385).

According to Awokuse and Xie (2015), Ciglovská (2018), and Timmer (1995:455), agriculture creates indirect non-market linkages that improve the quality of the major production factors like labour and capital. Timmer (1995:455) reiterates that agriculture indirectly contributes to economic growth by providing better caloric nutrient intake by the poor. It achieves that by improving food availability, food price stability and poverty reduction, which are critical economic development goals that all countries aspire to achieve. However, according to Liu (2014:1), such positive agricultural outcomes do not often arise automatically and they differ from country to country. He attributes that due to the diverse and contradiction in the agricultural sector, agricultural businesses growth largely depend on the investment contract, the type of business model, linkages with smallholder farmers and the institutional framework in place in the host country (Alston & Pardey, 2014:121; Liu, 2014:1). Thus, in that context, the data in Figure 2.2 imply that the global agricultural sector contributed a low but stable 3% GDP average from 2007 to 2017 (Statistica, 2020a:19).

Figure 2.2: Contributing share of the various economic sectors to global GDP



Source: Statistica (2020a).

In 2017, the agricultural sector contributed only 3.42% compared to the other sectors, which contributed 25.5% (industry) and 65.04% (services). The remaining 6.04% is from the mining and fishing industries, which together with agriculture, form the primary sector (Foreign Agricultural Service, 2019:8). The data in Figure 2.2 also reflects the contribution of agriculture has gradually deteriorated from 2007 to 2017, while the services sector's contribution to GDP increased slightly. Despite the agriculture sector's lowest GDP contribution, Liu (2014) states that agricultural investments are enablers of higher productivity, technology transfer and access to capital and other markets. Awokuse and Xie (2015) agree, citing Advocates of agricultural-led growth, such as Schultz (1964) and Timmer (1995), who argue that as an enabler of higher productivity, the agricultural sector is also a catalyst for national output growth through its effect on rural incomes and the provision of resources for transformation into an industrialised economy. Agriculture contributes to GDP growth by spurring technology transfer and access to capital and markets. This means that investment in agriculture and the accompanying creation of infrastructure and institutions in other sectors is a prerequisite for national economic growth. However, Vercillo (2020:1) cautions that agricultural interventions to stimulate GDP growth that works for one country might not necessarily work for another. The best way to develop a sustainable agricultural sector is to consult with the farmers about their particular environments and constraints rather than introducing and funding technologies and business arrangements. Such interventions could exacerbate environmental change and socio-economic inequalities.

A consultation approach should create favourable conditions that should enable farmers to apply the requisite strategies to create value for themselves, the country and the world at large (Vercillo, 2020:1). It is thus through such initiatives that global agriculture bolsters the growth per capita income to spawn overall economic growth across the globe (Dawson *et al.*, 2016:204). But quests to achieve such desired socio-economic outcomes also signify policies should not be formulated for farmers. Instead, policy formation should rather be a collaborative process that includes many stakeholders that, among others, also include farmers to integrate small- and largescale commercial farmers (Khwidzhili & Worth, 2017:75). Such a view accentuates the insights from implementing the Green Revolution model that sought to drive agricultural growth and increase food production through innovative measures

Vercillo (2020:1). It yielded the intended results in developing countries in Asia and Latin America during the 1960s and 1970s because it benefited the smallholder farmers in these areas (Dawson *et al.*, 2016:204).

However, when it was introduced to Ghana, Kenya, Rwanda and other areas in sub-Saharan Africa, the farming environment was not as well suited to the technologies as in Asia and Latin America (Vercillo, 2020:1). For the same reasons, Dawson *et al.* (2016:309), as well as Blaustein (2019:48), argue against the Green Revolution Agricultural model introduced at these countries. They further say that instead of driving agricultural growth, the model promoted neo-colonialism and large monopolising agro-businesses and was also environmentally degrading. Furthermore, the policies involved a substantial transformation for rural farmers from a traditional polyculture system that supported subsistence and local trade to adopting modern seed varieties, inputs and credit to specialise in marketable crops and achieve increased production and income (Asseng *et al.*, 2017:2464).

Thus, the report compiled by Dawson *et al.* (2016:309) indicates that the Green Revolution achieved productivity increases in some areas in sub-Saharan Africa. However, Blaustein (2019) argues that farmers resisted it because modern production methods inflated food prices and sabotaged the original goal of helping the poor. Moreover, only a minority could adhere to modernisation and policies. Through the support of the Alliance for a Green Revolution in Africa (AGRA), newer models directed specifically at sub-Saharan Africa, which differ from the ones implemented in Asia and Latin America, emerged in the past 20 years intending to promote the integration of farmers into global markets (Battat & Lampietti, 2015:189). It also sought to improve the commercialisation of agricultural production, encourage efficient use of land and drive production levels up to catch up with other regions. Vercillo (2020:1) and Liu (2014:1) support these arguments. These researchers state that any model must originate from listening to farmers, learning about their particular environments and constraints, and then adhering to their advice.

Nevertheless, despite such improved new insights, it is evident that global agriculture catalyses activities in the agricultural sector. Agriculture also influences the related industries and improves the overall economic activities creating goods and services

that leverage per capita income. As such, overall GDP (and global economic growth) increments faster (Bene *et al.*, 2020:9; Capone *et al.*, 2014:13). This view accentuates the overall notion that, despite certain complexities and dynamics, global agriculture leverages the overall well-being of the global population by enhancing food security, reducing poverty, and catalyses economic growth (Asseng *et al.*, 2017:2464; Briones *et al.*, 2018:113). It is still evident from various studies that other continents (like Europe, North America and Asia to some extent) are benefiting more from global agriculture than Africa. The socio-economic outcomes agriculture offers the African agricultural landscape, and its population are lacking compared to the global population (Adenle *et al.*, 2019:101; Akudugu *et al.*, 2020:103; Amirzadeh *et al.*, 2020:289).

2.3. THE AFRICAN AGRICULTURE LANDSCAPE

Africa possesses a more attractive environment than most other countries and is suitable for farming with all crops and livestock (Meyer *et al.*, 2017:1180). Its fertile soils, combined with more favourable weather and climate, are suitable for all forms of agricultural activities. It is also cheaper to establish livestock farming than in most other parts of the world (Adenle *et al.*, 2019:5). Africa does not have severe interruptions from climatic change, nor suffer from extremely cold winters like some other continents, or require sophisticated infrastructural facilities to protect the livestock (Krause *et al.*, 2019:170). Compared to the different parts of the world, agricultural activities are often accomplished by groups of people that do not have to have the usually required higher amount of capital finance. The implication is that agrarian activities in Africa engage mainly women and youth, as well as some limited categories of men (Gillson & Fouad, 2015:19). Ease of engagement in agricultural production in Africa signifies that a large number of people can engage in agricultural production to reduce the level of unemployment. This is because the agricultural sector accounts for 65% of the African continent's employment (AGRA, 2018:9; Imara Africa Securities Team, 2012:3; Oxford Business Group, 2019:7).

Almost 60% of the 1.2 billion people who live in rural Africa are inherently dependent on agriculture (Otavio, 2017). A high level of the general African population's engagement in agricultural production has also been critical for reducing food

insecurity risks that Otsuka and Muraoka (2017:173) note to have been declining since 2005. Even though some farmers in Africa do not reap enormous earnings from agricultural production, McCullough (2017:133) argues that at least the farmers can earn some income to reduce the poverty levels compared to if such earnings were not available. Agricultural production in Africa is also emerging as a major influencer of GDP increment and a stimulator of socio-economic growth and development (Oxford Business Group, 2019:16). Beegle *et al.* (2016) and AGRA (2018:6) observed impressive results of sector investments made in African agriculture. It was reported that, between 2000 and 2016, the continent recorded the highest agricultural growth rates (just over 4%) compared to the world's average (slightly below 3%). Moreover, the primary agricultural sector in Africa generally makes up a larger portion of the economy than it does in developed countries (Otavio, 2017:3). In 2018, agriculture, forestry and fishing comprised more than 15% of the GDP in sub-Saharan Africa, and 32% in Africa as a whole, compared to the less than 1% of the GDP in North America (Otavio, 2017:8; Oxford Business Group, 2019:16; World Bank, 2018a:13). The agricultural sector is generally regarded as the engine of growth and economic development in Africa (Oxford Business Group, 2019:5).

However, even if that is so, studies by researchers like Addison *et al.* (2016:47), Bjornlund *et al.* (2020:880) as well as Davies (2015:5) still reveal agricultural production in Africa to be punctuated with a myriad of challenges. He mentioned challenges such as land fragmentation, poor transition to modern agricultural production methodologies, poor quality seeds, climate change, lack of capital finance, poor transport infrastructure in rural agricultural production regions, and endlessly lingering land disputes. Poverty is elucidated by van Ittersum *et al.* (2016:14964) as a major hindrance to efficient agricultural production in Africa. It deprives most of the African population of the financial capabilities to invest enormously in agricultural production. Due to poverty, most of the households do not only engage in subsistence farming but also rely significantly on government and non-governmental organisations for seedlings and financial support (Bene *et al.*, 2020:33). If such support is not provided, most of these households fail to effectively engage in extensive agricultural production (Keyser, 2015:153). Instead, they only tend to engage in subsistence farming and small-scale commercial farming. The effect is that as a lot of agricultural products is reserved for household consumption, only a little or even nothing tends to

remain for sale to earn some income and reduce poverty levels (Frelat *et al.*, 2016:458). This leads to a vicious circle of poverty arising from the fact that as farmers fail to access financial support to cultivate extensively, they also tend only to get limited earnings that, in turn, affect their capabilities to engage in extensive commercial agriculture in the next planting seasons to overcome their situations of poverty.

As poverty among the rural population persists, it has also affected the transformation of the agricultural production methodologies in Africa from traditional to modern agricultural production approaches (Kumar & Kalita, 2017:29). Consequently, most farmers or households largely use manual cultivation compared to machinery and equipment like tractors and combine harvesters. The average income of the local population across Africa is gradually increasing. Even farmers with relatively adequate capital finance often cannot engage in extensive large commercial agriculture due to land fragmentation (Mahuku *et al.*, 2015:956). Most households or farmers in Africa reside on land structured according to fragmented traditional boundaries inherited from generations. Thus, unless the occupiers of such land are willing to sell it and move to other areas, it often becomes difficult for commercial farmers with relatively adequate financial resources to acquire land for extensive agricultural expansion and production (Gillson & Fouad, 2015:19).

At the same time, even for small and large farmers that manage to acquire land, frequent endless land disputes have still stalled their efficient and effective agricultural production (Oluwatayo, 2019:489). With certainty, all these challenges often tend to mutate with other challenges like climate change, lack of capital finance and poor transport infrastructure in rural agricultural production regions to undermine the overall level of agricultural productivity and performance in most African countries (Frelat *et al.*, 2016:458). Such a view is consonant with Goedde *et al.* (2019:33), who acknowledge that due to a myriad of different dynamics and complexities, Africa's full agricultural potential remains largely untapped. Similarly, Oxford Business Group (2019:6) also notes three most distinct threats to opportunities in Africa's agricultural potential. Firstly, the smallholder farmers are excluded from high-value agriculture due to a lack of physical infrastructure, input-based infrastructure, resource-based infrastructure and institutional infrastructure (Mudhara, 2010:16; Mutero *et al.*, 2016:47; Oluwatayo, 2019:489; Sikwela, 2013:44; Tshuma, 2014:29). If these notable

challenges can be overcome, agriculture could play an even larger part in transforming economies because smallholder farmers represent 80% of all farms in the African region (Goedde *et al.*, 2019:36; Oxford Business Group, 2019:6; Wiggis & Keats, 2013:27).

Secondly, although the African continent holds more than 60% of the world's arable land, yet its share in global agricultural production is meagre concerning the arable land ratio (Henao *et al.*, 2017:8). Thirdly, the African continent also has a diverse range of agro-climatic conditions that enable it to grow a wide assortment of agricultural products, as was evident from 1990 to 2013 during which time the total value of agriculture production increased by 130% (FAO, 2017:4). However, the continent still experiences scarcity of water and vast areas of land are therefore not cultivated. Consequently, productivity is lower than in the rest of the world (FAO, 2018:6; KPMG, 2012:6; OECD, 2018:9). But even if the productivity of African agriculture is relatively low as compared to the agricultural productivity in other regions like Asia and North America, most researchers like Dorward and Morrison (2015:194) as well as Bjornlund and Pittock (2017a:685) have still confirmed that African agricultural production is steadily and gradually improving.

As such, a narrative was also echoed by NEPAD (2020:18). NEPAD, the development branch of the African Union, was prompted to emerge with the Comprehensive African Agricultural Development Programme 2010-2030. In such a programme, the improvement of agricultural production was recognised as the only pillar through which the socio-economic transformation of the African countries could be achieved. The programme emphasises the importance of treating farming as a profitable business venture by raising the profile of the farming profession. It also agitated for the encouragement of the African private sector to invest enormously in agricultural production and the support of the subsistence and smallholder farmers to transition to medium and largescale commercial farming (Nwafor *et al.*, 2020:47). NEPAD's (2020:18) Comprehensive African Agricultural Development Programme further requires a strong political will to be exhibited by all African countries to not only support agriculture but also to negotiate better trading terms for agricultural products with their counterparts in the developed countries' markets. This would render African

agricultural production more attractive, motivating private sector entities to commit enormous capital to agricultural production.

Besides discouraging activities that induce climate change to undermine agricultural production, NEPAD (2020:18) also emphasises the need to improve food access to bolster the overall level of nutrition among the African population. Unfortunately, even ten years into the implementation of NEPAD's (2020:18) Comprehensive African Agricultural Development Programme, Bene *et al.* (2020:33), Krause *et al.* (2019:170) and Santpoort (2020:19) highlight African agricultural production yet to be characterised by extensive subsistence farming among households and small-scale commercial farming that do not stimulate the desired level of agricultural productivity. Evidence of such poor agricultural practices in countries that invested heavily in agricultural production exists in many African countries like Chad, Malawi, Zambia, Niger, Nigeria, Uganda, Tanzania, Ghana and South Sudan, Kenya, Ethiopia and South Africa (Gillson & Busch, 2015:87; Kumar & Kalita, 2017:29; Meyer *et al.*, 2017; Mahuku *et al.*, 2015:956). NEPAD (2020:18) estimates the African population to reach 1.5 billion people in 2030 and 2.6 billion in 2050. However, the productivity and growth rate of African agricultural production is not proportional to the food security for such a population; this means that food security and other related challenges are highly likely to emerge soon in Africa.

Such a view echoes the revelations of Islam and Karim (2019:16) and Schanbacher (2010:23) that the increase in the global population growth is estimated to rise from 7.3 billion today to close to 9.8 billion by 2050, with the highest increase projected to be in the developing countries and most especially sub-Saharan Africa and Asia. Thus, as much as per capita food production capacity has increased by at least 1.6-fold in Asia, China and Latin America, Africa's per capita food production has not changed much over the past 50 years (Godfray *et al.*, 2010:16, cited in Mutero *et al.*, 2016:42). Similarly, Africa also needs to pay attention to rising urbanisation, population and income growth, which are increasingly pushing up the demand for food, especially when agriculture is faced with the emerging threat of natural resource constraints and climate change (FAO, 2017:66). In other words, improvement is needed in Africa's agricultural productivity in light of forecasts that predict Africa's population to double to 2.6 billion by 2050. Therefore, African nations need to boost their food production

to prevent food insecurity and the worsening agricultural trade deficit (Oxford Business Group, 2019:7). Suppose these highlighted agricultural concerns are not attended to. In that case, the region's ability to produce food will depend on domestic markets because domestic production capacity will remain insufficient to meet the region's growing consumption needs (FAO, 2018:6; OECD, 2018:9).

Therefore, to experience greater agricultural production to meet the growing consumption needs is also linked to SDG 2, which aspires to end hunger, achieve food security, improve nutrition and promote sustainable agriculture by 2030 (see Section 2.3.1). The African continent will have to be innovative and enhance productivity, especially in the agriculture sector (Chavez, 2020:17; FAO, 2018:6; OECD, 2018:9). According to FAO (2019:10), SDG 2 calls for increasing incomes and productivity. In doing so, SDG 2 recognises the essential role of smallholder food producers in promoting food production worldwide while facing constraints in accessing land, inputs and productive resources, knowledge, financial services, markets and opportunities. Therefore, strengthening adaptive capacity and the resilience of smallholder food producers is critical for reversing the trend of rising hunger and reducing the share of people living in extreme poverty (Chavez, 2020:17). However, despite such limitations, there are also exceptional regions within the African continent, such as Kenya and Ethiopia, that exhibit the best agricultural practices from which the rest of the continent can learn. This is because recent reports by Birch (2018:9), Davis (2018:13), Deloitte (2017:6) and The World Bank (2019:26) show that although there are untapped agricultural opportunities for Kenya and Ethiopia, these countries already have had remarkable results.

2.3 CHAPTER SUMMARY

This chapter discussed the global and African agriculture landscape and its orthodox food production approaches. Orthodox food production approaches imply agriculture is a seamless process through which inputs like land, capital, labour and raw materials in crop and livestock production are coherently combined to generate outputs that create the desired socio-economic values for farmers and the surrounding communities as well as the general national and global economy (Bene *et al.*, 2019:149). However, Kubitza *et al.* (2020:22) caution that agriculture does not

just deal with primary activities entailing the direct cultivation and harvesting of crops or the rearing of animals and extracting their products for the market. Instead, agriculture also integrates critical secondary activities from procuring inputs like seeds, machinery, equipment, pesticides and disease control products from relevant agricultural input producers and supplying them to farms (Iortyom *et al.*, 2018:243).

Such a process requires some form of farmers' backward integration and linkages into the input market to access the required inputs, as secondary activities require some form of a farmer's forward integration into the output market to access and reap the desired values from the output market (Iortyom *et al.*, 2018:243). Such reasoning accentuates shared opinions of theorists like Santpoort (2020:19), Seekell *et al.* (2018:26) and Pingali (2015:583) that the concept of agriculture inter-relatedly cuts across the disciplines of agricultural science and agricultural economics. Agricultural science is a multidisciplinary notion that integrates biology, natural science, economics and social science concepts to analyse and improve different plant and livestock farming practices and production processes (Santpoort, 2020:19). It uses techniques like agronomy, plant breeding, genetics, plant pathology, crop modelling, soil science, entomology, agricultural technologies, pesticides, waste management, bioremediation and adverse ecological research (Pingali, 2015:583).

Agricultural science seems to deal directly with the production of inputs and agricultural technologies for the primary generation of plant and livestock outputs. However, Seekell *et al.* (2018:26) point out that it is still interrelated with agricultural economics that studies the efficiency and effectiveness of the process, practices and methodologies of producing and supplying agricultural inputs to farmers as well as the primary agricultural output production and distribution of such agricultural outputs along the value chain to the final consumers. In contrast to agricultural science, agricultural economics consonate with the research topic, aim, objectives and questions that seek to use the concept of New Generation Cooperatives to analyse the overall efficiency of agricultural science to generate the requisite inputs and influence the efficiency and effectiveness of the agricultural production process to create the desired outputs that accurately respond to the socio-economic needs of farmers and the society at large (market).

Agricultural economics also integrates the notion of agribusiness management as one of its critical sub-sets that also deals with the evaluation and improvement of the efficiency of the process of agricultural inputs' production and supply to farmers. In addition, it includes all the actual plant and livestock production processes and moving the produce from farms, along the value chain, to the final consumers (Mottaleb *et al.*, 2018:156). Unfortunately, due to the differences in technologies, skills, competencies, skills, established farming traditions and ideologies, climate, soil, poverty and political systems, among others, the usage of agribusiness management methodologies is seamlessly integrated with certain agricultural economics and science concepts has often still not been able to influence all agricultural entities to generate the desired quantity and quality of socio-economic outcomes (Tadesse *et al.*, 2018:698; Stagnari *et al.*, 2017:13; Sanyang *et al.*, 2016:187). The implication is that as different agricultural entities induce different socio-economic outcomes, the entire global agricultural production industry can contribute equally on different socio-economic levels.

Agricultural contribution to the global socio-economic sphere tends to vary from country to country to thereby signify as some countries perform poorly, extraction of the best agricultural practices from the excelling countries is critical for turning around the performance of the poorly performing countries (Kubitza *et al.*, 2020:22). Such best performing countries are reflected in the global agricultural production patterns to include inter alia China, Russia, Canada, Indonesia, Argentina, India, Germany, Netherlands and United States of America (Poole *et al.*, 2020:9). Even if that implies, such countries and regions around the world tend to benefit more, it was still evident that despite certain complexities and dynamics, global agriculture still leverages the overall wellbeing of the worldwide population by contributing as a tool for enhancing food security, as an instrument for reducing poverty and as a method that catalyses economic growth (Asseng *et al.*, 2017:2464; Briones *et al.*, 2018:113). As such, benefits accrue mainly in developed countries. A comparative analysis of global agricultural production's contribution with the African agricultural contributions signifies it is Kenya, Ethiopia and predominantly South Africa that create more desired socio-economic outcomes (Adenle *et al.*, 2019:101; Akudugu *et al.*, 2020:103; Amirzadeh *et*

al., 2020:289). The next chapter, therefore, shows an overview of the South African agricultural landscape.

CHAPTER 3

OVERVIEW OF THE AGRICULTURAL LANDSCAPE IN SOUTH AFRICA

3.1 INTRODUCTION

Efficacy of the overall agricultural activities unfolding in a particular country's agricultural landscape is often reflected in the overall quantity and quality of the socio-economic outcomes generated by such agricultural activities (Candemir *et al.*, 2011:66; Pokharel & Featherstone, 2021:1). Likewise, it is also the quantity and quality of the socio-economic outcomes generated by the agricultural production system that also mirror its overall level of efficacy (Candemir *et al.*, 2011:66; Pokharel & Featherstone, 2021:1). Efficacy of each discrete agricultural activity spawns the overall agricultural production efficacy at the farm, cooperative, sectoral, local, regional, national, continental and global levels to create and deliver the desired quantity and quality of socio-economic values at all such levels (Hun *et al.*, 2018: 82). Thus, in the context of such logic as also dictated by this research's topic, aim, objectives and questions that are to evaluate the efficacy of NGC business framework in uplifting smallholder farmers, this chapter evaluates different agricultural landscapes so as to discern their efficacy as reflected in their overall quantity and quality of socio-economic contributions. The motive of such analysis is to identify the best agricultural practices that can be replicated in South Africa to leverage the efficacy of NGC business framework in uplifting smallholder farmers. Quests to achieve this entailed structuring theories and literature evaluation in this chapter according to three main chronological phases.

The first phase examines the literature on the landscape of South African agriculture and the contribution of both the smallholder farmers and the largescale commercial farmers towards the agricultural sector. The three subsectors, agriculture, forestry and fisheries, are further discussed as how they, directly and indirectly, support the 8.5 million people who depend on agriculture for income and employment. Against that backdrop, the second phase of theories and literature evaluations assessed trends in the efficacy of South African agriculture. This is reflected in its overall quantity and quality of socio-economic contributions to the GDP, employment creation, poverty alleviation, linkages with other sectors, and foreign exchange earnings mirrored in its overall socio-economic contributions. The last phase evaluates theories and literature

on measuring and improving agricultural efficacy and productivity using FAO's Framework for Measuring Agricultural Productivity and Efficiency.

3.2 THE AGRICULTURE LANDSCAPE IN SOUTH AFRICA

South Africa is a significant exporter of agricultural products, as compared to other African countries, and ranks highly on the export of many products (Chakona & Shackleton, 2017:82). In 2018, South Africa's agricultural exports reached US\$10.6 billion, a record level. This increase in agricultural output led to the country being ranked 45th out of 113 countries in the Global Food Security Index, thereby making it the only African country within the top 50 (Sihlobo, 2019:35). South Africa has one of the most multi-sectoral agricultural systems in the world and also compares quite highly against the agricultural systems in the entire African continent (Gwebu, 2018:55).

In the rest of Africa and other developing countries, agriculture is mainly undertaken by smallholder farmers and subsistence households. In contrast, agriculture in South Africa is often the preserve of well-facilitated corporates that engage in extensive largescale commercial farming (Rudolph *et al.*, 2021:46). This is because it is estimated that South Africa has 32000 commercial farmers, of which only 5000 to 7000 produce about 80% of the total agricultural output in the country (Rudolph *et al.*, 2021:46). Such figures signify that only a few corporates engage in largescale commercial farming even amid the extensive population that is already in the range of 60 million people. But even if that suggests that apart from providing food for their households, small-scale and household farmers only play minimal roles in the economy, de la Hey and Beinart (2017:753) still argue that the agricultural sector remains vitally important to the South African economy. This is because South Africa is a rich and diverse country with a spectacular range of vegetation types, biodiversity, climates and soil types that offer enormous opportunities for agricultural productivity to be improved (Sinyolo & Mudhara, 2018:78).

The South African agricultural sector comprises three subsectors to aid the optimisation of agricultural resources and generate the desired outputs. These sectors are agriculture, forestry and fisheries. The agriculture sub-sector which is linked to this

study is further divided into field crops, horticulture and animal production (Department of Agriculture Forestry and Fisheries, 2011:7, as cited in Sinyolo & Mudhara, 2018:78). Goldblatt (2010:67) (as cited in Mokoena, 2019:98), explains that the country's farming activities are divided into distinct farming regions. These farming activities range from intensive crop production in the winter and high summer rainfall areas to cattle ranching in the bushveld and sheep farming in the more arid regions. Thus, with 8.5 million people directly or indirectly dependent on agriculture for income and employment, agriculture requires robust initiatives and support to improve further its overall level of productivity (KPMG, 2012:6).

Unfortunately, with most of the smallholder farmers not properly supported to spur the overall increment of agricultural productivity to serve both the domestic and internal markets, the agricultural production gap still exists. The implication is that these gaps offer attractive agricultural market opportunities for agricultural products in South Africa (Khwidzhili & Worth, 2016:22). Combined with a conducive farming climate and good soils, South Africa is attracting more foreign investments in largescale commercial agriculture. Unfortunately, these gaps in existing markets are exploited by importers of agricultural products such as chicken and pork from Brazil and the United States (Majola, 2021:16). As a result of the high levels of market attractiveness, South Africa's agriculture has diversified extensively to produce commodities like grains, oilseeds, fruits, sugar, wine and all forms of vegetables (Hutton *et al.*, 2021:20). Agriculture also successfully ventured into livestock farming, integrating cattle, dairy, hogs, pigs, goats, sheep and highly sophisticated, well-developed poultry and egg sectors (Hutton *et al.*, 2021:20).

However, the actual farm-based activities become more diversified, South Africa's agro-processing and value-adding sector has diversified extensively into inter alia the slaughtering, processing, packaging and preserving of all forms of finished meat (Bellora *et al.*, 2017:33). Other agricultural value-adding processes include processing and preserving of fruits, dairy products, grains, crushed oilseeds, animal feeds, sugar refining and confectionary as well as processing of cocoa and chocolate products (Mokoena, 2019:17). The overall implication of such a market-oriented agricultural sector is that it contributed 10% to South Africa's export earnings at a value of \$10.2 billion even during the heights of corona virus that saw global agricultural production

decline in the financial year 2020 (Hutton *et al.*, 2021:20). Although South Africa exported wool, nuts, sugar, mohair and pears among other significant products, it was citrus, wine, table grapes, corn and apples that offered the most significant exports by value (Mokoena, 2019:6). In terms of grain, South Africa's grain industry that constitutes of barley, maize, oats, sorghum and wheat production sectors to comprise one of the biggest agricultural industries provided above 30% to the total gross value of agricultural production (Rudolph *et al.*, 2021:46). Besides actual farmers, the grain industry also integrates other critical players and actors like input suppliers, silo owners, traders, millers, bakers, research institutions, insurance firms and financial institutions (Von Bormann, 2019:9).

In such a network, the animal feed industry is an integral and critical player in the South African grain industry. Annually, 6.0 million tonnes of grain and 1.6 million tons of oil cake (originating from imports, domestic sunflower and soybeans production) are used as inputs in the animal feed industry (BFAP, 2021:6). In similar disaggregation, South Africa leads Africa in corn production. Most domestically produced corn is used as essential ingredients for carbohydrates in the South African Development Community (SADC) region. On average, animal and human consumption consume 15 million tonnes per annum (BFAP, 2021:6). Domestic corn consumption totals 12 million tonnes, while a surplus of three million tonnes is exported. Although wheat is largely grown in the winter-fall regions of the Western Cape and the eastern part of the Free State, there have been frequent production fluctuations. The average South African wheat production is 1.8 million tonnes per annum (Majola, 2021:16). The wheat production is less than the total domestic demand of 3.5 million tonnes per annum. South Africa relies significantly on wheat imports to meet the excess demand. Weather pattern changes and the deregulation of agricultural grain markets in 1997 are responsible for a decline in wheat production, even amid rising demand (Kirsten *et al.*, 2019:1).

Such deregulation saw profit margins decline, instigating farmers to switch wheat production to other profitable crops like canola, corn and soybeans, or even livestock production (Kirsten *et al.*, 2019:1). Excess demand is not only reflected for wheat products but also meat products. As a result of the increasing average and disposal incomes among South Africa's households, meat consumption skyrocketed in the past

ten years to 4.0 million tonnes per year and at a value of R250 billion in 2020. This represented 35% of the total food expenditure (Majola, 2021:16). However, South Africa still imported 490.475 tonnes of poultry meat in 2020 due to the rising disposal incomes that have rendered meat relatively cheaper as the most preferred diet among South Africa's households (Majola, 2021:16).

The implication is that even if South Africa produced for domestic consumption and exported to earn enormous foreign exchange, unfilled market needs still motivated it to spend \$6.3 billion for the importation of agricultural products in the financial year 2020 (Hutton *et al.*, 2021:20). Despite such a figure reflecting a decline by 7% from 2019 due to Covid-19 devastating effects, major imports were rice that constituted \$497 million, wheat (\$449 million), palm oil (\$389 million), chicken cuts and offal (\$205 million), cane sugar (\$197 million), sunflower oil (\$164 million), soybean meal (\$130 million) and whiskies (\$114 million) (Rudolph *et al.*, 2021:46). In addition to these imports, South Africa also spent \$282 million to import agricultural products like poultry meat, wheat, planting seeds, distilled spirits, animal feeds, tree nuts, dairy products and sorghum from the United States (BFAP, 2020:5; BFAP, 2021:6). These signify as much as South Africa's agriculture is voluminous enough, it is still insufficient to meet the needs of the constantly expanding South Africa's market as explained by the constantly rising demographic figures and quests of the largescale agricultural entities to also serve neighbouring SADC markets.

However, despite such complexities, different empirical studies still suggest that South Africa's agricultural production contributes enormously to the attainment of socio-economic goals and objectives of the South African economy (Benjamin *et al.*, 2018:8; Oldewage-Theron *et al.*, 2018:51; Sinyolo & Mudhara, 2018:78).

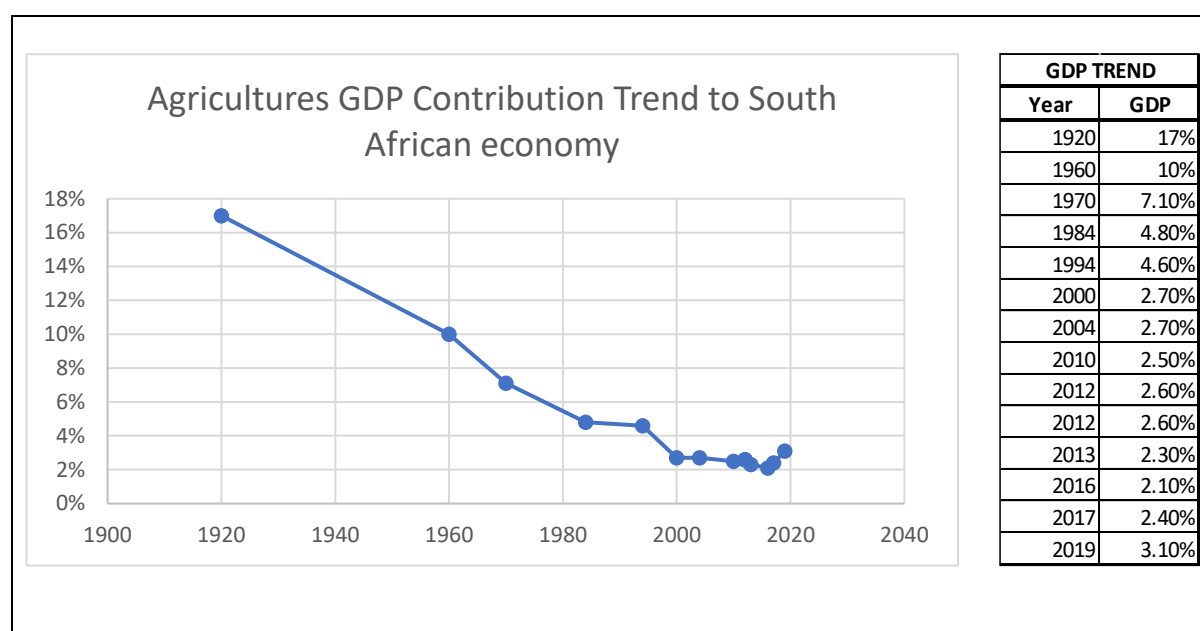
3.3 SOCIO-ECONOMIC CONTRIBUTION OF THE SOUTH AFRICAN AGRICULTURE

Empirical facts imply socio-economic contributions of South Africa's agriculture are often reflected in an increase in the GDP, improved employment creation, poverty alleviation, enhanced food security, catalysing effects of agriculture's linkages with other sectors and increment of foreign exchange earnings (Cholo *et al.*, 2017:407; Taruvinga *et al.*, 2017:28; Zimpita *et al.*, 2015:33;). A combination of challenges constraining the reaping of socio-economic contributions emanating from South Africa's agriculture. Typically, these challenges include devastating climate change, fluctuating prices, and minimal contribution of smallholder farmers (Olivier & Heineken, 2016:168; Wenhold & Faber, 2017:5;). Thus, below are the details of the analysis of such agriculture's socio-economic contributions vis-à-vis their associated impediments.

3.3.1. Agricultural Contribution to GDP in South Africa

South African agriculture contributes significantly to the improvement of the GDP. Figure 3.1 shows a comparison of agriculture's GDP contributions for 1920 and 2020. The data suggest that the contribution of agricultural production to South Africa's GDP has been in a general decline over the past century, whereby a significant drop from 17% to a low of 3.10% in 2019, was experienced (Von Bormann, 2019:25). Despite the waning GDP during this period (1920 – 2019), during the 1950s and 1960s the commercial sector agricultural output gradually started to grow due to the government's investments in infrastructure, extension services, research and development, direct subsidies and debt relief, guaranteed markets and guaranteed prices for most farm commodities (Greyling *et al.*, 2015:4; Khapayi & Celliers, 2016:26). From 1960 to 1970, the GDP contribution declined from 10% to 7.10% and, although the 1970s were a period of rapid growth in the South African economy as a whole (Wenhold & Faber, 2017:5), this growth did not result in any improvement in the agricultural GDP contribution because by 1976 the economy had moved into a recession (Oldewage *et al.*, 2015:113). This led to a period of prolonged stagflation that lasted until the 1990s.

Figure 3.1: GDP contribution trend of the agricultural sector from 1920 to 2019



Sources: Business Tech (2019), DAFF (2011, 2019), Department of Agriculture (2011), Greyling *et al.* (2015), Stats SA (1994, 2013), Von Bormann (2019).

3.3.2. Agriculture and Employment Creation

Despite challenges, the contribution of South Africa's agricultural production to employment creation has been enormous, with the effect that approximately 8.5 million people are directly or indirectly dependent on agriculture for income and employment (Wenhold & Faber, 2017:5). Agriculture offers direct and indirect employment to many people in South Africa. It also provides them with a source of income to alleviate poverty and aid South Africa's capabilities to respond to the MDGs (2000-2015). Millennium Development Goals (2000-2015) that were replaced with SDGs 2015-2030 aim to support a global initiative that eradicates poverty, fosters development and promotes peace while emphasising the collective responsibility to uphold the principles of human dignity, equality and equity (Mbajiorgu, 2020:332). MDG1 aimed to fulfil three targets that entail a reduction of extreme poverty, achievement of productive employment with decent incomes and halving the number of people who suffer from hunger, thus ensuring food security (Musemwa *et al.*, 2018:31; UN, 2015:29). Thus, in the agriculture context, Kirsten (2016:88) and Ciglovska (2018:27) share similar views. Agriculture provides sources of incomes to minimise poverty through the direct

and indirect provision of employment opportunities to the population and also minimises urban migration to improve social viability by employing in rural areas.

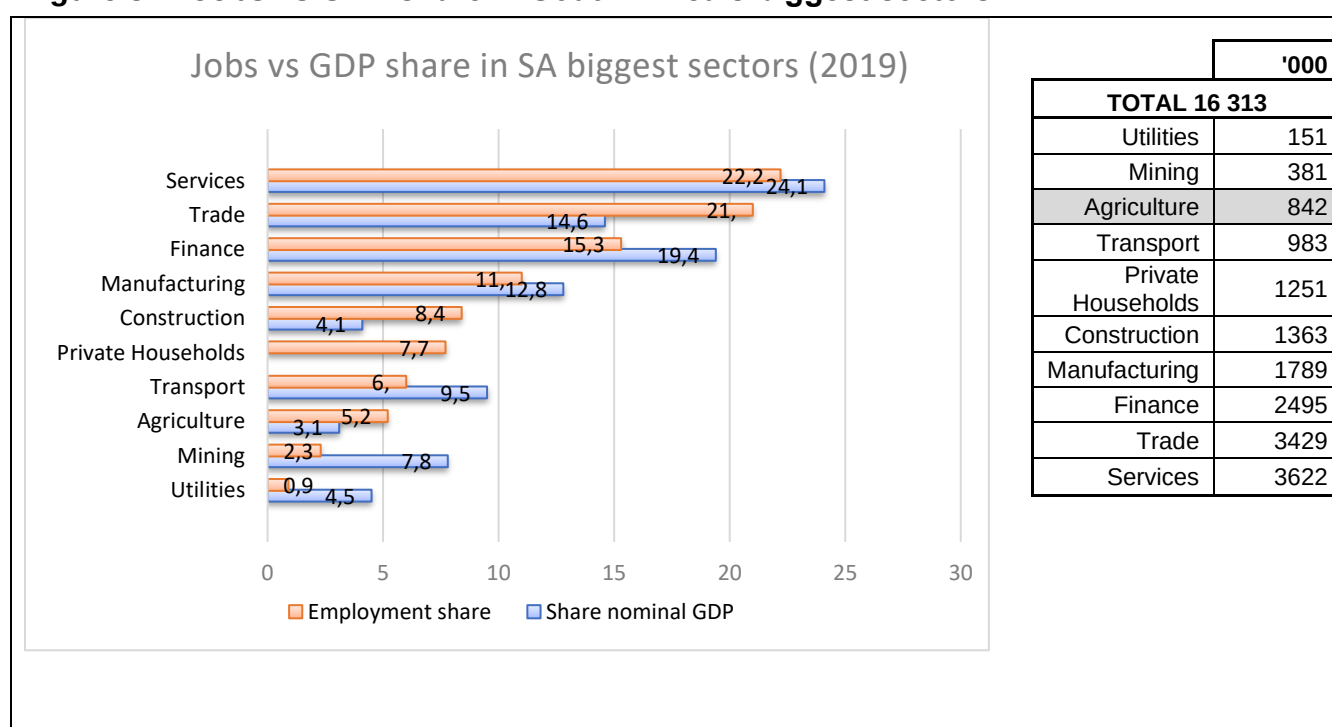
Apart from agriculture playing a role in achieving MDG1, Greyling *et al.* (2015) and Ciglovská (2018) also commend the agricultural sector for having significant linkages with other sectors to catalyse activities in such sectors and stimulate growth across the sectors in the economy. Adhikari (2019:6) further reiterates that SDGs that now apply to developing and developed countries emphasise the achievement of similar targets articulated in the MDG (2000-2015). South Africa is increasingly promoting increased investment in agriculture and rural development. At the same time, national programmes for food security are also being established, especially for smallholder farmers (Mudhara, 2010). This is because if supported, smallholder farmers can make a bigger contribution to employment, poverty alleviation and food security (Mutero *et al.*, 2016:40). In other words, these factors imply that sustainable improvements in food security and employment contribute to poverty reduction (Ciglovská, 2018:547; Zhou *et al.*, 2013:2599). Unfortunately, even if that is so, Stats SA (2020b:28) still isolates South Africa to occupy number 14 on the list of 20 countries with the highest unemployment rate in 2020. The implication is that South Africa had an unemployment rate of 29.1% in 2020, the country's highest unemployment rate since 2008. Burkina Faso in West Africa was in position one, with the highest unemployment rate of 77%, and number 20 on the list was the West Bank in Israel, with a 26.7% unemployment rate (Statistica, 2020b:48).

The South African NDP of 2012-2030 is optimistic. It estimates that South African agriculture could create close to one million new decent jobs by 2030 (The Presidency National Planning Commission, 2012:102), especially in the rural areas (Von Bormann, 2019:14). The NDP notes that agriculture is crucial for transforming rural economies and enhancing social cohesion by holding a significant number of people in the rural areas by offering agricultural-based employment opportunities to mitigate the risks of urbanisation. Such logic echoes Kirsten's (2016:19) concerns that if agricultural activities supporting rural communities disappeared, communities would destabilise, and urban migration would increase. In turn, this would cause a problem of population concentration in the urban areas, thereby resulting in financial strain on the hosting municipalities, especially if there was extensive urban unemployment.

Agricultural growth and its employment, therefore, make an important contribution to the spatial distribution of the population (Satterthwaite *et al.*, 2010). Yet, as agriculture creates employment, it also tends to contribute enormously to the increment of the South African GDP.

Such a view is echoed in Figure 3.2, which shows jobs versus the GDP share of SA's biggest sectors.

Figure 3.2: Jobs vs GDP share in South Africa's biggest sectors



Source: Business Tech (2019:8).

The highest contributor to GDP in 2019 was the services sector, with a contribution of 24.1%, and the lowest contributor to GDP was the agricultural sector, with a contribution of 3.1%. Although agriculture's share the GDP is low, its employment contribution to the South African economy is almost double (5.2%) of its GDP contribution. This is an unlikely ratio compared to the other sectors (Business Tech, 2019:1). However, despite this remarkable GDP-employment ratio, the agricultural sector is one of three sectors that contributes less than 6% to total employment in the country (Business Tech, 2019:1). According to Vagdevi and Kiranbabu (2015:6), this indicates poor usage of the available workforce and the failure to modernise agriculture and other activities. Figure 3.2 also shows that agriculture represents a low

5.2% of formal employment, which amounts to 842,000 people (Business Tech, 2019:1; Stats SA, 2020b:2). If agricultural seasonal and contract workers are taken into account together with the entire value chain of agriculture, agricultural and agriculture-related employment represents a total of 12% of national employment (Mokoena, 2019:2). However, this includes the workers in the agricultural services, food manufacturing and trade sectors. The Labour Surveys of Statistics South Africa indicate that from the recession of 2008 to March 2020, the sector experienced the largest employment increase of all sectors.

Statistically, the highest employment gains in agriculture were in the fourth quarter (Q4) with 2014 (56,000), 2016 (38,000), 2017 (39,000) and the third quarter (Q3) of 2019 (38,000) (Stats SA, 2016:6; Stats SA, 2017:28; Stats SA, 2019a:4). As a result of the Covid-19 pandemic, in South Africa closed its borders and limit movement with lockdown regulations. This brought about new challenges to trading in various industries (Department of Cooperative Governance, 2020:7). However, the agricultural sector was deemed an essential service, and limited lockdown regulations were imposed on the industry. The sector proved to be resilient and was the only sector that was relatively unaffected, such that it reported positive growth figures during the Covid-19 lockdown (Bizcommunity, 2020:201). At the end of 2020, the sector expanded by 15,1% (StatsSA, 2020b:31). These remarkable figures notwithstanding, the agriculture sector's employment statistics have declined since the early 1990s (Stats SA, 1994:6; Stats SA, 2013a:7; Statistica, 2020c:13).

Wenhold and Faber (2017:5) note three significant periods of massive unemployment. The first period fell from 1988 to 1998, during which the agricultural sector lost 20% of jobs due to the industry shift from formal labour to more casual and seasonal labour. The deregulation of agricultural marketing and the liberalisation of agricultural trade that was completed in the late 1990s also resulted in lower grain prices. This prompted producers to remove marginal land from crop production and to decrease the area planted under maize and wheat by more than a million hectares (Greyling, 2015:7). Nonetheless, KPMG (2012:7), in support of Wenhold and Faber (2017:5), noted the second period of low agricultural employment. In the early 2000s, there was a strong shift towards mechanisation motivated predominantly by cost-saving concerns. The

third decline period in agricultural employment was caused by the effects of the 2008 global recession.

The 2008 global recession was characterised by the deterioration of global trade, fluctuating exchange rates and a failure to implement fair trade policies around the world, all of which had a negative impact on the agricultural sector (Wenhold & Faber, 2017:5). Hence, more recently, in Q1 2016 and Q3 2016, and in Q1 of 2020, the sector shed 44,000, 16,000 and 21,000 jobs respectively (Stats SA, 2016:9; Stats SA, 2020b:11) due to drought which also negatively affected farmers' incomes (DAFF, 2017:1; DAFF, 2018:9; Sihlobo, 2018b:10). The Business Tech (2019:1), Statistica (2020c:34) as well as Von Bormann (2019:66) confirm that direct employment from the agricultural sector has decreased in the past two decades, from almost two million in the year 2000 to an estimated 842,000 in 2019. This is worrying, considering the SDG1 of creating employment to improve South Africa's employment rate through agriculture. However, the South African President, Cyril Ramaphosa acknowledges the challenges faced by the country's agricultural sector. During his 2020 State of the Nation Address, he reaffirmed the government's commitment to ensuring that agriculture is one of the main sectors funded to drive development and job creation in South Africa (The Presidency, 2020:33). He added that there would be an investment in agricultural research to improve the competitiveness, creativity and productivity of the country's agriculture globally (The Presidency, 2020:33).

Nonetheless in addition to employment creation, South Africa's agricultural sector also has a contributory responsibility to attain SDG's target which is to alleviate poverty as well as improve food security.

3.3.3. The Contribution of Agriculture to Poverty Alleviation and Food Security

Agricultural production often contributes enormously towards poverty alleviation and improved food security. However, South Africa, made progress towards eradicating extreme poverty and hunger, as defined by the MDG poverty lines (Stats SA, 2015:22), has not been quite enormous. Although Cichello and Rogan (2017:37) believe that formal and informal employment helped to reduce poverty, the Living Conditions Survey, which Stats SA last did in 2015, shows that 40% of South Africans still live

below the upper-bound poverty line (Stats SA, 2018:72). Secondly, there is a positive link between food security and poverty alleviation, especially in rural areas (Mahadevan & Hoang, 2016:183). When people are employed, their livelihoods improve, they have a source of income, and income enables them to buy the household goods and services they need, thus eradicating poverty and also generating income for other sectors (Alston & Pardey, 2014:103; Ciglovska, 2018:547; Zhou *et al.*, 2013:2599). Unfortunately, since unemployment in the country currently sits at 33,9%, it is the biggest threat to achieving the set poverty reduction targets in the country (StatsSA, 2022:1). There were more than 30,000 job losses from the sector in the past five years (Stats SA, 2016:26; Stats SA, 2020b:19). In this regard, Von Bormann (2019:264) concludes that agriculture needs robust initiatives and support to achieve growth in employment numbers so that unemployment can be reduced and poverty alleviated.

Kirsten (2016:39), therefore, endorses the support of smallholder farmers because they generally engage in absorptive production practices and can employ many workers who can contribute to employment targets. Such initiatives would influence the increment of income earnings to alleviate the poverty levels and food security issues among rural households. Such a view is consonant with Bahta *et al.* (2018:95) postulation that there is a relationship between poverty alleviation and food security. The SDG1 and SDG2 list poverty alleviation and food security as key priorities (UN, 2015:53). The analysis by Mahadevan and Hoang (2016:180) indicates a positive relationship between poverty and food security in the rural regions. Interestingly, these researchers found no such relationship existed for urban regions. Citing the UN's (2015:53) statistics, Olivier (2018:8) states that rural poverty has remained 2.5 times higher than in urban areas.

Moreover, females comprise less than 30% of the agricultural workforce. Rural female-headed households are 2.69 times more likely to live below the poverty line than urban male-headed households (Stats SA, 2015:22). Sihlobo (2018a:89) also makes an important point about women in this sector, namely that firstly, women's incomes have a larger impact on food security. Secondly, every rand in income earned by women achieves the same impact as R11 earned by men. In this regard, the authors conclude

by pointing out a transformational area that the South African agricultural sector should strive for policy discussion to increase the effective participation of women and youth in agriculture to significantly increase their potential to address food insecurity (Mahadevan & Hoang, 2016:179-199).

In a resource's context, Farming First (2015:7), Khapayi and Celliers (2016:39) and UN (2015:9) all believe that food security is achievable if the productivity and incomes of smallholder farmers are improved. This can be facilitated through secure and equal access to land, inputs, knowledge, financial services, markets and opportunities for value addition. Tshwene and Oladele (2016:73) state that security works through employment creation, higher real wages, farm income and stable food prices. Thus, the employer's contribution to the agricultural sector is important for poverty alleviation and food security. Kiprutto *et al.* (2015:36) elaborate that many of the poorest people in rural areas regard smallholder farming as an important strategy to move out of food poverty and malnutrition. As such, the smallholder agricultural sector in South Africa is regarded as one of the prominent livelihood options for most people living in rural areas (Oluwatayo, 2019:485).

Maziya *et al.* (2017:40) define food security as having reliable access to a sufficient quantity of affordable, nutritious food. FAO (2004:102) highlights four key points concerning food supply and accessibility: availability, stability, access and use. Access to food and adequate nutrition are rights enshrined in the Constitution of the Republic of South Africa, Section 27, 1(b) of the Bill of Rights (Nesengani *et al.*, 2016:242). Food security, in particular, has been on the international agenda since 1948 (Kiprutto *et al.*, 2015). However, although reports show that progress has been made in this area, 20% of South African households still have inadequate, or severely inadequate, access to food (Stats SA, 2019b:19). Mugambiwa and Tirivangasi (2017:1) claim that the failure to meet the 2015 target of the MDGs on ending hunger was a result of failure by the governments of developing countries to make commitments to curbing the major barriers to the MDG targets. According to Orellana (2010:108), climate change directly impacted the efforts of communities to achieve the MDGs. Still, it poses a threat to achieving current SDGs, most particularly SDG 2, of ending hunger,

achieving food security and improved nutrition and promoting sustainable (Mugambiwa & Tirivangasi, 2017:3; Zikhali *et al.*, 2020:45).

The climate change effects on agricultural production often damage agricultural infrastructure and wipe out harvests (FAO, 2018:28). These effects include decreased seasonality, disrupted weather patterns, the increased duration and severity of extreme weather occurrences such as droughts (shortage of water challenges), floods and heatwaves (Lotter, 2019:86). Therefore, if South Africa wants present and future generations to be able to feed a growing population, the land needs to be nurtured. Sustainable agriculture must be adopted (Kiprutto *et al.*, 2015:47). Moreover, FAO (2018:28) highlights that, firstly, the goals of achieving sustainable agriculture and of addressing the challenges of climate change and food security are intertwined and need to be addressed in a coordinated manner. Secondly, for farmers to be climate resilient, they require greater access to technologies, markets, information and credit for investment to adapt their production systems and practices. Without appropriate responses, climate change, which SDG13 addresses, is likely to constrain economic development and poverty reduction efforts (Oduniyi *et al.*, 2019:22).

Mugambiwa and Tirivangasi (2017:6) acknowledge such challenges and warn that South Africa being a developing country, can be a daunting task in working towards achieving food security in light of climate change threats. Therefore, they suggest that to end hunger in South Africa, progressive agricultural policies that provide knowledge and relevant equipment to poor smallholder farmers must be implemented to enable them to adapt to climate change, especially in rural communities. This is because of the vulnerability of rural communities to natural disasters and climatic hazards owing to inadequate access to these services (Muema *et al.*, 2018:9) and the lack of knowledge and technology to deal with the effects of climate change (Ayanlade *et al.*, 2017:24; Shahid & Piracha, 2016:413). Consequently, the effects of climate change on agriculture result in significantly increased hunger and malnutrition (Oduniyi *et al.*, 2019:11262). Hence, achieving SDG2, that is, food security amid climate change, is a severe challenge to South Africa.

Despite that, it is also still evident that agricultural production links with other sectors to catalyse the overall level of productivity in the country (Tshwene & Oladele, 2016:73).

3.3.4. Agriculture and Linkages with Other Sectors

High productivity of the agricultural sector often interacts with other sectors. Typically, an increase in agricultural productivity also leads to improved productivity in sectors like manufacturing and agro-processing (Aliber & Mdoda, 2015:18). These sectors stimulate the overall pace and level of economic growth and development. Such a view aligns with the three-sector theory's reasoning that posits all economic activities to unfold according to the interrelated primary, secondary or tertiary sectors (Pettinger, 2019:402). The primary sector uses the natural resource base directly for revenue generation, the secondary sector produces manufactured goods, and the tertiary sector offers services (Lotter, 2019:6; Pettinger, 2019:402; Schafran *et al.*, 2018:1708). With this in mind, Aliber and Mdoda (2015:18) add that the secondary and the tertiary sectors use the primary sector products as raw materials or inputs. Together with the mining sector, the agriculture, forestry and fisheries sectors represent the bulk of the primary sector in South Africa and act as a catalyst for the economic development of the secondary and tertiary sectors. Many smaller settlements in South Africa are strongly dependent on it (Lotter, 2019:6). Business Tech (2019:1) shows that, in 2019, South Africa's primary sector grew by a firm 9.7%. This was much higher than the secondary and the tertiary sectors, which recorded a positive growth of 1.5% and 3%, respectively. The growth of the primary sector is vital to economies worldwide as the antecedent for the growth of the secondary and tertiary sectors (Vagdevi & Kiranbabu, 2015:1). The DAFF (2019:46) also observes the three-sector theory and agriculture's role in assisting the secondary and the tertiary sectors. It refers to agriculture's indirect role in the economy; it functions as a backward and forward linkage to the other sectors.

Gininda *et al.* (2014:1032) explain that purchasing fertilisers, chemicals and implements constitute backward linkages with the manufacturing sector. In contrast, forward linkages are formed through the supply of raw materials to the manufacturing industry and the wholesale and retail sectors. Based on the fact that up to 70% of the

agricultural production is used as intermediate products, Mokoena (2019:6), and Vagdevi and Kiranbabu (2015:2), argue that this high contribution makes the agricultural sector an important engine of growth for the rest of the economy. Louw and Jordaan (2016:286) further point out that the agricultural sector makes and supports important investments in infrastructure through the extension of roads, storage facilities, power generation and transmission, railways and other entities needed for agricultural purposes. This indirectly leads to investments in education (schools) and healthcare facilities. Morton (2017:1) also asserts that farming encourages the improvement of local infrastructure, especially capacitated farmers. Firstly, farms that depend on electricity extend electricity to the community. Secondly, the farmers construct roads to aid the movement of their goods and equipment. In developing countries, governments build roads and railways and extend water supplies to places where these services do not exist. Thus, farming is the primary economic activity in areas where it supports the vast majority of the population through direct employment and indirect linkages. Secondly, its productivity supports the entire rural economy through investments in healthcare, education and basic infrastructure (Vagdevi and Kiranbabu, 2015:1).

It is also clear that overall social and political stability is linked inextricably with the state of the agricultural sector; that is why the government is keen to support the sector. Edeme *et al.* (2020) state that investments in infrastructure development improve not only agricultural production factors but also employment and wages. Sectoral Determination 13 for Agriculture establishes and regulates employment conditions for employees in the Farm Worker Sector. According to the determination, the regulated minimum wage between 1 March 2018 to 28 February 2019 was R3169 per month (South African Human Rights Commission, 2018, p. 3) and R2778 in 2016. However, according to (TIPS, 2016:2), between 2014 and 2016, the Western Cape and the Gauteng Provinces paid the highest wage (R2000), while the Limpopo and the Free State Provinces paid the lowest wage (R1200), which are both below the regulated wage of R2778 per month.

Besides the positive economic impacts that may result from agricultural production's interaction with other sectors, agriculture often catalyses increment in foreign

exchange earnings through increased export volumes (Aliber & Mdoda, 2015:18; Gininda *et al.*, 2014:1032; Louw & Jordaan, 2016:286;).

3.3.5. Agriculture and Foreign Exchange Earnings

Agriculture significantly influences the increment in foreign exchange earnings (Von Bormann, 2019:14). However, that depends on whether the country is generating the requisite quantity and quality of agricultural products. The notion of foreign exchange is elucidated by Duggan *et al.* (2014:5) to refer to the system by which the currency used in one country is exchanged for another country's currency, making international trade easier. Foreign exchange earnings determine the favourability of the balance of payment. Thus, for most countries, agriculture is often the major earner of foreign exchange countries, and agriculture is often the major foreign exchange earner (Alston & Pardey, 2014:44; Von Bormann, 2019:69). This signifies changes in exchange rates are relevant to farm businesses. Agricultural exports earn valuable income in foreign currencies in international trade, which significantly influences a country's financial state (Jacobsen, 2017:209). For instance, a small increase in agricultural exports can substantially reduce poverty in a country because the increased income from agricultural exports might also directly benefit the people involved in agricultural activities (Taruvunga *et al.*, 2017:28). It, therefore, suggests positive export earnings play an important role in the overall national economy of a country. The earned foreign exchange leverages the country's capabilities to invest more in the additional programmes that improve the agricultural sector's performance and the performance of other critical sectors of the economy (Tsotetsi-Khambule *et al.*, 2018:1951).

Such a view echoes the explanation of Betek and Jumbam (2015:41) that the capacity to import capital goods and machinery for further industrial development depends significantly on the export earnings of the agricultural sector. Suppose the exports of agricultural goods fail to increase at a sufficiently high rate. In that case, countries are forced to incur heavy deficits in the balance of payments, resulting in a serious foreign exchange problem and an unbalanced balance of payments. This means the country would be spending more on the foreign exchange than it earns from exports. Such reasoning is in accord with what Cholo *et al.* (2017:407) said: agricultural export earnings also provide much-needed capital for investment used to finance

intermediate and capital goods imports. He also elaborates that an increment in foreign exchange earnings improves a country's capacity to import other essential inputs, such as machinery, raw materials and infrastructure, that support the country's economic development. Therefore, an increase in agricultural export earnings provides more capital. This leads to accelerated economic development through the increment of direct foreign investment (Hossain, 2018:2). South Africa has an advantage in the international agricultural markets based on its emphasis on trade liberalisation. This is a result of South Africa's political reforms in the early 1990s that resulted in a more globally integrated economy (Vickers, 2014:57). The inclusion of an agreement on agriculture within the World Trade Organisation framework also facilitated increased trade in agricultural products (Zimpita *et al.*, 2015:33).

In the quest to produce more and respond to the international markets, South Africa's agricultural sector has the capabilities because the South African agriculture sector is diverse, incorporating crop production, horticulture, animal production, agriculture, forestry and fisheries. Its production is widely distributed across the country, owing to the environmental and climatic diversity of the country (Chaminuka *et al.*, 2014:80). However, only 12% of South Africa's surface area is suitable for crop production. The sector still comprises a highly developed commercial sub-sector geared towards export, as well as a smallholder sector that can still generate more agricultural outputs to satisfy both the domestic and international markets to generate more foreign exchange and improve overall South Africa's balance of payment (Fischer & Hajdu, 2015:304). Currently, the value of imports and exports per quarter equates to roughly 60% of South Africa's GDP (Rudolph *et al.*, 2021:46). Therefore, trade is an extremely important part of the South African economy (South Africa Market Insights, 2020).

Such narrative is corroborated further by the statistics which indicate that in 2018, the agricultural sector made a 10% contribution to South Africa's total export earnings at a value of US\$11.1 billion, whereas South Africa imported US\$7.7 billion in agricultural and food products in 2018 and 2017 (Foreign Agricultural Service, 2019:3; Hutton *et al.*, 2021:20). However, there are still challenges. In 2016, South Africa experienced with delayed rainfall and drought that negatively affected crop production (Sihlobo, 2018b:23). The effects lasted from 2017 to 2019, decreasing farmers' incomes by

almost 19% (DAFF, 2017:1; DAFF, 2018:22). Additionally, production inputs prices increased by 5.1% from 2016 to 2017, by 3.5% from 2017 to 2018, and by 4.3% between 2018 to 2019, thereby inducing decreased terms of trade (DAFF, 2017:6).

“Terms of trade” is defined by Cholo *et al.* (2017:407) as the value of a country's exports compared with the value of its imports, meaning that it is the ratio of export prices to import prices and can be interpreted as the number of import goods an economy can purchase per unit of export goods. In the past three years, South Africa's terms of trade decreased by 0.9%, 3.6% and 4.6% for the years 2017, 2018, 2019 respectively (DAFF, 2019:21). The balance of imports and exports plays a vital role in the economic development of a developing country (Taruvunga *et al.*, 2017:28). Hence, the above statistics indicate that the trade balance of South Africa is unfavourable because of the decrease in terms of trade, which seems to be widening. Therefore, South Africa must increase its agricultural exports. In evaluating opportunities within the agricultural sector for smallholder farmers, the authors of a study done by the KPMG for the South African Small Enterprise Development Agency (SEDA) insist that additional exports are possible. They recommend that SEDA assist these farmers in entering the export market and that reliance on imported products decreases (Cholo *et al.*, 2017:407). However, smallholder farmers are still struggling to enter export markets. In other words, all these imply as much as South African agriculture is creating the desired socio-economic values, its capabilities to do so more effectively are still hampered by a combination of dynamics and complexities that undermine smallholder farmers' participation to create more desired outcomes (Cholo *et al.*, 2017:407; Taruvunga *et al.*, 2017:28; Zimpita *et al.*, 2015:33).

The empirical facts above suggest the agricultural sector in South Africa is not only a contributor to South Africa's GDP but also plays a significant role in the socio-economic growth of the country by being a provider of employment, a source of income, a growth stimulator in other sectors, an earner of foreign exchange and an instrument to bring food security and poverty alleviation (Wenhold & Faber, 2017:5; Olivier & Heinecken, 2016:168). However, to achieve such outcomes, agricultural production theories still indicate that countries are increasingly using a combination of other methodologies to measure agricultural efficacy and productivity to influence its

capabilities to generate as many desired socio-economic outcomes as possible (FAO, 2018:5; Hayati, 2017:6; Ludena, 2010:7; Lips, 2017:472). Unfortunately, empirical evidence signifies as such agricultural efficacy and productivity measurement methodologies are used at the national level and among largescale commercial farmers, they tend to be less used at the provincial and smallholder farmers' levels (Bjornlund *et al.*, 2017b:690; McCullough, 2017:133; Roxburgh & Rodríguez, 2016:10). The literature implies measurement of agricultural productivity at the farm level determines the accuracy of the data used at the regional and national level to determine the improvement initiatives that can be undertaken to spur the overall level of agricultural productivity and efficacy in the country.

3.4. MEASURING AND IMPROVING AGRICULTURAL EFFICACY AND PRODUCTIVITY

Measuring agricultural productivity and efficiency is one of the approaches for discerning the overall efficacy of different agricultural programmes that have been adopted and implemented (Carmona *et al.*, 2019:385). It aids evaluation of the level of agricultural productivity and efficiency as well as its impact on stimulating the desired pace of economic development and growth. This enables authorities to assess the improvement measures that can be undertaken to bolster agricultural productivity and efficiency to induce the desired socio-economic outcomes (Ariyaratne *et al.*, 2014:5). Measurement of agricultural productivity and efficiency requires evaluation of the ratio of outputs from the agricultural sector or industry to the inputs into such agricultural sector or industry. A higher ratio of agricultural outputs to inputs implies a higher level of productivity and impressive performance of the agricultural programmes (Ariyaratne *et al.*, 2014:5). It also suggests different agricultural programmes and activities are implemented efficiently. Since productivity measures the degree to which the available agricultural resources are being optimised to achieve as many outcomes as possible, it also aids assessment of the overall sustainability of the agricultural programmes or entities (Carmona *et al.*, 2019:385). The overall level of agricultural productivity and efficiency is of significant importance to economists because it causes optimisation of the limited resources to shift and reallocate the excess resources to other sectors of the economy (Courtois & Subervie, 2015:953). Resource shifting and

reallocation to other sectors or industries stimulate economic activities in such sectors to catalyse the overall increment in national income.

However, agricultural productivity and efficiency measurement does not evaluate the impact of productivity and agricultural outputs but also its effects on the rate of returns on farmers' incomes (Courtois & Subervie, 2015:953). Higher agricultural productivity and efficiency must translate into a higher rate of return for farmers. For smallholder farmers, linking higher agricultural productivity and efficiency to higher returns is not only becoming essential for discerning the impact of smallholder farmers' agricultural activities on rural socio-economic transformation (Deutsch *et al.*, 2018:916). Instead, it is also in alignment with the SDG that aspires to end hunger and malnutrition worldwide by doubling agricultural productivity and rates of return for smallholder farmers (Quintana-Ashwell & Featherstone, 2014:22). This is because smallholder farmers are critical levers for rural socio-economic transformation and for improving the overall livelihoods among rural communities (Oluwatayo, 2019:485).

Thus, the significant emphasis on improved agricultural productivity and efficiency was recognised in June 2014 by the Malabo Declaration to be critical for driving the pace of economic development and growth for most of the developing countries that rely mainly on smallholder farmers' agricultural activities (Quintana-Ashwell & Featherstone, 2014:22).

Unfortunately, Hayati (2017:6) notes poor agricultural data collection and management to yet constrain effective measurement of agricultural productivity and efficiency at the farmers' and national levels. At the farmers' level, there is the poor collection, storage and management of data, especially by smallholder farmers, about the inputs used in most agricultural production activities (Hayati, 2017:6). Even in some instances, there is a lack of accurate statistics on the outputs gained from the smallholder farmers. This undermines the accurate agricultural productivity and efficiency measurement at the farm and national levels. But even if that is so, FAO (2018:5) still offers a framework which is supported by authors like Lips (2017:19) and

Global Strategy to Improve Agricultural and Rural Statistics (GSARS) (2018:9) as critical for leveraging effective measurement of agricultural productivity and efficiency.

3.4.1. Food and Agriculture Organisation's (FAO's) Framework for Measuring Agricultural Productivity and Efficiency

FAO's (2018:5) Framework for Measuring Agricultural Productivity and Efficiency, which is also echoed by authors like Fuglie (2015:201) and Ludena (2010:7) prescribes three main stages for measuring agricultural productivity and efficiency to encompass the designation of agricultural activities and collecting data, specification of indicators and measurement and identification of the sources of productivity growth.

3.4.1.1. Stage 1: Designation of agricultural activities and collecting data

Designation of agricultural activities is the process of classifying or categorising the agricultural industry according to different sectors and subsectors as well as regions (Deutsch *et al.*, 2018:916). It is a critical process for isolating sectors in the agricultural industry from which relevant agricultural data reflecting inputs and outputs must be collected for productivity and efficiency analysis (Cachia, 2018:45). Designation of agricultural activities does integrate not only typical agricultural activities but also different actors in the agricultural value chain and its ecosystem (Deutsch *et al.*, 2018:916). This is because productivity and efficiency measurements are multidimensional. This activity requires multiple variables from sources such as agricultural outputs, intermediate inputs and agricultural factors of production, in conjunction with their prices, wages and rental values (FAO, 2018:5). This data can be collected from the farmers themselves, and some of the data are easily obtainable from the farmers' partners. Other agricultural data are gathered by national data management agencies or institutions like Statistics South Africa and the Department of Agriculture, Rural Development and Land Reform. However, Fuglie (2015:201) emphasises that such collected agricultural data must also conform to the international standards prescribed by the United Nations International Standard for Industrial Classification of All Economic Activities. United Nations' standard stresses the importance of data accuracy, reliability and validity to aid accurate decisions on the country's overall level of agricultural productivity and the intervention measures that must be undertaken. Using the United Nations' classification, the FAO's (2018:5)

elaborates that although different countries may opt to classify their agricultural production activities in the way deemed fit, the United Nations' criteria can also be used to categorise agricultural activities according to different sectors. It outlines such agricultural activities' classification to include crop and animal production, including subsectors like a cash crop, food crop and animal production.

Other sectors include forestry and logging, as well as fishing and aquaculture. But the weakness of FAO's (2018:5) Framework for Measuring Agricultural Productivity and Efficiency is that such a framework does not measure productivity for sectors like forestry, logging and fishing. Instead, it focuses on the productivity and efficiency of crops, livestock and aquaculture production. As it notes, forestry, logging and fishing sectors require another specific framework for productivity and efficiency measures. It implies that the FAO's framework cannot be used across all agricultural activities. But even if that is true, GSARS (2018:9) notes that FAO's framework still highlights the essence of agricultural productivity measurement, which is a challenge in developing countries and how to do it. Nonetheless, after classifying agricultural activities according to the designated sectors, Lips (2017:19) reiterates the next process requires determining what kind of productivity falls or does not fall in a particular agricultural industry.

Lips (2017:23) defines the agricultural industry as a set of economic entities engaged in accomplishing economic activities of which agriculture is the principal activity. The principal activity is a technical term that requires over 50% of the value-added by the company accomplishing more than two or more economic activities for a particular activity to be classified as agricultural activity (FAO, 2018:5). Such approach is aimed at preventing overlap between certain industries that also accomplish activities related to the activities in the agricultural industry. Economic entities that often produce agricultural products without necessarily falling under the agricultural industry include economic entities in the tourism industry that can engage in some horticulture and animal farming, not for agriculture but for recreational purposes (FAO, 2018:5). Thus, to avoid distorting the estimates for agricultural productivity, Lips (2017:19) suggested that data can be drawn based on product or industry approach. The product approach evaluates the entire agricultural production autonomously of the industry from which it

emerges. The industry approach integrates all the units produced in the agricultural industry irrespective of whether or not it is an agricultural product (Cachia, 2018:16). That implies certain secondary activities related to agricultural products can only be included if they cannot easily be separated from the principal agricultural activities. Such activities may consist of lending farm equipment and machinery to like smallholder farmers, farm forestry, and recreational programmes associated with agriculture (BallNehring and Wang, 2016:65). In contrast, activities that transform agricultural products into other finished products, like milk to cheese, or maize grain to maize flour, are not included in the definition of agricultural production. This is because producing such finished products can easily be differentiated from the process of producing the agricultural raw materials used in their manufacturing (Cachia, 2018:17).

Production of non-agricultural products by agricultural entities is also not considered under agricultural production productivity (Kahiluoto *et al.* 2019:123). Yet, as these accurate leverage estimates for agricultural productivity measurement, Kahiluoto *et al.* (2019:123) share similar views with FAO (2018:5) that clarification of the agricultural industry to be measured must be accompanied by clarification of the commodities' production to be measured to assess the overall agricultural industry productivity. However, that would require the use of commodity disaggregation only to measure the productivity of the major and most important commodities produced in that sector or industry (GSARS, 2016:9). As only the most important commodities are selected, data for productivity measurement of the less significant commodities can be estimated or inferred. GSARS (2018:9) contends that productivity can also be measured at the commodity, farm and industry levels. But it points out that in most cases, productivity measurement at the farm and industry levels is preferred because it is easier to discern inputs used at the farm and industry level, but not inputs like fertilisers and values of machinery used for specific commodities (Fuglie, 2015:201; Pena-Bautista *et al.*, 2017:231).

Thus, accurate estimates can be undertaken at the farm and industry level rather than at the commodity or product-specific level. Lips (2017:19) notes that measuring the aggregate productivity of the entire farm and, subsequently, the agricultural sector or

industry still requires accurate data on outputs and inputs for specific commodities. To accomplish such relatively difficult tasks, Lips (2017:19) proposes the essence of using Bayesian and entropy-based estimate techniques to accurately estimate and allocate inputs across different specific commodities designated for the aggregate agricultural industry productivity measurement. However, for household levels that apply to smallholder farmers, FAO (2018:5) highlights productivity measurement to integrate the capabilities of smallholder farmers to reap sufficient income and attain livelihood to sustain their households. Regarding output estimates, FAO (2018:5) reveals that data is often gathered from individual farmers for specific commodities on the areas planted, harvested, amount sold, and income earned. In the case of livestock, information is elicited on the headcounts, units sold, and the income earned per animal.

Though such input and output estimation often focus on only major commodities, Hayati (2017:6) still emphasises that such estimation should integrate all commodities, whether major or minor, in the measurement of the productivity of agricultural entities. He elaborates that such an approach causes an underestimation of agricultural productivity in most developing countries. Hayati (2017:6) explains that in most developing countries, most smallholder farmers may focus on producing maize as the source of revenue but still grow beans and groundnuts from which enormous supplementary income is obtained. Thus, adopting a complete estimation of all agricultural production activities of an agricultural entity is critical for aiding accurate agricultural productivity measurement. Such a view accentuates Rada and Valdes (2012:12) argument, as cited in Pinstруп-Andersen (2015:9), that smallholder farmers are often not registered as agribusiness entities and also tend to be integrated with non-household sectors. They are often left out in the agricultural productivity measurement.

This causes an underestimation of agricultural productivity in most developing countries where unregistered smallholder farmers are integrated inherently with non-household subsistence farming. Pinstруп-Andersen (2015:9) suggests that all kinds of agricultural production at the household and non-household levels must also be integrated into the agricultural productivity measurement. Such measurement can be

undertaken at the local, regional or national level, depending on who requires the information and for what purpose. Nonetheless, FAO (2018:5) highlights that clear designation of agricultural activities in terms of industry, sector, farms, and commodities set the stage for indicators to be defined for actual agricultural productivity and efficiency measurement to be undertaken.

3.4.1.2. Stage 2: Specification of indicators and measurement

In specifying the indicators and measurement methodologies, agricultural productivity is evaluated as the relationship between the volume and quantities of agricultural products produced as a result of the utilisation of a particular volume or quantity of inputs (GSARS, 2017a:6). Hayati (2017:6) and Ball *et al.* (2016:65) explain that such agricultural inputs include intermediate inputs and certain production factors used to generate the achieved agricultural outputs. At the same time, intermediate inputs include, among other things, seeds, agrochemicals, irrigation facilities and farmers' protective wear. Lastly, factors of production encompass labour, machinery and equipment, financial resources, land, agricultural houses and infrastructure and any other factors that are used directly in the generation of the achieved outputs (Hayati, 2017:6). On the other hand, agricultural outputs connote the volume or quantity of agricultural goods or services measured at constant prices and generate using such intermediate inputs and factors of production (Cachia, 2018:8).

Some indicators also include the revenue or profits earned by farmers (GSARS, 2017b:11). It is around such areas of inputs and outputs that indicators are set to measure the overall level of agricultural production productivity at the commodity, farm, local, regional and national levels, as well as at the sectoral and industry levels (GSARS. 2016:9). The implication is that productivity improvement can be explained by the difference between the growth in output and the quantity or volume of inputs used (Ball *et al.*, 2016:65). However, one limitation of such an approach to productivity measurement is the assumption that the agricultural market is also performing well (Hayati, 2017:6).

Unfortunately, that is often not the case, as productivity at the farm level tends to be instigated by escalating demands and the overall attractiveness of the agricultural

markets (GSARS, 2018:9). Due to the overall poor economic growth, the quality of agricultural inputs used and the level of operational efficiency, many smallholder farmers in developing countries often struggle to derive significant benefits from their agricultural products. This is further compounded by the limited purchasing power of the population (Hayati, 2017:6). Amid such limitations, authors like Cachia (2018:8), Hayati (2017:6), and Rada and Valdes (2012:12) all cited in FAO, (2018:5) share a combination of methodologies used in measuring agricultural productivity and efficiency. Such methods encompass single-factor productivity, total factor productivity, growth accounting approach and econometric approach integrating stochastic frontier and data envelopment analysis. The growth accounting and econometric approaches integrating stochastic frontier and data envelopment analysis are used to measure total factor productivity (Cachia, 2018:9).

(i) Single-factor productivity

The general argument in agricultural productivity measurement is that improved productivity can be attained due to the usage of multiple inputs. In such instances, it becomes difficult to associate productivity increment with any single-factor (Parman *et al.*, 2016). Thus, most theories on agricultural productivity measurement hold productivity indicators to either be based on partial factor productivity or multi-factor productivity (Cachia, 2018:8).

Partial-factor productivity or single-factor productivity connotes where only one input is evaluated using single productivity indicators (Cachia, 2018:8; Le Mouel & Forslund, 2017:541). Multi-factor productivity uses indicators that evaluate all the principal factors of production and intermediate inputs used in generating of a particular volume or quantity of agricultural output (Cachia, 2018:8). Thus, single-factor productivity is a methodology that uses certain specified indicators to measure volume or quantity of agricultural outputs produced by a single input (Hayati, 2017:6). Such single-factor productivity analysis may entail measurement of labour productivity resulting into agricultural output produced per hour, day or even week worked (Cachia, 2018:8). Single-factor productivity methodology is easy to understand, use, calculate and interpret. It does not require complex data about the prices of inputs and outputs but instead uses only volumes and quantity measurements (Hayati, 2017:6). It may also

entail the sole measurement of land productivity in terms of output produced from a unit of planted land or capital productivity involving measurement of agricultural output per machine horsepower (Pena-Bautista *et al.*, 2017:231).

However, single-factor productivity may also misrepresent the overall source of productivity growth and performance of the farm and the farming sector. This is because productivity growth may arise from other inputs or advantages resulting from using such factors in combination with other factors (Krause *et al.*, 2019:170). Improved labour efficiency and productivity may result from capital availability, the efficiency of automated machines and equipment, and the availability of other intermediate inputs (Ball *et al.*, 2016:69, Cachia, 2018:8). A change in a single-factor productivity may arise from the combined positive outcomes of efficiency, technical change and modifications of other agricultural inputs rather than just a single-factor (Quintana-Ashwell & Featherstone, 2014:22). This implies although single-factor productivity is critical for measuring the impact of certain individual factors; it must still be accompanied by multi-factor or total factor productivity that measures the combined effects of all the relevant inputs used in the generating a certain volume or quantity of outputs (Ball *et al.*, 2016:64; Cachia, 2018:8).

(ii) Total factor productivity

Total factor productivity is the direct opposite of single-factor productivity on the basis that it captures and measures all indicators set on all the most important factors used in the generation of the achieved volume or quantity of agricultural outputs (Funk, 2015:6). As it does that, it also measures how such factors were efficiently combined to achieve such outcomes (Cachia, 2018:9). It therefore, tends to offer an accurate picture of the level, as well as sources of a farm's productivity and the general agricultural productivity in a particular region or the country (Ball *et al.*, 2016: 64). But still total factor productivity differs significantly from multi-factor productivity. As multi-factor productivity measures all inputs irrespective of their significance, total factor productivity only selects the most important or significant factors (Funk, 2015:6). Total factor productivity holds the view that the change in all the inputs does not explain agricultural output change, but just a change in a combination of certain important and significant factors like land, labour, capital and intermediate inputs (Cachia, 2018:9).

Thus, FAO (2018:5) together with Funk (2015:6) as well as Nelson *et al.* (2018:773) highlight that the growth of total factor productivity is often measured using methodologies like growth accounting approach and econometric approaches reflected in stochastic frontier and data envelopment analysis.

(iii) Growth accounting approach

In agricultural productivity measurement, growth accounting is used to assess aggregate productivity growth (Cachia, 2018:9). It accomplishes this by separating the analysis of the total output growth from the measurement of total inputs' growth, of which the difference between the two reflects the total factor productivity growth (Mahuku *et al.*, 2015:956).

The growth accounting approach is frequently used in the measurement of total factor productivity because it is also one of the quantitative and accounting frameworks used at the national level to measure the contribution of specific factors to the total GDP growth (Kumar & Kalita, 2017:8). It mainly measures the most significant factors, like labour, capital and technology in influencing total factor productivity (Cachia, 2018:9). Compared to some econometric models and linear programming, growth accounting is often preferred because it is not only easy to understand but also uses easily replicable statistical approaches. In spite of such strengths, Pena-Bautista *et al.* (2017:231) still highlight growth accounting to be often avoided due to its high statistical demand for accurate data on the quantities and prices for all outputs and the most significant inputs to be measured. Usage of its major techniques like Laspeyres/Paasche index formulation or variable shares in Tornqvist-Thiel approach requires frequent collection and analysis of accurate data on prices and quantities to construct shares or weights of different commodities in total output growth as well as shares or weights of different factors in total input growth (Pena-Bautista *et al.*, 2017:231).

In most developing countries, accurate statistics in such areas is often not easily accessible or even available to render growth accounting less practicable for agricultural productivity measurement (Cachia, 2018:2). Growth accounting is also associated with certain conceptual deficiencies on the basis that it measures multiple

heterogeneous outputs, like cereal crops, fruits, vegetables and livestock, changes in the production structure reflecting the percentage of different products in the total output affect total output growth (Kahiluoto *et al.*, 2019:123). Likewise, the measurement of total input growth reflecting the weighted average of the changes in each unit of inputs is often constrained by a lack of accurate statistics on the quantities and prices of each input (Cachia, 2018:9). Fuglie (2015:201) offers a more flexible growth accounting approach to counter such weaknesses. This approach requires limited statistical modelling and measurement of total factor productivity growth even in the event of data incompleteness. This is because it only requires information on weights and growth rates with the effect that once weights and growth in revenue and costs are estimated and inputted into the algorithm, it can accomplish total productivity measurement with relative ease (Kumar & Kalita, 2017:8). Even though basing weights and growth rates on assumptions may not reflect the realities facing farmers on the ground. Fuglie's (2015:201) growth accounting approach is often still used to assess total productivity growth and to make certain agricultural policy decisions. But as it is applied, it may also be accompanied by certain econometric approaches.

(iv) Econometric approaches

In contrast to the growth accounting approach, the measurement of total factor productivity using econometric approaches is considered to require less data (Parman *et al.*, 2016). Even in econometric approaches, significant statistics on physical output and input quantities are required for accurate analysis and decision-making (Funk, 2015:6). At the farm level, data generated and stored for years on the farm's sources of efficiencies and inefficiencies may not be available; specifically smallholder farms have a less structured approach for data gathering and storage (Cachia, 2018:10, Funk, 2015:6). Although econometric approaches are associated with such limitations, econometric approaches as based on stochastic frontier approach still offer a comprehensive analysis of the sources of a farm's production efficiency and inefficiencies. The stochastic frontier measures technical inefficiencies in agricultural production functions (Le Mouel & Forslund, 2017:541).

Farms are construed or assumed to use a common technology in their agricultural production and to reach the frontier if the maximum possible output is produced using

the available set of inputs (Cachia, 2018:10). During such a process, the stochastic frontier approach also holds that inefficiencies can arise from structural problems, market imperfections, and other variables that can cause a farm to produce below the attainable maximum output (Mahuku *et al.*, 2015:956). With time agricultural production may become more inefficient and reach the frontier, or the frontier can shift to imply technical progress. Alternatively, agricultural production can also move along the frontier by changing the quantities of inputs (Cachia, 2018:10). Thus, the stochastic frontier approach tends to structure growth according to changes in input use, changes in technology and efficiency changes (Pena-Bautista *et al.*, 2017:231). The stochastic frontier approach is based on the production functions' estimation reflecting parameters linking agricultural outputs to input use. The production and best practice frontier are established based on the hypothesis of lack of inefficiencies in the estimated production function (Kumar & Kalita, 2017:8).

Agricultural technical efficiency is measured by assessing the difference between the observed inefficient production function and the frontier or the hypothesised theoretical production frontier of best practice (Pinstrup-Andersen, 2015:9). By using time as a variable, a change in the frontier is construed as a reflection of technological change, and total factor productivity changes are interpreted and approximated as change in technical efficiency arising from the change in best practice frontier reflecting technological changes undertaken by the agricultural entity (Cachia, 2018:10; Fuglie, 2015:201). Stochastic frontier uses an econometric formulation that assumes a linear production function reflecting agricultural outputs produced using a set of inputs through the technological function used by the farm over a given period (Mason *et al.*, 2015:581). However, it has emerged that linear relationships do not manifest in all farms. Some farms may deviate from the theoretical production frontier due a result of measurement errors or the emergence of exogenous shocks (like climate changes or changes in market trends) (Cachia, 2018:11). Even if certain inputs determine output, it has often emerged among farmers that outputs also tend to be determined by other factors like the experience the farmer and farm workers as well as ecosystem variables in which the farmer operates like road infrastructure and access to inputs and markets (Fuglie, 2015:201). Farmers' experience arising from years in farming influences the

accuracy of the decisions of how different inputs must be efficiently combined to achieve the designated output (Lazaro *et al.*, 2017:599; Metelerkamp *et al.*, 2019:154).

Combined with poor roads and distance between the farms and the markets, all these can induce technical inefficiencies that undermine a farm's productivity to attain the desired outputs (Fuglie, 2015:201; Mbatha, 2019:6). Such technical inefficiencies are integrated by Roxburgh and Rodríguez (2016:9) in econometric modelling using stochastic frontier, where the measure of a farm's technical efficiency is the distance between the estimated output with and without inefficiencies. Thus, total productivity growth is measured as the aggregate technical change and average efficiency change that a farm experiences in a given time. In contrast with the growth accounting approach, econometric modelling is often not based on stringent hypotheses on output elasticities and income share estimates (Cachia, 2018:10; Fuglie, 2015:201). But it is still often avoided because of the multiple assumptions that it requires on the linearity or log linearity of outputs to inputs and stochastic properties on output variables. Thus, it requires more complex statistical estimation processes that often render it less preferred for analysis of agricultural productivity and efficiency (Ball *et al.*, 2016: 64).

Even if that is the case, all methodologies for agricultural productivity and efficiency measurement, like single-factor productivity, total-factor productivity and growth accounting, seem to have advantages and limitations (Cachia, 2018:5). This implies that using a set of such methodologies is critical for enabling the advantages of a particular methodology to outplay the weaknesses of the other and vice-versa (Ball *et al.*, 2016: 64). Such a view accentuates the analysis of data envelopment analysis.

(v) Data envelopment analysis

Data envelopment analysis establishes a production frontier to evaluate technical efficiency and technological changes using a linear optimisation model. It is nonparametric and differs from the stochastic production frontier based on assumptions or hypotheses about functional forms and the distribution of errors (Zhang *et al.*, 2016:116). Instead, data envelopment analysis establishes the best practice frontier using a linear optimisation model reflecting the optimal set of input-

output relationships illustrating the production technology of the composite agricultural producer with the greatest possible level of efficiency (GSARS, 2016:9).

Such nonparametric processes do not use any farm production technology assumptions while integrating multiple output and input variables. Since data envelopment analysis focuses only on measuring the output quantities produced and inputs used. Therefore, this data tends to be flexible for use at the farm level on local, regional, national and international levels (GSARS, 2016:9). Although it's nonparametric optimisation procedure seems complex and vulnerable in that slight data change can cause a significant change in results, data envelopment analysis is still considered as complementary to growth accounting approach (Roxburgh & Rodríguez, 2016:9). It aids understanding and quantification of productivity growth drivers and cross-validation of such results with growth accounting approach (Cachia, 2018:11). Improved identification of productivity growth drivers is important for discerning the measurement methods to be used as well as decisions on agricultural productivity improvement initiatives that must be undertaken (Fuglie, 2015:201). Such a view explains why FAO (2018:5) emphasises that, as different agricultural productivity and efficiency measurements are being undertaken using a set of these methodologies, it is also critical to identify the sources of productivity growth.

3.4.1.3. Stage 3: Identification of the sources of productivity growth

Sources of productivity growth are drivers that emerge from the best agricultural operation and production to create advantages that catalyse the overall level of efficacy and, subsequently, higher productivity and growth of the agricultural entity (Lips, 2017:19).

As farmers adopt best agricultural practices, such drivers or sources of productivity growth often emerge from changes in technical efficiency, technology, quality change, economies of scale or even a combination of such changes (Cachia, 2018:13). Technical efficiency arises from how efficiently farmers or their managers combine the available inputs to create as many desired agricultural outputs as possible (Meyer *et al.*, 2017:1175). Technology change arises from the farmers' embracement and investment in more efficient technologies and inputs. The scale of economies arises

from the inverse relationship reflecting a significant constant decrease in marginal costs as output instead increases (Zhang *et al.*, 2016:116). In terms of technical efficiency, the agricultural entity is construed as technically inefficient if it cannot utilise the available resources of inputs to create as much desired output as possible. This is because the agricultural entity can create more than the desired output from the available inputs or resources. Through incremental improvements, the reduction of technical inefficiency induces improved technical efficiency to catalyse productivity (Mason *et al.*, 2015:581).

However, technical efficiency is just one of the drivers of productivity and cannot be solely equated with productivity in technical terms. Productivity connotes “how much” output a farmer can produce using the available resources. Technical efficiency is “how well” different inputs are efficiently combined to create the desired output (Cachia, 2018:5; Roxburgh & Rodríguez, 2016:9). That implies an increase in productivity that an agricultural entity experience is not necessarily associated with the changes in technical efficiency. Improved agricultural productivity can arise from using better seeds, fertilisers, pesticides or any other factor but not technical efficiency, reflecting how well the existing inputs are efficiently combined to create more output (Meyer *et al.*, 2017:1175). The notion of technical efficiency is anchored on the production frontier, illustrating the maximum output the technology can produce. It is critical to recognise that technology does not just connote the hardware and software of agricultural machines, but also the process of applying a combination of required scientific and agricultural knowledge to practically achieve the desired agricultural outcomes (Roxburgh & Rodríguez, 2016:9). Thus, production frontier as influenced by technical efficiency tends to vary across regions, even in a single country, and across countries and continents (Coetzee *et al.*, 2015:5). Such variances are attributable to the differences in agro-climatic zones, soil types, rainfall patterns, sunlight intensity and availability of qualified farm workers (Cachia, 2018:13).

Due to such variations of conditions, farms operating under the same conditions may experience variance in their productivity due to the differences in the technical efficiency or technology, highlighting how efficiently the same set of inputs is combined to create the desired output under the same conditions (Fuglie, 2015:201). Likewise,

agricultural productivity among farmers across different regions may also differ due to variances in conditions that necessitate the application of different agricultural production technologies (Cachia, 2018:11). Hence, to separate the source of technical efficiency from technological change and other variables, productivity growth must be decomposed using econometric methods and data envelopment analysis. This relies on its driving factors (Deb & Ray, 2014:59). Such an approach would aid in identifying the drivers of technical efficiency that spawn agricultural productivity growth (Fuglie, 2015:201). However, as an analysis of technical efficiency is being undertaken, it must also be accompanied by evaluating the economies of scale and marginal input productivity as the other sources or drivers of agricultural productivity growth (Cachia, 2018:15).

Economies of scale is experienced when a farmer's increment of all the inputs instigates a proportionally higher increment in output (Deb & Ray, 2014:59). It connotes the situation when a slighter increase of all inputs causes a higher increase in output as compared to the number of inputs used. Alternatively, economies of scale may also arise if the unit cost for each additional unit produced significantly decreases (Parman *et al.*, 2016:33; Yu & Nilsson, 2018:847). For marginal input productivity, an increase in the use of certain specific inputs drives higher productivity of that specific input (Thom & Jonas, 2016:305). When construing all other factors to be constant, marginal input productivity may arise in situations where a farmer adds a hectare of land to the existing cultivation land to instigate a rise in yields per hectare depending on the assumption that the added hectare of land is fertile and of good quality (Thom & Jonas, 2016:305). Marginal input productivity is also related to increasing returns to scale that arises when input use is low or even non-existent at all (Cachia, 2018:15). Such situations apply where a farmer uses fertilisers on land where it had not been used before to thereby drive increment in output per unit of fertiliser used and a corresponding decrease in unit costs (Olivier & Heinecken, 2016:168).

However, if the fertiliser had already been used on that land as proposed by agronomists or agricultural extension workers. In that case, more fertiliser usage may not increase yields and only instigate cost escalations and lower returns per unit of land (Wenhold & Faber, 2017:5). In other words, economies of scale, marginal input

productivity and increasing returns to scale may drive agricultural productivity and growth (Funk, 2015:6). However, there are instances where diminishing productivity may also set in to undermine further productivity growth. This arises in instances where smallholder farmers transition from small- to large-scale operations by expanding to larger hectares of land (Oldewage-Theron & Egal, 2015:113). In the initial stages, economies of scale and increasing returns may be experienced because they can put the available inputs and resources to maximum use to attain maximum output (Funk, 2015:6). Over time, as accompanied by further expansions, diminishing returns may set in. This is because using more inputs does not instigate increased output but also cost increments that displace economies of scale instead of inducing diseconomies of scale (Funk, 2015:6).

Diseconomies of scale arise from the fact that more farmland requires complex technologies like tractors, harvesters, large farm labour and, among others, usage of large amounts of fertiliser that cause an increase in output but with a reduction of returns to cover the constant escalating costs of the now expanded agricultural operation (Thom & Jonas, 2016:305). In such situations, the agricultural entities using traditional farming methods like manual labour may experience economies of scale that contribute to productivity. This contrasts with the sophisticated and input-intensive agricultural entities where it is technological change and not economies of scale and technical efficiency that induces significant positive effects on productivity growth (Parman *et al.*, 2016). Agricultural technology is construed to be determined by the kinds of inputs that can be intermediate inputs combined with factors of production that also include agro-climatic conditions to produce different outputs (Coetzee *et al.*, 2015:5). Different technologies are however associated with different production frontiers or attainable production levels. Hence, a change in agricultural production technology that can leverage production efficiency and productivity may entail investment in new technologies or more productive inputs (Wenhold & Faber, 2017:5).

Such a view is reflected in the fact that the installation of automated milking parlours that catalyse the productivity of the dairy production entity above the previous level is a technology shift and an embodied technological change (Olivier & Heineken, 2016:168). This is because the new technology is ingrained in the capital input

achieved through introducing new equipment. In dairy products and crop production, technological change may entail investment in pest-resistant varieties with shorter growth cycles to catalyse the productivity of a crop farm (Thom & Jonas, 2016:305). It may also encompass investment in legumes and pulses in crop rotations to enhance sequestration of the atmospheric nitrogen, thereby improving soil quality and yields of the plantation. Even though the two scenarios reflect a technological change in crop production, the introduction of legumes and pulses in crop production is more an embodied technological change since it creates new ways of combining the existing resources or inputs rather than investment in new technology to catalyse productivity (Wenhold & Faber, 2017:5).

In other words, it is a combination of all these drivers or productivity sources that not only the agricultural statisticians engaged in the measurement of agricultural productivity and efficiency must pay attention to, but also farmers in the quest to discern how to improve the productivity of their agricultural productions (Fuglie, 2015:201). Theories also imply FAO's (2018:5) framework for measuring and improving agricultural productivity and efficiency, which is also echoed by authors like Fuglie (2015:201) and Ludena (2010:7), leverages measuring and improvement of agricultural productivity and efficiency through the accomplishment of processes like designation of agricultural activities and collecting data, specification of indicators and measurement and identification of the sources of productivity growth. Unfortunately, in South Africa, such complex methodologies for measuring and improving agricultural efficacy and productivity seem to be used at the national level rather than at the local level or even among smallholder farmers Kirsten *et al.* (2019:2). In studies conducted in South Africa, researchers like Bellora *et al.* (2017:19), Gwebu (2018:55), Kirsten *et al.* (2019:1), as well as Tempia *et al.* (2020:8) highlight the essence for utilisation of methodologies like cost-frontier analysis and econometric methodologies. But the extent to which the application of such agricultural productivity and efficacy measurement methodologies have cascaded to the provincial and farm levels and among smallholder farmers remains largely unclear.

3.5. CHAPTER SUMMARY

Chapter Three gave an overview of the agricultural landscape in South Africa by showing how South Africa is a major exporter of agricultural products, as compared to other African countries, and ranks highly on the export of many products (Chakona & Shackleton, 2017:82). As much as South Africa's agriculture is voluminous enough, it is still insufficient to meet the needs of the constantly expanding South Africa's market as explained by the constantly rising demographic figures and quests of the largescale agricultural entities to also serve neighbouring SADC markets. Despite such complexities, different empirical studies still suggest that South Africa's agricultural production contributes enormously to the attainment of socio-economic goals and objectives of the South African economy (Benjamin *et al.*, 2018:8; Oldewage-Theron *et al.*, 2018:51; Sinyolo & Mudhara, 2018:78).

The chapter concludes by discussing socio-economic benefits of South Africa's agriculture and how to measure and improve agricultural efficacy and productivity. But the extent to which the application of such agricultural productivity and efficacy measurement methodologies have cascaded to the provincial and farm levels and among smallholder farmers remains largely unclear. Yet, the literature implies measurement of agricultural productivity at the farm level determines the accuracy of the data used at the regional and national levels to aid in discerning the improvement initiatives that can be undertaken to spur the overall level of agricultural productivity and efficacy in the country (Bjornlund *et al.*, 2017b:690; McCullough, 2017:133; Roxburgh & Rodríguez, 2016:10).

Thus, combined with other challenges, lack of capital, poor production methods, climate challenges and smallholder farmers' isolation from the agricultural value chain, it is not surprising that it is the failure to effectively use such agricultural productivity and efficacy measurement and improvement methodologies that also partially explain why the government has not thoroughly discerned how to integrated smallholder farmers seamlessly into the South African agricultural production systems to contribute to the overall socio-economic growth and development. Such a finding echoes the research problem statement in Chapter 1 of this thesis that highlights smallholder farmers have not been well integrated into the agricultural production systems to

produce the desired socio-economic values. Therefore, to evaluate how such complexities can be ameliorated, the next chapter analyses and discusses the major challenges that smallholder farmers face to assess the New Generation Cooperatives' Business framework. It also highlights how to integrate smallholder farmers in South Africa's valuable agricultural production systems to create value for themselves, the surrounding communities, and the country at large.

CHAPTER 4

CHALLENGES FACING SMALLHOLDER FARMERS IN SOUTH AFRICA

4.1. INTRODUCTION

Optimisation of agricultural cooperatives to bolster smallholder farmers' performance requires an in-depth understanding of the endogenous and exogenous complexities in which smallholder farmers operate (Oluwatayo, 2019:489). Thus, to get that picture, literature and theories reflecting a nexus of challenges marring smallholder farmers' socio-economic contributions to the South African economy are evaluated in this chapter. Such analysis aligns with the primary aim of this research which is elucidated in Chapter 1 (see Section 1.6.1) of this thesis to evaluate the efficacy of the NGC business framework in uplifting the smallholder farmers in Limpopo Province. This is because diagnosis and understanding the complexities constraining smallholder farmers' effective performance is critical for discerning how the NGC business framework can be positioned or even repositioned to provide holistic upliftment for South African smallholder farmers at large.

The literature study consists of three phases of analysis. The first phase examines theories and literature on the concept of smallholder farmers in South Africa in which subsistence farmers that produce agricultural products for pure household consumption were contrasted against the commercially-minded smallholder farmers. The commercially-minded smallholder farmers who produce agricultural products purely for profit are the focus of this research. The second phase of analysis examines theories and literature explaining a nexus of challenges faced by smallholder farmers in South Africa. In such an analysis, the profit maximisation motives of most commercially-minded smallholder farmers are often undermined by myriad complexities. These complexities could be physical, input-based, resource-based and institutional infrastructural issues. Given these dynamics, the third phase of literature analysis evaluated the efficacy of the smallholder farming support offered by the South African government and the Limpopo Provincial Government as the authorities for the area in which this study is conducted to address such

smallholder farmers' dynamics. While examining the pros and cons of such smallholder farmers' support programmes, it was found that the question of whether government support programs have effectively assisted smallholder farmers remains a subject of hot debate. This examination is presented in the last sections 4.4 and 4.5 of this chapter.

4.2 CONCEPT OF SMALLHOLDER FARMERS IN SOUTH AFRICA

The concept of smallholder farming has been approached from various angles, with the meaning of the term "small" varying in differing contexts, both globally and domestically (Narayanan & Gulati, 2002:66; Vuyiseka & Bahta, 2021:117). The expression "smallholder agriculture" is often used interchangeably with other terms like "small-scale farming", "family farming", "subsistence farming", "resource-poor farming", "low-income farming", "low-input farming" and "low-technology farming" (Machingura, 2007:712; Mazibuko *et al.*, 2020:261). In other instances, smallholder farmers refer to agribusinesses engaging in small-scale commercial farming and not necessarily subsistence farming (Agri-SETA, 2019:16). In these situations, Agri-SETA (2019:16) links smallholder farmers to subsistence farmers that are transitioning from subsistence farming to small-scale commercial farming. This implies small-scale farmers are often beginners that start small in the commercial agricultural production sector and require support to perform more effectively and grow into full-scale commercial agricultural entities. As cited in Vuyiseka and Bahta (2021:117), such a definition seems analogous to Narayanan and Gulati's (2002:66) description of smallholder farmers. Narayanan and Gulati (2002:66) characterise a smallholder farmer as one who practices a mix of commercial and subsistence production in which the family supplies the bulk of labour, and the farm provides their principal source of income. Mazibuko *et al.* (2020:261) concur with such smallholder farmers' characterisation and note that smallholder farms are often a family-operated model of agriculture where labour is drawn mainly from the family members. However, The World Bank's Rural Strategy (2003), as cited in Bernstein (2013:23), defines smallholders as those with a low asset base, operating less than two hectares (ha) of cropland.

Yet, as The World Bank differentiates smallholder farmers from largescale farmers according to the asset, it also seems to echo FAO's similar categorisation of

smallholder farmers as farmers with “limited resource endowments, relative to other farmers in the sector” (Mapiye *et al.*, 2020:50). These definitions describe smallholder farmers according to their essential features that are reflected in assets, resources and labour constraints that often characterise most smallholder farmers to distinguish them from largescale common farmers. Consequently, Mabaya *et al.* (2019:10) view smallholder farming as a backward and inefficient approach that hinders a country’s faster socio-economic growth and development. However, contrary to the derogatory description of smallholder farming as valueless to the economy, Aliber and Mdoda (2015:19), who evaluated the direct and indirect economic contribution of smallholder farmers in South Africa, reject the notion that these farmers contribute little to the economy and the welfare and livelihoods of rural dwellers. They demonstrate that smallholder farmers contribute just under one-quarter of the country’s income from agriculture. Besides that, Kirsten and Van Zyl (1998:99), as well as Ortmann and King (2006:321) (as cited in Ntuchu *et al.*, 2021:99), have an issue with the interchangeable usage of the terms “small-scale” and “smallholder” farming. They reveal such an approach confuses because when the term “smallholder” is generically used, it suggests that these farmers are relatively homogenous. This tends to confuse class-based differences between them and leads to misleading assumptions being made about common interests in development planning when in actual cases, different smallholder farmers may have different interests and levels of performance (Kuivanen *et al.*, 2016:163; Tittonell *et al.*, 2010:33). This reasoning accentuates Pienaar and Traub’s (2015:9) argument that apart from being defined by agricultural activity, there are vast differences between all categories of smallholder farmers, even though they are defined by farm size.

Lahiff (2000:108) and Pienaar and Traub’s (2015:9) elaborate that land sizes for smallholder cultivation vary considerably, but they are generally extremely small, in the range of 0 to 1.5 ha per household. Moreover, many households farm on less than 0.5 ha. Only a small percentage of households farm on plots larger than 5 ha. This is contrary to The World Bank (2003) and Vuyiseka and Bahta (2021:117)’s claims that the average farm size is 2 ha of cropland per household. Regarding maximum hectareage, Deloitte (2017:6) confirms that small farms can use up to 5 ha. However, each of these definitions has limitations because important factors like quality of resources, farming operations, managerial ability and disparities across regions are

not considered in farm size (Pienaar & Traub, 2015:10). Attributable to such view is that a small farm that produces high-value crops on irrigated land that also uses good quality fertilisers is not comparable to a small farm on marginal land that produces staple crops. In the context of Ntuchu *et al.* (2021:99) citation, the implication of such narratives on what constitutes or does not constitute a smallholder farm is succinctly summed in Kirsten and Van Zyl (1998:217) explanation that:

“Size is not a good criterion for defining small farms. For example, one hectare of irrigated peri-urban land, suitable for vegetable farming or herb gardening, has a higher profit potential than 500 hectares of low-quality land in the Karoo. Turnover, or rather the net farm income level, determines the farm size category, not the land size.”

The “per 2 ha” definition does not correctly account for the quality of resources and crop types. It also does not shed light on a farm's labour arrangements, which can also have substantial implications for the farms' efficiency and productivity (Mabaya *et al.*, 2019:10). Similarly, Berdegúe and Fuentealba (2011:28), as indicated in Von Loeper *et al.* (2016:752) also criticise the size-based definition. They note, alternatively citing Narayanan and Gulati (2002), that smallholder agriculture also includes farms operated by farm families, who provide most of the labour. Thus, all characteristics reflecting the quality of resources, type of crops and labour arrangements need to be considered in addition to land size. Otherwise, they state that it can turn complicated to determine the nature of support to be given to farmers. Thus, it could be due to the lack of such considerations that explain why previous programmes have been ineffective stimulators of rural growth and poverty alleviation (Von Loeper *et al.*, 2016:749). It, therefore, suggests clarity and usage of the correct definition are crucial and need to be agreed upon if a smallholder-focused approach is utilised to design and implement effective rural development and transformation policies (Aliber & Cousins, 2013:164; Bernstein, 2013:23).

Using similar reasoning, Berdegúe and Fuentealba (2011:228) explain how to best group and define these farmers. They start by identifying two subgroups of smallholder farmers, of which most engage in agricultural production as a secondary source of food. Greyling *et al.* (2015:2) refer to these farmers as “subsistence-oriented smallholder farmers” who derive their household income from non-farm sources. The second subgroup consists of the “commercially-minded smallholders”. They engage

in production as a primary source of income and food, such that, at times, the “commercially-minded smallholders” hire a lot of permanent labour to work on the farms (Greyling *et al.*, 2015:2; Mutero *et al.*, 2016:40).

Unlike the “subsistence-oriented smallholder farmers”, the second subgroup is smaller in terms of the number of farms, but they play a more important economic role (Greyling *et al.*, 2015:2; Mutero *et al.*, 2016:41). The researcher will focus on the second group, namely, the commercially-minded smallholders because they play a more significant economic role. The term “smallholder farmer” will denote this subgroup.

In the previous chapter, the dual nature of South African agriculture reflected that there are about 40,122 commercial farmers and 2 million smallholder farmers in South Africa (Stats SA, 2020a:19). Stats SA (2020a:19) further suggests about 200,000 to 250,000 of the 2 million smallholder farmers produce to sell their products and can be categorised as “commercially-minded smallholders”. At the same time, the other 85% to 90% (1.75 to 1.8 million) are subsistence-oriented smallholder farmers who produce for their personal consumption (Aliber & Cousins, 2013:142; DAFF, 2017:8; Mutero *et al.*, 2016:40; Pienaar & Traub, 2015:162). However, supporting smallholder farmers requires understanding and finding ways to overcome the specific challenges they face (Mutero *et al.*, 2016:41). Their support should therefore be based on a strategy aimed at achieving both scale and impact.

More precisely, support for subsistence-oriented smallholder farmers should be focused on welfare and food security by enabling a significant number of subsistence farmers to increase production (Mutero *et al.*, 2016:41). On the other hand, support for the commercially-minded smallholders should be focused on helping them transition into real commercial farmers (Aliber & Hall, 2012:549; Cousins, 2013:49). In that context, this study does focus on commercially-minded smallholder farmers. In this regard, the study shares the definition offered by the Agri-SETA (2019:16) and Vuyiseka and Bahta (2021:117) where the smallholder farmers also connote emerging farmers that are either new in the agricultural sector or subsistence farmers that have identified commercial opportunities in the agricultural sector. They are engaged in establishing and growing different agribusiness entities to tap into such opportunities. Such a definition aligns well with the description of commercially-minded smallholders

that are summed in this study to refer to the smallholder farmers that invest in agriculture not to produce food for their household consumption but to generate profits and grow from a small-scale operation to fully-fledged largescale commercial agricultural entities. These commercially-minded smallholder farmers also combine efforts with largescale commercial farmers to catalyse overall productivity and activate the multiplier effect of the agricultural sector. In that way, they contribute to improving the overall pace and level of socio-economic growth and development (Van Dijk, 2015:15). Unfortunately, commercially-minded smallholder farmers pursue their commercial endeavours in the agricultural sector. Their operations and quests to achieve the desired agribusiness outcomes are frustrated by a combination of existing agricultural challenges.

4.3. CHALLENGES FACED BY SMALLHOLDER FARMERS IN SOUTH AFRICA

Smallholder farmers are afflicted by various social ills which, among others, include poverty, hunger and poor remuneration (Nel, 2019:6). Other factors that affect their ability to operate efficiently and hinder them from capitalising on the prevailing opportunities have been listed by several scholars like Mutero *et al.* (2016:41) and Oluwatayo (2019:489) as well as Sikwela (2013:69). In such narratives, Sikwela (2013:69) classifies the challenges facing smallholder farmers into two categories of endogenous and exogenous challenges. Endogenous challenges affect the farmer's ability to operate efficiently, despite having the potential to allocate resources economically. The farmer has some control over endogenous challenges like shortage of labour, lack of skills, knowledge and education and a range of cultural factors (Sikwela, 2013:24).

In contrast, exogenous constraints are beyond the farmer's control. It originates from the changes in the broader agricultural environmental variables, such as limited access to agricultural inputs, credit, mechanisation, and marketing services, as well as poor institutional and infrastructural support (Oluwatayo, 2019:489). Other exogenous variables originate from the emergence of inappropriate policies and legislation, social structures, problems associated with land tenure, and the acquisition of resources (Nel, 2019:6). Sikwela's (2013:69) further categorisation of smallholder farmer challenges are consonant with Patel's (2010:44) articulations that are cited in Mbatha (2019:6) to imply agricultural infrastructure does not only include typical

agricultural infrastructure like farm buildings and fences but also includes a wide range of public infrastructure that facilitates the production, procurement, processing, preservation and trade of the production. Most studies revealed findings consonant with the views of Patel (2010:44) and Sikwela (2013:69); that is where a consensus exists, that a combination of the challenges most smallholder farmers often face originate from issues associated with physical infrastructure, input-based infrastructure, resource-based infrastructure and institutional infrastructure (Agri-SA, 2016:41; Nengovhela *et al.*, 2021:611; Van Koppen *et al.*, 2018:6; Zantsi *et al.*, 2021:95).

The details of such challenges are evaluated as follows in the context of these narratives.

4.3.1. Physical Infrastructure

The dynamics associated with the non-availability of relevant physical infrastructure often constrain smallholder farmers' effective performance. Mbatha (2019:6) elucidates that such physical infrastructure dynamics arise from the prevailing undesirable conditions of factors like roads and transport, storage, processing or preservation facilities that smallholder farmers are exposed to. For roads and transport, Mbatha (2019:6) also explains that a lack of road networks or underdeveloped roads prevents smallholder farmers from accessing agricultural input and output markets. This is because such unsuitable roads and transport facilities compromise farmers' abilities to transport inputs from the input market to the farm and produce or output from the farm to the required output market (Oluwatayo, 2019:490). The lack of road networks and underdeveloped roads also constrain farmers from participating in formal markets, which affects their profitability (Mphafi *et al.*, 2019:6861). This happens largely in the rural areas, where most smallholder farmers are found. In rural South Africa, 80% of smallholder farmers are concentrated in the former homelands, and the other 20% are in urban formal and informal regions (Aliber & Mdoda, 2015:28; Oluwatayo, 2019:487). The implication is that, in most instances, smallholder farmers rely on public transport to source production inputs and to take their output to the market. Still, transport tends to be expensive due to the conditions of the roads (Mbatha, 2019:6).

The high transactional costs result in farmers being unable to save up funds to secure storage facilities. They also have inadequate capital finance and struggle to save enough money. As a result, they have little investment in the required input-based infrastructure, such as storage facilities and machinery (Von Loeper *et al.*, 2016:752). However, in the absence of suitable storage facilities, some smallholder farmers who trade in easily perishable agricultural products need to handle the produce from the moment it is harvested to get it delivered to the market while it is still fresh (Maponya & Mpandeli, 2014:135). Higher returns are realised from produce that is still fresh. This necessitates the availability of proper storage facilities to maintain the quality of the products and thus ensure a good price (Tshuma, 2014:2416). Unfortunately, these smallholder farmers do not have such an on-farm infrastructure. They consequently rely on the “farm gate sales” strategy, whereby crops are harvested only when an interested buyer comes to the farm to buy and collect the products (Mmbengwa *et al.*, 2015:176).

Therefore, this strategy is less efficient and generates low returns because if customers do not come to the farm to buy the produce, smallholder farmers do not make any sales. The effect is that some of the crops get wasted in the farm fields. Zantsi *et al.* (2021:94) stress the importance of storage facilities in smallholder farmers’ operations and state that access to storage facilities increases farmers’ flexibility in selling their products. It also improves their bargaining power.

The South African SEDA has increasingly facilitated smallholder farmers’ entrance to export markets and decreased their dependency on imported products (KPMG, 2012:15; SEDA, 2021:9). This implies the local establishment of agro-processing industries and fresh produce markets would significantly support smallholder commercial farmers to add value to the local economy in terms of employment, revenue, support services and the creation of demand for associated goods and services through forward and backward linkages (Mkhonto & Musundire, 2019:46). This signifies that smallholder farmers are improving their skilfulness and accessibility to capital. In addition, improving the road and transport infrastructure is part of the complementary strategies for improving smallholder farmers’ effective market performance. This is because non-development and non-maintenance of physical infrastructure leads to high transactional costs, one of the major factors constraining

the growth of smallholder farms (Oluwatayo, 2019:490). Such high transaction costs are caused by poor infrastructure, poor communication services in remote areas, and a lack of formal markets. It may also arise from the costs of acquiring information, negotiation, monitoring, coordination and enforcement of contracts (Metelerkamp *et al.*, 2019:154). High transaction costs discourage commercialisation and make it difficult for smallholder farmers to compete in lucrative markets (Von Loeper *et al.*, 2016:752). Myeki (2021:8) explains that in the worst cases, high transaction costs force smallholder farmers to produce less perishable commodities, thereby reducing productivity. It also causes farmers to stop participating in markets and resort to other means, such as spot markets.

Minimising transaction costs is vital for improving smallholder farmers' access to high-value markets and integrating them into the agricultural supply chain. Effects of these strategies often manifest in the wastage of most of the products after harvest or sales at lower prices to undermine the viability, profitability and sustainability of most smallholder farmers (Matlou *et al.*, 2021:546). Thus, greater effort needs to be made to reduce transaction costs and improve inefficiencies along the value chain (Myeki, 2021:8). Such reasoning echoes KPMG's (2012:8) statement, as cited in Zantsi *et al.* (2021:95), that the government has recognised the importance of the transport sector to agricultural development. It is increasingly identifying areas of investment in transport infrastructure to meet the growing demand for logistic services among farmers. Yet, as smallholder farmers experience such physical infrastructure dynamics, their performance is also undermined by particular input-based infrastructure challenges.

4.3.2. Input-Based Infrastructure

Input-based infrastructure includes seeds, fertiliser, pesticides, farm equipment, and machinery (Antwi & Oladele, 2013:280; Baloyi, 2013:66; Zewdie *et al.*, 2020:2).

On-farm infrastructure or input-based infrastructure is analogous to what Sikwela (2013:24) calls the endogenous variables that smallholder farmers can often exert control and influence to prevent them from undermining their performance. However, Agri-SA (2016:41) notes that smallholder farmers often cannot effectively exert control over these variables. A challenge of inadequate capital finance limit smallholder

farmers' investment in the required input-based infrastructure (Sikwela, 2013:27). The high input prices of such critical inputs are a challenge because most smallholder farmers often seek inputs from cheaper markets and, in some cases, reduce input purchases to avoid paying too much for them (Zewdie *et al.*, 2020:2). Such insufficient use of high-quality farm inputs results in low crop production, low income, low purchasing power for food, food insecurity, poverty and subsequently, poor sustainability of the agribusinesses initiated by the smallholder farmers. Since their inputs are of poor quality, their produce is also often of poor quality and rejected by output markets (Louw & Jordaan, 2016:306).

Although the demand for vegetables in South Africa is increasing, productivity is low due to the high incidence and severity of pests and diseases, the absence of efficient control measures and the limited availability and use of high-quality seeds (Lazaro *et al.*, 2017:599). The correct application of fertiliser on crops usually boosts production, thereby increasing the farmer's chances of being engaged in high-value markets. However, most smallholder farmers are afraid of using pesticides because they do not understand how to use chemicals (Khapayi & Celliers, 2016:31). The mechanical damage from pests affect yield quality resulting to yield loss. This can lead to a loss to yield. Besides fertilisers and pesticides, many smallholder farmers in South Africa do not have seed beds and care skills. Such farmers buy their seedlings from commercial farmers and nurseries. Only a few are experienced in producing their seedlings (Khapayi & Celliers, 2016). Tilman and Clark (2015) highlight the necessity for the government to take effective steps to improve efficiency by teaching farmers seed bed and care skills, standardising pesticides and training smallholder farmers to use the relevant technology correctly. As such, improve on -old-fashioned production techniques and use newly developed fertilisers safely.

According to Louw and Jordaan (2016:299), production assets such as tractors, machinery and vehicles that can transport agricultural products to markets are a key requirement in the value chain. Ownership of a vehicle, for example, can allow the smallholder farmer to participate in markets and thus reduce the barrier to market entry (Sinyolo *et al.*, 2017:1). Farmers who do not have their own transport hire from suppliers and are sometimes overcharged due to condition of roads and distance to the location of their farms (Louw & Jordaan, 2016:287). Moreover, when it is time for

tilling, most farmers do not own tractors and hire the plant at high rates. In this regard, When these farmers lack the necessary machinery and equipment, they opt to employ more labour to increase productivity. To some extent, the majority of these farmers end up producing low quantities of products (Baloyi, 2013:25; Louw & Jordaan, 2016:299). All these factors of transport and inputs determine the transaction costs of smallholder farmers, which tend to be high for smallholder farmers (Sikwela, 2013:35).

Yet, even for the smallholder farmers that manage to access output markets, their products often still fetch very limited returns because they do not have input-based or on-farm infrastructure to process and add value to their raw-agricultural products. Van Schalkwyk (2012:902) and Mabaya *et al.* (2019:10) offer similar explanations that the prices of primary agricultural produce may randomly experience a sharp decline, but it is common for retail prices of the same products to be higher when they are processed and packaged. Grading, sorting, cutting and packaging in standard weights and processing products are some of the value-adding methods that earn farmers additional income (Louw & Jordaan, 2016:287). In most cases, most smallholder farmers do not have these capabilities due to limited capital or finance (Mabaya *et al.*, 2019:10). Likewise, Kelly *et al.* (2015:482) also point out that the most growth in the commercialisation of food crops comes from increasing domestic and regional demand for traditional processed and semi-processed food products. Unfortunately, smallholder farmers do not offer value-adding agro-processing services, despite such processing services being a critical component of the vegetable industry (Metelerkamp *et al.*, 2019:154).

Thus, with a few exceptions, most of the agricultural products from smallholder farmers are often poorly packaged. The farmers' inability to add value to their agricultural products also excludes them from the most profitable value chains and markets (Louw *et al.*, 2016:84). To overcome such incapability, Black *et al.* (2014:29) note that some smallholder farmers often engage in contract farming to acquire quality inputs and access the most value in the industry value chain system. Contract farming, as Glover and Kusterer (2016:12), refers to the agricultural system where smallholder farmers get contracts with largescale buyers of agricultural products, of which the buyer provides the required inputs and dictates the production in exchange for the secured market that they offer to smallholder farmers. Although it can lead to the exploitation

of smallholder farmers in certain cases, it is used by beginning farmers to build and improve their internal production capabilities before going separate ways in the long run (Glover & Kusterer, 2016:12). Contract farming is an arrangement in which a public or private entity buys certain farmers' agricultural products through contracts that provide inputs, technical assistance and marketing to smallholder farmers (Khapayi *et al.*, 2018:407; National Agricultural Marketing Council (NAMC), 2015:4).

Even if such an arrangement creates opportunities for smallholder farmers to improve their capabilities to transition to real commercial farmers, Black *et al.* (2014:29) still note that contract farming is often associated with disrespect of contracts to operate to the disadvantage of smallholder farmers. Usually, when the produce is contracted, a shelving space has been reserved for the growers. However, suppose the seller does not produce or deliver the produce to the market or supplies it in lower quantities or even quality than those agreed for on the contract. In that case, it may result in a loss of customers in the market (Metelerkamp *et al.*, 2019:154). On the other hand, it is more of a concern if a contract stipulates the quantity, quality, and pricing of products. The producer delivers the best quality product on the market but receives less than the agreed amount from the buyer (NAMC, 2015:4). At the same time, some smallholder farmers tend to produce inconsistent quantities that render the contracted retailers to lose interest in procuring produce from such smallholder farmers (Metelerkamp *et al.*, 2019:154). For other smallholder farmers who managed to secure contracts from agro-processing companies, it has often emerged that instead of such companies becoming secondary streams of income for smallholder farmers, the contract often becomes a burden that causes them to produce in low quantities and qualities (Metelerkamp *et al.*, 2019:154). Subsequently, this affects the relationship between smallholder farmers and the contracted corporate buyers to undermine the extent to which they can use contract farming to build their internal capabilities and on-farm infrastructure to perform more effectively (Louw & Jordaan, 2016:299). That is because when smallholder farmers fail to deliver within agreed reasonable limits, their relationship with the retailer does not grow, and eventually, the agreement gets terminated. Such constraints motivate Louw and Jordaan (2016:309) to suggest that since improved value-adding properties reduce farmers' post-harvest losses, government programmes rolled out should also assist and train smallholder farmers on how to market their products as per the market requirements.

Yet, in addition, some contract buyers of agricultural produce in the contract farming arrangement also tend to prefer verbal rather than written contracts so that if the market turns unattractive, they can easily stop buying without any legal implications (Vuyiseka & Bahta, 2021:117). Verbal contracts are also preferred because the buyer can take or not take excess produce in the event of excess harvest and supply (Khapayi *et al.*, 2018:200). As these limit the benefits that smallholder farmers can derive from contract farming, other challenges tend to arise from what Sikkwela (2013:69) calls the exogenous variables. This is because even if farmers have access to suitable land, they are often not able to participate in contract farming programs due to exogenous factors like lack of infrastructure, distance from farms to markets and high transport costs amid an acute shortage of finance among smallholder farmers (Khapayi *et al.*, 2018). This suggests that even if contract farming can aid some smallholder farmers in addressing the input-based infrastructure dynamics, it tends not to benefit them in all situations. Nevertheless, besides the dynamics and complexities of input-based infrastructure, other challenges that often undermine smallholder farmers' sustainability arise from the dynamics associated with resource-based infrastructure (Myeki, 2021:8).

4.3.3. Resource-Based Infrastructure

Dynamics of resource-based infrastructure often emerge from the challenges associated with smallholder farmers' access to potential land, water, irrigation and farm power or energy (Baloyi, 2013:399; Oluwatayo, 2019:46). This is because access to potential land for cultivation is one of the challenges that most of the smallholder farmers in South Africa face. Most of the smallholder farmers in South Africa, as Mbatha (2019:6) notes, were the previously disadvantaged black population that was dispossessed of their ancestral land by the apartheid government. The implication is that even the modern black smallholder farmers that inherited land in the former homeland territories live on very limited land. Such limited land constitutes where the black smallholder farmers residence. The part of the land where they also do commercial farming (Nel, 2019:6). Such conditions have created resource-based infrastructure dynamics that render it difficult for smallholder farmers to access relatively larger land and begin commercial farming on a relatively medium or even

larger scale to gain the requisite returns that can motivate them to do more commercial farming (Oluwatayo, 2019:489).

Such dynamics are further exacerbated by the fact that some of the land chunks in which some of the black smallholder farmers reside in the former homelands are not necessarily very fertile (Devaux *et al.*, 2018:99). This means that to reap the higher yields, smallholder farmers need to engage in complex agricultural practices such as the use of fertilisers and genetic modifications of plants to suit the type of soil in which they are farming (Antwi & Oladele, 2013:273).

As such, resource-based infrastructure dynamics intertwine with input-based dynamics, and smallholder farmers doing relatively well and integrated into the requisite value chains still face the challenge of adequate land for expansion (Sihlobo, 2018a:88). Apart from the land the smallholder farmers freely inherited from their ancestors, the agricultural land in the market is expensive and unaffordable for most smallholder farmers (Von Loeper *et al.*, 2016:752). This limits immediate quests by the smallholder farmers that are doing well to easily access additional land to expansion and transition from smallholder farmers to becoming (at least) medium-scale commercial farmers (Sihlobo, 2018a:88). In response to smallholder farmers' challenges and in recognition of the role smallholder farmers play in the economic development of the country, the South African government has been adopting and implementing a series of support and land reform programmes since 1994 (Hanoman, 2018:27; Zikhali *et al.*, 2020:45). These programmes include the FSP and the CASP, and are integrated with land-related programmes like SLAG, LRAD and the PLAS (Greenberg *et al.*, 2018:66; Hanoman, 2018:27; Zikhali *et al.*, 2020:45). However, studies revealed that most South African land reform projects are inducing only limited impact in terms of productive land use and household livelihoods (Agri-SA, 2016:41; Fanadzo & Ncube, 2018:438). This has been attributed to many factors, but the most widely cited are inappropriate or inadequate planning, a general lack of skills and capital among the intended beneficiaries and poor dynamics within beneficiary groups (Devaux *et al.*, 2018:99).

But as smallholder farmers face such dynamics, it is also increasingly emerging that there are resource-based infrastructure dynamics as a result of a lack of access to adequate water and irrigation facilities (Sihlobo, 2018:88). Access to water

infrastructure, pollution-free water, and a reliable irrigation system are key success factors for commercial vegetable production and successful food production (Louw & Jordaan, 2016:304). In her analysis, Von Bormann (2019:116) reports that about 62 % of irrigation in South Africa is used for farming due to the classification of South Africa as a 'water-stressed' country and its climatic conditions. The country has highly variable rainfall patterns and experiences unreliable rainfall, which negatively affects its agricultural sector (Van Koppen *et al.*, 2018:6). The implication is that there was a drought in 2013, 2015, 2016 and 2019, which adversely affected the sector (Mkentane, 2019:309). This poses a higher risk for smallholder farmers, as they are driven significantly by rainfall availability. Rainfall-dependent agriculture is a limiting factor for farming and for improving crop productivity, as rainfall is unreliable (Zewdie *et al.*, 2020:2).

Therefore, irrigation has often been regarded as a promising solution to boost the level of agricultural productivity, most especially amongst smallholder farmers. Not only that, but it also enhances the overall economic growth for effective poverty reduction (Nonvide *et al.*, 2018:1009). However, most smallholder farmers irrigate their farms, using hosepipes and watering cans to water their crops. Others have inadequate knowledge about irrigation equipment and are also not irrigating their farms because they lack irrigation equipment (Agri-SA, 2016:41). They claim that the irrigation equipment is expensive to buy and they cannot afford to buy it (Khapayi & Celliers, 2016:39). This signifies new technologies, especially smallholder irrigation projects, will have to be developed in South Africa for irrigation efficiency.

Yet, as introducing such new technologies would bolster smallholder farmers' performance, undermining limitations would still arise from smallholder farmers' limited access to relevant farm power and energy (Louw & Jordaan, 2016:290). Quests of smallholder farmers to mechanise and adopt better agricultural practices may require using energy in their farm production activities. Unfortunately, access to the necessary energy has often been a problem (Rycroft, 2019:107). Due to increased population, urbanisation and consumption, the demand for electricity keeps rising, and South Africa's national power utility, Eskom, might not be able to sustain a steady flow of supply (KPMG, 2012:9 as cited in Rycroft, 2019:107). Moreover, Van Koppen *et al.* (2018:6) also insist that the increasing cost of electricity and inconsistent supply to

remote rural areas might require smallholder farmers to consider other sources of electricity, such as backup generators and other renewable energy sources, to survive.

In essence, all these issues impact the smallholder farmers' access to potential land, water, irrigation and farm power or energy. More often, these challenges mutate or combine into resource-based infrastructural challenges that constrain most smallholder farmers' effective performance (Matlou *et al.*, 2021:546; Metelerkamp *et al.*, 2019:154; Myeki, 2021:8;). Such resource constraints are often further compounded by some complexities arising from specific institutional infrastructural challenges.

4.3.4. Institutional Infrastructure

The institutional infrastructural challenges that affect smallholder farmers' effective performance usually originate from smallholder farmers' limited accessibility to credit institutions, agricultural research and extension, rural literacy, human capital, education technology, information and communication services, regulatory requirements, financial services and marketing (Cheteni & Mokhele, 2019:118; Matlou & Bahta, 2019:2). In these dynamics, lack of access to credit institutions, as defined by the institutional dynamics that render credit institutions more risk averse and not trusting smallholder farmers with credit, is often a challenge that smallholder farmers have learnt to live with (Matlou & Bahta, 2019:1). Except for smallholder farmers with collateral security, the implication is that most smallholder farmers in South Africa find it difficult to access financial capital (Cheteni & Mokhele, 2019:118). Firstly, credit providers are not keen to lend to smallholder farmers because the majority of these farmers do not fall within the economically active age range (Cheteni & Mokhele, 2019:118).

Smallholder farmers are also avoided by credit institutions because they have low education levels and pose a risk due to adverse weather conditions that can undermine agricultural productivity (National Department of Agriculture, Forestry, and Fisheries (NDAFF), 2020:9). Secondly, others are rejected because they lack land ownership collateral (Oluwatayo, 2019:490). This is because although some smallholder farmers were given land in South Africa, some were not issued title deeds to the land they were farming on. As such, they are considered to lack collateral

(NDAFF, 2020:9). Smallholder farmers are also affected by high transaction costs, which can come from high operational costs.

High transaction costs (for example, the high transport costs (see Section 4.3.1)) also affect the costs of the inputs used (see Section 4.3.2), and the final prices of the outputs. In effect, it also undermines the cost and pricing relationship because the marketing strategies for leveraging for effective market performance are diminished (Devaux *et al.*, 2018:99). It also limits smallholder farmers' effective market participation and their profits (Mphafi *et al.*, 2019:6861). Most smallholder farmers are located in rural areas with no formal agricultural markets or agro-processing industries. As a result, they are compelled to transport their products to towns at higher costs or to market their produce to local communities (sometimes at lower prices), which causes these farmers to make little profit and remain trapped in poverty (Mutero *et al.*, 2016:42). Trapped in poverty, these smallholder farmers lack the financial capital to run their businesses efficiently.

Smallholder farmers' lack of financial capital often leads to low production because they cannot purchase inputs for production purposes (see Section 4.3.2). This induces a vicious circle of lack of adequate capital finance among smallholder farmers with the effect that many of the obstacles that constrain smallholder farmers in their quest for productivity ultimately boil down to a lack of capital to purchase input necessities such as seed and fertiliser as well as equipment and machinery (Myeki, 2021:8). At the same time, DAFF (2015:26) attributes the reason for which Limpopo continues to experience food insecurity to the fact that most smallholder farmers cannot afford the high input costs because they do not have access to credit (see Section 4.3.2). Negative outcomes of lack of access to capital are often further exacerbated by smallholder farmers' difficulties in accessing relevant institutions and structures that offer the required agricultural research and extension institutions (Cheteni & Mokhele, 2019:118). This is because few institutions or structures offer the required agricultural research and extension services in some rural areas where most smallholder farmers operate (Cheteni & Mokhele, 2019:118). Such institutional challenges affect the capabilities of smallholder farmers to acquire good agricultural practices from agricultural research and extensions to improve their agricultural practices (Kirsty, 2016:9).

The implication is that although technological innovations improve agricultural productivity, such productivity can only be maximally realised through efficient agricultural practices (Lazaro *et al.*, 2017:599). This affects the capabilities of smallholder farmers to gain good agricultural practices and competencies to coherently combine agricultural inputs like seeds, fertilisers, pesticides, water and soil components to achieve the desired agricultural outcomes (Kirsty, 2016:9). It also undermines the acquisition and usage of best agricultural practices for tillage, harvesting and packaging of agricultural products for the market. Yet, due to unsustainable farming practices, such as intensive tillage-based farming practices with little or no attention being paid to managing the soils and the landscape as part of the biological and ecosystem resource base, agricultural soils are being increasingly degraded (Matlou & Bahta, 2019:2). This is reflected in the fact that in some villages, smallholder farmers allow livestock to feed on crop residues in winter without proper control or management (Matlou & Bahta, 2019:2), and lack good agricultural practices (Louw & Jordaan, 2016:303). However, if it can be managed, such practice can positively affect soil restoration and add soil nutrients from the livestock dung, a natural fertiliser.

Good agricultural practices, as opposed to standard or unsustainable farming practices, improve the efficiency of farming practices and improve the livelihoods of vegetable farmers, particularly smallholder vegetable farmers (Lazaro *et al.*, 2017:599). Good agricultural practices often integrate with climate adaptation farming methods to induce minimum soil disturbance, crop residue retention and crop rotation (Thierfelder *et al.*, 2018; Zikhali *et al.*, 2020:45). It is a key approach to addressing declining soil fertility and the adverse effects of climate change in Southern Africa (Louw & Jordaan, 2016:291; Thierfelder *et al.*, 2018). The climate adaptation approach results in increased yields, reduced labour requirements, improved soil fertility and reduced erosion. Climate adaptation is also recommended for climate variability in high and low-rainfall areas (Kirsty, 2016:9). This is because moisture loss from the soil is often a result of evapotranspiration and erratic rainfall distribution, as well as changes in the temperature due to droughty conditions that have become increasingly unpredictable, largely due to the changing climate (Vuyiseka & Bahta, 2021:117). This leads to crop failure and reduced food production by smallholder farmers in South Africa (Rankoana, 2016:2). In contrast, tillage and mulch practices have been reported

to enhance soil moisture storage. Therefore, climate adaptation systems should be tailored to the local farmer contexts and implemented at a small-scale to grow from there to increase feasibility for smallholder farmers (Thierfelder *et al.*, 2018).

Nonetheless, the production cycle's final stage is harvesting, where the invested capital produces profits to fund the loans and purchase production inputs. The time at which the crop is harvested and how it is handled during processing are therefore critical (Khapayi & Celliers, 2016:29). Some farmers do not plan before harvesting and others do not even know they have to prepare. Unfortunately, with a lack of agricultural research and extension services in the rural areas where smallholder farmers, most have not been able to gain such capabilities and good agricultural practices (GAP) (Metelerkamp *et al.*, 2019:154). Yet, poor harvest management, accompanied by poor packing of products, can cause mechanical damage, which causes the produce to rot, resulting in low yield efficiency. This makes it difficult for many smallholder farmers to meet consumers' demands and specific grades and specifications because they lack good knowledge and the resources to meet such requirements (Metelerkamp *et al.*, 2019:154). Smallholder farmers do not acquire relevant good agricultural practices from agricultural research and extension services. It has been proven that farmers who adopt good agricultural practices are often more aware and knowledgeable of improved production technologies and have better bargaining power in selling their products due to improved product yield and better quality (Lazaro *et al.*, 2017:599).

Training offered to smallholder farmers through agricultural research and extension services also enables them to access, read and interpret climate change information and to align their planting, weeding and harvesting decisions with the changes in climate trends (Myeki, 2021:8). This is because most crop farming in South Africa is rain-dependent and therefore, susceptible to weather variations and fluctuations. Seasonal forecasts of climate information predict temperature indicators in the forthcoming seasons to help farmers plan their production and harvesting wisely (Myeki, 2021:8). This is seldom the case, as Muema *et al.* (2018:49) point out that smallholder farmers do not access and use this information. It is not only low agricultural extension services to smallholder farmers that explain such low usage, but also the traditional practices that obscure the utilisation of such climate change information (Matlou & Bahta, 2019:2). This is attributable to the fact that in South Africa

and specifically in Limpopo Province, the reason for smallholder farmers being unable to access climate forecast information is because they have developed their own local climate forecast strategies and adaptation practices during times of climate risks through observation of the moon, stars, cloud formation, wind and animal behaviour (Matlou & Bahta, 2019:2; Mpandeli & Maponya, 2013:47; Tshuma, 2014:2414). This is because some smallholder farmers are largely traditional in thinking and tend to construe that some of the climate forecast information is inaccurate. Yet, Mutero *et al.* (2016:43) report that there is a direct relationship between access to relevant and effective information and agricultural development. Access to agricultural information can help smallholder farmers improve their production capacity and ultimately access lucrative markets.

However, Louw *et al.* (2016:220) argue that agricultural help from field extension agents does not assist much because the agents are ill-informed about local markets and often do not provide the necessary training and assistance with gaining access to information about markets. Thus, they maintain that the government should leverage the private sector and facilitate market access by using the existing value chain infrastructure. In that context, Louw and Jordaan (2016:312) recommend that the South African government extend its extension services to provide farmers with knowledge of GAP, as well as of how best to produce, process, handle, harvest, store, sort, grade, package, label, transport and market their produce in compliance with market requirements, which will reduce post-harvest losses.

Government policies and investment strategies should be geared towards supporting education, providing on-farm demonstration training and disseminating information on climate change adaptation strategies, especially for smallholder farmers in the country (Thinda *et al.*, 2020:9). The government, stakeholders and donor agencies need to provide capacity building developments in agricultural extension systems and climate change education using information and communication technologies (Thinda *et al.*, 2020:9). Most smallholder farmers are illiterate to the extent that they cannot read, understand and respond to the trends in the market dynamics. Poor literacy levels of smallholder farmers also causes them to lack investment skills, negotiation skills or financial and marketing skills to the extent that they are often unable to meet the quality standards set by the retailers, fresh produce markets and food processors (Mutero *et*

al., 2016:42; Oluwatayo, 2019:490, Tshuma, 2014:2415,). The high illiteracy among smallholder farmers also suggests that they are often unable to evaluate and assimilate the required agricultural technologies to leverage the overall productivity and performance of their agricultural production (Devaux *et al.*, 2018:99; Sihlobo, 2018a:88).

The limited market information available to smallholder farmers is often a result of their isolation in rural areas, which hinders their access to crucial market information. This affects the acquisition of relevant market information to inform decisions on product plan, such as what type of crops to grow in a given season, to ensure their marketability and access to the most remunerative markets (Mphafi *et al.*, 2019:6861). Due to their isolation in rural areas, smallholder farmers also do not have up-to-date information on current prices and sales timing to plan their marketing approach and ensure that they do not cause a market glut (Mutero *et al.*, 2016:42).

In other words, a consensus seems to exist that a combination of the challenges that most smallholder farmers often face arise from issues associated with physical infrastructure, input-based infrastructure, resource-based infrastructure and institutional infrastructure (Agri-SA, 2016:41; Maponya & Mpandeli, 2014:135; Van Koppen *et al.*, 2018:6; Zantsi *et al.*, 2021:102). Therefore, the South African government has crafted and implemented a nexus of support programmes over time to address these challenges. They aim to ensure smallholder farmers can contribute significantly to the socio-economic development and growth of the country in the near future.

4.4. SUPPORT FOR SMALLHOLDER FARMING BY THE SOUTH AFRICAN GOVERNMENT

In a bid to support not only smallholder farmers but also the entire agriculture, the South African government has, in the past two decades, implemented several policies and programmes to increase the budget spent on the agricultural sector as well as to support smallholder farmers (Christian *et al.*, 2019:94). However, Chapman *et al.* (2021:7) believe that there is little evidence of the success of these attempts. In fact, the attempts by government and development agencies seem to have intensified rather than alleviated the difficulties that emerging farmers face (Chapman *et al.*,

2021:7; Khapayi *et al.*, 2018:375). This view contrasts with DAFF's (2019:49) argument that government programmes have lessened farmers' challenges. It reiterates such programmes be reflected in the fact that the government allocated a CASP budget of R1,538,325 billion in 2019, which assisted more than 21,000 farmers in 2019 and a budget of R1,675,989 billion in 2020 (DAFF, 2019:49).

Whether government support programmes have assisted smallholder farmers or not, is also hotly debated. Some programmes were implemented to support the agricultural sector and smallholder farmers. These programmes include the FSP, SLAG, LRAD, PLAS and the CASP (Chapman *et al.*, 2021:3; Christian *et al.*, 2019:94; Hlatshwayo *et al.*, 2021:7699; Mama, 2020:8; Nwafor, 2020:19). Details and the evaluation of these programmes follow below.

4.4.1. Farmer Support Programmes

Funds for farmer support programmes come from DAFF conditional grants, provincial equitable shares (PES) from National Treasury to provincial treasuries and the Department of Rural Development and Land Reform (DRDLR) direct programmes (Hlatshwayo *et al.*, 2021:7699). The Farmer Support Programme implies that the current policy framework targets 300,000 smallholder farmers for support through government programmes and the emphasis of the programmes is commercialisation and public-private partnerships (PPPs) (DAFF, 2019:49). Before the implementation of the CASP, FSP was championed first by the Development Bank of South Africa (DBSA) in 1986 to provide the support required for successful agricultural production by small-scale farmers in the former homelands (Manjunath & Kannan, 2017:126). Its main objective was to rectify the imbalances caused by the inequitable access of black farmers to the agro-support system and to provide fair access to the market by improving economic efficiency (Manjunath & Kannan, 2017:126). The programme provided these farmers with various forms of comprehensive support, including credit for agricultural input, mechanisation services and agricultural infrastructure. It also offered agricultural extension and research services support in conjunction with training and marketing services (Mama, 2020:8). The outcome of the FSP was that it provided capacity building for the farmers and improved access to inputs and necessary services. It introduced a shift towards more flexible small-scale farm management systems, farm sizes and cropping systems (Mama, 2020:8). However,

the programme also had its limitations. Chapman *et al.* (2021:6) and Vink *et al.* (2012) argued that although the FSP policy was, overall, a good model, its focus should have been on marketing and land support because of the problems experienced with implementation. Studies by Cheteni and Mokhele (2019:118), Oluwatayo (2019:339) as well as Nwafor *et al.* (2020:58) also found that FSP implementation was marred by the provision of poor-quality extension support in most instances.

The low effectiveness of services could not be ascribed to a lack of field officers but rather to their low-level formal education and the lack of appropriate in-service training to meet job support needs (Nwafor *et al.*, 2020:58). Mokhele (2019:118) also reiterates that there was no meaningful contact between extension and research, given that most research capabilities remained targeted at the commercial sector.

Besides the fact that extension methods were outdated and had not adapted to changing international extension approaches, farmers were also encouraged to use inputs at too high a level against their actual achievement to push many into debt (Hlatshwayo *et al.*, 2021: 7699). Some 40 farmer training centres had been constructed in the former homelands, but occupancy rates were only 15% to 20%. Combined with poor activity coordination between the departments of agriculture and the agricultural corporations, all these challenges mutated to undermine the overall successful FSP implementation (Cheteni & Mokhele, 2019:118). Similarly, Sinyolo *et al.* (2017:5) also reveal that small-scale farmers in the former homeland areas are generally not included in the recent commercialisation development models and remain largely neglected because extension services, funding support and infrastructure have effectively broken down. Thus, Sinyolo *et al.* (2017:5) suggest that the scope of FSP must accommodate development models that bolster profit maximisation and commercialisation. This model also aspired to improve rural livelihoods, food security and stabilise and expand employment opportunities (Sinyolo *et al.*, 2017:5).

In essence, Cheteni and Mokhele (2019:118), Oluwatayo (2019:339) and Sinyolo *et al.* (2017:5) all share a similar view; the choice of a farming model and type are more important now than in the DBSA period.

However, Kirsty (2016:9) defends FSP, saying that the programme succeeded in alleviating the constraints confronting small-scale farmers in the former homelands by improving access to inputs and extension services. Even though little attention was paid to market development and institutional capacity, he still reiterates that FSP approach was a good strategy for promoting small-scale agriculture in Africa. In that context, Kirsty (2016:9) refers to FSP as a “paradigm shift”, because it was utilised successfully by other African countries such as Zimbabwe, Kenya and Malawi. This is accentuated by the fact that FSP in Zimbabwe, Malawi and Kenya improved farm production, which significantly increased farmers’ contributions to the total agricultural output. Nevertheless, as FSP was being implemented, it was followed by various subsequent land reform programmes, including the SLAG (Goldman *et al.*, 2018:1; Grain SA, 2018:1).

4.4.2. Settlement and Land Acquisition Grant

Settlement and Land Acquisition Grant was part of the various policy frameworks, and initiatives like LRAD programmes and PLAS that were introduced to support smallholder farmers (Goldman *et al.*, 2018:1; Grain SA, 2018:1). These land redistribution programmes were rolled out in phases. The first one was the SLAG, the second one the LRAD programmes, and the third one was the PLAS (Netshipale *et al.*, 2017:58). The SLAG and LRAD programmes were aimed at transferring the ownership of the land to the beneficiaries, while PLAS dealt with land owned by the state and how to lease it to beneficiaries (Grain SA, 2018:1; Macdonald, 2019:66; Netshipale, *et al.*, 2017:57). SLAG was the main vehicle for land redistribution between 1995 and 2000. Through SLAG, a R16,000 grant was allocated by the South African government to poor families to buy land (Netshipale *et al.*, 2017:60). However, Macdonald (2019:66) indicates that the requirement for the SLAG programme was that the landless poor families had to buy land in groups, which resulted to its failure due to group dynamics.

SLAG was accompanied by the introduction of the Land Restitution programme in 1997 (MAFISA, 2016:8). The Land Restitution programme was implemented in 1997. Farms were transferred back to the traditional owners who had been forcibly removed and sent to their previous homelands. It also sought to transfer land ownership to

former labour tenants on commercial farms and those who had lost land and livelihoods through “betterment” planning in the homelands (MAFISA, 2016:8).

The land restitution process resulted in land ownership under a community property association (CPA) (Gwiriri *et al.*, 2019:189). However, Parliamentary Monitoring Group-PME (2018:3) concluded that the Communal Property Association Act No 28 of 1996 that drove the land restitution process was appropriate, especially for poorer communities. CPAs are landholding institutions established by the Department of Agriculture, Land Reform and Rural Development (DARDLR) in all South African Provinces (PME, 2018:3). They are registered under the Communal Property Associations Act No 28 of 1996 to be the vehicles for land reform in South Africa for the beneficiaries of the land reform, restitution and redistribution programmes (Gwiriri *et al.*, 2019:189). Those who want to acquire, hold and manage land as a group can establish legal entities (Centre for Law and Society, 2015:1). Despite achievements in certain areas, it is still reported that CPAs face various challenges and experience socio-economic pressures, leading to the poor implementation of the Act (Goldman *et al.*, 2018:1).

According to Goldman *et al.* (2018:1), CPAs are under-resourced legal entities compared to sectional title estates and companies and are not compliant with the CPA Act (DALRRD, 2021:13). Furthermore, they have received limited support and oversight from the government. There is a lack of communication between officials and the CPAs (DALRRD, 2021:13). In some areas, the traditional leaders undermine the CPAs because they see them as challenging their authority (Goldman *et al.*, 2018:3; DALRRD, 2021:14). There are also severe conflicts amongst the members associated with power struggles, abuse of resources, selling off land, infringement of their constitution and lack of transparency in running the affairs of the CPA (DALRRD, 2021:14). Thus, as cited in Gwiriri *et al.* (2019:189), recommendations from the Centre for Law and Society (2015:4) on CPAs are that, land reform beneficiaries should be able to choose the kind of landholding entity they want to form. Contrary to the DARDLR’s Draft Policy Paper on CPAs, it also emphasises that people should not be prevented from forming CPAs in communal areas or where traditional authorities exist. This is because denial to do so would constrain people’s ability to choose the

landholding entity that best fits their needs and their land tenure practices, including customary practices (Gwiriri *et al.*, 2019:189).

Particularly in Limpopo Province, DALRRD (2021:78) notes that challenges faced by CPA's are 1) low literacy levels and a lack of understanding of committee responsibilities, 2) mismanagement of CPA resources by those in leadership, 3) composition of leadership consists mainly of elders within the community and people not economically active thus resulting to the constitutions not being followed, and 4) the senior people also do not consult the youth adequately to encourage their participation in drafting the CPA constitutions. These challenges result in non-compliance, administration difficulties, membership and expired terms of office (DALRRD, 2021:14).

It is also suggested that DRDLR's emphasis should be on ensuring that skilled facilitation is available for setting up and assisting CPAs – not just on CPAs' legal compliance with the CPA Act (Vuyiseka & Bahta, 2021:117). The progress so far shown in the DRDLR's 2021 CPA report is that some of the CPAs are placed under judicial administration (DALRRD, 2021:14). Nonetheless, MAFISA (2016:8) highlights that the implementation of SLAG and Land Restitution programme was followed by the introduction of LRAD.

4.4.3. Land Redistribution for Agricultural Development

LRAD programme was implemented from 2000 to 2008 to empower land reform beneficiaries to improve their economic and social wellbeing through the productive use of land and to promote commercially oriented agriculture (MAFISA, 2016:8).

In 2004, the Agricultural Support Programme was also introduced to assist all new landowners in retaining and maintaining their land by providing information and management skills, technical advice, and skills support (Agri-SA, 2016:41). LRAD was non-prescriptive. However, Devaux *et al.* (2018:99), Antwi and Oladele's (2013:273) study on the impact of the LRAD projects on the livelihoods of the beneficiaries in the Ngaka Modiri Molema district of the North West Province found that providing land to beneficiaries without the necessary production support programmes, resulted in serious underutilisation of the agricultural land resources and low productivity.

Major constraints faced by the LRAD projects in the study area were found to arise from a lack of finance (81%), unreliable sources of water (43%) and poor or a lack of farm equipment (36.2%). Other challenges manifested in poor fencing (36.2%), a lack of farm machinery (32%), insufficient farm inputs (30%), poor or even complete lack of irrigation infrastructure (21.3%) and drought (21.3%) (Devaux *et al.*, 2018:99). However, despite these drawbacks, MAFISA (2016:8) also echoes Antwi and Oladele's (2013) report stating that all the projects' beneficiaries (100%) indicated that their projects had created jobs. A total of 660 jobs had been created. Of these, 37% of those jobs were permanent, and 63% were temporary. Therefore, MAFISA (2016:8) argues the projects provided a source of income for some community members who would otherwise not have been employed. Yet, as the implementation of LRAD unfolded amid different challenges, the PLAS was later introduced to address LRAD's challenges (Zantsi *et al.*, 2021:102).

4.4.4. Proactive Land Acquisition Scheme

The South African government rolled out the PLAS from 2008 to 2014 (Antwi & Oladele, 2013:273). It aimed to achieve land distribution of 30% (24.6 million ha) of the (82 million ha) land owned by white commercial farmers to the landless black people (Antwi & Oladele, 2013:273-274; Zantsi *et al.*, 2021:724). The principle under which the land was to be acquired for distribution was the willing-buyer willing-seller approach (Zantsi *et al.*, 2021:102).

However, this approach was ineffective because it was market-oriented and because white farmers sometimes charged exorbitantly for the land the government wanted to buy (Nwafor *et al.*, 2020:44). As a result, by 2010, South Africa could not distribute sufficient land to the poor in the country to meet its target (Zantsi *et al.*, 2021:102). In the same instance, Antwi and Oladele (2013:273), as well as Goldman *et al.* (2019:7), argue that agrarian reform can result in lower productivity if the land includes collectivisation, but can increase productivity if the land is redistributed. They also argue that, as land reform processes unfold, they should be conducted with caution so that the national food security is not compromised, taking into account the example of Zimbabwe where land was transferred to black people who had limited farming experience and inadequate equipment. Antwi and Oladele, (2013:273) and Goldman *et al.* (2019:7) conclude that policies in South Africa must be crafted with the

understanding that there is a strong link between land ownership and sustainable agricultural practices.

Certainly, there is a strong connection between employment and access to agricultural land. As cited in Nwafor (2020:19), the obvious solution to unemployment, poverty and inequality, as identified in the NDP 2030, is to create jobs. In his February 2020 SONA (State of the Nation Address), President Cyril Ramaphosa announced plans to achieve this through Land Reform and Agriculture by accelerating land redistribution, expanding agricultural production and transforming the industry (Nwafor *et al.*, 2020:44). As part of the government's commitment to land reform, the Department of Agriculture, led by Minister Thoko Didiza, thus issued a call towards the end 2020 for emerging farmers to apply for land. There are 700,000 ha of underutilised or vacant state land (Mathe, 2020:1; Vuyiseka & Bahta, 2021:117). In other words, all these land reform programmes sought to deal with land issues that smallholder farmers face. They were still less effective as the programmes were marred with various challenges. It is such challenges that prompted the introduction of the Comprehensive Agricultural Support Programme (Greenberg *et al.*, 2018:15; Mathe, 2020:1; Vuyiseka & Bahta, 2021:117).

4.4.5. Comprehensive Agricultural Support Programme

During the implementation of land reform programmes, the South African National Department of Agriculture (NDA) realised that it was insufficient to provide prospective farmers with only land or capital. Such concerns instigated the need for establishing the Strauss Commission in 1995 to evaluate and recommend the role of government policies in developing rural communities. The Strauss Commission recommended the implementation of the CASP, which was subsequently initiated in 2004 to provide support and services to targeted beneficiaries of land reform, restitution and redistribution; and to establish a financial mechanism to support farmers during their start-up phase (Greenberg *et al.*, 2018:15; Xaba & Dlamini, 2015:154). The Department of Agriculture (2017:5), and Van Koppen *et al.* (2018:6) explain that CASP received the biggest capital budget ever allocated to small-scale black farmers in South Africa.

Such funds were aimed at supporting six pillars for effective smallholder farmers' performance: on-farm and off-farm infrastructure, advisory and regulatory services, capacity building, information and training, market development, and financial services branded by MAFISA (Xaba & Dlamini, 2015). Furthermore, a CASP pillar of financial services, called the MAFISA, was established in 2006 for the provision of financial services to micro-level producers, processors, the working poor, micro-entrepreneurs and emerging farmers in the rural and peri-urban areas (Antwi & Oladele, 2014:280; Goldman *et al.*, 2019:7). DAFF (2011:3) clarifies that this was to improve livelihoods, reduce poverty through the creation of jobs, offer loans, develop small-scale farming enterprises into viable businesses, and transform them into larger commercial businesses. Unfortunately, as of 2012, the Parliamentary Monitoring Group (2018:4), as cited in Mathe (2019:208), found that most farmers who received loans through MAFISA were indebted and struggling to make their loan repayments. Moreover, there was no policy to deal with farmers who could not repay loans. Furthermore, Aliber and Hall (2012) and Gwiriri *et al.* (2019:189) express concern when analysing the MAFISA budget expenditure. They argue that the extension support services done provincially accounted for more than 50% of the budget share yet reached few people. Additionally, the 2005 NDA report records show that the strategy had not created jobs (Parliamentary Monitoring Group, 2018:4, as cited in Mathe, 2019:208). Thus, MAFISA did not achieve its objectives and, in fact, resulted in socio-economic challenges.

In response, Devaux *et al.* (2018:99) suggested that the government should not impose or over-encourage credit uptake and instead promote training among both borrowers and non-borrowers in using production credit. Pfunzo (2017:266) also points out that MAFISA was extremely strict about extending credit to smallholder farmers with the necessary collateral. Moreover, smallholder farmers have low incomes and would benefit from low-interest rates. Lowering the interest rate would be advantageous to smallholder farmers because it would result in cheaper credit for borrowers and less risk to lenders. Lower interest rates also lower transaction costs, resulting in less risk to lenders (Pfunzo, 2017:266). Pfunzo (2017:266) and Devaux *et al.* (2018:99) argue that credit accessibility has helped to alleviate poverty and achieve food security; it increased income through increased agricultural production. It is, therefore, important to note that any strategy to boost economic development should

ensure credit accessibility for farmers because faster growth cannot be achieved without capital (Antwi & Oladele, 2013:280; Pfunzo, 2017:266).

Yet, at the same time, Antwi and Oladele, (2013:280) also note that, during the early period after the CASP and MAFISA were established, it could not be concluded whether these programmes had failed or succeeded. Still, they inevitably left much to be desired. The general consensus was that there was non-cohesiveness in implementing the pillars or elements of the CASP (Mabaya *et al.*, 2019:10). In other words, pillars were not implemented together as a package to support smallholder farmers in South Africa. They therefore hindered the promotion of traditional agriculture from subsistence to commercial agriculture (Mabaya *et al.*, 2019:10). Comments from farmers on the projects that were implemented through CASP and MAFISA are that their funds were managed poorly by the Department of Rural Development and Land Affairs. They also expressed disappointment about the appointment and payment of service providers (Mazibuko *et al.*, 2020:261). Nonetheless, amid such criticisms, several lessons learnt over time informed the agricultural research with the result that CASP has recently been improved (Greenberg *et al.*, 2018:336). This is reflected in DAFF's (2019:3) presentation report to the portfolio committee on agriculture, land reform and rural development on the findings of CASP's impact in a study conducted in 2014–2015.

The findings are that CASP had significantly improved and contributed towards the growth and sustainability of individual smallholder farming enterprises (Greenberg *et al.*, 2018:336). The results from DAFF's (2019:3) report show that the incomes of project or farm managers increased due to CASP, jobs increased and were sustained due to CASP, and 85% of CASP beneficiaries had access to markets. The report also indicated that the average area cultivated increased due to CASP, access to agricultural information increased due to CASP, and more than 77% of the beneficiaries indicated medium to high satisfaction with the information received. Conclusively, farmers were generally satisfied with the quality of extension services (DAFF, 2019:3). DAFF's (2019:3) report also revealed weaknesses based on age. Since the country aims to support the youth and women in agriculture, the programmes resulted in a low proportion of youth beneficiaries. There were also repeated audit findings regarding inadequate monitoring of the funded projects. Thus,

DAFF's (2019:3) report recommended to the DLRD that, instead of working in a silo approach to supporting farmers, developing a holistic model that integrates all the existing discrete farmer support programmes is crucial. However, the extent to which such a proposition will turn around the performance of the smallholder farmers in South Africa is yet to be established as time unfolds. Yet, in addition to such programmes that are initiated at the national level for them to cascade to the provincial and local levels, the Limpopo Department of Agriculture has also initiated and implemented a range of some of its provincial programmes for supporting smallholder farmers (Mwadzingeni *et al.*, 2020:418; Nengovhela *et al.*, 2021:611; Van Koppen *et al.*, 2017:109).

4.5. SUPPORT FOR SMALLHOLDER FARMERS BY THE LIMPOPO PROVINCE LOCAL ECONOMIC DEVELOPMENT

To address a nexus of challenges that often affect smallholder farmers' performance, the Limpopo Department of Agriculture (LDA) complemented the national programmes for smallholder support with the initiation of its smallholder farmers' support programmes that include Mechanisation Revolving Credit Access Scheme (MERECAS) and Revitalisation of Smallholder Irrigation Scheme (RESIS). It also integrated other programmes like Limpopo Agribusiness Development Academy (LADA), Crop Input Access Support Policy (CIASP) and Limpopo Agricultural Development Programme (LADEP) (Mapiye *et al.*, 2020:50; Mwadzingeni *et al.*, 2020:418; Ntuchu *et al.*, 2021:99; Van Koppen *et al.*, 2017:109). Details of such programmes are evaluated as follows.

4.5.1. Mechanisation Revolving Credit Access Scheme

The MERECAS policy was intended to assist small-scale farmers with mechanisation and to subsidise their purchase of necessary equipment such as tractors, planters, ploughs and trailers (Ntuchu *et al.*, 2021:99). This is because the province had only 39,000 ha of irrigated land and over 600,000 ha of dry land under small-scale farming in 2007. Less than 40% of this land could be farmed optimally because the small-scale farmers did not have tractors (Ntuchu *et al.*, 2021:99). There were too few farmers with these assets to assist the many poorly resourced farmers who depended on farming

for their livelihoods. Moreover, the tractors that the farmers owned were mostly in poor condition (Nkadimeng, 2019:29).

During the 2008/2009 financial year, about R18 million was allocated to the scheme, from which 110 farmers benefited (Nkadimeng, 2019:29). Of these beneficiaries, 61% were commercial farmers who made their cash contributions (50% deposit), while the remaining 39% were able to access finance from ABSA Bank by virtue of having collateral. The scheme's objective was to benefit previously disadvantaged small-scale farmers (Nkadimeng, 2019:29). However, this could not be achieved maximally because most farmers who benefited from the scheme were commercial farmers. Most of the poor farmers farming on communal land did not have collateral. They farmed on small communal plots under dry land conditions (Mosase & Ahiablame, 2018:364). The other disadvantage was the selection criteria set by ABSA Bank. Apart from the collateral requirement, other requirements included largescale and the ability to repay the loan, as reflected in the business plan with positive cash flow projections (Mapiye *et al.*, 2020:50). It also required evidence of good on-farm infrastructures like water and irrigation facilities. Unfortunately, poorly resourced farmers did not possess such assets, so the credit failed to reach its intended beneficiaries.

Even if such a programme had limitations, the Revitalisation of Smallholder Irrigation Scheme was introduced to ameliorate water shortage challenges among smallholder farmers (Van Koppen *et al.*, 2017:99).

4.5.2. Revitalisation of Smallholder Irrigation Scheme

The RESIS was implemented to improve the accessibility of smallholder farmers to the required irrigation facilities (Mwadzingeni *et al.*, 2020:418). This decision accentuated that most smallholder farmers are found mostly in areas with limited water supply, which affects sustainable rural livelihood. Sustainable irrigation agriculture is thus key to supporting sustainable food production (Mwadzingeni *et al.*, 2020:418). The objective of the RESIS was to support smallholder farmers by revitalising their irrigation schemes and providing the necessary infrastructure for previously disadvantaged farmers to become successful commercial farmers (Mwadzingeni *et al.*, 2020:418). However, to improve smallholder farmers' overall skilfulness and competencies, the Limpopo Department of Agriculture also introduced the LADA.

4.5.3. Limpopo Agribusiness Development Academy

LADA was established to provide short vocational courses for farmers. The courses included free agribusiness management and marketing management (Ntuchu *et al.*, 2021:99). The aim was to improve market access for the majority of small-scale farmers, and it did indeed benefit most of the farmers in the province. The important spillover effect of the agricultural sector on the South African economy is, firstly, through agro-processing. The LDA supports and understands this and hence vocational short courses like agribusiness management that integrates business planning and bookkeeping as well as value-added processing for farmers and entrepreneurs were offered free of charge to improve smallholder farmers' businesses (Ntuchu *et al.*, 2021:99). Secondly, the agricultural sector has an important direct impact on the growth of the economy through job creation and food security and affects the economy indirectly due to forward and backward linkages with other sectors (Ubisi *et al.*, 2017:27). It is also such similar outcomes that Limpopo Department of Agriculture aspires to achieve through the establishment of Limpopo Agribusiness Development Academy to improve the competencies of smallholder farmers to adopt techniques that bolster agricultural productivity to catalyse the rural economic development in Limpopo as well as the country large (Ntuchu *et al.*, 2021:99). It adopted such the CIASP initiative that was introduced to provide smallholder farmers with the required agricultural inputs.

4.5.4. Crop Input Access Support Policy

Due to the high cost of production inputs and smallholder farmers' limited access to credit, the LDA also found it necessary to establish a policy on access to crop input support (Afful & Ayisi, 2016:41). This was established in 2008. It subsidised previously disadvantaged farmers up to 50% of total input production costs. In support of other policies, the CIASP emphasised the development of smallholder farmers and focused on coaching them towards commercial production by using improved inputs and emphasis on production for the market (Ubisi *et al.*, 2017:27). Some of the policy objectives were to maximise crop farming and land use, and to increase crop yields, which would benefit the farmers' profitability (Ntuchu *et al.*, 2021:99). Positive outcomes of such policy were reflected in Mkhonto and Musundire's (2019:56) study on the Agricultural Production Inputs Support Programme, which also supported

smallholder farmers with inputs. They found that the programme generally benefited farmers. Soil testing for nutrient content, fertiliser application, irrigation scheduling, use of hybrid seeds, and planting seedlings were essential for small-scale farmers to experience an increase in the volume of their crops (Mkhonto & Musundire, 2019:56).

Mkhonto and Musundire (2019:56) recommended that extension services were crucial in input programmes. Currently, most government extension and advisory service officers have low farming skills, possessing only a diploma (or lower qualification). This could contribute to the limited programme success (Afful & Ayisi, 2016:41). According to South Africa's NDP, a new agricultural extension advisers training plan need to be implemented. This should enable them to respond effectively to the needs of smallholder farmers (Mkhonto & Musundire, 2019:56).

Besides Crop Input Access Support Policy, Limpopo Department of Agriculture also introduced LADEP to improve the overall performance of Limpopo agricultural sector.

4.5.5. Limpopo Agricultural Development Programme

LADEP is a bilateral programme that was initiated by the governments of Finland and South Africa in 2002 to assist poor small-scale agricultural projects in the province with on-farm infrastructure and production inputs to enable them to be sustainable (Limpopo Department of Agriculture and Rural Development (DARD), 2016:8). It also aimed to ensure that through smallholder farmers' produce, they can eradicate poverty and contribute to food security in the province. A study by Baloyi (2010:227), as cited in Ntuchu *et al.* (2020:602), shows that the programme achieved positive results as it assisted 27 smallholder projects between 2002 to 2009. However, by 2010, only 16 projects were still operational when six were no longer operational due to incomplete infrastructure, two had been vandalised, and three had collapsed due to poor financial management. Baloyi (2010:227), as cited in Ntuchu, *et al.* (2020:602), concluded that a significant challenge confronting value chain economists, is to determine how to increase the access of smallholder farmers to high-value markets in the agribusiness value chain. There were also issues on how to increase farmers' participation in adding value to their products.

On the other hand, Nkadimeng (2019:29) notes that, in light of all the constraints faced by smallholder farmers and through the various national and provincial programmes

and initiatives put in place, smallholder farmers can be linked to markets. It is difficult for smallholder farmers to satisfy market needs, achieve consistency, and remain sustainable. They cannot meet the required market quality (Nkadimeng, 2019:29).

While the quantity and quality of material assets available to producers is central, the non-material assets, including the ability to coordinate all the aspects of production or marketing, are still more important for them to enter and remain in markets (Botai *et al.*, 2020:32; Louw & Jordaan, 2016:306). This requires smallholders and their organisations to know how to position themselves in a market, make effective choices to advance their interests, and be able to act on those choices (Nwafor *et al.*, 2020:44). Ntuchu *et al.* (2020:602), furthermore, highlight the importance of market strategies for smallholder farmers, and caution that before linking farmers to markets, farmers need to 1) identify the factors currently preventing smallholder farmers from benefiting from reliable markets and 2) determine strategic combinations that can assist them to compete consistently in the open market. It is also critical to analyse and address production factors like on-farm and off-farm infrastructure and management capacities (Mwadzingeni *et al.*, 2020:418). Quests must accompany such initiatives to ameliorate transaction costs, provision of financial assistance, advisory support, research and technology adoption.

The province must also ensure farmers are consistent in marketing their produce and more efficient along the value chain (Nkadimeng *et al.*, 2021:744). However, despite the opportunities offered by economic development and the support offered by the government to smallholder farmers, the general view of smallholder farmers' prospects is discouraging. According to Mapiye *et al.* (2020:50), most do not transition from subsistence and smallholder farming to commercial operations. This is reflected in the fact that there is little visible change in the circumstances of the rural smallholder farmers, despite far-reaching efforts by the government to address their plight. This contrasts with the international experience that has shown that if smallholder farmers participate successfully in agribusiness value chains and access high-value markets, they should be able to produce demand-driven high-value crops (Manjunath & Kannan, 2017:119). But transaction costs tend to be high for producing and marketing high-value-adding products, particularly for smallholder farmers in rural areas (Louw & Jordaan, 2016:291). Therefore, the other school of thought is that high transaction

costs in marketing high-value-adding products tend to exclude smallholder farmers from participating in high-value markets (Mapiye *et al.*, 2020:50).

Most smallholder farmers worldwide have been able to achieve this by cooperating to imply thereby encourage farmers to act collectively is a viable strategy for addressing challenges, especially in the smallholder sector. Such a view echoes Nkadameng *et al.* (2021:744) reasoning that co-operatives can link farmers to markets, which is essential to enhance their income because it increases the number of marketing options available to them (Louw & Jordaan, 2016:291). Similarly, the government has a role to play by reforming the cooperative policy framework, including legal and regulatory procedures, and strengthening the cooperative governance system to encourage more producer organisations (Mapiye *et al.*, 2020:50). The government also needs to know the right incentives to offer agriculture beneficiaries in conjunction with searching for other farming models that will boost the sector. This is because, in the current situation, a lot is still required to leverage the overall smallholder farmers' productivity and contribution to the economy (Myeki, 2021:8).

4.6. CHAPTER SUMMARY

This chapter revealed the different types of smallholder farmers, those that produce agricultural products for pure household consumption (subsistence farmers) and commercially-minded smallholder farmers who produce agricultural products for profit and are the focus of this research. The commercially-minded small farmers face a number of challenges which include poverty, hunger, poor remuneration, lack of access to resources and infrastructure, as well as issues with policies, legislation, and social structures (Mudhara, 2010 as cited in Nel, 2019; Sikwela, 2013; Mutero *et al.*, 2016; Oluwatayo, 2019). These are well structured in the chapter under physical infrastructure challenges, input-based challenges, resource-based challenges and institutional challenges.

To address these challenges, the South African government and the Limpopo Department of Agriculture have implemented support programs such as the FSP, Settlement Land Acquisition Grant, Land Restitution, Proactive Land Acquisition Scheme, and Comprehensive Agricultural Support Program, as well as MERECAS, RESIS, LADA, CIASP, and LADEP (Christian *et al.*, 2019; Chapman *et al.*, 2021a;

Hlatshwayo et al., 2021; Mama, 2020; Nwafor, 2020; Mwadzingeni et al., 2020; Nengovhela et al., 2021; Van Koppen et al., 2017). However, there is limited evidence of the success of these programs (Chapman et al., 2021a). According to the authors, the attempts by government and development agencies seem to have intensified rather than alleviated emerging farmers' difficulties. Such a view contrasts with DAFF (2019:49) argument that government programmes have lessened farmers' challenges. It reiterates such programmes be reflected in the fact that the government allocated a CASP budget of R1,538,325 billion in 2019, which assisted more than 21,000 farmers in 2019 and R1,675,989 billion in 2020 (DAFF, 2019:49).

But DAFF's (2019:49) narrative is still unbelievable as Nkadimeng (2019:29) reveals that although the motive of the Mechanisation Revolving Credit Access Scheme was to benefit previously disadvantaged small-scale farmers, the objective could still not be achieved maximally. This is because most farmers who benefited from the scheme were commercial farmers. The majority of the poor farmers on communal land did not possess collateral because they farmed on small communal plots under dry land conditions (Mosase & Ahiablame, 2018:364). The other disadvantage was the selection criteria set by ABSA Bank. Apart from the collateral requirement, other requirements included largescale production and the ability to repay the loan as reflected in the business plan with positive cash flow projections (Mapiye *et al.*, 2020:50). It also required evidence of good on-farm infrastructures like water and irrigation facilities. Unfortunately, poorly resourced farmers did not possess such assets, so the credit failed to reach its intended beneficiaries. These challenges mutate with other complexities to undermine smallholder farmers' contribution to the socio-economic contributions of the country. Therefore, such paradoxes motivate this research to explore the efficacy of the New Generation Cooperative business framework introduced in Limpopo to discern how it can be improved to create the desired socio-economic values for smallholder farmers and the entire South African economy. The discussions in the next chapter critically examine theories and literature on developing and managing more efficacious agricultural cooperatives to accomplish that.

CHAPTER 5

LITERATURE AND THEORIES ON DEVELOPING AND MANAGING AGRICULTURAL COOPERATIVES

5.1. INTRODUCTION

This chapter offers critical insights into the theories and literature regarding developing and managing efficacious agricultural cooperatives. This chapter's evaluation of relevant theories and literature is structured into seven main sections. The first section examines theories and literature on contemporary notions of cooperatives, including the definition of cooperatives, their historical evolution, types of cooperatives and the emergence of NGCs. The second section discusses the advantages of agricultural cooperatives which include productivity and economies of scale, access to input and output markets, and socio-economic contributions. The third and fourth sections introduce the movement and legislative framework of South African cooperatives, including challenges confronting South African cooperatives.

In the fifth section, the background of NGCs and their distinction from traditional cooperatives is discussed. The sixth section describes the critical success factors and best practices for developing, managing and growing successful and sustainable agricultural cooperatives. The last section reviews the social capital theory and the theory of contracts, which are also associated with cooperatives management.

5.2. CONTEMPORARY NOTIONS OF COOPERATIVES

The overall notion of agricultural cooperatives is derived from the word “cooperation”, from the Latin word “*co-operari*”, which means to “work together” (Kanyane, 2009:6; Kumar *et al.*, 2018:24). Thus, in a cooperative, the work is performed jointly by persons who share a common goal (Gulati *et al.*, 2012:533; Salvato *et al.*, 2017:963). As with the concept of *ubuntu* in South Africa, inter-dependence and mutual help among human beings have been the basis of social life and constitute the social foundation of cooperatives (Cameron *et al.*, 2020:660; Lyne *et al.*, 2010:40; Mugumbate & Chereni, 2019:32; Stewart, 2014,). A collaborative approach is considered an economical way to create value for all the stakeholders. Worldwide, multiple ways to

cooperate in producing and distributing goods and services exist across different economic systems (Kumar *et al.*, 2018:24).

5.2.1. Origin of Cooperatives

Cooperatives are essential for socio-economic transformation in local and national economies worldwide (Booth & Golooba-Mutebi, 2014:173; Cameron *et al.*, 2020:649). The first modern cooperative was established in Rochdale in the UK in 1844 (Fairbairn, 1994:6; Phillip, 2003:3 as cited in Chagwiza *et al.*, 2016:165). Fairbairn (1994) and Kunhu (2013), as cited in Chagwiza *et al.* (2016:165), explain that the 1840s were a bitter decade in Europe, characterised by poverty, hunger and unemployment due to the first phase of the Industrial Revolution (1750–1850), which resulted in significant social change. Consequently, the weavers of Rochdale, who were particularly hard hit, set up the Equitable Rochdale Pioneers Society with the purpose of pioneering a way to a new and better socio-economic order (Rena, 2017:2). After that, the cooperative movement gained momentum in Europe (Phillip, 2003:3, as cited in Kunhu, 2013:10).

5.2.2. Definition and Principles of Cooperatives

The first universally accepted definition of a cooperative was adopted by the Congress of the International Cooperative Alliance (ICA) in 1995 (Okem, 2016b:9). ICA (1995) and ICA (2017:3) define a cooperative as “an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise”. In other words, cooperatives are business enterprises that are owned by members who use the cooperatives’ services with shared costs, risks and benefits to achieve common outcomes. The ICA’s definition has been accepted globally, including in South Africa. It is embedded in Section 1 of the Cooperatives Act 14 of 2005, as amended through the Cooperatives Amendment Act, 2013 (DSBD, 2019:197).

As Okem (2016b:9) and Stirling (2014:21) pointed out, the ICA’s definition suggests that a cooperative is based on three pillars. The first is that cooperatives must be voluntary associations formed by groups of people with common goals and needs.

The second pillar requires cooperatives to be formed freely by members who all contribute their assets, which the members subsequently control since they are actively involved in making decisions about the cooperative's operations. The third pillar suggests that all members bear the risks, who can jointly enter into agreements with other organisations, including government institutions and private partners, to raise capital from external sources while ensuring that the cooperative maintains its independence (Okem, 2016b:9; Stirling, 2014:21). Fernandez-StarkBamber and Gereffi (2012:15) refer to this as horizontal integration which happens when producers form groups or associations, not only to reach essential economies of scale but also to provide opportunities to add value to their products. These pillars are reflected in the fundamental principles of cooperatives, which are dealt with in the next section.

Okem (2016b:9) and Stirling, (2014:21) extracted seven principles from these pillars, which guide cooperatives worldwide:

(i) **Voluntary and open membership**

This principle requires cooperatives not to discriminate and to ensure that they are open to anyone who can use their services and is prepared to accept their membership responsibilities (ICA, 2017), which include contributing time, finance, inputs and other resources required for the functioning of the cooperative (Johnston, 2004:17).

(ii) **Democratic member control**

This principle means that the members are responsible for the governance of this member-owned organisation (DSBD, 2019:198; Johnston, 2004; Okem, 2016b:13). The principle of one member, one vote is at the heart of the cooperative movement. This means that the association is committed at every stage to meeting the needs and desires of those who own it (DSBD, 2019:198). While the leadership and management of the cooperative can be delegated, those managers and leaders are still accountable to the cooperative's members.

(iii) **Member economic participation**

In terms of this principle, cooperative members must contribute equally to the cooperative fund and any programme the cooperative is engaged in. It

also requires members to exercise democratic control over the contributed capital, funds and assets the cooperative has at its disposal (Dobre-Baron, 2015:28). Cooperative profits should be proportionately paid out directly to members. In the event of cooperative surpluses, such extra resources can be utilised by members to implement other cooperative activities, such as community development programmes that its members support. The distribution of capital might entail providing cash to members, either as common property for compensation for membership subscriptions, distribution of surpluses, patronage refunds or other approved activities (Krall, 2015:6). Members receive dividends based on their transactions with the cooperative and not on the amount of share capital they own (DSBD, 2019:198; Okem, 2016b:61).

(iv) **Autonomy and independence**

“Autonomous” means that the cooperative must be independent of outside influences in its decision-making. It also guarantees that cooperatives are not manipulated into fulfilling the needs and aspirations of external agents at the expense of the members’ needs and aspirations (Hannan, 2014:22; Nannyonjo, 2013:9). Therefore, decision-making in matters relating to the cooperative is vested solely in the cooperative members (DSBD, 2019:198).

(v) **Education, training and information**

Education, training and information are needed to improve the overall skilfulness and competencies of the members to participate effectively and contribute to decision-making activities. It also ensures that the cooperative leaders attain the requisite skills to oversee the day-to-day running of the cooperative education (Dobre-Baron, 2015:28; Okem, 2016b:5). Training and information must be provided to members, including elected representatives, management and employees (DSBD, 2019:198).

(vi) **Cooperation between cooperatives**

Cooperation among cooperatives enables “cooperatives [to] serve their members most effectively and strengthen the cooperative movement by working together through local, national, regional, and international structures” (Dobre-Baron, 2015:28). Cooperation between cooperatives

leverages their capabilities to grow and become more successful. It enables cooperatives to become strategically placed to harness the benefits of economies of scale and scope (Wolz *et al.*, 2020:57). It also allows them to influence local, regional and national policies. Through cooperation, cooperatives become more successful and enhance the viability and sustainability of the cooperative movement since it links them to support and opportunities in the network (DSBD, 2019:198).

(vii) **Concern for the community**

“Cooperatives [need] to work for the sustainable development of their communities through policies approved by their members” (Dobre-Baron, 2015:28). Such initiatives require cooperatives to have strong concerns for the immediate community in which they operate. If they succeed in addressing their member’s needs, they can spill over to the community at large. In other words, cooperative members should be in solidarity with the larger community in which they operate to create a more supportive and conducive environment for the cooperative’s operation (DSBD, 2019:198).

5.2.3. Levels and Types of Cooperatives

Cooperatives vary significantly in size and scale and regarding the sector in which they operate (Wolz *et al.*, 2020:57). Moreover, they can be categorised as local, regional, national or international structures. Local cooperatives usually serve members at one branch and typically operate in a single country, whereas regional cooperatives serve several countries in one region. National cooperatives serve a major portion of a country or state, and international cooperatives operate in more than one country with headquarters in their original state or another country (Rosenthal & Eiges, 2014:5).

Dobre-Baron (2015) states that cooperatives can also be identified according to membership structure and the industry in which they operate. Shen and Shen (2018:240) include primary, secondary, tertiary and apex cooperatives as different membership structures. A primary cooperative is formed by a minimum of five natural persons who aim to provide employment or services to its members and facilitate community development. Primary cooperatives are usually local (DAFF, 2011:20, Fakude, 2016:33). When two or more primary cooperatives merge, they become a

secondary cooperative, and their purpose is to provide sectoral services to their members and may include juristic persons. These cooperatives operate mainly at the regional or national level. Tertiary cooperatives are secondary cooperatives whose objective is to advocate and engage organs of the state, the private sector and stakeholders on behalf of its members (Shen & Shen, 2018:240). When three national or five provincial, district or local tertiary cooperatives integrate to operate as one cooperative, they become apex cooperatives, which operate mainly at a national level. The main function is to advocate for their members' interests through engagement with the state, private sector and other stakeholders (DSBD,2019:5).

The third way of categorising cooperatives is by the functions they perform (Hagedorn, 2014:555). The Cooperatives Act No 14 of 2005 states that types of cooperatives can be, but are not limited to, housing, worker, social, agricultural, burial society, financial services, consumer, marketing and supply, or service cooperatives. Dobre-Baron (2015:19) and Hagedorn (2014:555) add producer, multi-stakeholder cooperatives and NGCs. The focus of this research is traditional (primarily agricultural) cooperatives and NGCs.

5.3. AGRICULTURAL COOPERATIVES

Agricultural cooperatives are socio-economic associations created and established by either smallholder farmers or large commercial farmers to pool resources and leverage their aggregate capabilities (Syden & Lee, 2016:195). The socio-economic benefits of agricultural cooperatives for smallholder farmers are often reflected in improved productivity and economies of scale, and leveraged access to input and output markets (Parman *et al.*, 2016:33; Yu & Nilsson, 2018:847), increased employment opportunities and income, as well as enhanced livelihood, food security and social integration (Liu *et al.*, 2019:265; Ma & Abdulai, 2017:537; Parman *et al.*, 2016:33; Yu & Nilsson, 2018:847).

5.3.1. Productivity and Economies of Scale

Improved productivity and economies of scale are two positive outcomes most likely to emerge from smallholder farmers' involvement in agricultural cooperatives. Their membership in the agricultural cooperatives aids their integration with critical partners

such as researchers and agricultural experts (Jara & Satgar, 2009:12, as cited in Quintana-Ashwell & Featherstone, 2014:13), who are engaged in training and development programmes on the best farming techniques, technologies and practices. The agricultural skills and competencies thus acquired transform their farming activities in terms of how they combine agricultural inputs to achieve the most desired outcomes possible (Jara & Satgar, 2009:12, as cited in Quintana-Ashwell & Featherstone, 2014:13). Thus, a high level of productivity will result from the smallholder farmers' engagement with agricultural cooperatives (Yoo *et al.*, 2013:309). Moreover, agricultural cooperatives improve smallholder farmers' capabilities to significantly control and reduce transaction costs in the agribusiness value chain, thus creating cost advantages and differential values. Smallholder farmers' membership in agricultural cooperation also leverages their access to relevant markets (Syden & Lee, 2016:195).

Combined with the fact that agricultural cooperatives place smallholder farmers in direct access to the market and critical corporate customers, such as wholesalers and retailers, increased access to markets further drives productivity, which induces the desired economies of scale. An additional driver of productivity and economies of scale arises from the agricultural machinery and equipment agricultural cooperatives can expose smallholder farmers to (Yoo *et al.*, 2013:309). Using superior agricultural machinery and techniques reduces the overall average costs per unit output to enable smallholder farmers to save costs and attain the desired level of profitability. Therefore, if managed well, agricultural cooperatives improve smallholder farmers' productivity and economies of scale (Hun *et al.*, 2018: 82).

The overall efficacy of the agricultural cooperatives is also reflected in their capabilities to leverage increased access to input and output markets.

5.3.2. Access to Input and Output Markets

Agricultural cooperates integrate and link smallholder farmers to the critical partners in the value chain (Abate *et al.*, 2014:19; Abebaw & Haile, 2013:2; Hun *et al.*, 2018: 82). They thus offer smallholder farmers opportunities to access input and output markets that were hitherto unknown to them (Shen & Shen, 2018:240). They do this by integrating them with carefully selected suppliers of agricultural inputs that offer

relatively cheap high-quality agricultural inputs (Hun *et al.*, 2018: 82) such as quality seeds, fertilisers, equipment such as irrigation facilities and other machinery that can lower their overall operational costs (Liu *et al.*, 2019:265; Ma & Abdulai, 2017:537). This is because the suppliers of agricultural inputs often offer significant discounts to cooperatives rather than individual farmers, so that they can sell their inputs all at once to all the smallholder farmers in a particular agricultural cooperative (Yu & Nilsson, 2018:847). This enables smallholder farmers to lower the costs of agricultural production and to produce better quality agricultural outputs (Bolton, 2019:3). Thus, agricultural cooperatives can help, for example, to solve the problem of the shortage of resources, infrastructure, machinery, inputs and fertilisers that smallholder farmers face (FAO, 2017:68). Agricultural cooperatives' investment in infrastructure or facilities, such as the internet, electrical infrastructure and access to potable water in the areas in which they operate, also improves economic growth and enables them to respond to the needs of the surrounding communities that lack such infrastructure (Marshall, 2017:20).

Cooperative membership also benefits smallholder farmers' legal protection services and limited economic liability, so risk sharing between members and cooperatives is arguably more stable than individual enterprises (Shen & Shen, 2018:240). Agricultural cooperatives integrate and link smallholder farmers to the critical partners in the value chain (Abate *et al.*, 2014:19; Abebaw & Haile, 2013:2; Hun *et al.*, 2018: 82). Birthal *et al.* (2005) as cited in Shen and Shen (2018:240) support that cooperatives offer smallholder farmers with capabilities to access the required capital finance. Like any other investor-owned enterprise, cooperatives are required to raise capital to finance their operations. The principles of “voluntary and open membership” and “member economic participation” in cooperatives mean that cooperative members contribute equitably towards the capital of their cooperatives (DAFF, 2011:14; Okem, 2016b:4). However, cooperatives are also permitted to raise funds from mainstream financial institutions through loans or grants/ donations from external organisations. Farmers can collectively access finance that would otherwise not have been possible if they sought it individually (Ahmed & Mesfin, 2017:20).

For example, the 2013/2014 third annual report of South African cooperatives in the agriculture, forestry, and fisheries sector, reflects that R121,388,901 of the budget was allocated to cooperative grants (DAFF, 2015:14); this demonstrates the amounts of

finance that smallholder farmers can have access to if they join agricultural cooperatives.

Farmers form cooperatives to leverage new markets and economic opportunities that would not have otherwise been available to them (FAO, 2017:68). Gala (2013:21) notes that such a structure and approach attract more buyers because of the value cooperatives add. The assurance they can offer if they are looking for larger quantities. This has the effect of broadening market opportunities for the cooperative members. Farmers are driven to establish agricultural cooperatives due to unfair conditions in the agro-markets and competition from more powerful corporations and multinational companies that buy smallholder farmers' products (Abebaw & Haile, 2013:82). Establishing agricultural cooperatives improves their bargaining power in these competitive conditions by combining the volume of the members' production with supply and demand members (DAFF, 2011:6; Phon & Yamaji, 2016:167). This creates fair competition between largescale commercial and smallholder farmers (Chen *et al.*, 2018:6).

On skills and shared services, cooperative members also have different skills and unique expertise, and they learn from each other and innovate jointly. Secondly, they have the advantage of shared services, which results in economies of scope (FAO, 2017:68). As a result of sharing labour and production facilities, cooperatives can increase smallholder farmers' efficiency and the use of available resources by inspiring innovation, diversification and specialisation. This can enhance smallholder farmers' productivity, growth and sustainability (Jara & Satgar, 2009, as cited in Marshall, 2017:20). Lastly, being a cooperative member benefits smallholder farmers if properly managed. Hence, using similar views, Ito *et al.* (2012) and Verhofstadt and Maertens (2015:86) concluded that cooperatives significantly improve the welfare of the literate members and those that have more land than illiterate members or members who own smaller sizes of land. These suggest access to bigger land and education is crucial amongst cooperative members. But despite such limitations, it is also apparent that as agricultural cooperatives spawn improved smallholder farmers' accessibility to input and output markets, they also tend to induce and catalyse the overall socio-economic benefits they get from agricultural cooperatives.

5.3.3. Socio-Economic Benefits

Agricultural cooperatives catalyse enormous socio-economic benefits that transform not only the socio-economic standards and conditions of smallholder farmers, but also those of the surrounding communities (Ma & Abdulai, 2017:537). These benefits include employment, income, livelihood, food security and social integration. Nkhoma (2011:23) and the Minister of the Department of Agriculture and Fisheries, in a speech in 2012, indicate that cooperatives help smallholder farmers and rural communities to improve their livelihood through better access to capital, product markets and food security (DAFF, 2011:2).

Firstly, agricultural cooperatives' membership has a positive and significant impact on the farmers' welfare (Ahmed & Mesfin, 2017:10,11). Because they lower their transaction costs and increase their profit margins, their disposable incomes increase. Consequently, smallholder farmers can purchase better houses and access better medical care and good nutrition.

Secondly, cooperatives also benefit the economy (Dogarawa, 2005:16, cited in Francesconi & Wouterse, 2019:148). In particular, they have been confirmed empirically to contribute enormously to poverty reduction, largely by offering income generation opportunities (UN, 2005:23, cited in Ahmed & Mesfin, 2017:49). By creating sustainable rural employment through business models resilient to economic and environmental shocks (ILO, 2016:39). Against the backdrop of growing unemployment and underemployment in South Africa, the cooperative framework provides an alternative approach to dealing with socio-economic challenges affecting the country (Johnston, 2004:52, cited in ILO, 2016:3). Cooperatives are sometimes initiated by the government to catalyse the overall pace of agro-stimulated economic growth and development (Chen *et al.*, 2018:6; ILO, 2016:39), and to reach the SDGs (ICA, 2021:69; Johnston, 2004:52 as cited in Manhattan *et al.*, 2011:10), also in section 3.3.

As the literature provided by the DTI (2012:8), Novkovic *et al.* (2022;3) and others indicate, cooperatives have potential benefits over other types of business entities. However, Shumeta and D'Haese (2016:27) report that there are contradictory and mixed results from joining cooperatives. He argues that some cooperatives perform well while others fail to benefit their members. Secondly, some members benefit from

membership more than others. Thirdly, a cooperative benefits smallholder farmers only if it is managed efficiently and effectively.

Verhofstadt and Maertens (2015:86) note that cooperatives improve the welfare of the literate members and those with more land significantly more than the illiterate members or those with smaller erfs. Bolton (2019) also notes that evidence of improved incomes is mixed. He also indicates there isn't no significant income difference between individual cooperative members and non-members. The advantages rather seem to arise from cooperative interventions of collective marketing that lead to improved incomes for members, as compared to non-cooperative farmers. Farmers' access to technological innovation and extension services also create access to higher-value markets (Bernard *et al.*, 2008; Fischer & Qaim, 2014:684). However, Bolton (2019:3) asserts that while the increased use of technology and productive inputs such as fertilisers result in higher output levels and improved food security, cooperatives might encourage inputs and intensive practices that are not necessarily beneficial to production quality or the environment.

The differing ways cooperatives are managed also lead to differences in the quality of products, and older cooperative members with higher education levels or even larger pieces of land tend to earn more. Lastly, cooperatives that have been established longer and may have received more government support tend to outperform newly established cooperatives (Ahmed & Mesfin, 2017:49; Verhofstadt & Maertens, 2015:96). These tend to limit the overall multiplier effects of agricultural cooperatives on the overall socio-economic wellbeing of the population.

Moreover, although cooperatives benefit both the farmers and the economy, Ahmed and Mesfin (2017:8) and Fischer and Qaim (2014:684) highlight certain limitations to cooperative membership and the participation of farmers in cooperatives. These are asset ownership, the proximity of the cooperative office from the farm and the distance to the market. Asset ownership affects cooperative membership in the sense that the size of the owned land has a positive effect on cooperative membership and the benefits that a farmer gets from the cooperative. Verhofstadt and Maertens (2015:103) indicate that owning more land decreases the likelihood of being a cooperative member and showed that both the poorest and the wealthiest farmers are least likely to participate in agricultural cooperatives.

These reduce the overall socio-economic impact that agricultural cooperatives may have on the general population (Abebaw & Haile, 2013:29; Fischer & Qaim, 2014:683; Mojo *et al.*, 2015:6; Verhofstadt & Maertens, 2015:87). The proximity of the cooperative office has a significant influence on the farmer geographic locations and their decision-making. Thus, farmers located near the market are less dependent on agricultural cooperatives as they have better access to markets anyway, while farmers who are distant from the markets, face higher transaction costs. This renders cooperative membership more beneficial to them (Verhofstadt & Maertens, 2015:99). Fischer & Qaim (2014:685) imply promoting, deepening and supporting agricultural cooperatives in rural areas is one of the critical strategies for inducing the desired socio-economic benefits for farmers and subsequently influencing the change and transformation of the socio-economic rural conditions and standards of living. However, as much as these structures provide socio-economic benefits, they cannot replace public service delivery (Derr, 2013:10). This calls for a comprehensive approach to tackling problems head-on with the cooperative's strategy forming part of the government's overall plan (DAFF, 2019:3; Satgar & Williams, 2012:197) (see Section 3.4.5). However, in that process, Okem (2016:29) and Jara and Satgar, (2009:13) share similar views that although government support can facilitate the growth of cooperatives, its role should be limited to the creation of an enabling environment. Cooperatives must remain autonomous.

In summary, it is evident that the efficacy of agricultural cooperatives on smallholder farmers is often reflected in the improved productivity and scale economies that farmers gain, as well as smallholder farmers' leveraged access to input and output markets (Parman *et al.*, 2016:33; Yu & Nilsson, 2018:847). Such values result in certain socio-economic benefits that agricultural cooperatives induce through increased employment opportunities and income, as well as enhanced livelihood, food security and social integration (Liu *et al.*, 2019:265; Ma & Abdulai, 2017:537; Parman *et al.*, 2016:33; Yu & Nilsson, 2018:847). Therefore, cooperative membership relates positively to price, yield, quality, input adoption, and income (Grashuis & Ye Su, 2019:79). Unfortunately, even if that is the case, the empirical facts on the trends of agricultural cooperatives in South Africa still suggest that, just as racial inequities marred the apartheid era agricultural cooperatives, the post-apartheid agricultural

cooperatives still have not been able to yield the enormous socio-economic benefits of efficient and productive ones (Kanyane & Ilorah, 2015:13).

5.4. COOPERATIVES IN SOUTH AFRICA

This section provides a historical overview of South African cooperatives and the relevant legislative framework. According to Rena (2017:3), the South African cooperative movement has two eras, the apartheid era, from 1922 to 1994, and the post-apartheid era, from 1995 to date. This history is significant because it provides the background and context for the growth of cooperatives in the country.

5.4.1. Cooperatives Movement and Legislative Framework: 1892 to 1994

The first agricultural cooperatives in South Africa were formed at the beginning of the 19th century when farmers organised themselves into agricultural classes in the four South African colonies, namely the Cape Province, Natal, Transvaal and Orange Free State (Rena, 2017:3). The first formerly established cooperative was the Pietermaritzburg Consumers Cooperative, registered in 1892 under the then Companies Act. This was after the Anglo-Boer war, and the driver of establishing cooperatives was the government's intention to improve the social position of predominantly white farmers (Rena, 2017:3). By 1907, 53 cooperatives had been founded, and 80 were in the process of being established. In subsequent years, the process of establishing and operating cooperatives was influenced by legislation such as the first Act in South Africa enacted in 1908 by the Transvaal Colony (the Cooperative Societies Act of 1908), the Land and Agricultural Bank of South Africa Act (No. 18 of 1912), the Cooperatives Societies Act (No. 28 of 1922), Cooperatives Societies Amendment Act (No. 38 of 1925), Marketing Act (No. 27 of 1937), Cooperatives Societies Act (No. 29 of 1939) and Cooperatives Act (No. 91 of 1981) (Derr, 2013:5; Mzuyanda, 2014:34).

These regulatory frameworks emphasised the need for all forms of cooperatives to work together as well-established entities. They were also established to finance agricultural cooperatives and provided the establishment of these cooperatives with limited liability. Agricultural cooperatives aided with the marketing of farmers' products, encouraged the government to support them and offered farmers the necessary training to develop new commercial farmers (Van Wyk, 2014:17). The Land Bank Act

(No 18 of 1912) was fundamental to the development of cooperatives, because it stipulated providing cooperative members with access to finance (DTI, 2012). White commercial farmers and cooperatives were offered loans at reasonable interest rates and under less stringent conditions than commercial banks (Derr, 2013:5). These cooperatives were largely dependent on extended state support through the provision of the required agricultural inputs, equipment and machinery. Such support spurred economic growth, with the effect that farmer cooperatives were recognised and used as important instruments of agricultural commercialisation (Okbandrias & Okem, 2016:73).

In July 1922, the consolidation of all previous pieces of cooperatives legislation resulted in the enactment of the first Cooperatives Society Act (No. 28 of 1922) to control cooperatives in all four colonies. Rena (2017:3) states that agriculture under these cooperatives thrived by buying and selling of inputs, equipment and commodities for agriculture and delivering goods. Assistance in the form of debt consolidation was also provided to cooperatives that experienced disasters.

However, the situation changed with the Marketing Act (No. 27 of 1937). A Marketing Board, that allowed various policy instruments, such as export monopolies, pool schemes and single-channel schemes, to market agricultural products was established. This allowed cooperatives to have a regional monopoly (Rena, 2017:3). The fixed prices set by control boards meant that all producers, members and non-members alike received the same price for their products. Thus, the cooperatives' strongest economic reason for their existence, namely bargaining power, was destroyed, and there was no longer any incentive to join cooperatives (Gotyi, 2019:86).

In light of the failure of this Act, the Cooperatives Societies Act of 1939 was enacted. This Act gave agricultural cooperatives the right to accept people other than farmers as members and to deal with non-members (Derr, 2013:6). This meant cooperatives could accept outside investors and become “modernised”, which significantly contributed to the growth of the total turnover of cooperatives and the GDP (Derr, 2013:6). The state also extended tax exemptions, financing at fair rates and subsidies to agricultural cooperatives via the Land Bank (DTI, 2012; Rena, 2017:10). However, due to criticism about the privileges they enjoyed, the capital benefits to cooperatives were terminated in 1977 (Gotyi, 2019:86).

A series of reforms took place in the 1980s due to political changes, leading to the deregulation of the agricultural sector, which ended state subsidies and attempted to reduce the dependence of cooperatives on the government. Many agricultural cooperatives were converted into investor-owned firms in the late 1980s and early 1990s (Okbandrias & Okem, 2016:74). This development resulted in the proclamation of the Cooperatives Act (No. 91 of 1981), which put an end to the tax exemptions and the financial leeway given to cooperatives (Derr, 2013:6). A registrar of cooperatives was appointed under the Act and given the ability to treat all cooperatives in a uniform manner (Mushonga *et al.*, 2019:261).

5.4.2. Cooperatives Movement and Legislative Framework: 1994 to date

The new ANC-led government has attempted to rectify the imbalances of the pre-1994 approach to agricultural cooperatives. Its immediate preoccupation was to address the injustices of the past through radical transformation of the country's unjust economic system (Okbandrias & Okem, 2016:74). Cooperatives were identified as one of the mechanisms for poverty alleviation, income generation and bridging the gap between the rich and the poor in the country. Thus, the national government promoted legislation and policies aimed at establishing cooperatives in black communities to improve their socio-economic conditions (NPC-National Planning Commission, 2012:32). This included developing a legal environment that supported black cooperatives (Rena, 2017:4). Thus, in 2001, the Cabinet transferred the cooperative development and promotion mandate from the Department of Agriculture to the DTI, and subsequently to the DSBD (Khumalo, 2014:71). The motive was to ensure that cooperatives received recognition and flourished in all sectors of the economy (DTI, 2012).

At that stage, the Cooperatives Act 91 of 1981 was still in force, but it was considered unsuitable because its focus was on large commercial agriculture cooperatives. Moreover, the registration process was complicated, and members' interests were not sufficiently protected. The Cooperatives Act (No. 14 of 2005) took into consideration the shortcomings mentioned above (DTI, 2012:25; Okem, 2016:73). Together with the Cooperative Development Policy (which was established to promote the provincial

development of cooperatives), the Cooperatives Act (No. 14 of 2005) was intended to recognise cooperatives from all sectors, to ensure that the cooperative endeavours of poor communities were accommodated, and to provide support to emerging cooperatives (Khumalo, 2014:69; Lyne & Collins, 2008:18 as cited in DTI, 2012:19). However, the Act was criticised for its limitations (Gotyi, 2019:85) and for not specifying the type and nature of support that would be provided or how it would be provided. Moreover, due to the poor dissemination of government information, poor communities in rural areas were unaware of its contents (Gotyi, 2019:93).

Nevertheless, under the new Act, the number of cooperatives increased from 1,444 registered under the 1922, 1936 and 1981 Cooperatives Acts to 4,210 cooperatives in 2005. Approximately 70% of these were in the agricultural sector (DTI, 2012:26). The Companies Intellectual Property Commission register reports that 19,559 new cooperatives were registered from 2005 to 2009, representing a growth rate of 86%. However, most new entrants remained vulnerable and weak, requiring high and sustained levels of support (DTI, 2012).

Experience from developed countries and commercial cooperatives in South Africa indicated that TCs struggled to raise sufficient capital to compete in the changing and competitive global food market (Gotyi, 2019:93). The government passed the Cooperatives Bank Act of 2007 in 2007, which intended explicitly to promote and advance the social and economic wellbeing of all South Africans through improving access to financial services; support the development of sustainable and responsible cooperative banks; and build a regulatory framework and regulatory institutions for cooperative banks (The Cooperative Banks Development Agency, 2022:2). It also intended to resolve the inadequacies of the Cooperatives Act (No. 14 of 2005) concerning financial services. It provided instructions on how cooperative banks should be formed.

A DTI baseline study shows that 22,030 cooperatives were registered between 2009 and 2011, and only 2,644 survived, while 19,386 remained redundant, indicating a 12% survival rate (DTI, 2012:38). In 2012, the South African government introduced the Integrated Strategy on the Development and Promotion of Cooperatives in South Africa (2012–2022), a 10-year strategy to operationalise further the Cooperatives Act (No. 14 of 2005). The strategy's aim was to enhance the implementation of the 2005

Act so that cooperatives could unleash their capacity to implement income-generating activities, decent and sustainable jobs, poverty reduction and the improvement of the socio-economic wellbeing of the population (DTI, 2012:7). The strategy included financial and non-financial support services to cooperatives to improve their sustainability (DTI, 2012:38). Hence, a range of cooperative development agencies was established at the provincial and district level as one-stop shops for cooperatives (Khapayi & Celliers, 2016:33).

The Cooperatives Act of 2005 was replaced with the Cooperatives Amendment Act (No 6. Of 2013) in 2013 to align it with the 2012 strategy (Gotyi, 2019:98). Under the 2013 Act, the Cooperatives Advisory Board was replaced by a Cooperatives Advisory Council, which included a supervisory committee to supervise the board and to represent the interests of the members (RSA, 2013a:30). The Act also provides for an Intergovernmental Relations Framework to coordinate cooperative development in all three spheres of government (RSA, 2013a:84). It stipulates the design and implementation of cooperative development support programmes with the relevant agencies, including the DSBD and the SEDA. However, in attempting the design and implementation of cooperative development support programmes, Gotyi (2019:98) notes a severe lack of cohesion in the government support provided to cooperatives, with government, national and provincial institutions working in silos without proper coordination.

The new Act allows primary cooperatives to be formed by two juristic persons, or a combination of any five natural persons, as opposed to the Cooperatives Act of 2005, in terms which a minimum of five juristic persons could form a primary cooperative. It categorises primary cooperatives, making it easy for the minister to prescribe a sliding scale on cooperatives that should pay tax based on such categorisation. It also exempts emerging cooperatives from paying taxes, which benefits most cooperatives in poor communities (Gotyi, 2019:99). The Act also includes non-members with no voting rights concerning cooperative activities, allowing investors, service providers and employees to participate in these cooperative structures to raise capital through investor memberships. Under the legislative framework, cooperatives have the potential to respond more effectively to crises than investor-owned businesses. However, they still face several challenges.

5.5. CHALLENGES OF AGRICULTURAL COOPERATIVES IN SOUTH AFRICA

Many agricultural cooperatives in South Africa fail or collapse, dashing the dreams of smallholder farmers to use agricultural cooperatives to revitalise their agribusinesses (Khapayi & Celliers, 2016:33). These failures are often attributed to misuse of the concept of the cooperative for ideological or political purposes. Other obstacles are linked to poor governance management issues, property rights problems and operational challenges.

5.5.1. Governance Challenges

Governance is how groups make decisions, whether corporate executives, politicians or cooperative board members. These decisions influence the way a business, organisation, or government is managed (Puri & Walsh, 2018:1). For cooperatives in South Africa, all authority and power exercised in the cooperative should be performed in pursuance of the objectives of the cooperatives as stipulated in its constitution. The board of directors must establish a set of procedures, policies and organisational framework to guide the cooperative business's directions, management, and control. Similarly, cooperative members should agree to the procedures, policies and structures, including the constitution requirements agreed to by its members (DSBD, 2019:199). However, good cooperative governance entails more than just fulfilling fiduciary responsibilities and adhering to legal obligations; it also involves putting the seven cooperative principles into effect through fairness, participation, accountability, responsibility and transparency (Puri & Walsh, 2018:1). The board of directors, who members appoint, and the cooperative members, who elect the directors, establish and guide the overall direction of the cooperative to ensure its success as a solid business enterprise and a cooperative community (DSBD, 2019:199). The performance of cooperatives depends on transparency, professionalism and accountability; therefore, directors must be accountable to the cooperative members in ensuring transparency in decision-making and in the financial accounting of the cooperative (Puri & Walsh, 2018:1). Professional managers appointed by the board should adhere to the cooperative's principles, all legislative and constitutional requirements of the cooperative and ensure that they act in the interest of the members of the cooperatives. They must be innovative and strategic in optimising the profitability of the cooperative members, in this way practising good governance (DSBD,

2019:199). Good governance is the most important determinant of a cooperative's success, especially in the cooperative establishment and growth stages (Fairbairn *et al.*, 2015:1; Kanyane & Ilorah, 2015:13).

Yet, as agricultural cooperatives face governance challenges, they face property rights problems.

5.5.2. Property Rights Problems

Cooperative property rights explain the legal and intellectual ownership of the cooperative members' assets and resources. These assets and resources can be both intangible or tangible in nature and can be claimed through copyrights and patents. Property rights owners have the legal right to use the property they own for their benefit. They can exchange the assets and resources as they wish (Cleartax, 2022:1). However, the vaguely defined property rights in cooperatives reduce levels of trust among cooperative members (Cook, 2018:2; Valentinov & Iliopoulos, 2012:141). In their apprehension, Cook (2018:2), James and Sykuta (2005:547) and Valentinov and Iliopoulos (2012:141) believe that since cooperatives rely heavily on member loyalty, a reduction in organisational trust could have important implications on cooperative performance. Trust is associated with organisational and property rights, and it is a characteristic of an agricultural cooperative that reflects norms of equality and homogeneity of member interests. These authors list property rights problems as free rider problems, horizon problems, leadership and control problems, portfolio problems, influence costs problems and constitutional degeneracy- all of which constrain their ability to raise equity and debt capital and, consequently, their ability to finance growth assets (Cook, 2018:2; James & Sykuta, 2005:547; Valentinov & Iliopoulos, 2012:141).

5.5.2.1. The free rider problem

Free rider problems emerge in cooperatives when members' incomes are disproportional to their contribution (Cook, 2018:10). All cooperative members earn almost the same amount of money, despite some members' lower contributions (Gotyi, 2019:30) because compensation is usually not based on individual effort, but on what the group produces. Thus equal "dividends" are paid to each member, irrespective of whether a member was committed or not (Gotyi, 2019:31). Free riders,

therefore, enjoy all the benefits, but they do not fulfil tasks and obligations that are necessary to make the cooperative succeed (Van Dijk, 2015:9). This situation tends to demoralise conscientious and devoted members (Gupta, 2014:102). It also means that membership growth tends to dilute members' revenues and benefits and increases adverse selection and moral hazards (Francesconi & Wouterse, 2019:144). Consequently, the cooperative starts collapsing (van Dijk, 2015:9). Van Dijk (2015, 10) advises sanctioning free riders but warns that this might destroy the volunteer character of a cooperative society. Moreover, the free riders might just quit when sanctions are applied.

5.5.2.2. Horizon problem

Horizon problems originate when a patron's residual claim on income generated by an asset is shorter than the asset's productive life. The horizon problem threatens to constrain collective action when some of the contributors and cooperative members attempt to access their claims by demanding a return of their allocated patronage or unallocated surplus (Cook, 2018:10). This means that cooperative members pressure their board or management for a pay-out of equity, instead of the usual retention of earnings for investments purposes (Francesconi & Wouterse, 2019:144). These demands might increase the cost of capital for the organisation. The cooperative is then obliged to negotiate risk capital from alternative sources (Cook, 2018:10). An additional contributor to the horizon problem is associated with a delay in economic gains due to the period a member must wait before gaining interest from the investment made in the cooperative (Gotyi, 2019:30; Thomas & Hangula, 2011:74). In addition, the income received from a cooperative might be far less than the income generated by an investor-owned enterprise. These factors cause members to become reluctant to invest in a cooperative (Cook, 2018:10)

Members might also be reluctant to make long-term investments in a cooperative due to the disadvantage of having no shares to sell at market value should they decide to leave the cooperative (Gupta, 2014:102). If there is no trade for ownership rights, members focus on the current price levels for the commodities sold and present value payments in favour of long-term profitability (Gupta, 2014:102). This destroys the possibility of the cooperative's collective action of generating future benefits from the current assets, effectively hindering the growth and the expansion of the cooperative

(Nene, 2018:84). This difficulty is exacerbated further by property rights challenges arising from portfolio management issues (Adefila & Madaki, 2014:80).

5.5.2.3. Portfolio problems

Portfolio problems often arise due to the fact that the cooperative does not offer equity shares that can be freely purchased or sold, such that cooperative members invest in a cooperative in proportion to their participation (Gotyi, 2019:31). In cooperatives, members cannot diversify their individual investment portfolios according to their personal wealth and risk preferences because this type of business does not offer equity shares that can be freely purchased or sold (Cook, 2018:10). Moreover, cooperatives might not be able to diversify their operations when it is ideal to do so due to the selfish interests of some members, thus leading to suboptimal investment portfolios and cooperative members being compelled to accept more risk than they would have liked (Franken & Cook, 2015:2). In many instances cooperative managements end up reorganising the cooperative's investment portfolio to reduce risk, even if it means lowering the expected returns (Nene, 2018:84). However, such challenges can still be prevented if the cooperative can attract and retain good managerial personnel.

5.5.2.4. Leadership and control problems

The quality of leadership is one of the most important factors that determine the success of a primary agricultural cooperative (Nene, 2018:84). However, it is often difficult for cooperatives to attract and retain good managerial personnel. This problem is compounded by the fact that directors are elected on a one member, one vote basis. This could result in managers who are elected based on their political, rather than business, skills (Gotyi, 2019:31). A lack of governance skills among the board members could result in the implementation of poor control measures at cooperatives (Nene, 2018:82). Influence costs problems exacerbate this dilemma.

5.5.2.5. Influence costs problems

Influence cost problems often arise because some people in a cooperative might be more powerful than others, despite the democratic principle of "one member, one vote" (Cook, 2018:2). Their influence could even lead to costly decisions for the cooperative

(Valentinov & Iliopoulos, 2012:141). This problem is prevalent in cooperatives that engage in various activities, where the members' goals diverge and differ, leading to costly influence problems (Gotyi, 2019:32). The diversity in members' goals can also result in excessive conflicts and poor decision-making, which can be detrimental to organisational competitiveness (Francesconi & Wouterse, 2018:141; Gupta, 2014:102). Even if these problems arise, the cooperative can continue to grow in membership strength. If the cooperative growth is not properly managed, it can lead to constitutional degeneracy.

5.5.2.6. Constitutional degeneracy

The degeneration of the cooperative structure often occurs when the cooperative grows in size and capital. When this happens, members have fewer opportunities to interact and learn together (Hartley, 2014:725). Cooperatives might also eventually develop a corporate structure in which founding members want to be dominant, take control of the cooperative, and reduce other members to wage workers. Moreover, when cooperatives grow and become successful, the next generation of members might lose interest in the cooperatives' ideology and decide to change it to a capitalistic business model (Varman & Chakrabarti, 2004:194, cited in Gotyi, 2019:33). These factors altogether cause the degeneration of the cooperative's business model (Adefila & Madaki, 2014:80). Additional to the governance and property rights problems, cooperatives may face operational challenges.

5.5.3. Operational Challenges

Operational challenges often encumber the functionality and sustainability of cooperatives. Generally, they emanate from the immediate environment (Khapayi & Celliers, 2016:33). Depending on the intensity of the challenges, the effect(s) might be impaired performance and, in extreme cases, the demise of the cooperative. Notably, the challenges faced by agricultural cooperatives are similar to those of smallholder farmers (see Chapter two). Thus, the cooperatives structure that is supposed to assist smallholder farmers is faced with similar challenges to the ones they face. These operational challenges include inadequate skills and competencies, poor production management, inadequate capital finance and poor marketing and networking (Borda-Rodríguez & Vicari, 2014:45; Derr, 2013:9; DTI, 2012:16).

5.5.3.1. Inadequate skills and competencies

Inadequate skills and competencies are often due to poor levels of education and training and take the form of poor technical and management skills and a lack of knowledge about cooperatives (Gundani & Odeku, 2018:106), marketing and bookkeeping. This lack of the requisite knowledge and skill prevents cooperative members from maximising their production, profitability and sustainability (Westoby, 2014:836). Most cooperative members cannot read or write, which limits their ability to negotiate business deals and market their products outside their region (Chiloane-Tsoka & Mello, 2011:1450, Mushonga *et al.*, 2018:268, and Ortmann & King, 2007:22). Illiteracy also means they are unable to access useful information on government support programmes which, most importantly, negatively affects the skills transfer initiatives needed to grow cooperatives (Gotyi, 2019:34).

Moreover, many rural cooperatives are founded by unemployed people living in marginal areas; they have limited or no business experience and low skill levels (Nene, 2018:83; Thaba & Mbohwa, 2015:22). Thus, they have poor business acumen, leadership inadequacy, and insufficient managerial experience. This makes them ill-equipped for managerial responsibilities and driving the cooperative's vision (Shaidi, 2020:23). This situation leads to business products being compromised, which makes it hard to compete in the market (Mangnus & Schoonhoven-Speijer, 2020:104). Furthermore, many do not understand cooperatives. They often see them as a get-rich-quick scheme. When that does not happen, they become disillusioned about cooperatives and demotivated (Gotyi, 2019:187; Kanyane & Koma, 2014:124).

The situation is compounded by inadequate extension services to impart the necessary agricultural skills to farmers (Mangnus & Schoonhoven-Speijer, 2020:104). Extension officers are agricultural officers who support agricultural-dependent economies, especially in rural communities, by visiting them to offer technical support services (Danso-Abbeam *et al.*, 2018:2; Gotyi, 2019:43). Additional extension programmes include developing the farmers, disseminating information about farm technologies, support of rural adult learning, and assisting farmers to develop their technical and managerial skills (Danso-Abbeam *et al.*, 2018:1). However, most of the farmers in the rural areas are unable to access such services (Mangnus &

Schoonhoven-Speijer, 2020:104). It is also evident that inadequate skills and competencies lead to poor production management issues.

5.5.3.2. Poor production management

Poor production management issues faced by agricultural cooperatives often arise from productivity or production constraints, a lack of commitment or entrepreneurial culture, inadequate conflict management and a lack of capital and infrastructure (Gundani & Odeku, 2018:106). Most South African cooperatives lack the necessary funds to buy high-quality seeds and fertiliser and to invest in infrastructure such as irrigation, technology, roads, water and electricity (Nene, 2018:82). Therefore, it is difficult for these agricultural cooperatives to take advantage of market opportunities because they fail to meet the high-quality requirements, safety standards and coordination of modern food supply chains (Nene, 2018:82).

Another constraint that often compromises the production management of agricultural cooperatives is the poor level of members' commitment (Khapayi & Celliers, 2016:33). Members' commitment inspires the leadership to be creative in carrying out their duties; the greater the commitment of members, the higher the chances of success (Borda-Rodrigues & Vicari, 2015:334). Unfortunately, government-initiated cooperatives tend to have a membership that is not based on the aspiration of the members but on a desire to access state grants (Mushonga *et al.*, 2018:270; Ruben & Heras, 2012:463). The members of these cooperatives are mostly interested in making quick money, and they lose interest and discontinue the cooperative when the money is not forthcoming (Kanyane & Koma, 2014:124).

A lack of commitment from members also leads to conflict, which is sometimes compounded by poor commitment from buyers and suppliers. This is because the buyers' priority is to purchase quality agricultural products. In contrast, some suppliers are more motivated by the amount of money they can make than by aiding the cooperative to achieve its common goals (Gundani & Odeku, 2018:114). People generally form cooperatives from various backgrounds, who all get equal ownership rights, and hence, vulnerable to conflict (Gotyi, 2019:40). Failure to manage the conflicts often leads to instability in the cooperatives' operational and production

functionality (Böhm *et al.*, 2020:341; Ruben & Heras, 2012:480), thus making them not to reach maximum performance.

Suboptimal performance affects the level of productivity and is not only caused by poor conflict management but also exacerbated by a poor entrepreneurial culture (Borda-Rodrigues & Vicari, 2014:44). Poor entrepreneurial culture affects the creativity of agricultural cooperatives to come up with innovative solutions to business challenges they face (Bijman, 2016:7). This subsequently affects the level of productivity because there are no strong business instincts to identify business opportunities and respond effectively with innovative strategies (Böhm *et al.*, 2020:343; Ijeoma & Matarirano, 2011:855). This undermines the performance of many agricultural cooperatives. Capital finance has been raised as a critical production performance factor (see Section 4.3.2).

5.5.3.3. Inadequate capital finance

Inadequate capital finance is often a significant impediment to most agricultural cooperatives' effective operation (Gundani *et al.*, 2018:106). Thus, agricultural cooperatives find it difficult to compete with commercial farmers (FAO, 2017:89; Khumalo, 2014:74). Agricultural cooperatives are often formed by people with a low capital and asset base, who normally do not have enough funds for both the capitalisation and operational overheads of the enterprise. Their low capital base restricts their ability to finance their enterprise and compromises the cooperatives' creditworthiness and the prospects of securing loans from financial institutions (Böhm *et al.*, 2020:348). Banks are reluctant to give them loans because of their lack of collateral, poor financial record-keeping and the absence of a business track record (Gotyi, 2019; Ijeoma & Chiloane-Tsoka, 2011:743). Poor access to finance contributes to poor operational and production functionality. It prevents them from building an asset base (Eum, 2017:70). The entity then becomes limited to supplying markets with limited chances of success, and only a few can survive (Khumalo, 2014:72).

5.5.3.4. Poor marketing and networking

The members of agricultural cooperatives often lack marketing skills, networks and technology, value-adding skills, and the infrastructure required to link them to the input and output markets (Gotyi, 2019:44; Hartley, 2014:725; Johnson & Shaw, 2014:671).

Not reaching high-value markets makes agricultural cooperatives unprofitable, especially those in rural areas, far from the market. Steele (2014:47) states that Information and communication technologies (ICT) is important for access to markets. The Mid-American Cooperative Council (2013:1) contends that cooperatives must conform to the buyers' procurement systems by adopting specific information technology that facilitates sound planning by suppliers in terms of inventory, transactions and billing. When cooperatives pool their resources to participate in government tenders, the inadequate preferential procurement programmes of the government worsen the situation (Khumalo, 2014:72). They are often not distinguished from investor-owned companies, which limits their chances of success. This is saddening because state procurement was identified as one of the strategies to support cooperatives' development. Still, the organisation of government procurement systems makes it difficult for these enterprises to survive the harsh market conditions (RSA, 2012:72).

Poor networks also undermine their marketing capabilities to attract new business opportunities. This is because businesses nowadays use networks to facilitate knowledge between organisations, quick distribution of information and effective general communication (Chiloane-Tsoka & Mello, 2011:1445). In this way, they can exploit economies of scale, manage risks and uncertainty enjoy available opportunities through their networks. Networking can also be an effective tool to lobby the government to influence policymaking. Cooperative members also need to communicate easily so they can have a strong institutional voice to represent their interests to the government, especially in policy making (Hartley, 2014:725; Johnson & Shaw, 2014:671). Networks also help members and other agricultural cooperatives to connect, thus enabling them to establish a support base among themselves that would increase their productivity and success rate. However, their inability to exploit the opportunities presented by ICT limits them, although social media platforms are critical entrepreneurial tools they can embrace (Johnson & Shaw, 2014:671).

Even if networking is not the challenge, the value addition problem can undermine the effective performance of most agricultural cooperatives. Most agricultural cooperatives deal in unprocessed agricultural products that render it difficult to market their products outside the circles of the buyers of unprocessed agricultural products (Hartley,

2014:725). Some agricultural cooperatives have attempted to create product development processes to deliver better products faster and cheaper, while others cannot do value-added production. To build client loyalty, cooperatives must identify ways to add value to their services and provide marketable products and services at competitive prices (Eum, 2017:70).

However, most agricultural cooperatives are often impeded by a lack of capital to engage in such value-adding activities. In contrast, others tend to experience infrastructural challenges that prevent them from connecting to both input and output markets. Infrastructural challenges are reflected in poor roads and telecommunication networks, especially in rural areas (Ijeoma & Chiloane-Tsoka, 2011:743). Poor infrastructure results in high overhead and transportation costs because poor roads damage vehicles, resulting in increased maintenance and wear and tear costs. This constrains the efficient linkage of agricultural cooperatives with the input and output markets and increases operational costs that render agricultural cooperatives less competitive (Johnson & Shaw, 2014:671). Government networks also bring challenges.

Government authority interventions do not always cultivate the autonomy and independence needed for sustainability within cooperatives. Gotyi (2019:44) calls government intervention in initiating cooperatives detrimental because it inhibits the cooperative's growth. It also creates vested interests by civil servants, government officials and politicians, who subsequently assume control of these cooperatives for their own selfish ends (Kanyane & Ilorah, 2015:8). Westoby (2014:836) confirms that state support can easily be used for political gain. The politicisation of cooperatives leads to cooperatives' funding being based on political point scoring. Unfortunately, most cooperatives initiated by the government become dependent on state support (Kanyane & Ilorah, 2015:8). Nevertheless, despite the government's negative interference on cooperatives' development, the government will always have a crucial role to play in uplifting cooperatives development.

This section has shown how traditional cooperatives lost their vibrancy due to the abovementioned challenges. The evolution of the NGC has been brought to commensurate the gaps present within traditional cooperatives and corroborate with higher benefits to marginal and smallholder farmers (Pani *et al.*, 2021:625).

5.6. NEW GENERATION COOPERATIVES

NGCs are the new form of cooperatives, which adopt typical business principles and approaches. They differ from TCs (Wolz *et al.*, 2020:57) by, for example, correcting the challenges noted in Section 4.5. The idea is to respond to members' needs more than TCs and encourage members and processors to expand the scope of their businesses, thus enabling them to gain access to a larger share of the consumer dollar (Kalogiannidis, 2020:452). Unlike TCs, which only promote and market members' products, NGCs also integrate value-adding components into their operations to create more value for the cooperative and its members (Fischer & Qaim, 2014:683; Francesconi & Wouterse, 2019:144; Hagedorn, 2014:555).

Pani *et al.*, 2021:625 and Kittredge, (2019) state that many modern agricultural producers increasingly react to the changing environment by cooperating with other producers to establish value-added socio-economic enterprises such as NGCs. Three fundamental characteristics distinguish these innovative cooperatives from the TCs. The first is that members purchase delivery rights or shares that require them to supply a fixed quantity of an agricultural product. The second is that membership is limited, and the third is that the value of delivery rights fluctuates in response to market forces (Hohler & Kuhl, 2018:697).

NGCs attempt to correct the problems associated with TCs by connecting tradable delivery rights to members' equity contributions while retaining the cooperative characteristics (such as the principle of one member, one vote on important policy issues) regardless of the number of shares purchased by a member (Kittredge, 2019). They also adhere to the principle that cooperative earnings belong to the members and are distributed according to patronage (Kittredge, 2019:1). Wolz *et al.* (2020:57) thus describe an NGC as a form of business arrangement that encourages agricultural producers and processors to expand the scope of their businesses (Fischer & Qaim, 2014:683; Francesconi & Wouterse, 2019:144; Hagedorn, 2014:555). They are hybrids between TCs and limited companies with a legally incorporated business arrangement that provides for control of the business through their memberships using a system of delivery rights and obligations to encourage business loyalty and provides a form of vertical integration (Van Dijk, 2015; Wolz *et al.*, 2020:57).

Therefore, NGC business frameworks are deemed more efficient and responsive to members' demands and can create viable businesses that will benefit producers, increase employment and diversify the economy (Grashuis & Cook, 2018:623). Governments and producers use them to facilitate a strong market orientation and as a developmental strategy to tackle unemployment (Galatoulas *et al.*, 2018:37).

5.6.1. History of NGCs

The NGC is a popular farmer-owned enterprise in the northern states of North Dakota and Minnesota, United States (Grashuis & Cook, 2018:624). The first was the American Crystal Sugar Company, birthed by sugar beet farmers in 1972 (Zhang *et al.*, 2018:49). Hohler and Kuhl (2018:697) note that in the 1980s alone, Midwest farmers created more than 50 NGCs and the region thus came to be dubbed as the centre of the NGC movement. By the 1990s, 100 NGCs had been formed, and this phenomenon was referred to as “cooperative fever” (Grashuis & Cook, 2018:624). Since then, NGCs have spread across the world, farmers attempting to deal with external pressures such as reduced commodity margins and increased income volatility (Flynn, 2000:1482 as cited in Wolz *et al.*, 2020:57; Yu & Nilsson, 2018:847). Markets were diminishing due to economic troubles in the global market, resulting in low market prices, thus, for these farmers to thrive, they had to embrace value-adding processes to gain access to a larger share of the consumer dollar (Kalogiannidis, 2020:452).

5.6.2. Objectives of NGCs

The aim of forming NGCs is to increase the efficiencies of agribusinesses so they can take advantage of profits at other stages of the food value chain (Fischer & Qaim, 2014:683; Kittredge, 2019:1). Therefore, NGCs create viable businesses that can benefit producers, increase employment, and diversify the economy (Fischer & Qaim, 2014:683; Galatoulas *et al.*, 2018:37). They present small businesses with the opportunity to grow and survive, but instead of relying on government handouts, they foster self-help measures (Galatoulas *et al.*, 2018:37). Farmers are thus able to earn more, increase the value of their productive assets, and create jobs. Through the

multiplier effect, such jobs can potentially revitalise rural communities (Ngamjan & Buranasiri, 2020:2343).

Generally, both NGCs and TCs have similar objectives. However, the way they handle their marketing and finance sector functions is somewhat different. TCs and NGCs also differ in characteristics and how they conduct business with members, engagement with stakeholders and perform business functions.

5.6.3. Distinction between NGCs and TCs

Although distinct from TCs, NGCs retain many of the Rochdale Society characteristics. Both the TCs and the NGCs match the definition. NGCs and TCs practice democratic control in that both small and large operators are allowed to participate (Flynn, 2000:1483, cited in Alho, 2019:161). A cooperative is characterised as a company operated primarily to provide benefits to members through marketing transactions and benefit members through marketing transactions and the distribution of earnings from those transactions (Giagnocavo *et al.*, 2018:21). In exchange, members are responsible for providing equity capital and managing the company. However, NGCs are structured differently from TCs. They differ in how they conduct business with members and are more restrictive regarding marketing and financing (Flynn, 2000:1483, as cited in Alho, 2019:161). Kenkel, (2019:1) explains that TCs are open membership cooperatives and that NGCs are closed or restricted membership cooperatives. There are also differences in how these cooperatives are structured.

Coltrain *et al.* (2000), cited in Giagnocavo *et al.* (2018:21), state that, in NGCs, not all members are joint owners of the cooperative; those who use the NGCs are customers who have contractual rights and obligations to deliver a quantity of a particular quality product, as stated in the marketing agreement. NGCs also have owners who are expected to purchase shares of equity stock, as specified in the stock subscription agreement, which confers the right to deliver a quantity of the product in compliance with the marketing agreement (Giagnocavo *et al.*, 2018:21). Patrons are those eligible to receive a share of the profits, usually as patronage refunds. Members can vote to rule or regulate the cooperative, elect directors, enact articles of incorporation and

bylaws, and vote on primary issues such as mergers, acquisitions and dissolution (Alho, 2019:161).

By contrast, TCs or open cooperatives often have users with various combinations of these roles. In other words, TCs are owned entirely by the farm producers, their patrons, and capitalists (Grashuis & Cook, 2018:625). Ownership is restricted to the farm producers; it is non-transferable, non-appreciable and redeemable. Other users may be customers, patrons and owners, but not members and are called non-member customers or patrons (Zhang *et al.*, 2018:49). In contrast, NGCs usually require users to accomplish certain sets of activities clustered under four main functions. These include customer marketing transactions, patron profit distributions, owner investment obligations and member voting control (Flynn, 2000:1483, as cited in Giagnocavo *et al.*, 2018:21).

5.6.3.1. Customer marketing transactions

NGCs perform market transactions differently from TCs in five ways: delivery rights, delivery obligation, quality accepted, identity preserved and initial payment.

- **Delivery Rights:** In a TC, delivery rights are normally unlimited because most TCs receive any amount of product delivered by customers and then market the total amount delivered by both member and non-member customers (Giagnocavo *et al.*, 2018:21). Some TCs have contractual marketing agreements with members, and this controls the amount of product each member can deliver, but they are a small minority. In contrast, the delivery rights of NGC customers are limited to the level of stock each member has purchased in the cooperative (Ma & Zhu, 2020:1009).
- **Delivery Obligation:** Delivery rights are usually paired together with delivery obligation. TCs normally do not have delivery obligation agreements with their customers (Giagnocavo *et al.*, 2018:21). Instead, customers may choose to market their products elsewhere because of higher prices, more convenience or personal relationships. In contrast, delivery obligations are a requirement for NGC members (Kelley, 2019:2; Lyne & Collins, 2008:18). This obligation includes the complete supply of the commodity required by the NGC in terms of its value-adding processing and marketing. Members of the NGC are

expected to deliver the amount stated in their delivery rights, which is finite as membership is closed (Grashuis & Cook, 2018:627). Suppose extenuating circumstances prohibit the members from delivering a sufficient amount. In that case, the NGC member or their representative will typically buy the agreed amount elsewhere, most likely from other members, otherwise a penalty will be imposed (Mojo *et al.*, 2017:84). To avoid this, members choose to only contract a portion of their total planned production for delivery.

- **Quality Accepted:** Since TCs do not usually have marketing agreements with members, the quality of their products typically covers a wide range. A TC is required to find a demand for all the product's characteristics (Mojo *et al.*, 2017:84). NGCs usually process or market a specific product with certain desired characteristics and traits, giving them a narrower range of quality that can be delivered. In this way, NGCs develop recommended production practices to ensure that producers supply consistent quality goods (Kelley, 2019:3).
- **Initial Payment:** TCs and NGCs also differ in the initial payment price received for commodities marketed through or sold to a cooperative. Since TCs do not rely on a marketing agreement or pooling programme, they pay the current market price at the time the commodity is marketed (Mojo *et al.*, 2017:84). NGCs, on the other hand, pay the contracted price stipulated in the marketing agreement between the members and the cooperative. The contracted price could be either lower or higher than the current market price (Kelley, 2019:3). In an NGC, producers do not produce only raw commodities but also commodities for processing purposes, and total revenue or income is based on income distributions based on returns from the marketing of raw commodities and/or further processing (Alho, 2019:161).

5.6.3.2. Patron profit distributions

The most evident differences between TCs and NGCs are in income or profit distribution activities by cooperatives to their members. These activities are cash patronage rate, investment or retained profits and pooling distributions (Ma & Zhu, 2020:1009; Zhang *et al.*, 2018:49).

- **Cash Patronage Rate:** This is a payment made by cooperatives to their members from total patronage income or margins based on the quantity or value of business done by each member (Kelley, 2019:3). It is paid partly in cash, and the remainder is retained as an equity investment by the member (Kittredge, 2019:1). TCs pay a relatively low patronage rate of 20 to 35% (Alho, 2019:161). The retained patronage refund is redeemed later through the cooperative's redemption programme. This cash patronage rate is often much higher in NGCs, usually at 65 to 85%. Since each NGC member invests in equity in the cooperative "upfront" to purchase marketing rights when the cooperative is established, it allows for a high cash patronage rate to be paid each year (Alho, 2019:161).
- **Investment or Retained Profits:** In TCs, a high percentage of the income distributed to patrons is retained and invested to finance assets, including business expansion and improvement (Kittredge, 2019:1). Hence, in TCs, most new equity comes from internal operations, especially retained patronage refunds. By contrast, NGCs invest a small percentage of the members' profit distributions back into the cooperative (Gyulgyulyan & Bobojonov, 2019:121). Generally, NGCs have a high proportion of equity invested in direct and permanent capital when formed (Kelley, 2019:3).
- **Pooling Distributions:** Pooling can be described as an alternative way to set and pay the price for the products each cooperative member markets through the cooperative. It works best when using a marketing agreement and determining the price paid after the pool has been put on the market and a net margin has been calculated (Gyulgyulyan & Bobojonov, 2019: 121). In effect, a delaying pricing or payment mechanism is used. An initial or advance payment is made upon delivery, and then one or more advance payments are made before the pool is closed and the final margin is known and paid. Pooling distribution in TCs is relatively uncommon but is more common in NGCs.

5.6.3.3. Owner investment obligations

In a cooperative, users who are patrons and members are usually expected to be the owners. Six ownership activities differentiate NGCs from TCs. These are the initial

investment, the proportionality of use, liquidity or exchangeability, exchange value, redemption obligation and business expansion investments.

- **Initial Investment:** The initial equity investment is one of the significant differences between TCs and NGCs. The initial investment in TCs is usually meagre, while NGC members invest generally ten times the amount of equity to purchase marketing rights (Abate, 2018: 257). In lieu of cash stock purchases, NGCs also allow farmers to transfer ownership of commodities in exchange for their shares. NGCs limit the total amount of shares one member can purchase.
- **Proportionality of Use:** This is the extent to which members have invested equity in proportion to the cooperative use. In TCs, from one year to the next, a member might choose to use or not use the cooperative (Zhou *et al.*, 2019:50). Therefore, even if the amount of business is proportional each year, over time, proportionality is poor since the equity contribution comes from operations and accumulates during the member's lifecycle. However, NGCs have a contractual obligation to deliver to members, who are expected to sell their goods on a steady and negotiated basis (Zhang *et al.*, 2018:49).
- **Liquidity or Exchangeability:** This includes the extent to which ownership can be transferred between owners. In almost all cooperatives, and many other companies that are held closely, no open markets exist, and transfers are highly restricted. Still, public companies have open markets for the stock exchange (Ma & Zhu, 2020:1009). TCs are much more restrictive than NGCs and transactions between members are rare. TC members increase equity primarily through retained patronage refunds and per unit retains. They decrease equity through equity redemptions made by the cooperative. These transactions are subject to the discretion of the board of directors. NGC members raise their equity mainly by acquiring shares that reflect or convey transferable distribution rights (Zhou *et al.*, 2019:50). NGC members can reduce their equity by selling their shares to other members, as approved by the board, at a negotiated price.
- **Exchange Value:** When equity is transferred or exchanged, the exchange value of TC equity is fixed at the par value at the time of purchase or retention. New members can join TCs whenever they desire, and their equity investment is valued at par (Abate, 2018: 257). However, the NGC exchange value for the

stock is variable and depends on the market price members receive if they sell their delivery rights to another member. This exchange value feature of NGCs can increase (or decrease) the value of the equity of each member relative to the price they paid. The value is strongly associated with the anticipated profitability of the NGC (Abate, 2018: 257).

- **Redemption Obligation:** Member ownership can be redeemed under specific conditions. For example, some cooperatives redeem the equity of those members who die or reach a certain age (Alho, 2017:207). In NGCs, there is no requirement to redeem or expect members to have previously purchased equities. The transferable distribution rights of NGCs allow for the selling of equities in whatever way their regulations permit.
- **Business Expansion Investment:** This is when a business expands by adding assets and the financial investment of those assets is from additional equity. In NGCs, there is an immediate investment obligation by those members who want to utilise the additional capacity (Ma & Zhu, 2020:1009). However, when a TC business expands, there is usually no immediate investment obligation by individual members. TCs also have longer equity revolving periods, usually 55 years, while NGCs have shorter revolving periods, usually five to seven years (Zhang *et al.*, 2018:49).

5.6.3.4. Member voting control

Each type of business has governing mechanisms and is controlled by those with the right to make decisions. Those rights are vested in voting stakeholders or voting members (Huang & Liang, 2018:48). The voting members of cooperatives approve articles of incorporation and bylaws, elect directors and may approve other actions such as mergers, acquisitions and dissolution. TCs and NGCs may differ regarding two control aspects: membership eligibility requirements and voting power (Liang *et al.*, 2018:196).

- **Eligibility Restrictions:** Eligibility restrictions for membership in TCs are commonly low. Agricultural cooperatives generally require members to be producers or associations of producers (Zhou *et al.*, 2019:50). Some TCs require members to sign a marketing agreement setting out certain criteria for membership, such as growing or quality specifications. In NGCs, this type of

marketing agreement is a rule, not an exception. In addition, NGCs include the purchase of marketing or stock rights. This results in high eligibility limits for members of the NGC (Zhou *et al.*, 2019:50).

- **Voting Power:** The voting power for TC members is usually one vote per member, regardless of the amount of patronage provided by each member of the extent of ownership. More often than not, NGCs allow a variable voting power for members based on stock holdings (Gyulgyulyan & Bobojonov, 2019: 121). However, the laws of other countries allow for one member, one vote. By far, most TCs and NGCs follow the one member, one vote rule, but NGCs are more likely to differ from that rule, regardless of the amount of patronage provided by each member or the extent of ownership (Gyulgyulyan & Bobojonov, 2019: 121; Huang & Liang, 2018:48; Liang *et al.*, 2018:196). More often than not, NGCs allow a variable voting power for members based on stock holdings.

These key defining features influence the entire governance and management approaches in different forms of TCs and have significant overriding effects on how agricultural cooperatives are formed and managed (Hagedorn, 2014:555; Rosenthal & Eiges, 2014:5; Wolz *et al.*, 2020:57). The theories and literature imply there is still a combination of certain critical success factors that must be integrated to bolster the successful development, establishment and management of the growth of any of such agricultural cooperative (DTI, 2012:7; Hagedorn, 2014:555; Krall, 2015:6; Rosenthal & Eiges 2014:5).

5.7. CRITICAL SUCCESS FACTORS FOR AGRICULTURAL COOPERATIVES

Developing and managing the growth of NGCs to enable them to attain the desired state of sustainability is a complex process with which agricultural cooperatives often grapple (International Fund for Agricultural Development (IFAD), 2012:2; Sihlobo, 2018a). The literature indicates a combination of factors that are fundamental to the success of such endeavours, including adherence to cooperative values, ethics and principles, managing the cooperative lifecycle and seamlessly integrating it with value chain systems, and use of contract farming to integrate farmers into the value chain (Hagedorn, 2014:555; Rosenthal & Eiges, 2014:5; Wolz *et al.*, 2020:57). The essence of each of these critical factors is evaluated below.

5.7.1. Adherence to Cooperative Values, Ethics and Principles

Adherence to the requisite cooperative values, ethics and principles is a foundational success factor for agricultural cooperatives because, according to the ICA (2017:12), they reflect critical behaviours, practices and approaches that define how cooperative activities are accomplished to create common values and achieve the common goals. In fact, the major cause of cooperatives' failures is the emergence of incompatible behaviours and practices among cooperative leaders and members (DTI, 2012:20). The failure of cooperatives undermines governments' attempts to utilise them to stimulate growth and development. Hence, the ICA (2017) has prescribed certain underlying cooperative values, ethics and principles that have been accepted by cooperatives worldwide, including South Africa (DTI, 2012:4; ICA, 2017:12; Rena, 2017:16). The ICA (2017:12) states that cooperative values are anchored in self-help, self-responsibility, democracy, equality, equity and solidarity. These values are regarded as the general norms that determine the way of thinking and acting of the cooperative members, leaders and their staff. These ethical values include honesty, openness, social responsibility and caring for others.

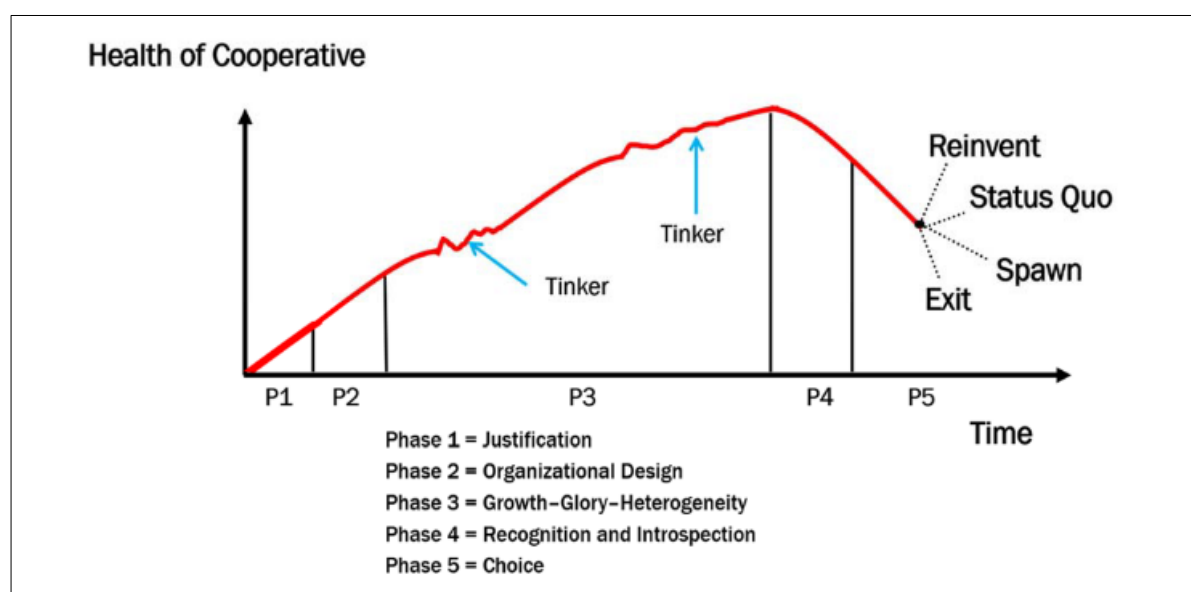
Cooperative members are also expected to adhere to certain principles, as indicated in (see Section 5.2.2) above. Although the principles have been applied and modified by various cooperatives to suit their unique needs, the core of the cooperative principles was articulated by the Rochdale Pioneers, who promoted their adoption by the cooperative movement globally. Such principles apply to all forms of cooperatives and have been incorporated into the cooperative laws of countries (Birchall, 2011:6) and are echoed in the ICA (2017:3) cooperative definition. Kanyane (2009:1125) identifies them as guidelines by which cooperative members and their boards put their values into practice. If such values and principles are not integrated into certain best practices for developing and managing agricultural cooperatives, the agricultural cooperative will often struggle to achieve its intended goals and objectives (Addai *et al.*, 2014:141; Chagwiza *et al.*, 2016:165).

Effective management of the cooperative's evolution through all the stages of its life cycle is another factor that determines the success of a cooperative (Addai *et al.*, 2014:141; Chagwiza *et al.*, 2016:165).

5.7.2. Managing the Cooperative Lifecycle Framework

The cooperative lifecycle is one of the frameworks that influence modern cooperatives' successful development, establishment, growth and sustainability (Francesconi & Wouterse, 2019:144). The important phases of the cooperative lifecycle require effective diagnosis and management of the complexities associated with each phase for the cooperative to grow and remain sustainable. Failure to do so has often been the major reason for cooperatives' failure (Hagedorn, 2014:555). To avoid such scenarios, the cooperative lifecycle, as indicated in Figure 5.1, provides a relatively accurate explanation of the phases and their associated factors that can influence or constrain the success of a cooperative. The cooperative lifecycle is similar to any other organisation's lifecycle, which unfolds from inception to growth and then maturity, only to decline or redevelop in the case of adopting the appropriate redevelopment strategies (Cook & Burrell, 2009:2 as cited in Ma & Abdulai, 2016:94).

Figure 5.1: The Cooperative Lifecycle Framework



Source: Cook & Burrell (2009:3); Cook (2018:5)

The cooperative lifecycle framework has five phases reflected in Figure 5.1, which are:

1. economic justification and cooperative formation;
2. organisation design;
3. growth;
4. recognition and introspection (restructuring analysis);
5. choice (restructuring choice):

5.7.2.1. Phase 1: Economic Justification and Cooperative formation Stage

Economic justification and the formation stage are part of forming the cooperative. It is the stage in which farmers come together to form a cooperative (Francesconi & Wouterse, 2019:144). During this phase, the focus is on defining the need to form the cooperative and how it will address or fill a gap in the economy. Once the need is justified, farmers internalise start-up costs or attract external support to establish a cooperative. Such external support could be equity and patronage investments. Good public relations management and communication are important to ensure enough buy-in from the community and producers. Such initiatives can also be accomplished by appointing a “local champion” to be the organisational catalyst (Carlberg *et al.*, 2006:19, as cited in Francesconi & Wouterse, 2019:144).

5.7.2.2. Phase 2: Organisational Design

In this phase, the cooperative constitution and the purpose of the cooperative are defined clearly. Membership rules and strategies for decision-making and distributing benefits are defined, together with members’ responsibilities (Francesconi & Wouterse, 2019:144). Successful accomplishment of such activities leads to establishing a cooperative governance structure. Cooperative governance is defined by Scholl and Sherwood (2014:10), as the act of steering cooperatively owned enterprises towards economic, social and cultural success. It ensures accountability, defines roles and responsibilities, and establishes processes for setting expectations. Scholl and Sherwood assert that the four pillars of cooperative governance are teaming, accountable empowerment, strategic leadership and democracy.

Teaming requires the initial cooperative members and leaders to collaboratively work together to achieve a common purpose, as stipulated in the cooperative constitution and strategic plan (Hagedorn, 2014:555). Accountable empowerment refers to cooperative leaders and managers empowering people while also creating mechanisms for the same people to hold them accountable. Strategic leadership means cooperative leaders set the goals and purpose of the cooperative to influence and direct members and other stakeholders to move in a direction that aids the achievement of such goals. Democracy means that members and stakeholders at all levels of the cooperative structure must be offered unfettered opportunities to

participate in the governance and management of their cooperative (Rosenthal & Eiges, 2014:5).

The essence of these four pillars is that the cooperative's principles generally guide governance processes for this phase. All members must focus on the purpose and participate in ensuring a healthy democracy when making key decisions and working to achieve common goals (Hagedorn, 2014:555). But it is also often at this stage that there is a high risk of members' vaguely defined property. This, could undermine the creation of common property and shared services (Francesconi & Wouterse, 2019:144). Hence, when the cooperative gets to phase 3 of growth, these entities experience problems of growth that Cook (2018:2) and Iliopoulos (2005:9), as cited in Hagedorn (2014:555), call "vaguely defined property rights constraints" because they are generated by a vaguely defined "user versus investor" set of property rights. Such incidents are exhibited in TCs, where members can enter and exit as they please. Cooperatives operating without marketing contracts with their members cannot guarantee a specific operating capacity at any time (Hagedorn, 2014:555). In contrast, NGCs tend to have a set of well-defined property rights, whereby access to the preferred markets secured by the NGC requires members to purchase new rights in the form of delivery rights.

5.7.2.3. Phase 3: Growth, Glory and Heterogeneity

The growth phase is when the cooperative becomes successful and captures the market to create the desired values for the members and the cooperative. At this stage, members face pressure to grow the business to reap the benefits of economies of scale and scope (Francesconi & Wouterse, 2019:144). However, unless well managed, it is also often during the growth stage that problems that can cause failure can emerge. For instance, cooperative growth can be hard to manage amid vaguely defined property rights, resulting in diseconomies of scale and scope. Cook (2018:2), Gupta (2014:102) as well as Ortmann and King (2007:33) argue that it is the TCs rather than NGCs that often face a range of property rights (institutional) problems as discussed in (see Section 5.5.2.).

5.7.2.4. Phase 4: Recognition and introspection (restructuring analysis)

During this phase, cooperatives may experience degeneration as economic pressure prompts them to deviate from their cooperative principles and adopt capitalist business practices (Cook, 2018:3). The degeneration risk is heightened by the separation of the organisation from its values and daily practices, as well as the “weak exercise of internal democracy” to hold leaders and members accountable (DSBD, 2019:199). Other cooperative problems experienced in this stage include increased side selling and diminishing collective marketing (Van Dijk, 2015:6). Phase 4 is characterised as a period of introspection, often called a restructuring analysis, signifying an interval of analysis and reflection upon the system’s path-dependent growth (Cook, 2018:9). However, organisational degeneration can often be avoided through organisational tinkering (Cook, 2018:8), (see Table 5.1).

Organisational tinkering involves devising and implementing management solutions to help the cooperative to resist degeneration and enhance its performance (Cook, 2018:8). The solutions are highly linked to cooperative principles because all efforts to overcome growth problems need to comply with cooperative principles while ensuring cooperative identity preservation (Wolz *et al.*, 2020:57). Most of the solutions requiring the use of organisational tinkering are devised from the NGC framework (Wolz *et al.*, 2020:57) because this type of business framework displays the most advanced solutions for managing growth (Kelley, 2019:3). While members’ patronage and rent-seeking purposes drive traditional cooperatives, NGCs require a large upfront investment for value-adding purposes from the members (Hagedorn, 2014:555; Kelley, 2019:3).

For free rider problems arising from extensive membership growth that dilutes members’ individual revenues and benefits and increases adverse selection and moral hazard, NGCs ensure membership size is defined to ensure that supply meets but does not exceed demand. They enforce the distribution of benefits in proportion to patronage (Francesconi & Wouterse, 2019:143). While doing this, NGCs must also abide by the first principle of open and voluntary membership.

Table 5.1: Proposed management solutions for agricultural cooperatives.

ICA Principles	Growth Problems	Management Solutions
Open and voluntary membership: Cooperatives are voluntary organizations, open to all persons able to use their services and willing to accept the responsibilities of membership, without gender, social, racial, political or religious discrimination. Democratic member control: Cooperatives are democratic organizations controlled by their members, who actively participate in setting their policies and making decisions. Member economic participation: Members contribute equitably to, and democratically control, the capital of their co-operative. At least part of that capital is usually the common property of the co-operative. Autonomy and independence: If coops enter into agreements with other organizations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their autonomy. - Education, training and information - Cooperation with other cooperatives - Concern for community	The free-rider problem: Growth in membership dilutes individual revenues and benefits, and increases adverse selection and moral hazard. The decision-making-cost problem: Increased heterogeneity in preferences results in lengthy and costly democratic deliberations. The horizon-portfolio problems: Equity capital accumulation induces an overzealous investment strategy that is not valued by all members. Influence-cost problem: Diversification of services and products increases members' autonomy and independence at the expense of group cohesion and competitive advantage. Agency-cost problem: Additional costs and responsibilities put a strain on management-members relationships.	1. Defined membership: Membership size is defined to ensure that supply meets but does not exceed demand. 2. Membership agreement: To define and enforce the distribution of benefits in proportion to patronage. 3. Professionalization: To shift residual control from members and general assemblies to boards, committees and managers. 4. Investment pools: To ensure that equity capital is used to make strategic and diversified investments through the pooling of members' needs and contributions. 5. Specialization: To maintain the right balance between the individual and common good generated by a cooperative. 6. Strategic planning: To anticipate the rise of conflicts of interest through preemptive communication, negotiation and decision-making processes.

Source: Francesconi and Wouterse (2019:143-145).

In situations where horizon and portfolio problems may arise from extensive equity capital growth to induce glory and celebration, resulting in an overzealous investment strategy that all members might not value, NGC minimises such risks by ensuring there are investment pools (Rosenthal & Eiges 2014:5). They provide that equity capital is used to make strategic and diversified investments by pooling members' needs and contributions (Francesconi & Wouterse, 2019:143). This is in line with cooperative principle three of member economic participation, where members contribute equitably to and democratically control the capital of their cooperative (Francesconi & Wouterse, 2019:143-145).

On the other hand, an agency-cost problem can emerge from the organisation's growing responsibilities and costs, putting strains on the management-membership

relationship. NGC uses strategic planning integrated with pre-emptive communication, negotiation and relevant decision-making processes to identify and mitigate possible areas of conflict (Hagedorn, 2014:555). Management must ensure that cooperative principles five, six, and seven of education, training and information; cooperation with other cooperatives; and concern for the community are all adhered to (Francesconi & Wouterse, 2019:143-145).

Yet, in case of influence cost problems arising from extensive growth of services and products in a cooperative to reduce group cohesion and competitive advantage, NGC applies specialisation to maintain the right balance between the individual and common good generated by the cooperative (Francesconi & Wouterse, 2019:143). In this sense, the cooperative may also agree with the government and other organisations to raise capital. When doing so, they must ensure democratic control by their members and maintain their autonomy and independence.

Such initiatives may also be accompanied by the management of decision-making cost problem that can arise from the extensive growth of organisational structures that slows down and increases the costs of decision-making processes. To solve such a challenge, NGC management deploys professionalism to shift residual control from members and general assemblies to boards, committees and managers (Rosenthal & Eiges 2014:5). While doing this, NGCs should be careful to allow democratic member control, where members should actively participate in setting their policies and making decisions. This phase nears completion when cooperative leadership presents, or the membership demands explicit action to remedy challenges not correctable by tinkering, and member patrons need to make a decision or a choice.

5.7.2.5. Phase 5: Choice (restructuring choice)

In phase 5, a decision affecting organisational longevity needs to be made in an attempt to minimise cooperative health constraints (Cook, 2018:12). The cooperative has four choices: 1) to enter a state of dormancy (maintain the status quo position), 2) spawn, 3) exit the industry, or 4) reinvent and start a new lifecycle (Cook, 2018:12; Francesconi & Wouterse, 2019:22). The **status quo option** suggests the membership assumes exogenous forces will allow continuation of the existing entity as currently structured. Generally, this option of inaction results from factional gridlock and the

inability to reach a consensus regarding macro environment conditions, industry structure, degree of rivalry, or reluctance to adapt or change. Patron drift and substitution usually have drained membership patronage and leadership resources to the point where the exit is soon the optimal choice (Cook, 2018:12). **Spawning** is where a group of employees or patrons organise a separate venture that will interact with the parent organisation. The development of the separate entity addresses free cashflow concerns by establishing separate capital and governance pools (Cook, 2018:12). When **exit** is chosen, the cooperative no longer bases ownership rights on patronage. It may convert to an investor-driven firm, a hybrid, or liquidation depending on cooperative asset valuation. **Re-invention** redirects the cooperative's purpose and/or culture by adapting major changes in strategy, for example, by reassigning claimant rights partially on investment, rather than patronage basis (Cook, 2018:13).

Understanding a cooperative's life cycle helps co-operators learn from past successes or failures as they re-examine and reformulate justification, design, and cooperative health metrics in phases 1 and 2 of the next life cycle. Therefore, although cooperative health may decline throughout a particular life cycle, degeneration is not imminent. Adaptive cooperatives seek out the chance to regenerate through multiple life cycles. Furthermore, agriculture also needs to be coherently integrated with the value chain systems in the market and industry in which it operates.

5.7.3. Integrating Agricultural Cooperatives in Value Chain Systems

Getting farmers under different agricultural cooperatives integrated within the critical value chain system is one of the complex challenges that most contemporary agricultural cooperatives face (Su & Cook, 2020:519; Zhao *et al.*, 2021:231). This is because buyers of agricultural products have different quality concerns and business approaches that require agricultural cooperatives to modify their approaches to be compatible and integrate seamlessly with critical partners and customers. Various theories offer insights regarding the effective integration of agricultural cooperatives with the requisite value chain systems, which might require internal and external integration and the use of contract farming as one of the strategies to link and integrate farmers in the value chain (Chang *et al.*, 2016:282; Falkowski, 2015:704; Florea *et al.*, 2020:783; Tsolakis *et al.*, 2014:120; Vasa *et al.*, 2014:286).

5.7.4 Internal and External Integration

Several studies indicate that what matters most for agricultural cooperatives is their capabilities to seamlessly integrate with the value chain systems in the markets and industries in which they operate (Chang *et al.*, 2016:282; Florea *et al.*, 2020:783). Integration of agricultural cooperatives with the required critical value chain system eradicates the gaps between farmers and the market, farmers and agricultural technologies, farmers and input suppliers, farmers and financial institutions, farmers and the government, and research agencies (Su & Cook, 2020:519; Zhao *et al.*, 2021:231). These bolster agricultural cooperatives' capabilities to create advantages resulting in increased economic benefits for the farmers and their transition from smallholder farmers to large commercial entities. However, to achieve such outcomes, Florea *et al.* (2020:783) and Ajates (2019:337) highlight that agricultural cooperatives must not pursue only external integration with the relevant value chain systems but also internal integration.

Internal integration through the creation of relevant coordinating coherent departments and units encourages operational capabilities that aid agricultural cooperatives' seamless integration with external value chain systems with relatively minimal effort. Zhang *et al.* (2021:23) describe agricultural cooperatives' integration with the value chain as a strategic process of creating internal and external integration to coherently link upstream and downstream partners in the accomplishment of "farm-to-table" sequential activities of production, marketing, supply and transportation to final consumers. This integration requires the creation of synergistic departments and units to facilitate cost-efficient processes of input purchase, production, marketing, supply, logistic transportation and information sharing and exchange (Zhang *et al.*, 2021:23). Internal systems must communicate with research units to implement points of improvement (Dubois, 2019:763; Song & Yang, 2019:1820).

External integration is the strategic process of creating the required synergistic relationship, coordination and coordination between an agricultural cooperative and critical partners such as suppliers, distributors, customers, logistics and transporters, other agricultural cooperatives, government agencies and agricultural research centres to mutually create the desired values for all the partners (Zhang *et al.*, 2021:23). The integrated system should also include financial institutions, insurance

institutions, agro-processors or manufacturers, major wholesalers and retailers. The establishment of such integrated systems requires a high level of management and leadership competency (Florea *et al.*, 2020:783; Zhang *et al.*, 2021:23). Ajates (2019:337) agree that such integrated systems would enable farmers and agricultural cooperatives to eliminate information asymmetry. It not only closes the technological gap, thus improving farmers' product quality, but also improves market access. However, Kim (2013:74) and Jacobs *et al.* (2016:60) note that such integration must be accompanied by adopting a buyer-driven and intermediary-driven cooperative business frameworks.

A buyer-driven cooperative business framework is one in which agricultural cooperatives liaise and collaborate with critical agricultural products' processors, wholesalers and retailers to integrate backwards and link with farmers (Kim, 2013:74). Combined with other integration strategies, this leverages the degree of farmers' integration with agro-processors, largescale wholesalers and retailers to bolster farmers' accessibility to larger markets. However, to effectively respond to the range of the needs of different players in the market, Jacobs *et al.* (2016:60) propose that agricultural cooperatives should integrate the buyer-driven business framework with the intermediary-driven business framework. The latter refers to the utilisation of critical distributors and logistics handling companies in the supply chain that link farmers with manufacturers, wholesalers and retailers (Luo *et al.*, 2017: 73). Such integration is imperative because some of the large wholesalers, retailers, and manufacturers prefer to deal only with intermediaries to cut costs. Thus, Jacobs *et al.* (2016:60) argue that agricultural cooperatives' tendencies to sidestep intermediaries to link farmers directly to the manufacturers, wholesalers and retailers might not suit the needs of some critical customers in the value chain. Hoken and Su (2018:831) and Wang (2019:767) advocate using contract farming concepts to link and integrate farmers with other critical players in the agribusiness sphere and value chains.

5.7.5. Using Contract Farming to Integrate Farmers in the Value Chain

Contract farming can be used to integrate farmers with critical partners and customers in the value chain system (Florea *et al.*, 2020:783). It is one of the agricultural seller-buyer arrangements increasingly used by the private sector to support rural smallholder farmers (Zheng & Luo, 2020:80).

Contract farming refers to agricultural seller-buyer arrangements or linkages in which an agribusiness entity contracts farmers to produce certain agricultural products. Agribusiness processors can either engage smallholders through agricultural cooperative structures by arranging with the cooperative or can engage smallholder farmers on a one-by-one basis (Zheng & Luo, 2020:80). According to Florea *et al.* (2020:783), contract farming is increasingly being used by the private sector to support smallholder farmers in rural areas and those that have found agricultural cooperatives unattractive. Thus, its adoption by agricultural cooperatives can aid their effective response to the unique needs of some of the players in the market and offer their members enormous opportunities (Florea *et al.*, 2020:783). In exchange, the smallholder farmers get better prices for their products and credits, seeds, fertilisers, technical assistance, and other light agricultural equipment (Song *et al.*, 2017:1541).

Contract farming opens up the agricultural value chain to integrate smallholder farmers in such value chains and eliminate the difficulties that most smallholder farmers often face when seeking to penetrate the established value chain systems (Tsolakis *et al.*, 2014:47). It also catalyses smallholder farmers' productivity and improves the degree of collaboration between agricultural products' processors and smallholder farmers (Peng *et al.*, 2018:1184). This leverages the level of information sharing and exchange, which provides opportunities for smallholder farmers to engage in unlearning and learning new things to improve their capabilities (Tsolakis *et al.*, 2014:47). Some of the seller-producer linkages for contract farming that agricultural cooperatives can adopt to market their farmers include market-specification, production management and resource-providing contracts (Peng *et al.*, 2018:1184).

A market-specification contract is a pre-harvest arrangement in which the processor of agricultural products undertakes to market smallholder farmers' products under pre-established conditions, such as the expected price, quantity, quality and period of delivery (Vasa *et al.*, 2014:286). In such an arrangement, the smallholder farmer transfers some of the risks to the buyer, the processor of agricultural products, while retaining control over production. Production management, on the other hand, is an arrangement whereby smallholder farmers permit the agricultural processor to get directly involved in managing the smallholder farmer's agricultural production activities

(Vasa *et al.*, 2014:286). Although the smallholder farmer loses control in the short run, in the long-term, it contributes to the transfer of critical agricultural production and management skills to the smallholder farmers and bolsters improved production and quality management (Zheng & Luo, 2020:80). The third linkage, resource-providing contract, is an arrangement in which the agro-processing firm agrees to provide smallholder farmers with the required agricultural inputs in exchange for better prices, quantity and quality (Zheng & Luo, 2020:80).

Vandeplas *et al.* (2013:217) also highlight some other forms of contract farming involving smallholder farmers, including spot market trading, contract coordination, vertical integration and rural associations and cooperatives. In spot market trading, agro-processors trade with smallholder farmers, whereas contract coordination requires agro-processors to undertake to process combined with trading and contract farming (Peng *et al.*, 2018:1184). In vertical integration, agro-processors engage in direct plantation agriculture combined with agro-processing and the use of rural associations and cooperatives. However, Vandeplas *et al.* (2013:217) argue that the values of agricultural cooperatives for smallholder farmers far exceed the benefits offered by contract farming (Tsolakis *et al.*, 2014:120). Contract farming benefits only a few smallholder farmers from any given community, whereas agricultural cooperatives integrate almost any smallholder farmer interested in joining it. Moreover, it does not accommodate every type of crop or farming activity (Tsolakis *et al.*, 2014:120). Still, it tends to be applicable to agricultural products such as coffee, cotton and tobacco, which are relatively scarce. Thus, companies such as British American Tobacco tend to use contract farming not to assist smallholders but to deal with inputs scarcity (Falkowski, 2015:704).

However, despite agro-processors' assistance to smallholder farmers, complexities often arise that undermine their effective performance, such as from high price fluctuations due to competition, which could make it difficult for smallholder farmers to repay the production loans obtained from the agro-processors (Falkowski, 2015:704). Furthermore, agro-processors are reluctant to support smallholder farmers with production credit due to an ineffective legal system for enforcing credit recovery from smallholder farmers (Vasa *et al.*, 2014:286). Another challenge is that smallholder

farmers struggle to become independent as a result of their high dependence on the agro-processors for inputs and capital injections (Mugwagwa, *et al.*, 2020:14). Nevertheless, contract farming with small modifications still offers enormous opportunities for agricultural cooperatives to integrate their farmers with critical partners in the value chain system to create enormous values that benefit both the farmers and agricultural cooperatives, as well as the larger community (Khapayi *et al.*, 2018:376; Vasa *et al.*, 2014:286).

In summary, the critical success factors for developing, establishing and managing agricultural cooperatives encompass adherence to cooperative values, ethics and principles, managing the cooperative lifecycle and integrating agricultural cooperatives with value chain systems through seamless internal and external integration as well as usage of contract farming to integrate farmers in the value chain.

While there may be a number of other theories associated with the cooperatives theory, only the social capital theory and the theory of contracts are discussed in the study.

5.8. THEORIES

The current study focuses on two theories that are **applicable to the establishment stage of a cooperative**, the social capital theory and the theory of contracts.

5.8.1 The Social Capital Theory

Social capital theory, first introduced by Bourdieu (1986) and later developed by Putnam (1993), focuses on ways in which social networks and the relationships among individuals within those networks can contribute to the development and success of an organization or community. In the context of cooperatives, social capital theory suggests that the strong social connections and trust among members can lead to increased cooperation and collective action, which in turn can result in greater success and resilience for the cooperative (Gronroos, 1990; Portes, 1998; Putnam, 2000).

Studies by Bourdieu (1986), Gronroos (1990), Portes (1998), and Putnam (2000) further show that social capital plays a vital role in the formation and sustainability of cooperatives, as well as in their ability to achieve their goals and overcome challenges

(Adler and Kwon, 2002). It does this through the trust it builds among its members (Gronroos, 1990:121). It also achieves this by facilitating communication and information sharing (Putnam, 1993:67), promotion of collective decision-making and collective action (Portes, 1998:45).

It is however important to note that social capital is not always a positive force within cooperatives, and that the dynamics of social capital can vary depending on factors such as the size and structure of the cooperative, the diversity of its membership, and the level of conflict and competition within the group (Adler & Kwon, 2002:34). For example, a lack of trust or low levels of social capital can lead to low participation, poor decision-making, and even the failure of the cooperative (Putnam, 1993:78). Therefore, it is important to understand and manage the dynamics of social capital in cooperatives in order to maximize its positive effects and minimize any negative impacts.

The application of social capital theory to cooperatives highlights the importance of social connections and relationships in the success and sustainability of these organizations, and offers insights of how to foster and leverage these connections for the benefit of the cooperative and its members (Putnam, 1993:78).

5.8.1.1. Leveraging on social capital

In the **establishment of cooperatives**, social capital can be leveraged in several ways:

- **Building trust and cooperation among members:** A strong sense of social capital among the members of a cooperative can increase their trust and willingness to cooperate, which is essential for the success of the cooperative (Ostrom, 1990).
- **Facilitating information sharing:** Social networks can be used to share information about the cooperative, its goals and objectives, and to mobilize support for the establishment of the cooperative (Bourdieu, 1986).
- **Securing resources:** Social capital can be leveraged to secure financial, technical, and other resources necessary for the establishment and growth of the cooperative (Bourdieu, 1986).

- **Resolving conflicts:** Norms of trust and cooperation can help to resolve conflicts that may arise among members during the establishment and operation of the cooperative (Putnam, 2000).

Overall, social capital can help create a supportive environment that enables the establishment and success of cooperatives (Ostrom, 1990). Even with a supportive cooperative environment, according to the Theory of Contracts, the sustainability of the cooperative may be impossible without the inclusion of cooperative members' legally binding commitments..

5.8.2 The Theory of Contracts

The theory of contracts is the study of legal principles and concepts that govern the formation, performance, and enforcement of agreements between parties. It involves formulation of legally binding commitments, consent from both parties, rights and responsibilities of the parties, and the repercussions of breach. It also provides a framework for understanding contractual relationships and promoting fairness in commercial transactions. In economics, contract theory examines the behaviour of parties in a contract, their interests, incentives, and performance (Gordon, 2021).

5.8.2.1. The link between the theory of contracts and cooperatives

In the context of cooperatives, the theory of contracts is based on the principle of voluntary and open membership, which means that any individual or organisation is free to join and participate in the cooperative, regardless of race, religion, gender, or political affiliation (International Co-operative Alliance, 1995:23). It refers to the agreement between members of a cooperative organisation to work together for a common purpose (Besen & Maskin, 1985:9). This agreement serves as the foundation of the cooperative, and outlines the expectations and responsibilities of each member. It is typically embodied in the cooperative's articles of incorporation and bylaws, which define the rights, duties, and obligations of the members (International Co-operative Alliance, 1995:19).

The theory of contracts in cooperatives is also based on the principle of mutuality, which is the cornerstone of the cooperative movement. This principle states that the

benefits and losses of the cooperative are shared among all members, ensuring that all members have a stake in the success of the organisation and that all members' interests are taken into consideration and aligned (International Co-operative Alliance, 1995:23). This helps to ensure that the cooperative operates in a fair and democratic manner, where each member has an equal voice and an equal say in the decisions that affect the cooperative (Besen & Maskin, 1985:11).

5.8.2.2. Application of the theory of contracts in cooperatives

The theory of contracts in cooperatives is applied in various ways to help the cooperative achieve its common purpose. Some of the key applications of the theory include:

- **Establishment of membership criteria:** The theory of contracts helps to establish the criteria for membership in a cooperative, such as the eligibility, admission, and termination of members (International Co-operative Alliance, 1995:19). This ensures that only individuals who are committed to the common purpose of the cooperative are able to become members (Besen & Maskin, 1985:9).
- **Determination of member rights and obligations:** The theory of contracts outlines the rights, duties, and obligations of the members of the cooperative (International Co-operative Alliance, 1995:19). This helps to ensure that all members have a clear understanding of what is expected of them and what they can expect from the cooperative (Besen & Maskin, 1985:9).
- **Allocation of benefits and losses:** The principle of mutuality, which is central to the theory of contracts in cooperatives, helps to ensure that the benefits and losses of the cooperative are shared among all members (International Co-operative Alliance, 1995:23). This promotes fairness and equity in the operations of the cooperative (Besen & Maskin, 1985:11).
- **Decision-making and governance:** The theory of contracts helps to establish democratic and transparent decision-making processes in the cooperative (International Co-operative Alliance, 1995, p. 19). Members are typically involved in key decisions, such as electing the board of directors and approving major investments (Besen & Maskin, 1985:11).

- **Conflict resolution:** The theory of contracts can also help to resolve conflicts that may arise between members or between the members and the cooperative (International Co-operative Alliance, 1995:19). The articles of incorporation and bylaws often outline the procedures for resolving disputes, ensuring that conflicts are resolved fairly and efficiently (Besen & Maskin, 1985:11).

Overall, the theory of contracts plays a crucial role in shaping the governance and operations of cooperatives, and helps to ensure that they operate in a fair, democratic, and equitable manner (Besen & Maskin, 1985:11).

5.9. CHAPTER SUMMARY

This chapter began with a definition of TCs, their origins and principles. The levels and types of cooperatives were also discussed, with an emphasis on TCs, particularly agricultural cooperatives and NGCs, which are the focus of this study. Agricultural cooperatives are known to have benefits of productivity and scale economies, access to input and output markets, and socio-economic benefits, especially for rural economies. However, the South African cooperative movement has not gained momentum compared to the rest of the world. Cooperatives in South Africa are still marred by various governance, property rights and operational challenges.

The governance challenges are associated with policies and procedures, good cooperative governance, and property rights challenges: free rider problems, horizon problems, leadership and control problems, portfolio problems, influence cost problems and constitutional degeneracy tend to impact agricultural cooperatives negatively. In terms of operational challenges, management challenges undermine effective performance and often fail the cooperatives. These include inadequate skills and competencies, poor production management, value addition, marketing and networking skills.

NGCs are the new cooperatives with typical business principles and approaches to differentiate them from TCs and create the required values for the members. The TCs and NGCs were compared about their characteristics, how they conduct business with members, engagement with stakeholders, and their business's function. Unlike the

TCs, which only promote and market members' products, NGCs also integrate value-adding components to their operations to create more value for the cooperative and its members. A combination of certain critical success factors was also examined. These must be integrated to bolster the successful development, establishment and management of the growth of any agricultural cooperatives. These critical success factors encompass adherence to cooperative values, ethics and principles, best practices for developing and managing agricultural cooperatives, managing cooperative lifecycle and integrating agricultural cooperatives into value chain systems through seamless internal and external integration, and the use of contract farming to integrate farmers in the value chain.

Agricultural cooperatives' relevant critical success factors are adherence to cooperative values, ethics and principles, managing the CLCF, integrating the cooperative into value chains, contract farming, and internal and external integration. The literature indicates that agricultural cooperatives can be more sustainable and thus create enormous socio-economic benefits for the agricultural cooperatives, farmers, the surrounding communities and the country. Smallholder farmers' benefits are often reflected in the improved productivity and economies of scale they gain and their leveraged access to input and output markets. Such values are also often accompanied by certain socio-economic benefits such as increased employment opportunities and income, enhanced livelihood, food security and social integration. In this context, this researcher uses the empirical philosophies and methodologies described in the next chapter to analyse the efficacy of the NGC business framework in South Africa. This analysis will contribute to identifying its major inhibitors and suggest how to improve the implementation of NGCs in South Africa.

The chapter concludes by discussing two theories, the social capital theory and the theory of contracts in relation to the establishment of cooperatives. The theory of contracts in cooperatives is a crucial aspect of cooperative organisations. It outlines the agreement between members, embodying the principles of mutuality, voluntary and open membership, and democratic control, all of which help to ensure that the cooperative operates in a fair, democratic, and transparent manner. Whilst the social capital theory helps to create a supportive environment that enables the establishment and success of cooperatives.

CHAPTER 6

RESEARCH DESIGN AND METHODOLOGY

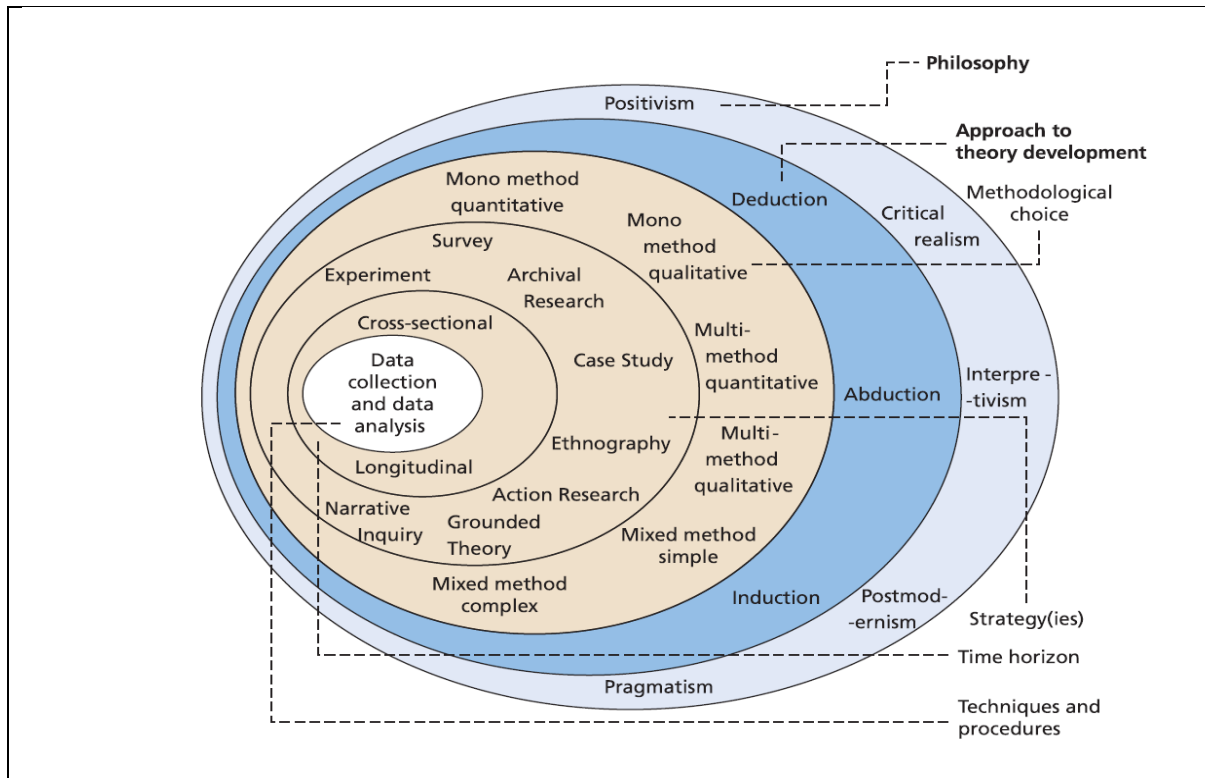
6.1. INTRODUCTION

This chapter outlines the process for the empirical research phase of this study. It discusses the philosophical stance, the research strategy, the research design, and methodology, which will cover research instruments, data and data analysis techniques. Leedy and Ormrod (2019:28) point out that this section must demonstrate the compatibility of the research methods in clearly answering the research questions. In light of the above, this section discusses the overall research approach of how the researcher will answer the main research question on the efficacy of the NGC in uplifting smallholder farmers and therefore explain why an interpretive qualitative, single case study is considered appropriate for this research. Moreover, it sets out the procedures to collect, analyse and report the data collected. Additional approaches implemented to enhance the validity and reliability of the study, the study area selected, the research process limitations, and the ethical considerations that govern the research process are also discussed in this chapter.

6.2. THE RESEARCH PROCESS

Saunders *et al.* (2019:128) illustrate that at the beginning of a research project, the researcher's thoughts on considering issues underlying the choice of data collection methods all belong in the centre of the research process 'onion' (see Figure 6.1). The research onion has necessary layers that need to be peeled off before coming to the central point of data and these will be detailed below in following sections. It is important for the researcher to point out that, in evaluating literature from different research design and methods authors, research terms have been used differently and interchangeably. Therefore to avoid confusion and contradiction, this study's research method will be built (point of reference) from Saunders *et al.* (2019:130) as shown on Figure 6.1. Any additional methodological terminology from other scholars will be explained within the Saunders *et al.* (2019:130) research onion.

Figure 6.1: The research process onion



Source: Saunders *et al.* (2019:130).

The reason for using the research process onion as the point of departure is that it is familiar and helpful in making choices regarding research philosophy, approach, method, strategy, time horizon and subsequent techniques. It guides research on the research approach and choosing an appropriate research strategy before coming to the central point of data collection methods (Saunders *et al.*, 2019). Researchers must consider the research paradigm to build an effective research design. Thereby they ensure that it is in line with the stance of the researcher regarding the nature of reality (Rashid, Rashid, Muhammad & Sabir, 2019:3). The research paradigm is also referred to by Saunders *et al.* (2019:159) as the research philosophy, dimensions that help researchers decide on a philosophical choice, and the assumptions researchers make about the research (whether they are subjective or objective).

6.3. PHILOSOPHICAL PERSPECTIVE AND RESEARCH PARADIGM

Research in various fields can adopt different paradigms based on their philosophical perspectives and assumptions (Rashid *et al.*, 2019:3).

6.3.1. Philosophical Perspectives and Assumptions

Research philosophy is a set of beliefs and assumptions about how knowledge is developed Saunders *et al.* (2019:129). While this sounds somewhat abstract, it is exactly what you are doing when beginning research: developing knowledge in a particular field (Sinha, Clarke & Farquharson, 2018:368). Therefore, a researcher's beliefs and assumptions have an important impact on the research they decide to pursue and the methodology and methods they use (Saunders *et al.*, 2019:129). In agreement with these scholars, Creswell and Poth (2018:54) allude that a researcher's philosophical perspective may be hidden in a study, but it informs and influences the actual research effort. Creswell further identifies this as a paradigm (see Section 6.3.2), as a fundamental collection of beliefs that prompted a researcher's action to a study (Gupta & Awasthy, 2015:6). These differing assumptions are of reality (ontology), knowledge (epistemology), and the role of values and ethics (axiology), and they shape a particular philosophical paradigm and a research method (Denzin & Lincoln, 2017:195; Rashid *et al.*, 2019:3; Saunders *et al.*, 2019:134).

i. Ontology

Ontology is concerned with the nature of reality and researchers' assumptions about how the world operates and their commitment to a specific point of view (Saunders *et al.*, 2019). Therefore, concerning the ontological assumption, the researcher must answer the following questions: what is the nature of reality, what is the world like, or what are organisations like (Taylor, Bogdan & Devault, 2016:17; Creswell & Creswell, 2018:67).

Ontology, in general, is a branch of research philosophy that guides enquiries on the nature of reality and its overall associated assumptions as held and shaped by the investigator's personal beliefs, perceptions and opinions (Taylor *et al.*, 2016:17; Creswell & Creswell, 2018:67). Ontology appears to be divided between two polarizing viewpoints: objectivism and subjectivism (Saunders *et al.*, 2019:135), meaning it may subscribe to objectivism or subjectivism. An objectivist view of ontology asserts that social reality has an existence that is independent of social actors. Hence, the world is external, with a single objective reality to any research phenomenon or setting,

independent of the researcher's viewpoint or belief (Rashid *et al.*, 2019:3; Saunders *et al.*, 2019:135; Yin, 2016:16).

Objectivist ontology is usually used in scientific and medical research to prevent interference from any external variables and the accuracy of the solutions to be prescribed (Ngulube, 2020). It significantly differs from subjectivist ontology. Subjectivist or constructivist ontology posits that the fundamental truth about the phenomenon investigated can best be obtained through interaction with the phenomenon (constructivism) or subject of the phenomenon to the investigator's personal judgment and opinions (subjectivism) to analyse and interpret meanings associated with its actual truthfulness (Archibald *et al.*, 2018:5).

The other school of thought explained by Bryman, (2016:710) argues that, truth and meaning are not found in external reality but are generated by the subject's interactions with it (constructivism) or emerge from the subject's imposition on the object (subjectivism). As a result, subjectivists and constructivists reject the objectivist viewpoint and consider social reality to be a reflection of human imagination, and that social actors are continually accomplishing their meanings (Gray, 2014:62; Saunders *et al.*, 2019:135; Yin, 2016:18). Realist ontology assumes that reality exists independently of observer perceptions and operates according to immutable natural laws, which frequently take the form of cause-and-effect relationships, whereas relativist ontology assumes that multiple, socially constructed realities are not governed by natural laws (Rashid *et al.*, 2019:3; Saunders *et al.*, 2019:135).

In essence, the study's main objective is to observe and investigate a real-life scenario where actors are involved in implementing the NGC. This case has not been previously explored in the South African context. Hence, the researcher takes the stance of relativist ontology, which maintains that, reality does not exist in and of itself but is the outcome of socially formed perceptions unconstrained by natural laws. The meaning of real-world events is captured from the perspective of a study's participants (Rashid *et al.*, 2019:6; Yin, 2016:16). In addition, the study recognises the important contribution from the social actors, more specifically of the people who are related to this phenomenon, the smallholder farmers and the commercial farmer. Contribution from these social actors adds to a better understanding of outside realities worldwide

through their perceptions and interpretations of relationships between the NGC and the performance of their businesses and providing meaningful interpretation for the established relationship.

ii. Epistemology

Epistemology emphasises the nature and origins of knowledge, and the construction of knowledge (Rashid *et al.*, 2019:3). In other words, it is concerned with the question of what should be regarded as valid and acceptable knowledge (Bryman, 2016:27; Rashid *et al.*, 2019:3; Yin, 2016:335). Epistemology helps the researcher to also understand the best ways of enquiring into the nature of the world (Jackson *et al.*, 2015:46). Epistemological undertakings present fundamental thoughts that are the basis for alternative worldviews, also commonly referred to as paradigms (Yin, 2016:22). The researcher's epistemology views can be classified as objective if the researcher believes natural laws regulate knowledge. Subjective, if the researcher believes knowledge is interpreted by individuals (Rashid *et al.*, 2019:3). In terms of epistemological undertakings, there are two fundamentally different but competing thoughts which are: positive (realism) epistemology and phenomenological (or normative, interpretive) epistemology (Bryman, 2016).

Epistemology, in general, is also a philosophical concept, just like research paradigm and ontology, that guides gathering and generating knowledge that can be considered valid and acceptable from different empirical sources (Kennedy, 2018:31). It posits that individual perceptions, beliefs and values about the world, as well as knowledge, influence data interpretation and the validity and reliability of the generated knowledge. Clarity of the philosophical paradigm at the commencement of research is critical for minimising incidents that can undermine validity and reliability of knowledge gathering and generation (Braidotti, 2019a:13). In that regard, it reiterates the epistemology of knowledge gathering and generation to take the form of objective epistemology (positive or realism) or subjective epistemology (phenomenological, normative or interpretive) (Bach *et al.*, 2018:125). Objective (positive or realism) epistemology uses positivist research paradigm in its real sense and emphasises the process where knowledge gathering and generation are guided by natural laws and not any form of extrinsic variables (Edmonds & Kennedy, 2017:150). Subjective (phenomenological,

normative or interpretive) epistemology is a philosophical approach where the natural process of knowledge gathering and generation which is also integrated with the investigator's social interaction and construction to get to the truth about the knowledge that must be extracted by from the concept being investigated (Creswell & Poth, 2018:55).

The study's major goal is to see if the NGC piloted by the South African government uplifted its smallholder farmer members. This is undertaken in a natural setting, where a more informed and nuanced construct is required, allowing the researcher's subjectivity to prevail (Edmonds & Kennedy, 2017:150). In this scenario, the researcher must interpret reality subjectively, presuming that the investigator and subject generate understanding. Social constructs can only be refined through interaction between researcher and respondent due to their varied and personal nature. (Rashid *et al.*, 2019:3). The axiology of a relativist and a subjective researcher believes that there is no value-free research (Rashid *et al.*, 2019:3), and the researcher openly discusses the narrative's values and includes their own interpretation alongside that of the participants (Creswell & Poth, 2018:55). Creswell and Creswell (2018:67) explain that researchers can use paradigms to identify and explain certain perspectives and assumptions quickly and that paradigms are understood as a basic set of beliefs that guide action. The research paradigm is also referred to by Saunders *et al.* (2019:159) as the research philosophy; dimensions that help researchers decide on a philosophical choice.

6.3.2. Research Paradigm

According to Rashid *et al.* (2019:3), a researcher's paradigm is a frame of reference one brings to a study and is utilised to make conclusions and develop findings about phenomenon. Saunders *et al.* (2019:139) provide five major philosophical paradigms of research: positivism, critical realism, interpretivism, postmodernism, and pragmatism, whereas the school of thought presented by Jackson *et al.* (2015:59) posits nine paradigms: Critical Realism, Critical Theory, Feminism, Hermeneutics, Postmodernism, Pragmatism, Scientific Method, Structuration Theory, and Systems Theory. Jackson *et al.* (2015:59) further contend that debate among social scientists focuses on the respective merits of two contrasting

views of how social science research should be conducted: positivism and social constructionism. Therefore, the nine world views presented are closely associated with either positivism or social constructivism (interpretivism), sharing any of these two paradigms. The third paradigm that is associated with both positivism and social constructionism paradigms being pragmatism (Creswell & Creswell, 2018:51). Over the decades, a general consensus seems to exist among theorists and scholars that a research paradigm can take the form of positivism, interpretivism or pragmatism philosophical reasoning (Braidotti, 2019b:31). These three paradigms are simplifications of the true complexity of worldviews that underpin various research perspectives; and the various philosophical and practical concerns influence the nature of a given paradigm, which directs research studies (Rashid *et al.*, 2019:3). Pragmatism, positivism, and interpretivism (social constructivism) are presented.

6.3.2.1. Pragmatism

The pragmatism paradigm believes that there can be more than one position adopted for a study to make a good research (Sekaran & Bougie, 2016:29). It was born out of an attempt to bridge the gap between interpretivist and positivist epistemologies (Ngulube, 2015:7). Meaning that it is not committed to any one system of philosophy and reality, contrasting perspectives from scientific realism (Creswell & Creswell, 2018:51). By not committing to one system of philosophy, pragmatism paradigm accepts both subjectivism and objectivism as its philosophical assumption (Leavy, 2017:44), thus contradicting the philosophical position of this study which upholds subjectivism, and considers social reality to be a reflection of human imagination (Gray, 2014:62; Saunders *et al.*, 2019:135; Yin, 2016:18). Secondly, the pragmatic philosophy also permits the researcher to apply multiple methods, both qualitative and quantitative research methods (Cherryholmes, 1992; Creswell & Creswell, 2018; Ngulube, 2020), further contrasting its suitability for this study which uses qualitative methods as shown in section 6.5. This research aims for the smallholder farmers to use as much of their own words as they desire to share their experiences, beliefs, and perceptions about the NGC's success or even failure. It also requires they provide reasons for the success or failure and the probable solutions that can be undertaken to leverage NGC's overall efficacy, thus making the pragmatic philosophy not suitable for this research.

6.3.2.2. Positivism

Positivism is a research paradigm which uses statistical analysis to solve major practical problems, find law-like generalisations, and establish precise causal relationships (Sekaran & Bougie, 2016:29). This makes the positivist research paradigm scientific and uses natural science laws, designs, methods and techniques to determine what can or cannot be measured to reach a logical conclusion about the concept being investigated (Bryman, 2016:710). The positivist approach's ontology is that of realism or common sense. According to the positivist viewpoint, knowledge can only be formed with the help of five fundamental senses (Gray, 2014:57). Positivists make two assumptions: first, the ontological assumption that reality is external and objective, and second, an epistemological assumption that knowledge is meaningful only if it is founded on observations of this external reality; and that knowledge is the outcome of empirical verification (Jackson *et al.*, 2015:74). Positivists adhere to the realistic foundationalism ontology, which implies that the world exists irrespective of human observation, signalling that the world is objective (Gray, 2014:56; Jackson *et al.*, 2015:74; Sekaran & Bougie, 2016:28). In this scenario, epistemology remains objective because the researcher begins the inquiry with an independent stance. as a result, the researcher must be independent of what is being observed (Rashid *et al.*, 2019:3).

Positivists strive to explain the world precisely and scientifically because they believe it operates according to cause-and-effect laws (Creswell & Clark, 2017:87). The scientific nature or statistical parameters used by positivism research constrain the study to evaluate certain variables to test its assumption associated with certain realities in the world (Pelias, 2019:89). This research deems the positivist research paradigm unsuitable for reaching logical conclusions about the efficacy of the NGC's business framework in uplifting smallholder farmers. NGC's business framework is a new phenomenon in South Africa, and it is just being piloted in South Africa with the effect that it has no known previous variables reflecting parameters that can be used to scientifically or statistically test its efficacy in uplifting smallholder farmers. Instead, this study offers smallholder farmers and the NGC implementers the opportunity to provide as many detailed narratives of their efficacy experiences. The progress and complexities of using the NGC's business framework is considered more valuable for aiding social construction to reach logical conclusions on the efficacy of the NGC

business framework in uplifting smallholder farmers. Such reasoning motivates the utilisation of the interpretivist research paradigm for this study as contrasted to positivism or even pragmatism research paradigm.

6.3.2.3. Interpretivism

Interpretivism is a research paradigm, philosophy, ontology and epistemological process that focuses on the social construction of linguistic features, shared meanings, consciousness and all social aspects from the subject's and investigator's perspectives to reach logical conclusions about the phenomenon being examined (Rashid *et al.*, 2019:3; Saunders *et al.*, 2019:135; Yin, 2016:16). The present study follows interpretivism philosophy. It focuses on narratives, stories, perceptions and interpretations of the NGC participants on whether this business framework uplifted their businesses and wants to gain these new understandings and world views as a contribution to the study. All this lies within the epistemology of interpretivism, making this study lie within the interpretivist research paradigm. In other words, interpretivism allows the researcher to have multiple views for a problem and to perceive the world through the participants' perspective (Creswell & Creswell, 2018:48; Rashid *et al.*, 2019:4).

Interpretivist paradigm differs from positivisms and pragmatism. It instead seems analogous to constructivist or subjectivist ontology. From an ontological standpoint, interpretivists are concerned with the relativist or subjective realities that exist in each research issue (Gray, 2014:62; Saunders *et al.*, 2019:135; Yin, 2016:18). Constructivist or subjective ontology construes the truthfulness and meaning of what it is, as well as the kinds and structure of the phenomenon or object being investigated not to arise from just external realities, but from the subject's interactions with the object (constructivism) or imposition on the object (subjectivism) (Bryman, 2016:710).

As contrasted to objectivist ontology, which is positivistic in nature, such reasoning places subjectivist or constructivist ontology in seamless alignment with interpretivist paradigm that exhibits critical features of constructivism and subjectivism as of essence for aiding social inquiries reach the actual truth and realities about the phenomenon being investigated (Creswell & Clark, 2017:87). This thereby implies as this research uses interpretivist research paradigm, it also echoes the essence of

constructivism and subjectivism as critical for discerning the overall truth about the efficacy of the New Generation Cooperative business framework in uplifting smallholder farmers.

Instead of relying on certain parameters, assumptions and scientific propositions, as is in the case of positivism, interpretivism allows the researcher to perceive the world through the participants' perspective and the words they use to relate to their experiences and beliefs (Creswell & Creswell, 2018:48, Rashid *et al.*, 2019:4). Social constructions are refined through the interaction between researcher and respondents (Rashid *et al.*, 2019:4,6) and how the investigator and other external realities perceive these perspectives (Schadler, 2019:215; Vannini & Vannini, 2019:22). Furthermore, interpretivists strive for a thorough knowledge of the social phenomena under investigation (Creswell & Creswell, 2018:48). Empirically, Rashid *et al.* (2019:9) and Saunders *et al.* (2019:148) explain that interpretivist researchers highly recognise the role and importance of participants' (farmers) subjectivity as part of this process (social interaction). Hence Creswell and Poth (2018:60) refer to it as social constructivism. The farmers use their own words in relating to their experiences and beliefs, explaining their perceptions of how the NGC improves their farmer businesses. Allowing the farmers to connect to their experiences will therefore enable the researcher to have multiple views of the research problem because it enables the world to be seen through the eyes of the farmers (Rashid *et al.*, 2019:4). The interpretivist researcher then uses their own interpretation into the research (Saunders *et al.*, 2019:160). This helps the researcher and the readers understand the NGC better.

Using positivist paradigm, medics, engineers and other natural scientists often still use their prior knowledge as influenced by beliefs and historical theories to diagnose and discern scientific research processes and outcomes that are good or not good (Hunter & Brewer, 2016:185). Thus, just like natural scientists, this research also used the interpretivist paradigm approach to guide the subjective ontology and epistemology to diagnose and reach logical conclusions about the meaning and truthfulness of the efficacy of the NGC business framework in uplifting smallholder farmers. The study's major goal is to discern whether the NGC piloted by the South African government uplifted its smallholder farmer members. This is undertaken in a natural setting, where a more informed and nuanced construct is required, allowing the researcher's

subjectivity to prevail (Edmonds & Kennedy, 2017:150). In this scenario, the researcher must interpret reality subjectively, presuming that the investigator and subject generate understanding. Social constructs can only be refined through interaction between researcher and participants due to their various experiences and perceptions about NGC implementation (Housley *et al.*, 2017: 607).

Thus, from an ontological standpoint, interpretivists are concerned with the relativist or subjective realities that exist in each research issue, and interpretive paradigm thus emphasises social context (Vannini & Vannini, 2019:22). Rather than using certain positivist's fixed scientific or statistical variables that the researcher controls, interpretivism encourages interactive engagement and exchange of views between participants and researcher to aid effective diagnosis of all facets and dimensions of the phenomenon being investigated (Watson, 2020:66). This explains why this research uses the interpretivist paradigm because the research aim is not to get participants to reflect their statistical or scientific opinions on certain scientific assumptions set about the efficacy of the NGC business framework in uplifting smallholder farmers. Instead, this research aims to get smallholder farmers to offer detailed narratives about the impact, success drivers and complexities or challenges of NGC's business framework and the probable improvement strategies that can be adopted.

Interpretivist research paradigm is therefore used in this study to engage in constructivist social interaction and constructionism to elicit critical in-depth real-world insights from smallholder farmers as well as NGC's implementing partners about all the dimensions of the implementation of NGS's in Limpopo and South Africa at large. This leveraged an in-depth understanding of NGC's implementation progress from the smallholder farmers' perspectives as well as from the perspectives of NGC's implementers. It enabled social construction to be made about the overall efficacy of the NGC business framework in uplifting smallholder farmers. As cited in Sim *et al.* (2018:619), such an approach is consonant with Gray (2014:10) connotation of interpretivism as a research paradigm that requires in-depth social interaction to understand and make social construction of the phenomenon being investigated as well as to generate new theory. As a research paradigm, interpretivism is also one of the philosophies reflecting certain beliefs and way of thinking that define design,

approaches, methods, strategies and techniques used in the investigation to reach logical conclusions about the phenomenon being investigated (Bach *et al.*, 2018:125).

By following an interpretive philosophy, it is anticipated that sufficient information will be obtained from the designated smallholder farmers and the NGC implementers to assess NGC's strides and limitations in the context of the South African smallholder farmers' business environment. Since NGC is a pilot program, it is such detailed information which is not only desired in this research but also wanted by the government to discern how NGC can be improved and subsequently adopted across the country. Thus, the research will contribute practical solutions that inform future practice (Saunders *et al.*, 2019:151) on how to plan and implement an NGC in South Africa and the value chain associated with this framework. This, therefore, aligns to the objective of the NGC, which is to improve the sustainability of the farmer businesses.

The research project also involves the use of theory, and a research project must be clear on how the theory was tested or built for the study (Saunders *et al.*, 2019:152).

6.4. RESEARCH APPROACH TO THEORY DEVELOPMENT

At the beginning of the research, the researcher must be clear about the approach to be used. Saunders *et al.* (2019:153) and Shani *et al.* (2020:72) mention three approaches to theory development, namely the deductive, inductive and abduction approaches.

The deductive research approach is positivist in nature and aligns with the philosophical logic in objective ontology and epistemology. It does not permit any form of social construction or integration of the investigator's perception in the research process (Leedy & Ormrod, 2019:320,387). In the deductive research approach, a theory or hypothesis is first formulated in the context of the identified problem, and secondary and primary data are collected, analysed and tested to validate or invalidate such hypothesis or theory (Denzin & Lincoln, 2017:195). Since this research is based on the interpretivist research paradigm, such limitations also explain why the deductive research approach was not used. Instead of moving from theory to data (as in

deduction) or data to theory (as in induction), an abductive approach moves back and forth, combining deduction and induction. Secondly, an abductive approach is also most likely to be underpinned by pragmatism, which is not the paradigm chosen for this study (Saunders *et al.*, 2019:155).

Interpretive paradigm is typically inductive (Creswell & Poth, 2018:75; Saunders *et al.*, 2019:145; Yin, 2018:100). Therefore, this research made use of induction as the research logic approach, which means that the application of the interpretivist research paradigm and subjective ontology and epistemology was also accompanied by inductive research approach. Inductive reasoning begins with an observation (Leedy & Ormrod, 2019:320,387), meaning that the research starts by collecting data to explore a phenomenon to build a theory, often in the form of a theoretical framework (Creswell & Poth, 2018:60; Saunders *et al.*, 2019:156). Yin (2018:100) also contends that researchers follow an inductive approach when little is known about the subject. The inductive research approach was therefore used to firstly discern the NGC business framework that can be extracted from the triangulation of findings with theories. Secondly, it was used to build a framework that can be the recommended solution for improving NGC implementation among smallholder farmers. This reasoning also aligns to Leedy and Ormrod (2019:320,387) as well as Gupta and Awasthy (2015:6) that an interpretive research approach first defines a problem, and then secondary and primary data are collected, analysed and interpreted to discern solutions or a theory that must be extracted to address such problem. This makes it appropriate for this study as there is little information and knowledge pertaining to implementing the NGC business framework in South Africa, as it is a pilot project. Globally, there has also been little research conducted on the NGC since the early 2000s (Grashuis & Cook, 2018:623).

Saunders *et al.* (2019:155) support the inductive approach that was used for this study as appropriate; by concluding that, research that uses an inductive approach is likely to be concerned with the context in which such events were taking place and as such, the study of a small sample of subjects might be more appropriate than a large number as with the deductive approach. As proof of this, the current study is a case study that interviewed a sample of 18 individuals who participated in the South African NGC project. This total includes all sixteen NGC smallholder farmer members. Leedy and

Ormrod (2019:41) highlight a pitfall when it comes to inductive reasoning. They warn that inductive reasoning makes generalisations about members of a category after having encountered only a limited subset of that category. In this study, that risk was mitigated by selecting all the NGC smallholder farmers to participate.

In this study, inductive reasoning in developing a theory was by first contextualising and detailing NGC problems motivating the study in Chapter 1 of this thesis. Such analysis was followed by an evaluation of theories and literature on the agricultural landscape and its socio-economic roles in Chapter 2 and Chapter 3 of this thesis; an analysis of the challenges facing smallholder farmers in South Africa in Chapter 4, and an evaluation of theories on agricultural co-operatives in Chapter 5. This created the contextual and theoretical basis for primary research to be conducted using the philosophies and methodologies elucidated in this chapter to extract the primary findings presented and discussed in Chapter 7 of this thesis. Such findings were subsequently triangulated with theories and literature in Chapters 2, 3,4 and 5 to discern the NGC business framework that can be extracted and suggested to resolve the NGC problems identified in Chapter 1 of this thesis.

This implies that the inductive research approach, accompanied by interpretivism and subjective ontology and epistemology, aided not only by analysis of the efficacy of the NGC business framework in uplifting smallholder farmers, but also the extraction of a new theory that can be used to respond to identified NGC challenges. As the study blends research philosophies and accommodates ontological and epistemological approaches, these philosophies influence the research design. It also used the case study and exploratory research designs to encourage the research process punctuated with some high level of social interaction, construction and reconstructionism. The discussion of the research design elements is the concern of the next sections.

6.5. RESEARCH DESIGN

The research design is the framework that explains how you plan to answer your research question(s) (Saunders *et al.*, 2019:173). It is vital to the research process

because it acts as the lens through which a researcher looks when acquiring knowledge about social phenomena and finding answers to research questions (Johnson *et al.*, 2019:144; Ngulube, 2015:7). It provides for the collection and analysis of data by avoiding a situation where the collected evidence cannot address the research question. In other words, the research design determines how the required data will be collected and analysed and how all this will be applied to address the research question (Creswell & Clark, 2017:105; Gray, 2014:55; Rashid *et al.*, 2019:7).

Concerning Saunders' research onion (see Figure 6.1), the next three layers of the research onion following the "Approach to Theory Development layer" are: 1) methodological choice and nature of research design, 2) research strategies, and 3) time horizon. These layers focus on the research design (Saunders *et al.*, 2019:173). Therefore, a different mix of elements to achieve coherence in the research design depends on the chosen methodological choice discussed in Section 6.5.1. The methodological choice is either quantitative, qualitative or mixed methods research design (Creswell & Creswell, 2018:43; Saunders *et al.*, 2019:174). Secondly, the nature of the research strategy chosen and its role are discussed in Section 6.5.2. The researcher can use one or more strategies within the research design to carry out the research project. The research strategy must fit the philosophy and the chosen methodological choice. The methodological choice and related strategies influence the selection of an appropriate time horizon (see Section 6.7.). Ethical issues related to the research design must be minimised and overcome (see Section 6.13), and finally, how the quality of the research design is considered, is also discussed (see Section 6.12).

6.5.1. Methodological Choice

The research method is a set of empirical strategies and tactics aligned with the chosen research paradigm, or philosophy. It is practically implemented in the field or during data collection from participants or respondents. This method aims not only to solve the identified problems but also to generate new theory (Shani *et al.*, 2020:73). It is the process through which primary information is gathered from the field and analysed to respond to issues outlined in the research objectives and questions. Rashid *et al.* (2019:7) simplify it as a set of particular procedures, instruments,

techniques, data collection and analysis methods. In other words, it refers to a set of steps to journey between two locations on the map (Johnson *et al.*, 2019:144). To accomplish that, Creswell and Creswell (2018:43), Edmonds and Kennedy (2017:18), Leedy and Ormrod (2019:299) as well as Saunders *et al.* (2019:174) mention that research may require the use of qualitative methods, quantitative methods, and mixed methods, which are the three methods to conducting research. These three methods are based on a system of philosophical convictions, which are either constructivism (interpretivism), positivism, and pragmatism respectively (Epizitone & Olugbara, 2020:8; Rashid *et al.*, 2019:4). The mixed methods, quantitative and qualitative research designs are therefore discussed.

6.5.1.1. Mixed method research design

A mixed method involves collecting, analysing, and interpreting quantitative and qualitative data to answer research questions (Creswell & Creswell, 2018:348). Mitchell (2018:106) asserts that a mixed method is more of an extension of qualitative and quantitative rather than a replacement and it minimises any shortcomings of either qualitative or quantitative methods when used together. However, because mixed methods require time, they are conducted over several years (Creswell & Clark, 2017:17). This was not possible in this study. The pilot support was planned for five years and only funded for three years (DSBD, 2015). The mixed-method research strategy provides the researcher with the flexibility of using different methodological techniques to converge and confirm the findings from each strategy (Edmonds & Kennedy, 2017:208). Converging the findings of one strategy from the other was not the aim of the study, and therefore mixed method was not considered for this study.

6.5.1.2. Quantitative method research design

Quantitative methodologies are epistemological frameworks that use statistical or scientific techniques, strategies and tactics to accomplish empirical research (Leavy, 2017:205; Iofrida *et al.*, 2018:470). Quantitative studies' main focus is usually the collection and analysis of summarised numerical data from the respondents using numbers and symbols reflecting respondents' perceptions about the phenomenon being investigated. In such processes, the quantitative method also utilises the emerging statistical information reflecting numbers and symbols to interpret what the

findings imply about the concept being investigated (Creswell & Creswell, 2018:44; Edmonds & Kennedy, 2017:xiv; Saunders *et al.*, 2019:175; Yin, 2018:98).

The positivistic nature of quantitative studies, combined with the fact that quantitative methodologies bind participants to use numbers or symbols to express their opinions, often limits their opportunity to elaborate on the reasons behind their perspectives. Therefore, inherent limitations instigated this interpretivist-based study to avoid using quantitative methodologies. Instead, this study opts to use a set of the required qualitative methodologies to elicit in-depth narratives of smallholder farmers and NGC implementers about the overall progress and challenges so far achieved by the NGC as a measure for uplifting smallholder farmers. Such a decision is at par with Mitchell's (2018:106) revelation that the qualitative research refers to a set of methodologies, strategies and techniques that aim to elicit non-numerical information reflecting in-depth narratives of the participants about the concept being investigated. Quantitative research is linked to positivism-oriented paradigms, while qualitative research is linked to interpretivism-oriented ones (Creswell & Poth, 2018:35; Iofrida *et al.*, 2018:469). As this research study takes the stance of the interpretivist paradigm, qualitative research was therefore employed in this study.

6.5.1.3. Qualitative method research design

According to Rashid *et al.* (2019:4) qualitative research approach gives meaning and understanding to the participant's experience in the research study, which is permitted by the interpretivist philosophy. Moreover, qualitative research relies on inductive reasoning, which is also the chosen approach suitable for this study (Saunders *et al.*, 2019:309), thus making qualitative research design the best design choice for the study. Saunders *et al.* (2019:134) further differentiate qualitative research from quantitative research by emphasising that quantitative research is considered objective and generalisable. It is also less likely for quantitative methods to 1) provide a rich and comprehensive view of organisational reality, 2) account for differences in individual contexts and experiences, and 3) provide a new understanding of the world (Creswell & Creswell, 2018:44). On the other hand, qualitative research does not generalise. It assumes subjectivist epistemology and agrees to an interpretivist philosophy which perceives the world from the participants' perspective (Rashid *et al.*,

2019:6). This was the intention of the study, thus qualifying the qualitative research method suitable for this study.

While formulating the research design, (Saunders *et al.*, 2019:17; Yin, 2018b:38) posit that within each methodological choice, there is a nature of design, also referred to as a research enquiry. The research nature is classified in terms of its purpose and strategy. The research could be exploratory, descriptive, explanatory, evaluative or a combination of these (Saunders *et al.*, 2019:186; Yin, 2018:38). Kumar (2018:165) claims that most qualitative enquiries aim to explore or describe the phenomena under study. Creswell and Poth (2018:84), as well as Leedy and Ormrod (2019:271), bring an expanded view to Kumar (2018:165), Saunders *et al.* (2019:186) and Yin (2018:38) by portraying that the potential advantages of a qualitative research method go beyond exploring and describing a phenomenon but also has the potential to solve problems, verification, evaluation, and theory development. Particularly, this current study will be explorative and aim to build a theory, which is one of the objectives of this study.

6.5.2. Nature of the Research Design

The nature of the research is inevitably the purpose of the research design, which equates to how the researcher asked the questions (Saunders *et al.*, 2019:186). The present study is exploratory. The exploratory research approach has valuable means of discovering what is happening by asking open questions like 'what' and 'how' (Saunders *et al.*, 2019:186). This clarifies ambiguous situations (Yin, 2018:304). The explorative characteristics of the qualitative study in this research allow the researcher to be able to robustly explore, investigate, build a depth of understanding and learn about the phenomenon, seek new insights by asking questions, and assessing a phenomenon under a new light (Creswell & Creswell, 2018:181; Yin, 2018:40). It does this by gathering values, perceptions, and the farmers' experiences about the NGC, which are less relevant in positivism-oriented paradigms (Leavy, 2017:205; Iofrida *et al.*, 2018:470). In other words, exploratory research was valuable, as the nature of the problem was uncertain and required a clarification to gain a deeper understanding (Creswell & Creswell, 2018:188). Within this context, this gave the researcher a multifaceted description of the research phenomenon, seeing the world through the

lens of the farmers, which is an indispensable advantage of the qualitative approach (Creswell & Poth, 2018:84; Leedy & Ormrod, 2019:271).

Secondly, after receiving the farmers' constructed reality from their own views and understanding, the researcher was able to report this reality honestly, based on her interpretation, without misinterpreting the interviewees' beliefs (Epizitone & Olugbara, 2020:8; Maree, 2015:53; Rashid *et al.*, 2019:4). This is more aligned with the interpretivist as edified by subjectivist ontology and epistemology as well as inductive research approach discussed earlier. The inductive research approach further amplifies the theory development characteristic of this qualitative study. This research aims to explore the NGC by collecting data and building a theory in the form of a theoretical framework (Creswell & Poth, 2018:60; Saunders *et al.*, 2019:156), which is also one of the objectives of this study. This confirms that the qualitative method is the best design for this study because it seeks to understand the experiences of business owners and how they deal with the operations of their businesses. It also examines if joining the NGC has uplifted their businesses.

In a South African context, little is known about the contribution of the NGC business framework. This is the first time it has been adopted in South Africa. Therefore, the exploratory approach in this study provided the opportunity to unravel the nature of the NGC farmers' challenges, including their experiences and perspectives regarding the NGC business framework in uplifting their businesses. Using the exploratory research strategy, the researcher also obtained a richer understanding of the experiences relating to the success factors of the NGC as the study sample is implementing it. Kumar (2018:165) states that exploratory research follows leads one after another and uncovers facets of facts, to reach in-depth information that reflects all the dimensions of the 'who', 'what', 'how', 'where', 'why', and 'when' of the phenomena that is investigated. Exploratory research design enriches facts about the concept being researched. It is used when limited information or facts exist about a particular concept to enrich information and develop a ground theory or knowledge about it.

Often, grounded rich information emerging from exploratory study constitutes the basis for applying other research paradigms like positivism ideologies and methods to further analyse such concepts in later studies. That is what this research aims to

achieve on the basis that, given the limited information on NGC efficacy in uplifting smallholder farmers, foundational rich data on NGC is critical for the accuracy of a government decision on whether or not to adopt it. Even if the government abandons or does not abandon NGC, rich exploratory text and knowledge generated by this research still offer critical insights for future studies to analyse how the NGC business framework can be refined and improved to induce the desired values for smallholder farmers and the South African economy. Thus, as this study aims to achieve such goals, a case study blended with an exploratory research design was considered a critical prerequisite. Such reasons explain why this study opted for using a case study blended with exploratory research instead of an explanatory or descriptive research case study.

After choosing the suitable methodological choice, the researcher can select one or more strategies within the research design to carry out the research project. The research strategy must also fit the chosen philosophy (Saunders *et al.*, 2019:189).

6.6. RESEARCH STRATEGIES

According to Denzin and Lincoln (2017:1381), a research strategy is a methodological link between the philosophy and subsequent choice of methods to collect and analyse data. The research strategy is a plan of how the researcher will answer the research questions (Saunders *et al.*, 2019:189). Narrative enquiry, case study research, grounded theory, action research and ethnography are examples of research strategies used in qualitative studies and is commonly referred to as the Five Qualitative Approaches (Creswell & Creswell, 2018:293; Leedy & Ormrod, 2019:276; Saunders *et al.*, 2019:179; 190). To answer the research questions of this study, the researcher used a case study where multiple qualitative forms of data such as e-mails, meeting minutes, and company reports were collected in the natural setting (case study), including rich, in-depth interviews (Saunders *et al.*, 2019:180).

6.6.1. Case Study

Rashid *et al.* (2019:5) and Yin (2018:33) characterise case study research as a detailed inquiry, frequently involving empirical data collected over time from a well-defined case to explain the context and processes involved in the occurrence. It

examines a specific present-day event or action in a bounded environment (Creswell & Creswell, 2018:293; Saunders *et al.*, 2019:196). The case study's main objective and focus is to do intensive research on a specific case, such as an individual, group, institute, or community, in great depth, making it possible to identify essential factors, processes, and relationships (Creswell & Creswell, 2018:293; Leedy & Ormrod, 2019:276). Although case studies originated in clinical medicine, it is also widely used in social sciences (Vannini & Vannini, 2019:22). Yin (2018:33) elucidates that in case studies, the research questions are often of "how do?" character instead of "how should?", and its questions seek to explain some contemporary circumstance (e.g., 'how', or 'why' some social phenomenon works). It describes real-life phenomena within their natural setting rather than developing normative statements (Leedy & Ormrod, 2019:276). These specific traits of a case study allow the researcher to focus on an individual's behaviours, attributes, actions and interactions (Rashid *et al.*, 2019:5). Case studies are a preferred strategy when the researcher has little control over events and when the focus is on a contemporary phenomenon within some real-life context. It leads to rich empirical descriptions, and can construct new theories (Ridder *et al.*, 2014:374; Yin, 2018:37). They are used in exploratory studies (Saunders *et al.*, 2019:197), making them suitable for this study, which also has an exploratory research design nature. The narrative enquiry, grounded theory, ethnography and actions research were unsuitable for this study for various reasons.

The narrative enquiry has similarities with the case study research as they both use in-depth interviews to collect data. However, the case study has more control than the narrative enquiry, in the sense of having an interview transcript, whereas the narrative enquiry believes that the experiences and stories of the participants must be collected and analysed as complete stories (Creswell & Creswell, 2018:55; Saunders *et al.*, 2016:188). It was unsuitable for this study because the information gathered from narrative research is often retold or re-storied by the researcher into a narrative chronology.

Grounded theory is also advised by Saunders *et al.* (2019:197) as one of the qualitative research strategies. It was not chosen for this study due to three reasons. As contrasted to grounded theory, case study research is best suited for providing an in-depth understanding of a case, whereas grounded theory focuses on grounding a

theory in the views of participants (Mfinanga *et al.*, 2019:55). Case studies also study a program of more than one individual. Still, grounded theory collects data from 20 to 60 individuals and is most commonly used when there are no existing theories regarding the process that is of interest to the researchers, so it is to generate or discover a theory (Elkatawneh, 2016:6; Mfinanga *et al.*, 2019:54). Furthermore, data analysis of grounded theory researchers analyse data through open coding, axial coding, selective coding, while case study researchers analyse data by describing the particular case and its various aspects (Mfinanga *et al.*, 2019:54).

Ethnography research is another approach used in qualitative methods to answer the research questions (Saunders *et al.*, 2019:200). Ethnography and case study research similarities reside in their holistic nature and the extended period (Harwati, 2019:151). They are both popular detailed qualitative studies used in social sciences (Harwati, 2019:150). However, the main purpose of the ethnography approach aims to observe and explore cultural phenomena and to understand the relationship between people and their social environment (Harwati, 2019:151). At the same time, a case study aims to describe the nature of phenomena through a detailed investigation of the case, situation, or individual to uncover complex issues (Yin, 2018:86). In case studies, the researcher does not have to live in a particular community, however, in ethnography studies, the researcher has to spend a considerable amount of time inside a specific community. In other words, the close relationship between the researcher and the researched becomes the main characteristic of this approach (Harwati, 2019:151).

Action research is the fifth research strategy in qualitative studies. It is an emergent and iterative inquiry process designed to develop solutions to real organisational problems through a participative and collaborative approach (Saunders *et al.*, 2019:203). Action research is suitable for medium to long term research projects rather than the short-term (Saunders *et al.*, 2019:204). The researcher in action research is a reflective practitioner who observes what happens in the social context and then identifies a problem that needs to be addressed and addresses it. Action research is seen as the intervention when radical change is required (Denzin & Lincoln, 2017:72). In contrast, the primary purpose of the case study is to know more about the case by exploring it within its natural life setting (Saunders *et al.*, 2019:195). Therefore, this

case study's objective was to explore the NGC's efficacy in uplifting smallholder farmers.

Although the study is concerned with exploring the efficacy of the NGC business framework in uplifting smallholder farmers, the fact that NGC is not yet adopted across South Africa but is only piloted in Limpopo implies case study research is more suitable. Case study research design is critical for responding to the nature of the study to limit the research only to NGC in Limpopo for necessary generalisation to be made on whether or not to adopt NGC for smallholder farmers across the country. Assuming the case study method for this study will also allow the researcher to record the context surrounding the specific case study. It includes the physical environment for greater exploration and understanding of the subject. Therefore, the qualitative case study was the optimal research strategy for this study, as it allowed the researcher to examine the NGC through the exploration of responses within its context by use of a variety of information sources and a variety of lenses, allowing for rich description and understanding of the context of the research (Saunders *et al.*, 2019:197). This also reveals multiple facets of the phenomenon to understand how the NGC was implemented and how it helped uplift smallholder farmer businesses (Quero *et al.*, 2017:416).

Similarly to Myataza (2019:37), the challenges incurred in this case study are addressed as follows: 1) The result was not generalised. It is, however, a challenge to generalise the findings of the case study method because they are generated with a small group of entities (Cohen *et al.*, 2007). The application of generalising was made where the researcher identified similarities. 2) The researcher interpreted data as it merged from the participant's point of view. 3) The researcher applied transparency to check information accuracy with the study participants. 4) Triangulation of data with organisational documents is also used.

A case study may be a single case or multiple cases (Braidotti, 2019a:13). Multiple case study connotes a multidimensional case study research design where several bounded studies are undertaken on the same phenomena in different locations or organisations to aid comparison and contrast between cases to extract the best practices as well as the complexities to avoid (Markham, 2020:227). It contrasts with

a single case study, which is often focused on a single organisation or geographical area, aiming to explore a specific concept in detail. Fullagar (2017:247) notes that the nature of the research project dictates research design selection, aim, objectives and questions. This research opts for a single case study. This is because a single case study suits the nature of this study, which aims to explore the NGC's efficacy in Limpopo to identify its successes and complexities and determine whether or not it should be extended across the country. Yet, as a single case study was being used to achieve that, it was also blended with an exploratory research design to complement the in-depth diagnosis and elicit rich information on the questions of 'who', 'why', 'how', 'where', 'what', and 'when' of NGC implementation in Limpopo. Also, the small sample size allows an in-depth and detailed understanding of the phenomenon (Yin, 2018:85). A single case study takes less time than multiple case studies. The other important choice concerns are the study's time horizon.

6.7. TIME HORIZON

There are two choices of time horizons when conducting research, a cohort study, also known as a longitudinal study, and a cross-sectional study. Longitudinal studies are conducted over a long period on a group of people that share certain homogenous characteristics and have experienced similar events in a given period (Creswell & Creswell, 2018:239). The data is taken at two or more different points in time to examine the development of ideas and trends and to specify how certain conditions and their underlying processes change over time (Creswell & Creswell, 2018:53; Yin, 2018:83). The longitudinal study is commonly used in medicine and pharmacology studies, indicating why it was not used in this research because it would not produce immediate outcomes that respond to the goal and objectives of this study. Most projects undertaken for academic studies are time-constrained studies of a particular phenomenon at a specific time. Many case studies are based on interviews conducted over a short period (Saunders *et al.*, 2019:212), making it more suitable for this study. The cross-sectional design was thus more conducive for this study, as it allows data to be collected at one point in time (Creswell & Creswell, 2018:239). Furthermore, cross-sectional studies may use qualitative or mixed methods research strategies, making it more suitable for this study.

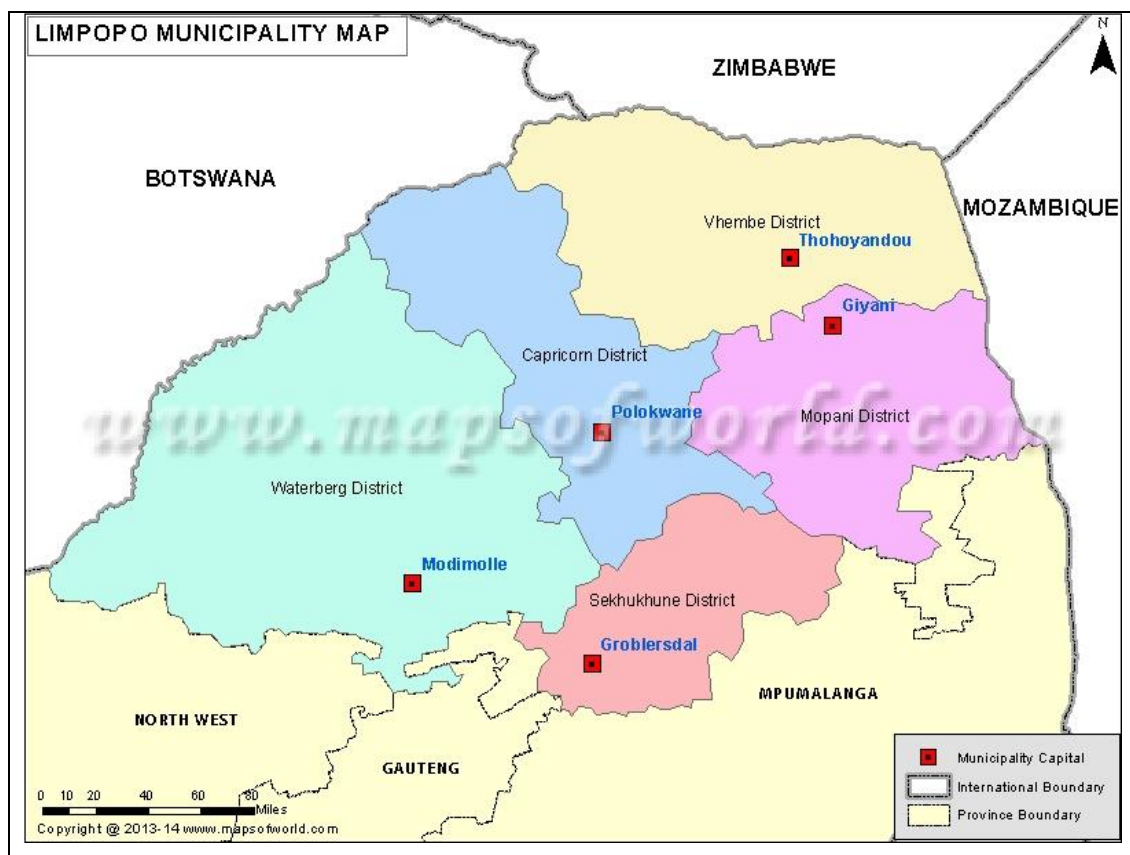
6.8. DESCRIPTION OF THE STUDY AREA

Marshall and Rossman (2016:44) suggest that the rationale for the site selected should be well outlined so that the reader can gain an understanding of the setting.

6.8.1. Selection of the Study Area

All the farmers in the case study reside within the Vhembe District, Limpopo Province, South Africa. The Vhembe District borders Botswana in the northwest, through the Kruger National Park with Mozambique in the east, and with Zimbabwe in the north. In the southeast, the province forms the border with Mpumalanga Province, Gauteng Province in the south and lastly, the North-West Province in the southwest (Mulaudzi *et al.*, 2019:779). It comprises five districts, namely: Mopani, Vhembe, Capricorn, Sekhukhune and Waterberg (Nesengani *et al.*, 2016:119) (see Figure 6.2.).

Figure 6.2: Map showing all districts of Limpopo Province



Source: Maps of the world, n.d.

The Mopani and Vhembe districts are considered to be the major producers of fruits and vegetables, while the other three districts are dominated with livestock and a few vegetable and fruit enterprises.

The present study will be carried out in the Vhembe District Municipality which is situated approximately 184 km north of Polokwane. This district municipality is comprised of Musina, Thulamela and the Makhado Local Municipalities which are within close proximity to each other. The district has a population of 1,232,218 people, with 90% residing in rural areas (Mulaudzi et al., 2019:779).

6.8.2. Choice of Commodities

International experience has shown that an important strategy for increasing the incomes of smallholder farmers in developing countries is to help them diversify from low-value staple food commodities into higher-value commodities (Baloyi, 2010; FAO, 2018:5). Vegetables are an ideal cash crop for commercial and smallholder farmers in developing and developed countries (Zewdie *et al.*, 2020:9). Tomatoes are preferred commodities for the NGC pilot because they are high-value crops commonly produced in the Limpopo Province and South Africa (Kom *et al.*, 2020:689). These high-value commodities can play a significant role in changing the lives of rural farmers in the province (Kom *et al.*, 2020:689), particularly when the NGC can address the production and marketing challenges confronting smallholder farmers along the value chain. Even households that may not benefit directly can reap indirect benefits through increased demand for hired labour in the value chain.

6.9. DEVELOPMENT OF THE SAMPLE PLAN

6.9.1. Population

Saunders *et al.* (2019:812) define a population as a complete set of cases or group members. A target population refers to the total number of people or organisations that are the main focus of the study (Myataza, 2019:37).

6.9.2. Sample

Saunders *et al.* (2019:295) advise that the sample selected should be related to the population highlighted in the research question and objectives, which, in this case, was done by selecting all the NGC farmer members. This choice is supported by Boddy (2016:429), who stated that the choice of the study sample is determined by the study's main objective and the question it wants to answer. Therefore, to answer the main research question and gain a rich understanding, it was consistent with the case study design to consider selecting all the participants (NGC members) (Creswell & Poth, 2018:376). According to Starman (2013:35), the primary objective of a case study is to understand the specific case being investigated, rather than focusing on defining populations or selecting samples as in other research approaches. The idea of representative sampling and statistical generalisations to a broader population should be rejected, and analytical induction should be chosen instead (Starman, 2013:35).

Thus, for this study, the researcher decided to include all sixteen farmers and the other stakeholders that may contribute to this study.

6.10. DATA COLLECTION

Niraula (2019:001) reasons that data collection connotes the systematic approach and techniques used for eliciting and analysing data that respond to the outlined research objectives and questions. The motive behind data collection is typically to gather relevant data that enables analysis and helps address the research question and objectives, ultimately bringing the entire research process to a conclusion (Kabir, 2016:46). However, despite the research philosophy, design and methods used in the study, the overall integrity of the collected data is often critical for leveraging the integrity of the study. The approach and methods used in data collection influence the overall level of validity and reliability in positivist research and credibility and trustworthiness in interpretivist research entailing the use of qualitative research methods (Niraula, 2019:001). But even if all forms of research share the importance of upholding the integrity, validity and reliability of the study, the methods used for data collection still tend to vary according to the research philosophy, design and methods used in the study. In such data collection processes, interpretivist studies entailing the use of qualitative methodologies often require data collection methods like interviews,

focus group discussions, observation and qualitative content analysis (Fox & Alldred, 2018:191). Similarly, the case study research approach also tends to prioritise the collection of qualitative data (see Section 6.6.1). As for the positivist study integrating quantitative methodologies, primary data is often collected using surveys, case studies, experimental methods and statistical content analysis (Saunders *et al.*, 2019:573). Thus, given these methodologies, data collection methods in this study first entailed using qualitative interviews with both the smallholder farmers and NGC implementation partners using the Interview Research Instruments based on the research objectives and questions for this study. Secondly, organisational documents were reviewed.

6.10.1. Semi-Structured Interviews

Semi-structured interviews were used to collect evidence from the sixteen smallholder farmers and the NGC implementing partners. This is because this research is based on an interpretivist research paradigm that mandates the use of qualitative methodologies, including qualitative interviews (Archibald *et al.*, 2018:5). In addition to the interpretivist paradigm, the nature of the study also necessitated the utilisation of qualitative methodologies. The study aimed to elicit detailed narratives reflecting insights on NGC impact, success, and failures, with the purpose of informing government decisions on the adoption of NGC nationwide. Such a view echoes Kabir's (2016:46) revelation that interviews refer to the person-to-person interactive method of data gathering in which the investigator asks questions, and the participant is expected to provide detailed responses and narratives to the question. In the contemporary research environment reflecting the emergence of new telecommunication technologies, Hunter and Brewer (2016:185) highlight that interviews can be face-to-face, telephonically or electronically involving the use of e-mails. However, face-to-face interviews were used in this study because most smallholder farmers are not technologically abreast with the existing modern telecommunication technologies like e-mails and telephones. Face-to-face interviews were also important for the researcher to be on the ground to leverage the effectiveness of the probe and re-probe technique. This approach facilitated the collection of more data than anticipated through the Interview Research Instrument.

Yet, as the study used face-to-face interviews, the interviews were also semi-structured, where questions were asked for smallholder farmers or the implementing partners to respond and then further probe and re-probe questions were asked. Such an interview approach was in tandem with Saunders *et al.* (2019:436) notion that interviews can be structured, semi-structured or unstructured. Structured interviews imply a rigid interview system that strictly adheres to the Interview Research Instrument, thereby prohibiting any deviations from the predefined questions or the inclusion of additional questions through probing and re-probing (Niraula, 2019:001). It contrasts with semi-structured interviews, in which additional questions can be asked to probe further new facts emerging from the participants' responses and unstructured interviews, which are often not all based on any pre-determined questions (Niraula, 2019:001). Thus, compared to structured and unstructured interviews, this research opted for semi-structured interviews because they were construed to offer a more systematic process of gathering and exploring more information from the participants. It provided opportunities for structured questions to be asked and then followed by further probe and re-probe questions. By this, semi-structured interviews therefore enabled this study to elicit more than the required relevant information on the impact, drivers and complexities of NGC implementation to uplift smallholder farmers.

Yet, as the study avoided structured interviews, it also avoided unstructured interviews for fear that they would induce even enormous amounts of irrelevant information to the study (Fox & Alldred, 2018:191). This being an academic study guided by the University research protocols, it is only semi-structured interviews that offer flexibility to deviate or add questions beyond those contained in the prior developed Interview Research Instrument approved by the supervisors. However, as the study avoided the use of unstructured interviews, the application of focus group discussions was also unnecessary and unsuitable. Indeed, interviews appear synonymous to focus group discussions. But interviews still differ from the process in focus group discussions. In interviews, data is collected on a one-on-one basis as contrasted to a focus group where a group of five to ten participants answer questions and offer their responses. The researcher tape records or takes notes to gather the relevant information (Fullagar, 2017:247).

Furthermore, the process of using focus group discussions to collect the required qualitative data is structured along specific six steps. These steps are to 1) include preparing the guide in the context of the research problem, objectives and questions, 2) decide the kinds of participants to invite for focus group discussions, 3) identify and train the moderator about the issues and questions in the guide, 4) select and notify the participants about the venue of focus group discussions as well as the dates and time, 5) conduct focus group discussions while tape recording or note-taking the proceedings, and 6) analyse and interpret the outcomes of focus group discussions.

Thus, focus group discussions could have been suitable for this research, but it was not easy to bring all the sixteen smallholder farmers together due to their different commitments and schedules in various areas of Limpopo. There was also fear that bringing all the smallholder farmers and NGC implementation partners together would create fear and unfavourable conditions for smallholder farmers to share their honest opinions about the dissatisfactions or satisfaction with NGC. This is further exacerbated by the fact that focus group discussions would bring smallholder farmers together with their leaders, inhibiting the possibilities for smallholder farmers to freely and honestly discuss sensitive issues such as NGC governance and management approaches by the leaders. Hence, the study opted for interviews that would maintain the principles of anonymity and confidentiality as signed with them and approved by the North-West University Research Ethical Committee. Such an approach created freedom and privacy for smallholder farmers to freely and honestly express themselves about all the sensitive issues to enable this study to reach logical conclusions about the efficacy of NGC business framework in uplifting smallholder farmers.

Yet, as the study used this approach, an observational method was irrelevant to the research aim, objectives and questions. The research aim, objectives and questions for this study were meant to analyse NGC's impact, success drivers and complexities. Such issues did not require the use of the observational method to elicit the required information. Instead, semi-structured interviews were found to be more suitable. Such a view aligns with Markham's (2020:227) definition that the observational method refers to the data collection method where the investigators submerge themselves in the data collection to use all their senses to study the behaviours of the subjects being

investigated in a particular setting as well as the surrounding environment. It is used to study new unknown behaviours for a specific setting and to answer questions like 'how' and 'what' of the phenomenon is being investigated and its surrounding environment (Pelias, 2019:89).

The observational method is often employed when it is crucial to understand the surrounding environment or settings to gain a comprehensive understanding of the phenomenon and draw the necessary logical conclusions (Wilson, 2016: 44). Unfortunately, none of such conditions emerged to necessitate the usage of an observational method in this research as contrasted to semi-structured interviews. Yet, as such conditions dictate the application of the observational method, it also tends to be casual and scientific, natural, subjective and objective, direct and indirect or participant and non-participant (Niraula, 2019:006). But just like the conditions for the application of an observational method that did not suit this study, none of such techniques for the observational method was also found relevant for the study to an in-depth diagnosis that investigates the impact, drivers and complexities of NGC in uplifting smallholder farmers as required in the research objectives and questions of this study. Given this study's resource and time boundness, all forms of observational methods were also considered to be slow, time-consuming and costly for this study to achieve its goals and objectives within the stipulated time. Yet, as the study used semi-structured interviews to achieve such research aims and objectives, the survey and experimental method were irrelevant.

The survey method is a quantitative data collection approach that involves using a Likert-scale questionnaire to gather data from a large number of people reflecting their perceptions and opinions about the concept for investigation (Thackray, 2018:299-313). Since the survey method is based on the Likert-scale questionnaire, the survey method tends to produce only summarised statistical data that do not offer underlying insights about the respondents' opinions or even about the 'how', 'why', 'where', 'what' and 'when' of the concept being investigated (Kabir, 2016:49). Thus, since positivism and quantitative methodologies were avoided for their strong reliance on summarised statistics and lack of details, survey method was also found less suitable for unearthing all underlying information about the impact, drivers and complexities of NGC in uplifting smallholder farmers. Similar explanations also apply for the reason why the

experimental method was avoided in this research. This view is based on Kennedy's (2018: 31) explanation that the experimental method is often constrained to evaluating a specific scientific concept or question to test and validate or dispute its associated hypothesis. Since this implies the experimental method is a scientific data collection method, it is therefore unsuitable for this study that falls under social sciences and humanities.

This study also avoided all forms of statistical approach; it relied on statistical content analysis using basic statistics and qualitative content analysis to evaluate the existing secondary data on implementing NGC to uplift smallholder farmers. As such, analysing secondary qualitative and quantitative data to discern the current position in the NGC implementation to prepare questions and issues raised during the semi-structured interviews, a case study was accompanied by semi-structured interviews. The semi-structured interviews were based on the two pre-designed interview research instruments and aligned with the research objectives and questions. This was to ensure that the semi-structured interviews with NGC smallholder farmers and implementing partners produced in-depth qualitative data that accurately responded to the research topic, objectives and questions. This is because despite having a shared understanding and knowledge about the success and failures of NGC, the two sets of participants tend to face different dynamics regarding the NGC pilot project's implementation. Thus, the usage of the two Interview Research Instruments aided in eliciting the required information from smallholder farmers' angles and the NGC implementing partners' perspectives.

The Interview Research Instrument for NGC smallholder farmers in the Vhembe District consisted of four main sections (see Appendix B: Interview Research Instrument: NGC Smallholder Farmers). Section A examined NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality. Section B analysed the drivers of NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality. Section C assessed the challenges of NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality. Section D evaluated the measures for improving NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality.

The Interview Research Instrument for NGC implementing partners consisted of four sections, (see Appendix C: Interview Research Instrument: NGC's Implementing Partners). Section A examined NGC's implementing partners' roles in facilitating the implementation of NGC pilot project. Section B assessed the impact of NGC in uplifting smallholder farmers. Section C analysed the complexities of NGC implementation in South Africa. Section D evaluated NGC implementing partners' proposals for improving NGC implementation.

In other words, the two interview research instruments contained four main sections reflecting sets of questions to accurately respond to the research objectives and questions outlined in Chapter 1. Thereby, it entails analysing the challenges confronted by South African smallholder farmers, NGC smallholder farmer members' views on challenges they faced before the implementation of the NGC in South Africa. It also responded to the research objectives and questions that explored the key design and implementation features of the South African NGC, views and perceptions of the NGC farmer members on the NGC framework, its contribution in uplifting their businesses, income and socio-economic impact of NGC, and the level of the implementation of the NGC practices by the newly-formed NGC.

Yet, as each of the two Interview Research Instruments was being designed, only simple and unambiguous statements were used to ensure that all the participants could interpret and respond to all the questions with the requisite precision. Such initiatives were accompanied by fact-checking and pilot testing of the two Interview Research Instruments on three participants, including experts from the agriculture and agribusiness domains. This was further followed by the consultation with the academic supervisors for this study to ensure the Interview Research Instruments and the questions contained therein were well designed. Mistakes that were identified by three pilot participants, experts and the academic supervisors were corrected prior to the commencement of the actual one-on-one and face-to-face semi-structured interviews with each of the sixteen smallholder farmers in Vhembe District and the two representatives from the NGC implementing partners in Gauteng Province.

After the overall veracity of the two Interview Research Instruments had been confirmed, formal preliminary telephonic calls were conducted with key leaders of the

NGC smallholder farmers, and managers from the implementing partners. These calls aimed to establish rapport, provide a brief overview of the upcoming study, and inform them about the study's objectives. Subsequently, formal letters of request and consent were sent to the participants, outlining the study's details and seeking their agreement to participate. For NGC implementing partner organisations, such preliminary communication was also aimed at identifying the units and managers that are in charge of NGC pilot project's implementation so as to know who to contact and deal with when sending the formal letter of request and consent to participate in the study.

Nonetheless, following the preparation of all key NGC smallholder farmers, implementing partners, and managers through telephonic communication, formal emails were sent after a week. Formal physical delivery of the letters of request and consent to participate in the study were also sent to the participants. The letter of request and consent for the designated managers and the implementing partners were delivered through e-mails, and the ones to the sixteen NGC smallholder farmers were primarily delivered using a combination of both e-mails and formal face-to-face physical delivery. Before the letters of request and consent were delivered to the smallholder farmers, they were translated by a language expert from English into Tshivenda, the language spoken by NGC smallholder farmers. This was after establishing, through the preliminary telephone conversation with farmers that not all could read nor understand English to the level required to effectively express themselves in the semi-structured interviews.

Thus, for both letters of request and consent in Tshivenda language and English, the contents highlighted the nature, purpose, motivators and the objectives of the study (see Appendix A: Letter of Request and Consent to Participate in the Study). The letter elucidated that the nature of the study is arising from the fact that following the introduction of the NGC pilot project for uplifting the smallholder farmers in Vhembe, there has been need for the analysis of the extent to which it has been effective or ineffective in uplifting smallholder farmers. It reiterated that such analysis is important for assessing whether the government must adopt NGC and implement it for smallholder farmers across South Africa. To accomplish that, all the smallholder farmers and the implementing partners were informed that the purpose of the study is to assess the overall NGC socio-economic impacts on smallholder farmers and the

limitations being experienced so as to discern the improvement strategies that can be adopted. Thus, smallholder farmers and implementing partners were informed that although the study is purely academic, their participation is still important for providing critical information that would influence government decision on how to improve NGC business framework and replicate it across South African smallholder farmers.

However, all smallholder farmers and implementing partners were still informed through the letter of request and consent that decision to participate in the study is voluntary and not mandatory where they could choose to participate or not participate. But even if they elected to participate, they could still discontinue their participation at any time without adverse consequences. They were also informed that no information obtained from the semi-structured interviews would be linked to the identity of any smallholder farmer or implementing partner to maintain anonymity and confidentiality. The request and consent letter to the smallholder farmers and implementing partners further reiterated that all qualitative data obtained about NGC are going to be used in this research report and for publication in different local and international academic journals (without linking any information to the identity of any smallholder farmer or implementing partner representative that participated). Smallholder farmers and implementing partners were also notified that all the qualitative data obtained from the semi-structured interviews would be used in this thesis and stored in the North-West University campus archives for future studies and decision-making purposes. In the context of all these, smallholder farmers and the implementing partner representatives were requested to sign the informed consent form acknowledging being informed about such terms and conditions and to accept to participate in the study.

Given that NGC implementation in Vhembe is just a pilot project, smallholder farmers feel privileged to be pioneer smallholder farmers associated with such a project. All sixteen smallholder farmers were willing, consented and signed the informed consent form to participate in the semi-structured interviews willingly. Likewise, NGC implementing partner organisations were also willing. They agreed to participate in the study because they permitted the designated number of personnel and managers from their organisations to participate in the semi-structured interviews. However, because all the sixteen smallholder farmers are located in Vhembe District in Limpopo Province, and all the implementing partners are based in Gauteng Province, the semi-structured

interviews were structured according to two phases. The first phase involved getting staged in Vhembe District Municipality, Limpopo Province to cut travelling costs and conduct semi-structured interviews with each of the sixteen smallholder farmers. Each of these sixteen farmers was contacted to decide the date and convenient place to conduct the semi-structured interviews and to allocate some ample time to participate in the semi-structured interviews.

Thus, during the semi-structured interviews with each of the farmers (see the questions under Section A) examined the NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality. The questions were individually read to the participant and allowed ample time to respond, elaborate, or even ask questions and exchange views with the researcher. During each of the sixteen semi-structured interviews, participants provided narratives in response to the questions. Probe and re-probe questions were employed to delve deeper into their responses, allowing for the exploration and understanding of new facts that emerged throughout the interviews, thus enriching the responses to the question.

Similar semi-structured interview processes were also followed for each of the questions under Section B that analysed the drivers of NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality. Each of the questions under Section C that assessed the challenges of NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality was also subjected to the same semi-structured interview process. The same also applied to each of the questions under Section D that evaluated the measures for improving NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality. Nonetheless, after the completion of the semi-structured interviews with each of the sixteen smallholder farmers, the researcher returned to Gauteng Province to conduct the second phase of the semi-structured interviews with each of the representatives from the implementing partner organisations.

Each of these representatives was contacted to set a convenient date, time and venue for the semi-structured interviews. Like for smallholder farmers, during the semi-structured interviews with each of the personnel or managers from NGC implementing partners, each question under Section A examined the NGC implementing partners'

roles in facilitating the implementation of NGC pilot project. The questions were also individually read to the designated manager, who was permitted to respond elaboratively. As they elaborated, new insights emerged from their responses and a better understanding of the smallholder farmers' responses developed during the first phase of semi-structured interviews. The managers were probed and re-probed to further explore specific issues about the implementing partners' roles in NGC implementation. Similar semi-structured interview processes were also used for each manager, and each question under Section B assessed the impact of NGC in uplifting smallholder farmers. A similar process was used for semi-structured interviews with each manager and each question under Section C that analysed the complexities of NGC implementation in South Africa and for each question under Section D that evaluated NGC implementing partners' proposals for improving NGC implementation.

In other words, all these detailed two phases of semi-structured interviews enabled eliciting of more than enough in-depth information about the efficacy as well as inefficiencies of NGC pilot project implementation to uplift smallholder farmers. Yet as interviews were beneficial in collecting the qualitative data, organisational documents were also used for data triangulation as part of credibility and trustworthiness.

6.10.2. Triangulation

Data was collected through multiple sources, including interviews, and document analysis (organisational documents), which is called triangulation of data (Creswell & Creswell, 2018:331). Triangulation is a strategy commonly used to increase the credibility and validity of the research findings when multiple methods or sources of data are used in one study (Denzin & Lincoln, 2017:779; Leavy, 2017:153; Yin, 2016:87). It is a way to confirm insights gleaned from different informants or different sources of data, and observers also gain a more profound and clear understanding of the research setting and respondents under investigation (Taylor *et al.*, 2016:93). These authors further explain that this approach involves combining various data sources that have been examined by different people, in different places, and at different times. Denzin & Lincoln, (2017:779) distinguish four types of triangulations, namely data triangulation, theoretical triangulation, investigator triangulation, and methodological triangulation. Investigator triangulation, also known as researcher

triangulation, refers to having two or more researchers study the same topic and compare their findings or monitor or rectify an individual's subjective bias. Theoretical triangulation entails examining the data from multiple theoretical perspectives to allow for the emergence of various interpretations. Whilst methodological triangulation involves using different methods to collect data on the same phenomenon. In the current study, methodological triangulation was employed, which involved analysing the in-depth interviews conducted with the respondents and examining relevant organisational documents.

By utilising methodological triangulation, the study aimed to enhance the comprehensiveness and validity of the findings by gathering data from different sources and employing different research techniques. The in-depth interviews provided rich qualitative data by directly capturing the perspectives and experiences of the respondents. On the other hand, the analysis of organisational documents offered additional insights and context related to the research topic.

Combining these two methods allowed for a more comprehensive understanding of the phenomenon under investigation, complementing each other's strengths and providing a more robust foundation for drawing conclusions.

6.10.3. Organisational documents

Yin identifies the most important use of organisational documents as corroborating and augmenting the evidence from other sources (Yin, 2018:142). Public and internal company documents were chosen and reviewed for their theoretical relevance in the analysis. NGC public documents, stories and the contextual background for the case study on the website were reviewed as valuable repositories of information as also guided by Taylor *et al.*, (2016:93). Internal company documents such as the NGC monthly reports, company registration documents, letters, memos, correspondence, contracts, meeting minutes, financial statements, payment schedules, and diaries provided an important data source. These documents were not reviewed as objective data but to lend insight into organisational processes and alert the researcher to fruitful lines of inquiry.

Written documents also help the researcher to analyse historical and public documents to gain a broader perspective on a setting. Through a historical perspective, researchers can view a setting in the context of its past and about other settings (Taylor *et al.*, 2016:93). The documents available for the NGC are identified in Chapter 7 (section. 7.3.1). They were identified and obtained during interviews with NGC members and implementing partners. While it is a simpler process compared to the interviews, collecting organisational documents presented its own challenges.

The first challenge was determining which documents were theoretically relevant. Therefore, careful questioning of the NGC executive committee and NGC implementing partners were consulted to determine which documents existed and were relevant to the study. The second challenge was gaining access to the documents, as many were internal documents that the NGC was nervous about sharing with the researcher. Therefore, careful assurances were made about ensuring the anonymity of the NGC, and the researcher was careful to explain exactly how the documents were to be used. These assurances were sufficient in most, but not all cases, to gain access to the necessary documents for this study.

A list of relevant documents was created to ensure the collection of relevant case study documents. The process for developing this list was similar to setting the interview guide in that it started with the main themes of this study. The strategic criteria relevant to the internal communication process in the NGC context were considered in each theme to determine if an organisation's specific document had the potential to provide insight into it. This process resulted in identifying eleven categories of organisational documents applicable to the study. First, the company registration documents, monthly reports, meeting minutes, website and organogram were identified as potentially providing background information for the case and the NGC's particular context. Second, the organisation's strategy, letters, memos, correspondence, contracts, meeting minutes, financial statements, payment schedules, and diaries were identified as potentially providing insight into the planning and implementation of the NGC, which answers research objectives 3 and 6. The specific documents used for the case study are indicated in the case descriptions in Chapter 7.

Once all the required qualitative data had been obtained, the two qualitative data sets from the smallholder farmers and NGC implementing partners were subjected to data analysis.

6.11. DATA ANALYSIS

According to Gibbs (2018:5) and Padgett, (2016:212), qualitative research generates a vast amount of data, which must be processed utilising analytic procedures into a clear, understandable, insightful, trustworthy, and even unique analysis. Data analysis is essential for turning massive amounts of data into defensible, actionable findings and reports, allowing data analytics to achieve its full potential (Flick, 2014:13). The purpose of data analysis in qualitative studies is to generate explanatory concepts, models, and methods (Grbich, 2013:26; Taylor *et al.*, 2016:169). Qualitative data analysis additionally describes a phenomenon in greater detail, the special features and links of a group, or develops a theory of the phenomenon under study (Flick, 2014:5,6).

During the analysis process, the researcher employs a systematic approach and takes three precautions: checking and rechecking the accuracy of the data; making the analysis as thorough and complete as possible rather than cutting corners; and continually acknowledging any unwanted biases imposed by own values when analysing the data (Yin, 2018:184). Yin additionally points out that analysing qualitative research does not follow any rules, neither is undisciplined, but in undertaking a qualitative analysis, researchers need to follow the approach which they consider to be the best fit for their overall research design and the nature of their evidence (Yin, 2018:185). As illustrated on Table 6.1, various approaches have been documented for analysing qualitative data including Yin's five-phased cycle approach, Miles and Huberman, Bengtsson's content analysis process, O'Connor and Gibson's "Five Step-by-Step Approach" to Qualitative Data and Analysis and Morse and Field approach.

Table 6.1: Qualitative data analysis

Analysis approach	Description	Source
Yin's five-phased cycle approach	Yin's approach includes follows: Compiling, Disassembling, Reassembling (and Arraying), Interpreting, and Concluding in data analysis	Yin, 2018:185
Miles and Huberman	Is done by putting information into different arrays, reflecting different themes and subthemes, making a matrix of contrasting categories and placing the evidence within such a matrix; creating visual displays—flowcharts and other graphics—for examining the data; tabulating the frequency of different events, and putting information in chronological order or some other sequence	Creswell and Creswell, 2018:215
Bengtsson's content analysis process	Bengtsson's content analysis process includes four main stages: the decontextualisation, the recontextualisation, the categorisation, and the compilation stage to draw realistic conclusions	Bengtsson (2016:11)
O'Connor and Gibson's "Five Step-by-Step Approach to Qualitative Data Analysis"	It is a five step by step approach to qualitative data analysis where thematic analysis is integrated with narrative analysis	O'Connor and Gibson's (2003)
Morse and Field approach	Morse and Field identify four steps to qualitative data analysis, which are: comprehending, synthesising (decontextualising), theorising and recontextualising	Morse and Field (1995:103)

Source: Adapted from Bengtsson (2016:11); Creswell and Creswell (2018:215); O'Connor and Gibson (2003); Morse and Field (1995:103); Yin (2018:185).

The four cognitive phases of qualitative analysis proposed by Morse and Field (1995:103) are useful in organising and analysing the evidence in this study. This method of data analysis was chosen because of its clear distinction between the various steps of analysis, namely 1) comprehending, 2) synthesising (decontextualising), 3) theorising, and 4) recontextualising (Morse & Field, 1995:103). The success of each phase depends on the ones that came before it. In addition, the Morse and Field approach has been implemented successfully as a method of

analysis in the academic work of management and marketing disciplines (Maritz, 2012). The following section discusses the steps and processes used during the study's four phases of data analysis.

6.11.1. Comprehending

Comprehending is about the researcher learning everything they can about what is going on, from both the literature and the research site, but holding off from making judgments at the literature review stage, so they can recognise when they are seeing something new. Comprehending provides the basis for rich description (Bazeley, 2020:328) to avoid tainting the evidence with a viewpoint. It is maintained separately from the information acquired during the evidence analysis and does not reflect prior theories (Morse & Field, 1996:26). Post-coded thematic analysis was applied to create this separation. Post-coded or open-coded themes develop from the data during analysis rather than being pre-determined by theory (Henning, 2004:105). The analysis of the responses was not directly related to the themes and constructs developed in Chapters 2 to 5, even though the interview questions were. Given the study's exploratory nature, this point is crucial because it allowed for the emergence of new themes and patterns in the evidence.

The core aspect of achieving comprehension of coding is the assignment of simple words or short phrases to capture the meaning of a larger portion of (the original) textual or visual data (Yin, 2018:365). The researcher starts by understanding how the data relates to broader conceptual issues (Yin, 2018:196). After preparation, the data is imported into the application. The data must be coded and reviewed to eliminate redundancy and overlap (Creswell & Creswell, 2018:310). The codes are grouped into themes representing a common idea (Creswell & Creswell, 2018:310). Themes are the broader levels of analysis that enable discussions of the research question. The codes were grouped and regrouped during this procedure to form meaningful themes. Similarly, by grouping issues with similar codes together, categories are also created (Jegade, 2021:174). Some field experiences maybe sufficiently similar with their codes belonging to a similar but even broader category, representing an even higher conceptual level (Yin, 2018:196).

Before coding, the researcher identified common speech data in the transcripts. Irrelevant comments were deleted from the transcripts to create, without loss of meaning, the core information provided by each research participant. After the interview transcripts were refined, the data was then coded using a line-y-line analysis approach recommended by Morse and Field (1995:104). The ATLAS.ti qualitative data analysis software was used to assign specific codes to specific keywords in the transcripts, allowing the researcher and anyone reviewing the analysis to understand how the tagged lines of analysis are arrayed throughout the document (Yin, 2018:214, Saunders *et al.*, 2019:694). Once the researcher was fully versed with the data and affirmed that the point of saturation had been achieved, comprehension was reached. The ATLAS.ti project file and the codebook detailing the assigned codes can be accessed by following this link:

https://drive.google.com/drive/folders/1RJTTW8_HQh8bPIRTbQopAkjGn2Q-ey23?usp=share_link

Both organisational documents and the literature provided in Chapters 2 to 5 allowed for the full comprehension of the existing theory and concepts in this study. The organisational documents were firstly analysed to gain a background understanding of the case being investigated. In addition, following the coding of the interview transcripts, the organisational documents were reviewed the second time to determine their support or contradiction of the themes arising from that process. This process allowed the researcher to understand the challenges that confronted these smallholder farmers before joining the NGC and the key design and implementation features of the South African NGC, thus starting to fulfil objectives 2 and 3. The evidence was strengthened by reviewing both documents and transcripts, as it was possible to identify where they corroborated and contradicted the picture each drew of their particular case. This contextual analysis is important, given the postmodern approach to this study and the importance of context to the research phenomenon. The individual case descriptions are included at the beginning of Chapter 7.

6.11.2. Synthesise

Once case comprehension is completed, to meet the study objectives fully, there needs to be a synthesis of the case understanding. Data synthesis sifts and 'shakes

off' less important facets as you consider each additional case and moves to a more aggregated, abstract picture and merges instances or events to describe typical or composite patterns and generate common themes (Balezey, 2021:328). It requires the researcher to synthesise, condense and conceptualised participants' statements to make their tacit understandings explicit (Järvinen & Meyer-Mik, 2020:204). At this stage of the research, the researcher is very familiar with the topic and confident to describe the topic without refereeing to notes (Morse & Field, 1995:105) as cited in (Goldberg, 2018:251). Synthesis techniques include; studying large amounts of data, learning the meanings rather than making assumptions in transcripts to get the real meaning of the terms used, and then organising the large chunks of data (Järvinen & Meyer-Mik, 2020:210). The synthesis step allows for the interpretation of data to warrant presumed common findings between data and support valid findings (Yin, 2018:248). Yin also explains that Atlas.ti, HyperRESEARCH, NVivo, or ethnography are all examples of computer-assisted qualitative data analysis software that can be used. They essentially help code and categorise large amounts of data from interviews and documents. However, the researcher needs to study the outputs themselves to determine any emerging meaningful patterns (Yin, 2018:214).

The synthesis process of the present study was conducted by comparing the interview transcripts across all research participants' answers and identifying numerous similarities and differences. The ATLAS.ti software was used to create the codes, categories, and themes for qualitative data analysis. This was done for the smallholder farmer interview transcripts (Project 1) and the implementing partners farmer interview transcripts (Project 2). The study's codebook presents the individual codes, the groups into which they were categorised, and the themes detected for both projects. The codebooks can be accessed by following this link:

https://drive.google.com/drive/folders/1RJTTW8_HQh8bPIRTbQopAkjGn2Q-ey23?usp=share_link

Through data synthesis and category analysis application, four themes were identified with 12 interpretation categories based on the information derived from the interview transcripts for Project 1 (see Table 6.2). For Project 2, four themes with five categories were identified (see Table 6.3).

Table 6.2: Interpretation categories and themes: Project 1: Smallholder farmers.

	Category (A)	Category (B)	Category (C)	Category (D)
Theme 1: New Generation Cooperative's <i>efficacy</i> in the upliftment	Assistance	Community		
Theme 2: <i>Drivers</i> of New Generation Cooperative's <i>efficacy</i> in the upliftment	Management	Farmers	Finances	Performance
Theme 3: <i>Challenges</i> of New Generation Cooperative's <i>efficacy</i> in the upliftment	Land	Links	Challenges	Training
Theme 4: <i>Measures</i> for improving New Generation Cooperative's <i>efficacy</i> in the upliftment	Improvement	Partnership		

Table 6.3: Interpretation categories and themes: Project 2: Implementing partners.

	Category (A)	Category (B)	Category (C)	Category (D)
Theme 1: The <i>role</i> of NGC implementing partners in the implementation of the NGC pilot project	Responsibilities	Networking		
Theme 2: The <i>impact</i> of the NGC in uplifting smallholder farmers	Contribution			
Theme 3: The <i>complexities</i> of NGC implementation in South Africa	Challenges			
Theme 4: The <i>proposals</i> of NGC implementing partners for improving NGC implementations	Improvement			

Tables 6:2 and 6.3 show that the in-depth interview responses from both projects were divided into interpretive categories and themes. Each response was categorised to show the similarities and differences discovered through analysis of the interview transcripts. Data synthesis was assisted by the coding in step 1 (comprehension), as the codes created in the first phase made it possible to classify the texts received from the interview transcripts into the appropriate categories found in step 2. The ATLAS.ti software was used to create the codes, categories, and themes for qualitative data

analysis. The study's codebook presents the individual codes, the groups into which they were categorised, and the themes detected. Empirical findings from the above analysis are found in Part I (section. 7.3) and Part III (section. 7.4) of Chapter 7.

6.11.3. Theorise

The next step of Morse and Field's qualitative data analysis approach after synthesising is theorising. Bazeley (2020:328) defines theorising as a stage of formulating 'best guesses' regarding explanations (recognising that theory is not fact), and in the process, asking follow-up questions about the data and taking into account other sources to connect to a wider body of knowledge, and until the "best" theoretical scheme is developed (Morse & Field, 1995:32).

The process of theorising involves understanding each individual's interpretation of their experience of particular events. The findings should be presented as a set of interrelated concepts, not just a listing of themes to achieve theory building. The unifying explanatory scheme raises findings to the level of theory (Bazeley, 2020:328). Several strategies can be used to assist theorising. The study used what Bazeley (2020:331) describes as theory building, which begins with a few scrappy ideas and is couched in terms of possibilities. Ideas are developed, specifying the concepts one is working with and identifying more or less predictable relations between them, constantly shifting between empirical data and reflection regarding the larger significance of what you see. The conclusions will have higher confidence if one systematically increases the evidence by developing hypotheses based on the data and testing them against further data, as well as by comparing the findings to the findings of other studies. At some stage in the process, building towards a substantive theory from your data will require deliberate engagement with existing frameworks and understanding.

In this study, theorising was conducted through the literature review (Chapters 2 to 5) and the data collected during the empirical part of this study were analysed. This allowed for challenges faced by smallholder farmers and agricultural cooperatives to be theorised and to formulate why the establishment of the NGC in South Africa is important. This process continued until the optimum, and most adequate explanation

of the data was found. The results of this process are integrated in Chapter 7, and conclusions are presented in Chapter 8.

6.11.4. Recontextualise

The evidence analysis process's final phase in line with Morse and Field's approach to qualitative data analysis, is recontextualisation. Bazeley (2020:329) explains two points about the recontextualisation stage, 1) it shapes what has been synthesised for applicability to other settings and contexts (its practical application), linking what was found with established knowledge and 2) it recontextualised theory established in stage 3, leading to fresh interpretation and potentially to a modified theoretical framework (Bazeley, 2020:336).

The theorising phase described above is a process of generalising from the specific cases to the current theory in the field. Conclusively, the overall qualitative data analysis was again drawn to discern how the overall structure of key themes offers the required insights on NGC impact, success drivers, complexities and improvement measures. Such a theoretical framework was also compared and contrasted with theories in Chapters 2, 3, 4 and 5 to extract a new theory or business framework for improving NGC efficacy. In other words, all these empirical philosophies, design, methodologies, techniques and processes enabled the study to respond to its critical research objectives and questions that were to analyse the challenges confronted by South African smallholder farmers and assess NGC smallholder farmer members' views on challenges they were confronted with before the implementation of the NGC in South Africa. It also responded to research objectives and questions that explored the key design and implementation features of the South African NGC, views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their businesses, income and socio-economic impact of NGC as shown in Chapter 7.

The study was also able to assess the level of the implementation of the NGC practices by the newly-formed NGC in South Africa and propose solutions for improving NGC efficacy through developing its new business framework for improving NGC efficacy.

Accomplishing all these initiatives require significant measures to leverage the overall credibility, trustworthiness and ethical considerations of the study.

6.12. CREDIBILITY AND TRUSTWORTHINESS

In interpretivist-qualitative research, credibility and trustworthiness connote the study's overall validity and reliability. But the concepts of validity and reliability are typical of the approaches in positivist-quantitative studies (Markham, 2020:227; Saunders *et al.*, 2019:413). Thus, to enhance the overall credibility and trustworthiness in interpretivist-qualitative studies, measures for an application often include credibility, transferability, dependability and confirmability (Saunders *et al.*, 2019:41). All such measures were integrated and used in this study to enhance the overall credibility and trustworthiness of the study and its findings.

6.12.1. Credibility

Credibility refers to the degree to which the processes and methods used in the study to reach necessary conclusions and its findings and conclusions are acceptable, convincing and believable (Denzin & Lincoln, 2017:26,57). A credible study provides assurance that the data were adequately collected and interpreted. The findings and conclusions accurately reflect the study environment (Creswell & Creswell, 2018:313; Yin, 2018:86). As a result, it is concerned with whether the participants in the study accept the constructed realities as being accurate and if the study participants agree that the study's findings reflect their social reality. Babbie and Mouton (2001:277) suggest several procedures to ensure the credibility of qualitative research, including triangulation, member checks and referential adequacy. In this study, quests for leveraging credibility entailed using the first technique (triangulation) to demonstrate the credibility of the research.

Since this study followed data triangulation in its data collection method (through the review of the in-depth interviews by the respondents and organisational documents), subsequently, this study's data analysis follows triangulation through theoretical triangulation and data triangulation methods as described in section 6.10.2 of this chapter and below.

In other words, this study's quests for leveraging credibility entailed triangulation in which the study findings were discussed and triangulated with theories and literature NGC business framework s in Chapters 2, 3, 4 and 5 of this thesis. Such triangulation was undertaken to discern whether the emerging findings are supported or disputed in the existing theories and literature. Data source triangulation as part of this study involved analysing the respondents' in-depth interviews and the analysis of organisational documents. The NGC monthly reports, company registration documents, letters, memos, correspondence, contracts, meeting minutes, financial statements, payment schedules, and diaries provided important data. These documents were not reviewed as objective data but to lend insight into organisational processes and alert the researcher to fruitful lines of inquiry. NGC public documents and stories were also found on the website and reviewed as valuable information repositories, as also guided by (Taylor *et al.*, 2016:93).

This study's credibility was also enhanced by ensuring that the methods and processes used are acceptable and used across other previous studies to reach the required conclusions. The study uses the interpretive, case study and exploratory research design. Qualitative methods and appropriate data collection and analysis methods and processes are aligned with each other and are not only widely acceptable and used by other studies but also accurately match the research topic. As these render the study more credible, other measures for enhancing credibility entailed ensuring that an appropriate sample was used. The study uses all the NGC smallholder farmers and key managers from NGC implementing partner organisations with detailed knowledge and understanding of NGC pilot project implementation. This enabled the study to elicit credible information reflecting the actual realities of NGC impact, success drivers, complexities and improvement measures. Yet, as the study produced critical information from these two groups of participants, the emerging set of findings from the group was still compared and contrasted by reducing biases and dishonesty and improving the overall credibility of the study and its results. Besides that, the two Interview Research Instruments used for smallholder farmers and NGC implementing partners were all designed according to the research topic, aim, objectives and questions. This enhanced collection of only qualitative data that was relevant to the study to improve the overall credibility of the study. Yet, as these

spawned the overall credibility of the study, they also indirectly and directly improved the study's transferability, dependability and conformability.

6.12.2. Transferability

Transferability is also known as generalizability. It is the degree to which the study's findings and conclusion can be replicated in the researched organisation or geographical area and solve similar research problems in other organisations (Archibald *et al.*, 2018:5). However, qualitative research studies using semi-structured or in-depth interviews cannot be used to make statistical generalisations about an entire population where data originate from a small non-probability sample (Saunders *et al.*, 2019:451). Leveraging transferability for this study is possible only through non-probability, purposive sampling and triangulation.

Sampling: McEwan (2020:235) warns that bias and sample biases in a research study occurs when factors related to the study design result in sample parameters that are not reflective of the population parameters. Selection biases are introduced when the sample's characteristics are unrepresentative of the population on a relevant variable or statistic. Both refer to external validity threats, showing that adequate and appropriate sampling techniques are critical to a research project's external validity or generalizability (Creswell & Creswell, 2018:277). The degree to which the generalisations being made are valid. It largely depends on the sampling methods and response rate (McEwan, 2020:235). Since the group contained a small group of sixteen smallholder farmers, all the sixteen smallholder farmers that constituted the NGC pilot project and two implementing partners were included in the sample population, thus contributing to the transferability of the study.

Triangulation: The study's findings were discussed and triangulated with theories and literature NGC business framework s in Chapters 2, 3, 4 and 5 of this thesis to ensure the transferability of the research findings (Creswell & Creswell, 2018:313). Such triangulation was undertaken to discern whether the emerging findings are supported or disputed in the existing theories and literature. Even in situations where findings were disputed by theories and literature, interpretations and social constructions were conducted to evaluate whether these represent the new dynamics of NGC

implementation that should be acknowledged by all NGCs worldwide. In essence, the triangulation of findings with theories and the researcher's personal judgment suggests that the types of NGC impact, success factors, and complexities observed are also prevalent in other NGCs worldwide. Therefore, not only are the findings of the study easily transferable or replicable, but the new NGC business framework developed and proposed by this study for enhancing the efficacy of NGC in uplifting smallholder farmers is also transferable. The outcomes and conclusions of this study are transferable and replicable, both within South Africa and globally. Through the contextual information provided, readers can ascertain the transferability of the study's findings to various contexts and settings. These measures were taken to enhance the study's credibility and transferability. Quests were also pursued to leverage its dependability.

6.12.3. Dependability

Dependability refers to the extent to which the findings of the study and its conclusions can be relied on to make critical decisions in the areas researched (Housley *et al.*, 2017: 607). It assesses the extent to which similar findings would still be obtained if the study is to be conducted again. In this study, dependability was improved by the fact that, as indicated above, all the sixteen smallholder farmers and key managers from the implementing partners were interviewed. Since these are critical categories of people involved in the implementation of NGC pilot project in South Africa, it implies their opinions coherently reflect the realities of NGC impact, success drivers, complexities and improvement measures. Thus, if this study is repeated, it is most likely that similar, or even the same findings, will be obtained. This will imply that the findings and conclusions of this study are reliable and depend on making critical decisions. In addition, the researcher kept all notes on the research process so that the reader and other researchers could establish their dependability for themselves. These initiatives improved the dependability and the confirmability of the study.

6.12.4. Confirmability

Confirmability is the extent to which the findings and conclusions of the study are supported by other studies (Braidotti, 2019b:31). It refers to the degree that the research conclusions are related to the focus of the study and not to the researcher's

biases (Babbie & Mouton, 2001:278). To establish confirmability, Denzin and Lincoln (2017:1380) refer to a confirmability audit trail, which consists of various elements, including raw data, various research notes, proposals and draft documents. These enable an auditor (another researcher) to assess whether the research findings can be traced to their source and if the evidence supports it. Since it is nearly impossible to repeat a qualitative research project with the same respondents in the same context and achieve exactly the same results, this generally means opening both the research findings and the process by which they were obtained to public scrutiny so that the reader and other researchers can establish their dependability for themselves (Pole & Lampard, 2002:207). The researcher safely stored the research information and all process; these are available on request.

Confirmability was also enhanced through the design of the Interview Research Instruments for both smallholder farmers and NGC implementing partners. These instruments were informed not only by the identified NGC problems in South Africa but also by the perspectives presented in previous and recent studies on the effectiveness of NGCs. Such initiatives were followed by the fact that as the findings were obtained, analysed, and interpreted, they were also compared and contrasted with other theories to discern whether or not other theories and literature supported such findings. These findings are also supported by other studies conducted within the Vhembe District Municipality, and the realities other NGC's face. Therefore, this study meets the conformability test because it is supported widely across NGC theories and literature.

In addition, initiatives to improve the credibility, transferability, dependability and conformability entailed fact-checking with the relevant experts on whether the interview research instrument was designed correctly and whether the entire study was being pursued in the right context. Inputs from other experts and the academic supervisors of this study were also quite valuable for leveraging the overall credibility, transferability, dependability and conformability. Such initiatives were also accompanied by an audit trail as well as the insertion of direct quotes from the participants' responses in the analysis, presentation and discussions of the findings to bring realities to the findings and to avoid distorting the information that NGC smallholder farmers and implementing partners aimed to say during the semi-structured interviews. Indeed, it is evident that all these initiatives improved the study's

overall credibility, transferability, dependability and conformability. If these initiatives are undertaken, significant quests are also needed to bolster the general ethical considerations of the study.

6.13. ETHICAL CONSIDERATIONS

Ethics connote a set of norms, rules and moral principles that govern and guide the research process (Fox & Alldred, 2018:191). Ethical consideration is the extent to which all relevant rules and moral principles for accomplishing research are adhered to during the research process. These research ethics ensure that a high ethical standard is maintained. This is also supported by Saunders *et al.* (2019:288). The following is a list of the ethical standards that apply to this study:

- **Honesty:** Honesty and transparency were used to handle data, results, methods and procedures, and publishing status. Data was not tampered with, created, or misrepresented in any way.
- **Objectivity:** Bias was avoided at all levels of the data collection, analysis, and interpretation.
- **Integrity:** Promises were kept with integrity. Through words and deeds, sincerity, consistency, and transparency were demonstrated.
- **Carefulness:** All research activities were documented and will be destroyed in accordance with university regulations. By carefully examining the work, errors were avoided.

Compliance with relevant principles influences not only the morality of the study, but also its credibility and trustworthiness as part of the indirect measures for enhancing the credibility and trustworthiness of the research (Bach *et al.*, 2018:125). In this study, multiple measures were employed to enhance the overall ethical considerations of the research. The first initiative entailed making the ethical application for approval by the North-West University Research Ethical Committee. This study received ethical clearance approval from the research ethics committee of the North-West University after a thorough scrutiny of all materials and procedures. The ethics number allocated is NWU-01346-19-A4. This application was not just a formal ethical application process but a process that provided relevant information on the ethical standards,

norms, rules, principles and morals expected of the study. It aided the understanding of the research actions and approaches to avoid or use to enhance the overall ethical considerations of the study. With such detailed understanding and commitment to what is or is not required to enhance ethical research consideration, the next step involved compliance with the ethical principles of informed consent.

Compliance with the principles of informed consent entailed writing to the NGC smallholder farmers in Tshivenda and the NGC implementing partners in English, notifying them about the study, and inviting them to consent to participate in the study. Both the smallholder farmer's letter of request and consent was in Tshivenda language and English. The contents highlighted the nature, purpose, motivators and objectives of the study (see Appendix A: Letter of Request and Consent to Participate in the Study). The letter clarified that the nature of the study stemmed from the introduction of the NGC pilot project aimed at uplifting smallholder farmers in Vhembe. It emphasised the necessity of analysing the effectiveness or ineffectiveness of the project in achieving its goals of uplifting smallholder farmers. Furthermore, it reiterated the significance of such analysis in assessing whether the South African government should adopt the NGC and implement it for smallholder farmers nationally. All the smallholder farmers and the implementing partners were informed that the study will also assess the overall NGC socio-economic impacts on smallholder farmers and the limitations they experienced to discern the improvement strategies that can be adopted.

Thus, smallholder farmers and implementing partners were informed that while the study is of an academic nature, their participation is essential for providing critical information that would influence government decisions regarding the enhancement of the NGC business framework and its replication across smallholder farmers in South Africa. The letter of request and consent informed smallholder farmers and implementing partners that participation in the study was voluntary. They were assured that their decision to participate or not would be respected, and they could withdraw at any time without consequences. The letter emphasised that the collected data would remain anonymous and confidential, with no connection to their identities. Furthermore, it stated that the qualitative data obtained from the interviews would be used in the research report and potential academic publications while maintaining

participant anonymity. That all the qualitative data obtained from the semi-structured interviews would be used in this thesis and stored in the archives at the North-West University campus for future studies and decision-making purposes.

When all the NGC smallholder farmers and representatives of the implementing partners acknowledged being informed about these ethical conditions and signed to participate in the study, initiatives were further taken to enhance compliance with the ethical principle of anonymity and confidentiality. The names and identities of the participants were not revealed anywhere in the notes taken during the interviews. Even during the analysis and interpretation of the findings, no information was linked to any participant by mentioning names or describing their identities (Hunter & Brewer, 2016:185). Instead, roman numerals 1 to 18 were used to label the participants and the value chain partners were also labelled with codes such as XXX, YYY, ZZZ (see Table 7.3).

Upholding the principle of anonymity and confidentiality also improved compliance with the principle of avoidance of harm to the participants. But since all participants had to be contacted personally by the researcher with the presence of the interpreter at all times, it was unfortunately not possible to ensure the complete anonymity of participants and respondents in this study. However, the data reporting process revealed no personal or business information. Protecting the names and identities of the participants was crucial to ensure their safety and prevent potential harm or retribution from their colleagues or NGC implementing partners. This allowed participants to freely express any contentious or sensitive views during the semi-structured interviews without fear of negative consequences. At the same time, no information linking any participant was disclosed to either the leaders of NGC nor the NGC implementing partners. Certainly, all initiatives were undertaken to avoid any incident that would cause physical or psychological harm to any participant in the study.

In addition to adherence to the principles of informed consent, anonymity and confidentiality, and avoidance of harm to participants, there was also compliance with the ethical principle of avoidance of conflict of interest (Saunders *et al.*, 2016:261). No form of bribes or promise of any benefits was offered to the participants to accept to

participate in the study to avoid conflict of interest. Likewise, the research did not accept or even experience any form of payment or promise of any benefits from any party to twist and swerve the outcomes of the study in their favour. Adherence to the principle of avoidance of conflict of interest, improved the study's impartiality, credibility and trustworthiness. At the same time, the researcher also adhered to the ethical principle of respect, honesty, professionalism and respect of the right to privacy (Yin, 2016:43). Views expressed by participants were respected irrespective of whether the researcher agreed with them or not. This was accompanied with respect of the right to privacy of the participants on the basis that the researcher only went to NGC smallholder farmers' homes or the NGC implementing partners' offices when invited to conduct the interviews. Such an approach improved the rapport and immersed cooperation and mutual respect between the researcher and all the participants in the study. In other words, it is quite evident that all these improved the overall ethical considerations of this research.

6.14. CHAPTER SUMMARY

A qualitative approach was considered for the empirical study because of its compatibility with the postmodernist and social constructivist worldviews through its emphasis on context and obtaining the insider perspective, and its suitability for the study's exploratory purpose. Within this approach, a single case study research design was adopted in order to obtain a holistic view of the research phenomenon. All sixteen smallholder farmers that constituted the NGC pilot project and two implementing partners were included in the sample population. They were engaged through face-to-face in-depth interviews, and triangulation of organisational documents was also utilised to validate the study's credibility.

The Morse and Field approach has successfully been implemented as a method of analysis in the academic work of management, making it most suitable for the analysis of this study. This qualitative analysis approach was useful in organising and analysing the evidence in this study due to its clear distinction between various steps of analysis, which are comprehending, synthesis, theorising, and re-contextualisation. The results of this process are discussed in Chapter 7. Even if such an approach aided effective

response to the fundamental research aim and main research question to analyse the efficacy of the NGC business framework in uplifting smallholder farmers, enormous quests were also undertaken to leverage the overall credibility and trustworthiness as the ethical considerations of the study.

Thus, in the context of these epistemological, methodological processes, the study's findings are presented and discussed in the next chapter.

CHAPTER 7

EMPIRICAL FINDINGS AND DISCUSSIONS

7.1. INTRODUCTION

The results and findings of the empirical study are presented in this chapter. The chapter begins with a review of the in-depth interview questions. It then goes on to detail the categories and themes found in the second stage of the Morse and Field technique to qualitative data analysis (see Section 6.11.2). The chapter continues by providing a thorough description of the results found in each of the corresponding categories. The presentation of results is divided into three parts. Parts I & II report on the empirical findings from the in-depth interviews with the smallholder farmers and the NGC implementing partners, respectively. Part III contains results from the organisational document reviews.

7.2. AIMS OF IN-DEPTH INTERVIEW QUESTIONS AND RELATION TO LITERATURE, OBJECTIVES AND INTERPRETATION OF THE CATEGORIES

This part discusses the research's findings and the aims of the in-depth interview questions by connecting each question asked during the in-depth interview to the literature and the objectives of the research. It also explains how the questions relate to the identified categories and themes. As a starting point for presenting the empirical research findings, Appendix D outlines the relationships between the questions posed during the in-depth interviews, the research objectives (see Sections 1.5 & 1.6), the literature (Chapters 2, 3, 4 & 5), as well as the categories and themes discovered using the Morse and Field approach (see Section 6.11.2).

From the qualitative data analysis, the myriad of data collected was reduced to 17 categories, which were then grouped into eight themes (see Table 6.2 & Table 6.3) emanating from two projects. Project 1 are themes and categories from smallholder farmer interviews, while Project 2 are themes and categories from the implementing partners.

7.3. PART I: QUALITATIVE RESULTS FROM IN-DEPTH INTERVIEWS WITH THE SMALLHOLDER FARMERS

This section consists of the results of the in-depth interviews with the smallholder farmers. It is structured following the categories and themes identified after applying the Morse and Field method and qualitative data analysis program ATLAS.ti (see Section 6.11.2). The thematic and categorical framework for the empirical research results is specified in Table 7.1

Table 7.1 The thematic and categorical framework for empirical research results

	Category (A)	Category (B)	Category (C)	Category (D)
Theme 1: New Generation Cooperative's efficacy in the upliftment	Assistance	Community		
Theme 2: Drivers of New Generation Cooperative's efficacy in the upliftment	Management	Farmers	Finances	Performance
Theme 3: Challenges of New Generation Cooperative's efficacy in the upliftment	Land	Links	Challenges	Training
Theme 4: Measures for improving New Generation Cooperative's efficacy in the upliftment	Improvement	Partnership		

Table 7.1 illustrates four themes for project 1 (smallholder farmer interviews), with twelve interpretation categories based on the information derived from the interview transcripts. It serves as a prelude to the research results discussed below.

7.3.1. Theme one: The New Generation Cooperative's efficacy in the upliftment

Finding 1.1

Project 1, theme one, was section A of the smallholder farmer interview protocols (see Appendix B). This section provides a detailed discussion about the efficacy of the NGC in uplifting smallholder farmers and their communities. From the interviews with the participants, two categories were identified, namely assistance (category: T1A) and community (category: T1B), (see Table 7.1).

7.3.1.1 Category T1A: Assistance

Category T1A indicates how the NGC assisted smallholder farmers in areas such as responding to their infrastructure challenges, facilitating linkages with largescale commercial farmers, integration into larger agribusiness value chains, strengthening marketing capabilities, income improvement and investments in value-adding agro-processing.

7.3.1.1.1. Responding to the needs and infrastructure challenges of the smallholder farmers

Table 7.2 shows the infrastructure challenges confronting smallholder farmers based on the literature review in Chapter Four, and how the NGC responded to the smallholder farmer infrastructure needs.

Table 7.2: Summary of literature and NGC's responses to the infrastructure needs of the smallholder farmers

A	CHALLENGES IDENTIFIED IN THE LITERATURE		From in-depth interviews: How NGC responded to the needs of the smallholder farmers
	From Chapter 4, literature review		
	B	C	
Category	Groups	List of challenges	
<u>Physical infrastructure</u>	Physical infrastructure and value-adding infrastructure	Roads, storage, processing facilities, preservation facilities	NGC built a Packhouse, storage and an office
<u>Input-based infrastructure</u>	Input-based infrastructure	Seeds, fertiliser, pesticides, farm equipment, machinery, transport	NGC supplied seeds, fertiliser, pesticides/chemicals, farm equipment, machinery(forklift) and transport.
<u>Resource-based Infrastructure</u>	Resources	Land, water, irrigation, farm power/energy	NGC helped extend land lease agreements, providing irrigation and energy
<u>Institutional Infrastructure</u>	Poor access to technology	Access to technology	Not mentioned
		Agricultural research and development	Through the largescale commercial farmer, in the first year, the NGC farmers were warned about the white fly disease that could destroy their crops, and they took measures against it, which saved their produce
	Asymmetry or lack of information	Extension services, Information and communication services	The NGC was not consistent in building relationships with the local government. As such, the Vhembe local government structures did not participate much in the NGC and the NGC smallholder farmers did not benefit from support rendered by local government during the implementation of the NGC, including extension services
	Marketing	Access to markets	The NGC linked farmers to three marketing streams. Grade 1,2 and Grade 3 products. Grade 1 and 2 was sent to the market. These included the Johannesburg market. Grade 3 was sent for agro-processing to the XXX agro-processing company.
	High transaction costs	High transaction costs	NGC lowered transactional costs
	Financial services	Lack of credit, capital or access to finance	NGC provided capital
	Compliance and regulatory requirements	Poor quality, grades and standards; inability to meet products' standard specifications, international standards and good agricultural practices	NGC linked farmers to learn about GAP and water licences
	Lack of governmental support, extension support; linkages and networks	Linkages to other farmer organisations	NGC formed linkages to agro-processor, input suppliers (contracts) and commercial farmer, but worsened the relationship with local government structures
	Human capital/ Education	Lack of investment and negotiations skills; lack of access to skills development	NGC trained farmers in bookkeeping and various agricultural production skills

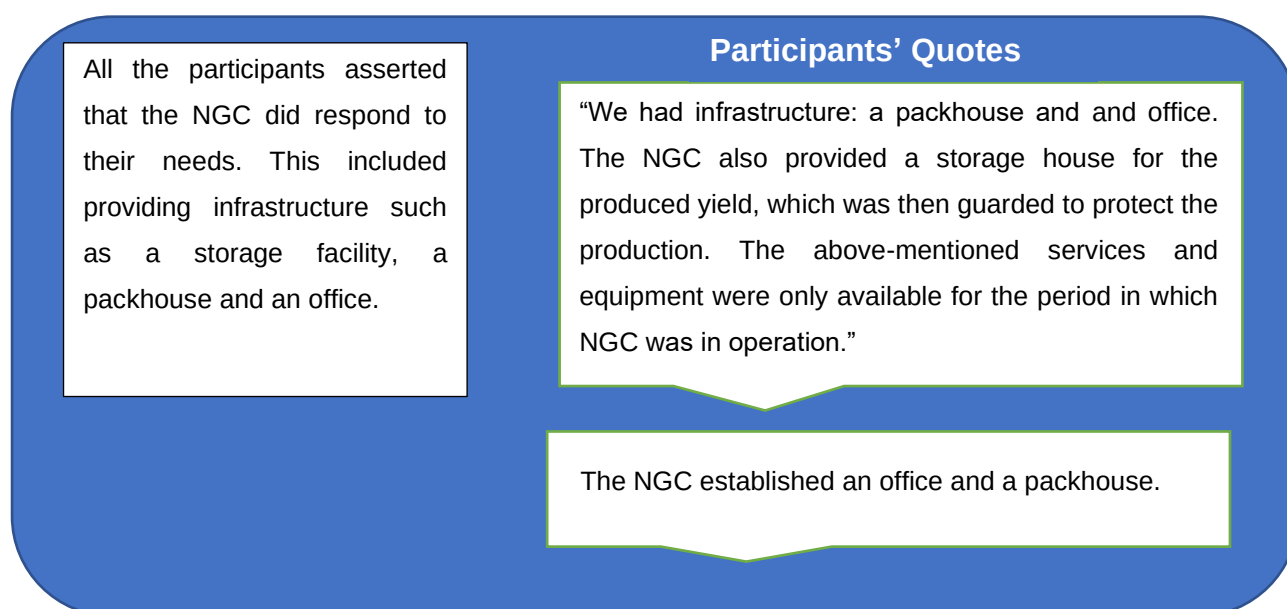
Source: By researcher from literature review, and in-depth interviews

In this category, most respondents indicated that the NGC effectively responded to their business needs by providing physical infrastructure, inputs-based and resource-based infrastructure, and institutional infrastructure through skills and compliance.

(i) Physical Infrastructure Provision to Smallholder Farmers

All the smallholder farmers revealed that the NGC built the essential infrastructure which had previously posed significant challenges for the majority of them. They elaborated that the NGC built a packhouse, a storage facility and an office. When asked to explain in detail how the infrastructure effectively responded to their needs, they stated that before NGC-built packhouse, they previously had difficulty in effectively packaging their tomatoes. The construction of the new packhouse effectively responded to their needs because it enabled them to radically minimise the damage to their agricultural products (see Figure 7.1 below).

Figure 7.1: NGC's response to smallholder farmers' physical infrastructure needs



Source: By researcher from in-depth interviews with smallholder farmers.

The smallholder farmers also indicated that the storage house enabled them to store their agricultural products before packing and transporting them to the various markets. They noted that this increased their efficiency. Most smallholder farmers also

indicated that NGC built an authority facility or office run by a manager appointed by the NGC board. They explained that the manager's functions were to coordinate the farmers' activities, advise them where necessary and monitor their compliance with the contracts. However, due to budget and time constraints, the NGC did not build an agro-processing infrastructure for the farmers. They explained that instead, agro-processing was outsourced to XXX agro-processing company, which provided seedlings for the NGC, as indicated below. The South African NGC had not yet reached the stage of adopting typical business principles and approaches to differentiate them from traditional cooperatives and creating the required values for the members (such as integrating value-adding components of their operations to create more values for the cooperative and its members) (see Section 5.6), because it was still outsourcing the service.

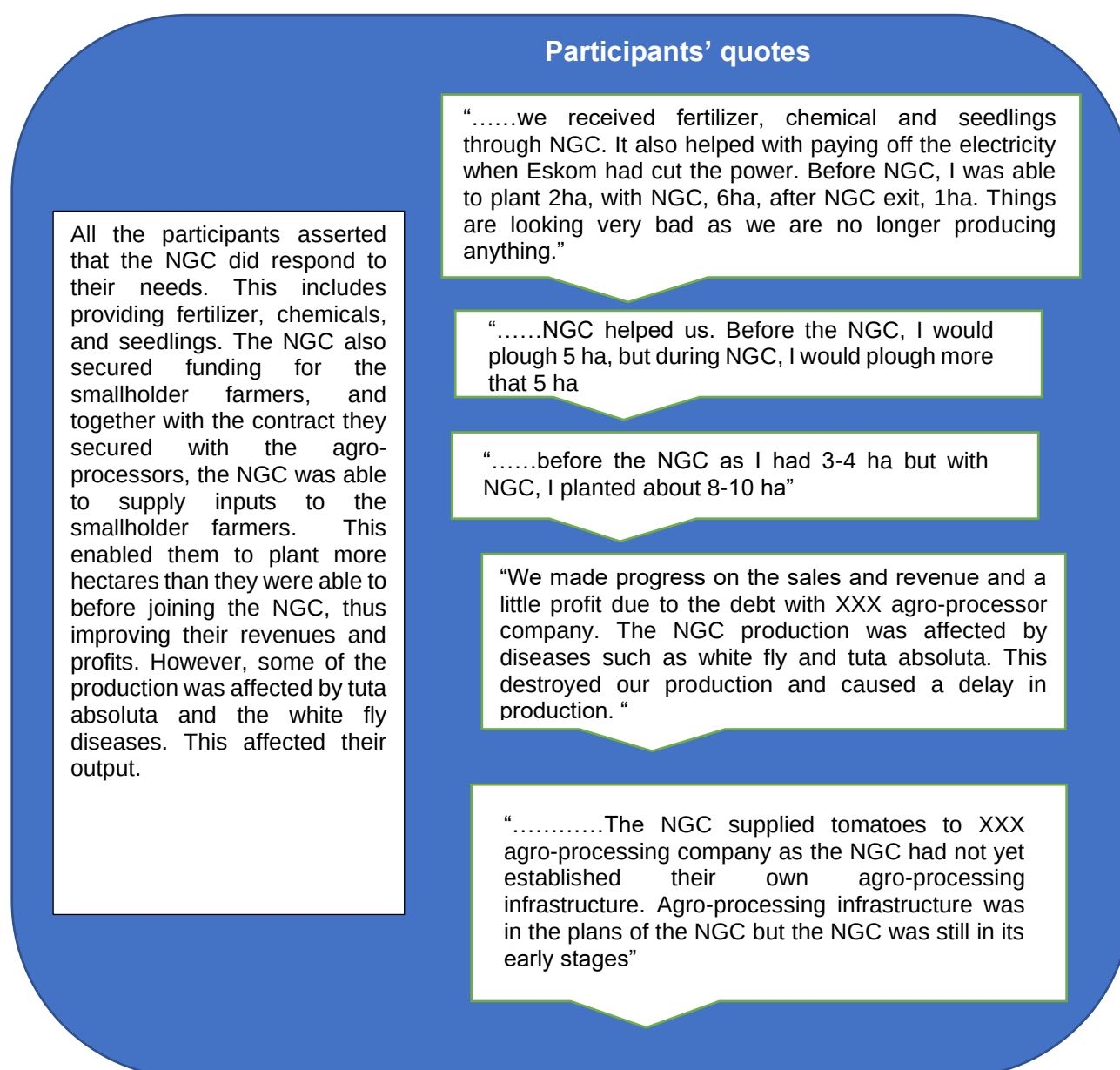
Nevertheless, because the NGC offered physical infrastructure, the smallholder farmers also indicated that the NGC responded to their input-based infrastructure needs and challenges, reflected in Table 7.2

- Inputs' Provision of Smallholder Farmers

The provision of inputs to smallholder farmers was reported by the majority of NGC smallholder farmers. Smallholder farmers said that, before the establishment of the NGC, accessibility to the requisite agricultural inputs, such as quality seeds, fertilisers and chemicals for planting, was a challenge. They attributed such challenges to a lack of information about where to purchase good quality agricultural inputs that were inexpensive. Others mentioned that insufficient capital hindered their ability to acquire necessary agricultural inputs. However, most of the smallholder farmers narrated that the establishment of the NGC had alleviated the challenges related to agricultural inputs, because it introduced them to XXX agro-processing company, which processes and manufactures tomato sauce and paste. The NGC entered into a contract with XXX agro-processing company, whereby the XXX agro-processing company would supply the NGC with seedlings, which were passed on to the farmers to grow tomatoes, and in return, the NGC would supply XXX agro-processing company with the tomatoes from the farmers. The individual farmers were then contracted to supply the production from the seedlings to the NGC. The agreement between the NGC and XXX agro-processing company was that XXX agro-processing company

would deduct the money of the seedlings it supplied to the NGC from the NGC's payment. The NGC then paid all farmers what was due to them from the produce.

Figure 7.2: NGC's response to smallholder farmers' input-based infrastructure needs



Source: By researcher from in-depth interviews with smallholder farmers.

Yet, as NGC offered such agricultural inputs and infrastructure, the smallholder farmers also stated that the NGC had also responded to their need for finance through a funding framework, whereby funds would be received by NGC from other stakeholders, such as the Department of Small Business Development and SEDA,

over and above the payments from XXX agro-processing company. These funds were then distributed among the smallholder farmers. They said this funding had resulted in an increase in the scale of their agricultural production. They stated that some smallholder farmers could employ more labour and pay decent wages, which was not the case before they joined the NGC. The NGC planned to do agro-processing and build their own value-adding infrastructure. However, it was still in its early operating stages.

The smallholder farmers also responded that the inputs and resource supply increased their production and yield from an average of 2 to 4 hectares to about 8 to 10 hectares. Most of the farmers considered the increased scale of agricultural production and the resultant yields impressive because the challenges of limited production and yields they had previously faced were being overcome (see Figure 7.2). The smallholder farmers also narrated that being able to plant more hectares and securing contracts with the XXX agro-processing company helped them improve their revenues, sales and profits. However, some of the production was affected by *tuta absoluta* and white fly disease, which affected their output.

- Resource's Provision to Smallholder Farmers

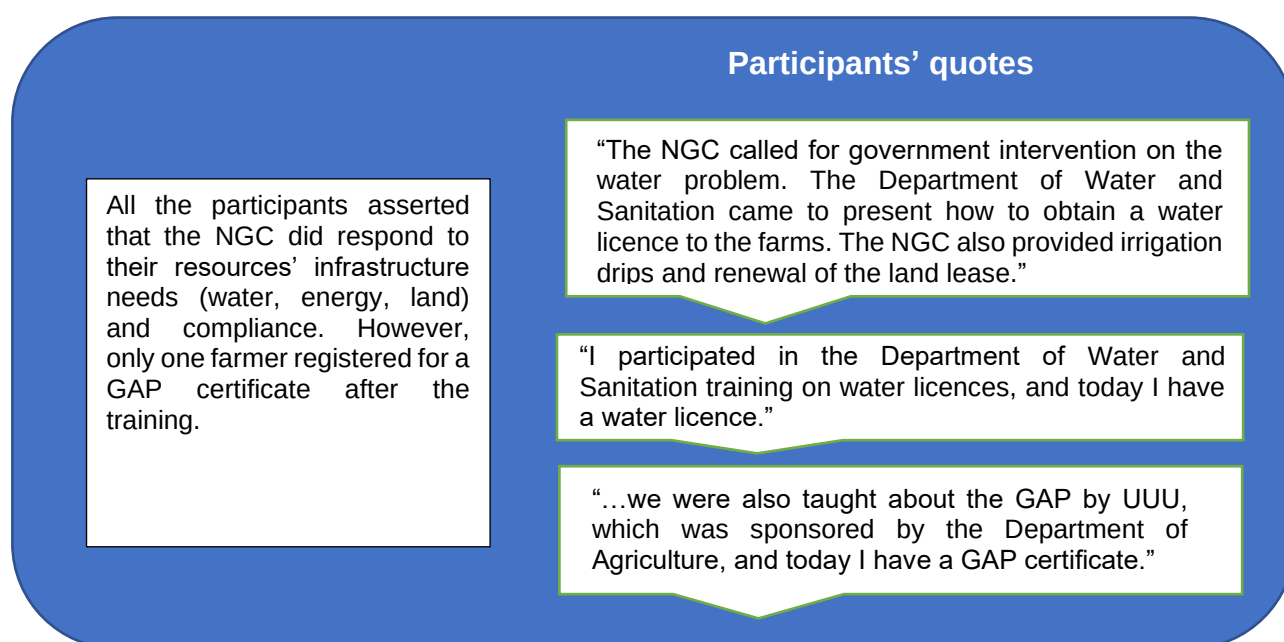
Some smallholder farmers indicated that water availability was not a concern for them as they were able to access water from the nearby river for crop irrigation. However, a majority of the smallholder farmers attributed that the increase in production scale and yield was due to the NGC's support with water, drippers and energy. In addition, the NGC helped farmers far from the river by engaging the Department of Water and Sanitation to provide smallholder farmers with water licences for their farms. Moreover, some of the participants revealed that the NGC also solved their energy crisis by paying the accumulated electricity bills of the smallholder farmers (see Figure 7.2). Even though some smallholder farmers later accumulated more electricity bills, most of them stated that the NGC could reduce the level of smallholder farmers' indebtedness to Eskom.

- Skills and Compliance Provision to Smallholder Farmers

The majority of the smallholder farmers stated that the NGC aided the improvement of their agricultural production skills and compliance. This was accomplished through

the framework in which UUU implementing partner (another NGC implementing partner) trained and taught smallholder farmers about Global Agricultural Practices (GAP), which is critical for smallholder farmers' agricultural products to access both domestic and export markets (see Section 4.3.4). However, only one NGC farmer confirmed having attained the GAP certificate and the water licence. The NGC also trained farmers on various other skills discussed in (see Section 6.4.3.4).

Figure 7.3: NGC's response to smallholder farmers' resource-based infrastructure and compliance



Source: By researcher from in-depth interviews with smallholder farmers.

Most of the smallholder farmers also stated that the NGC trained and improved their capabilities to make their product packaging attractive. They explained that from the farm, the agricultural products would be taken to the packhouse, where they are taught and guided on how to pack the tomatoes in a more attractive way. They elaborated that this improved the products' marketability because they found out that customers are enticed by the quality of the physical tomatoes and the attractiveness of the tomato packaging. Mabaya *et al.* (2019:10) depicted grading, sorting, cutting and packaging in standard weights and the processing of produce are some of the value-adding methods that earn farmers additional income. Due to limited capital finance, most smallholder farmers do not have such capabilities (see Section 4.3.2). They stated that some of the smallholder farmers continued to practice old habits. However, some

of the smallholder farmers abandoned their new farming methods after the NGC exited due to the high costs and unaffordability of the costs of packaging materials.

As these inputs improved their performance, most of the smallholder farmers said they were satisfied with the role of NGC in providing the required resource-based infrastructure, training and compliance. The smallholder farmers also revealed that the NGC bolstered their linkage with largescale commercial farmers, integrated them into the larger agribusiness value chains, and strengthened their marketing capabilities, which are part of the institutional infrastructure (see Table 7.2).

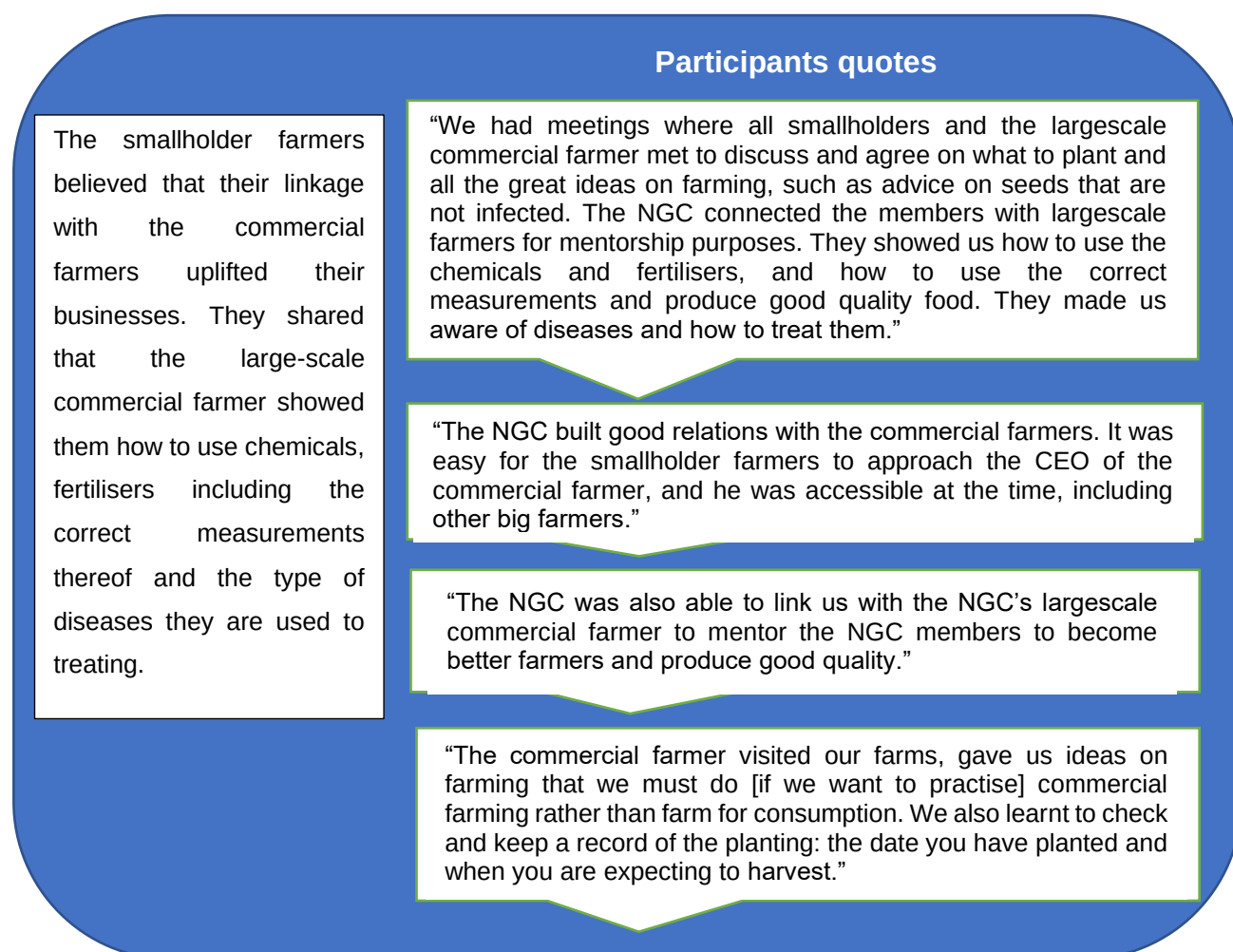
7.3.1.1.2. Smallholder farmers' linkage with largescale commercial farmers

Most of the participants stated that the NGC was able to improve their links with largescale commercial farmers. They stated that this improved the capabilities of the NGC to respond to their needs because links with largescale commercial farmers enabled them to understand and appreciate the do's and don'ts that largescale commercial farmers often practice getting the desired yields from agricultural production. Most smallholder farmers reiterated that such linkages were of immense importance because they all aspired to adopt good agricultural practices to grow and become largescale commercial farmers themselves. Thus, to ensure that the smallholder farmers spend time with largescale commercial farmers to learn the best agricultural production practices, the NGC often organised meetings between smallholder farmers and the NGC's largescale commercial farmers. According to most of the smallholder farmers, during such meetings, the largescale commercial farmer would share good farming ideas and advise them on disease-resistant seeds or crops to plant. These meetings took place on the largescale commercial farmer's site, with demonstrations.

They also indicated that the NGC's largescale commercial farmers would advise them on how to prepare the fields and soils and correctly measure and use fertilisers and chemicals to get the best yields. Through such linkages, most smallholder farmers indicated that their links with the largescale farmer enabled them to learn and practice good farming practices on their farms to increase yields. This implies that smallholder partnership and linkages with largescale commercial farmers improve smallholder

farmer business good practices through the lessons the largescale commercial farmer imparts on the smallholder farmers.

Figure 7.4.A: The NGC facilitated farmers' connections with largescale commercial farmers.



Source: By researcher from in-depth interviews with smallholder farmers.

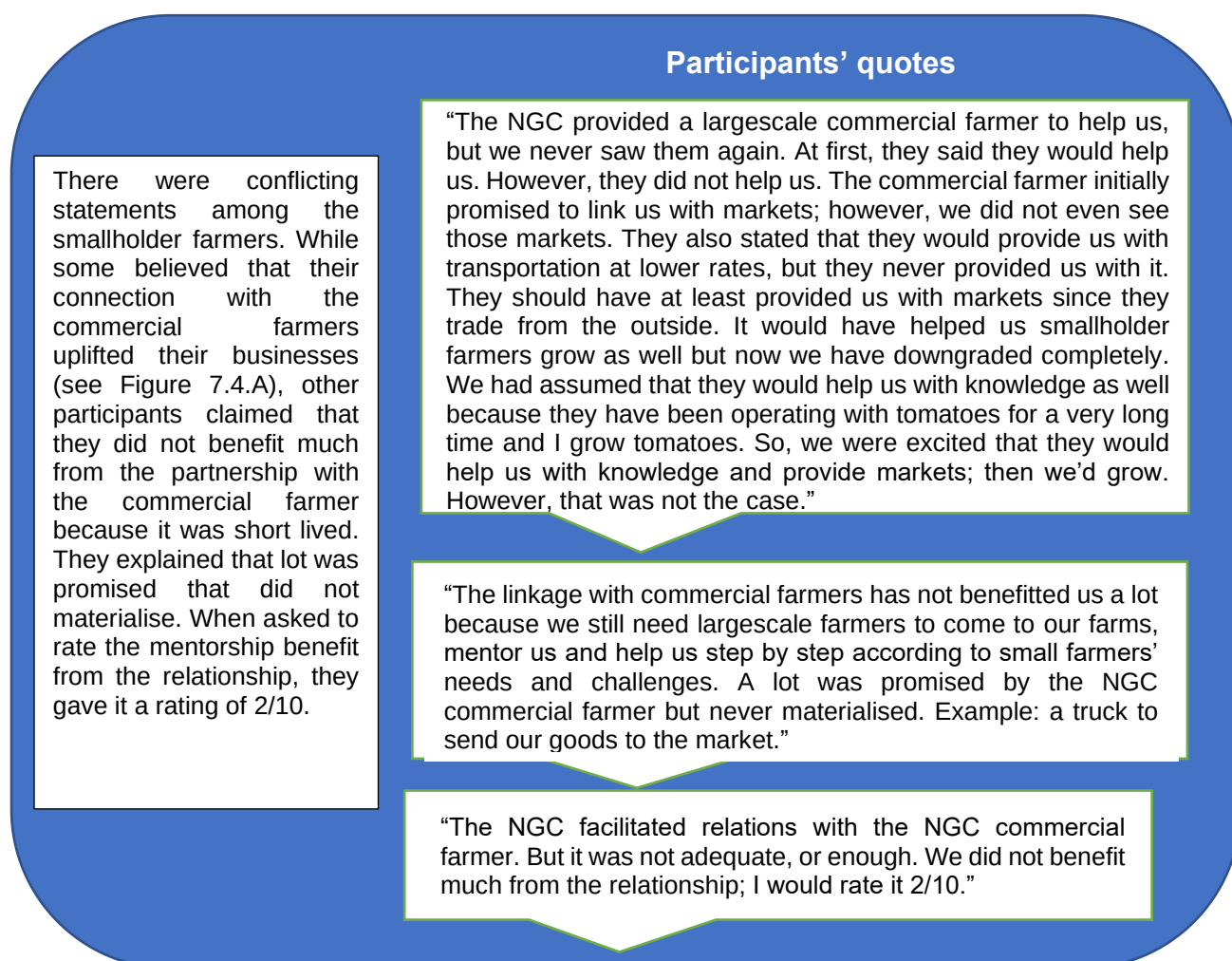
The smallholder farmers also explained that the largescale commercial farmer mentored them on good agricultural production practices. Mentoring included how to proactively detect and mitigate the risks of diseases that could destroy tomatoes, how to monitor and nurture plant growth to maturity and how to harvest, store and transport the agricultural products to the markets in a way that preserved and improved their quality to meet the customers' needs. Some smallholder farmers further highlighted

that the NGC improved the working relationships between smallholder farmers and other large commercial farmers.

The result was that the smallholder farmers who required assistance felt free to contact some of the leaders and managers of largescale commercial farmers. Since some of them could not read English, the largescale commercial farmers would advise them on the kinds of chemicals to buy as well as how to use such chemicals to avoid overdoses, which can destroy crops, even in their home language (Tshivenda). Due to their connections with largescale commercial farmers, most of the smallholder farmers reasoned that they had better chances of being exposed in South Africa and internationally and that linking with the largescale commercial farmers was critical for bolstering their dreams of becoming reputable largescale commercial farmers. They said that during their meetings with the NGC largescale commercial farmers, the latter often encouraged them to upgrade from subsistence farming for household consumption to commercial farming for profit. They stated that the NGC largescale commercial farmer often did this by visiting their farms and advising them on the values of commercial farming that could develop from good agricultural care, yields and returns in terms of the earned revenues and the profits they could use to improve their living standards.

However, some participants stated that they did not benefit much from such linkages (see Figure 7.4.B).

Figure 7.4.B: The NGC's smallholder farmer linkages with largescale commercial farmers.



Source: By researcher from in-depth interviews with smallholder farmers.

They explained that the time they were linked with the NGC largescale commercial farmer was too short and that some of the promises made by large commercial farmer were not fulfilled. Some of them complained that they did not gain the requisite technical agricultural skills from the NGC's largescale commercial farmer and that they therefore required him to come back and take them through all the step-by-step processes of commercial farming.

The negative narratives indicate a lack of consistency in the assistance offered by largescale commercial farmers to smallholder farmers because the NGC only brought them once and they did not return again, as most of the smallholder farmers had

desired, and as it was initially planned and promised. As most smallholder farmers noted, such limitations affected the extent to which they could learn the best agricultural skills from largescale commercial farmers. But even if that is the case, other smallholder farmers still reiterated that NGC also improved their integration in the agricultural value chains.

7.3.1.1.3. Smallholder farmers' integration into the larger agribusiness value chains

Smallholder farmers' integration into the larger agribusiness value was one of the ways in which the NGC contributed to uplifting their businesses. The smallholder farmers shared that the NGC integrated them into larger agribusiness value chains in Limpopo and other provinces, such as Gauteng Province. These included input suppliers, market agencies, trainers and the agro-processing company mentioned above. These larger agribusiness value chains are shown in Table 7.3.

Table 7.3: Smallholder Farmers' Integration in the Larger Agribusiness Value Chains

	REFERENCE CODE	TYPE OF COMPANY	CONTRIBUTION
1	SSS Packaging material company	Packaging materials company	Africa's leading packaging company (narrated by the implementing partners only in section 7.4)
2	TTT marketing agent	Marketing agent	Linked NGC smallholder farmers to markets
3	UUU impact investment	Impact investment company	Trained NGC farmers on water licenses
4	VVV/ NGC largescale commercial farmer	largescale commercial farmer	Partner to the smallholder farmers in the formation of the NGC business. Mentored the NGC smallholder farmers
5	WWW Consultants	Training company	Training company from The Netherlands
6	XXX agro-processing company	agro-processing company	Signed contract with the NGC to supply the NGC with seedlings and that the NGC supplies XXX with tomatoes for agro-processing-forward linkages
7	YYY seedlings supplier	Seedling's supplier	Seedling's supplier
8	ZZZ agricultural chemicals supplier	agricultural chemicals supplier	Supplied NGC with chemicals

Sources: Summarised from documents review and in-depth interviews.

The NGC created a platform that facilitated the linkage of smallholder farmers with other large agribusiness value chains such as TTT marketing agents, UUU impact

investment company, WWW consulting company, XXX agro-processing company, YYY seedlings supplier, and ZZZ agricultural chemicals supplier.

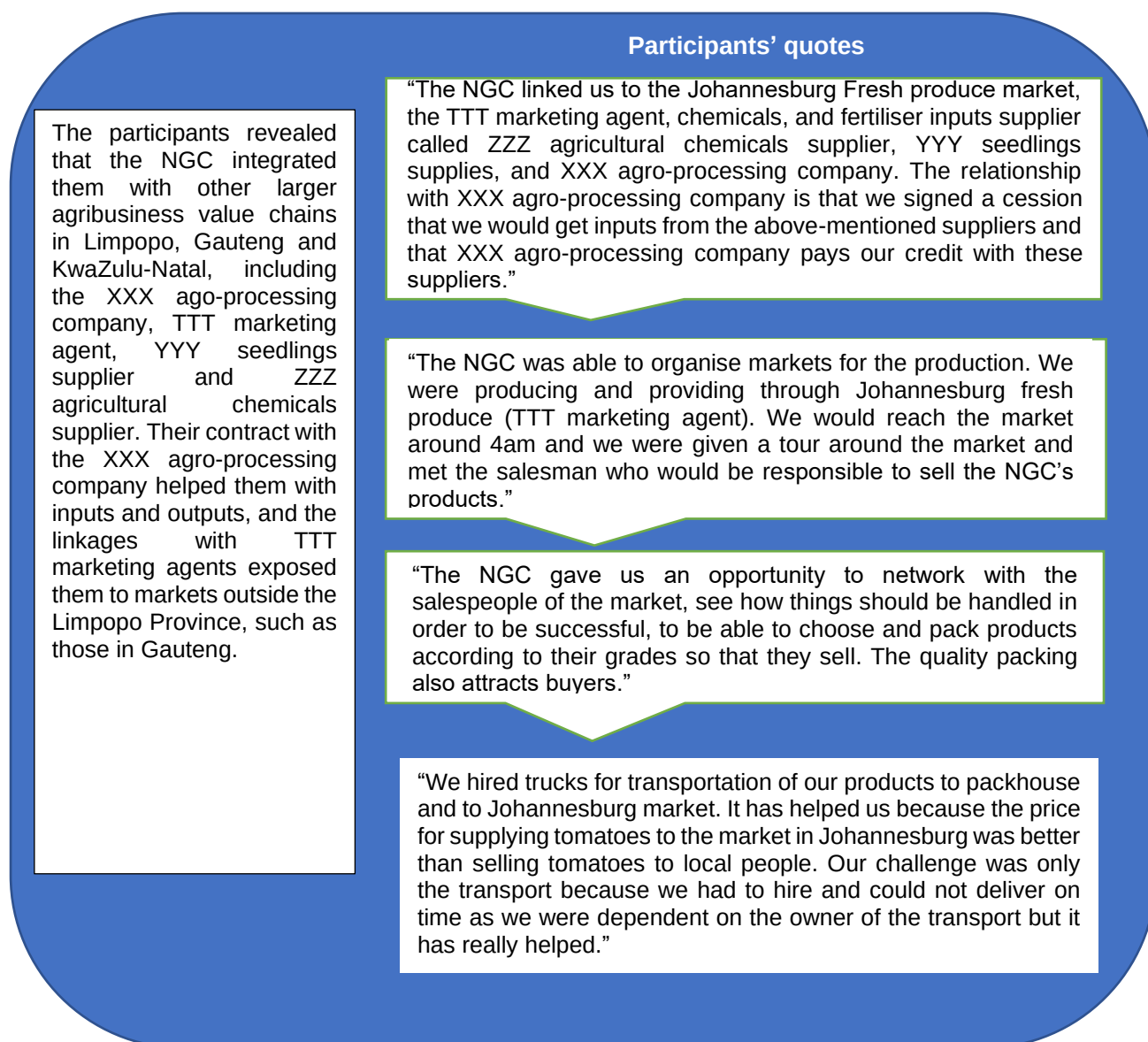
In their partnership with the XXX agro-processing company, the smallholder farmers explained that the NGC created both the backward and forward linkages for the smallholder farmers. The backward linkages refer to the inputs mentioned above. However, there were also forward linkages because the XXX agro-processing company was contracted to purchase all the tomatoes they produced, thus adding value to their businesses. In other words, they had access to critical inputs and the output markets for their products. As most of the participants noted, this enabled them to solve both the challenges of lack of critical inputs and access to output markets that had previously affected their effective performance. Moreover, as indicated above, the NGC connected them with some large agribusinesses that offered chemicals, seeds and fertilisers and also provided technical agricultural inputs regarding good farming practices like how to prepare the soil for cultivation as well as how to monitor and manage plant health throughout the stages of a plant's growth. Such findings are at tandem with the smallholder farmers' revelations on Figure 7.5.

Thus, the NGC and TTT marketing agents organised a trip for the smallholder farmers to the Johannesburg Fresh Produce Market in Gauteng. During their visit, they came to understand how the market worked and networked with all the critical salespeople in the market. Some smallholder farmers thereby got to know where to sell their products. Since then, they stated, some smallholder farmers have been using that market, even after the NGC's exit. Most smallholder farmers further indicated that the trip to the Johannesburg Fresh Produce Market not only enabled them to link with salespeople, but with other smallholder farmers from Kwa-Zulu-Natal, and officials from the DSBD. Such opportunities enabled them to network, share information and understand the market (see Figure 7.5).

Some smallholder farmers noted that the NGC also provided them with transport to move their products from the farms to the stores, packhouse and subsequently to the market. In responses to the question regarding how the NGC aided their integration into the larger agribusiness value chains in Limpopo and other provinces like Gauteng and North West, most of them stated that the NGC's provision of transport to

smallholder farmers eased their accessibility to the market. This had been previously hindered by the high cost of transportation and lack of knowledge about the market (see Figure 7.5).

Figure 7.5: NGC's aids smallholder farmers' integration into larger agribusiness value chains.



Source: By researcher from in-depth interviews with smallholder farmers.

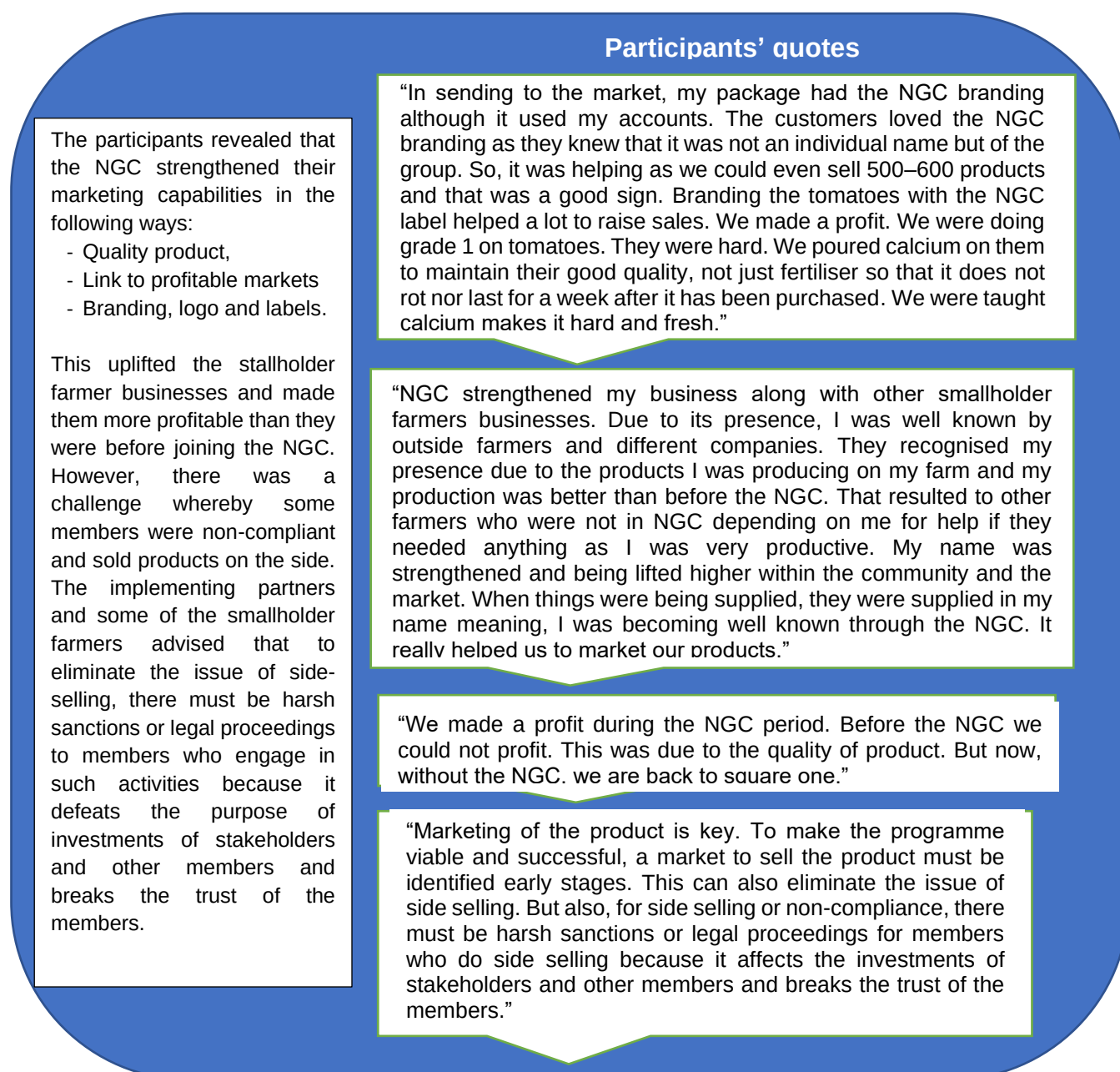
The participants revealed that NGC connected them with the salesmen from the Johannesburg Fresh Produce Market, streamlined the communication with them, and

other buyers of agricultural products in Limpopo and other provinces. They explained that this reached a stage where salesmen from the Johannesburg Fresh Produce Market and other provinces would call them requesting certain required products. Through such a framework, most of the smallholder farmers said that they could access the markets, even those outside Limpopo, that they had neither been able to access nor anticipated before, because they had supplied only local markets in the past. Thus, these developments influenced the improvement of their marketing capabilities.

7.3.1.1.4. Smallholder farmers' marketing capabilities leveraged

Most of the smallholder farmers said that marketing was a challenge before the NGC was established because they did not understand what customers wanted (see Table 7.2). They lacked the skills to position their products in a way that enticed customers to buy them. The farmers also indicated that they did not know where the various markets for agricultural products were located in other provinces. However, after joining the NGC, they came to understand that improvement of the marketing capabilities of an agribusiness entity did not begin on the day the agricultural product was brought to the market but with the field preparation for plantation. They explained that the NGC helped them to understand that the quality of the agricultural products that enticed the customer to buy them was determined by how the field was prepared, as well as the kinds of seeds, chemicals and fertilisers used in the agricultural production processes. Most farmers elaborated that it was also determined by how the harvesting process, storage and transportation to the market were handled. Since the introduction of such practices, the marketability of most of the participants' products has improved. Some of them added that the NGC introduced the importance of branding and the usage of logo, which improved the image of their agribusinesses and the marketability of their products. Such a view is echoed in the narratives of the smallholder farmers (see Figure 7.6). Most of them explained that the NGC's branded logo strengthened the marketing capabilities of their agribusinesses on the boxes in which they packaged the harvested agricultural products. This repositioned them as quality-conscious farmers, and the brand became widely recognised and attracted new customers in the local communities. They were now recognised almost everywhere in the Vhembe District. This led to the wider recognition of both the NGC and the individual smallholder farmers.

Figure 7.6: The NGC strengthened the marketing capabilities of smallholder farmer agribusinesses.



Source: By researcher from in-depth interviews with smallholder farmers and implementing partners.

Most of the participants noted that the good agricultural practices the NGC introduced had transformed how they accomplished their agricultural production activities. They highlighted that in the past, they would plough with or without fertilisers, quality seeds

or chemicals and then harvest only for the tomatoes to rot before sale, due to poor storage and transportation delays. They also revealed that, through the NGC's assistance, they did soil testing, which they had never done before. They now knew which nutrients made up their soil, which helped them accurately assess what fertilisation programme is required. They also revealed that, following the introduction of the NGC, most of them had become more careful about how they handled the agricultural production processes through all the stages of planting, weeding, pest control, harvesting, storage and transportation to the market.

Some of the participants indicated improved sales, profitability and revenues, even though value-adding was done only at the farm level, with all the agro-processing being done by XXX agro-processing company. This finding is consonant with the smallholder farmers' explanations about profits (see Figure 7.6).

7.3.1.1.5. Income improvement and investment in value-adding agro-processing

Improved profitability also influenced most of the smallholder farmers to increase their scales of operation. As they noted, most of them increased the hectares under cultivation. However, some participants revealed that they did not profit much because the price for their products paid by XXX agro-processing company was low compared to other companies' rates (these companies were their buyers before the NGC was established). This is possibly due to XXX agro-processing company supplying the NGC with inputs, partly in exchange for tomatoes. The smallholder farmers complained that pests and diseases such as white flies and *tuta absoluta* also affected the productivity and profitability of their agribusinesses.

However, some of the smallholder farmers revealed that most of the smallholder farmers did side selling and were not bringing all the production to the NGC as agreed. This hence negatively affected payment commitments by XXX agro-processing company. To avoid breaching the contract with XXX agro-processing company, the NGC leadership then had to bring other ways of meeting production quantities stated in the contract by inviting other farmers within Nwanedi, Vhembe District Municipality, to sell their tomato production to the NGC.

Yet, as the NGC influenced the improvement of the performance of the smallholder farmers' agribusinesses, findings, revealed that it also impacted positively on improved food security, employment creation and poverty alleviation, which falls under Category T1B: Community.

Finding 1.2

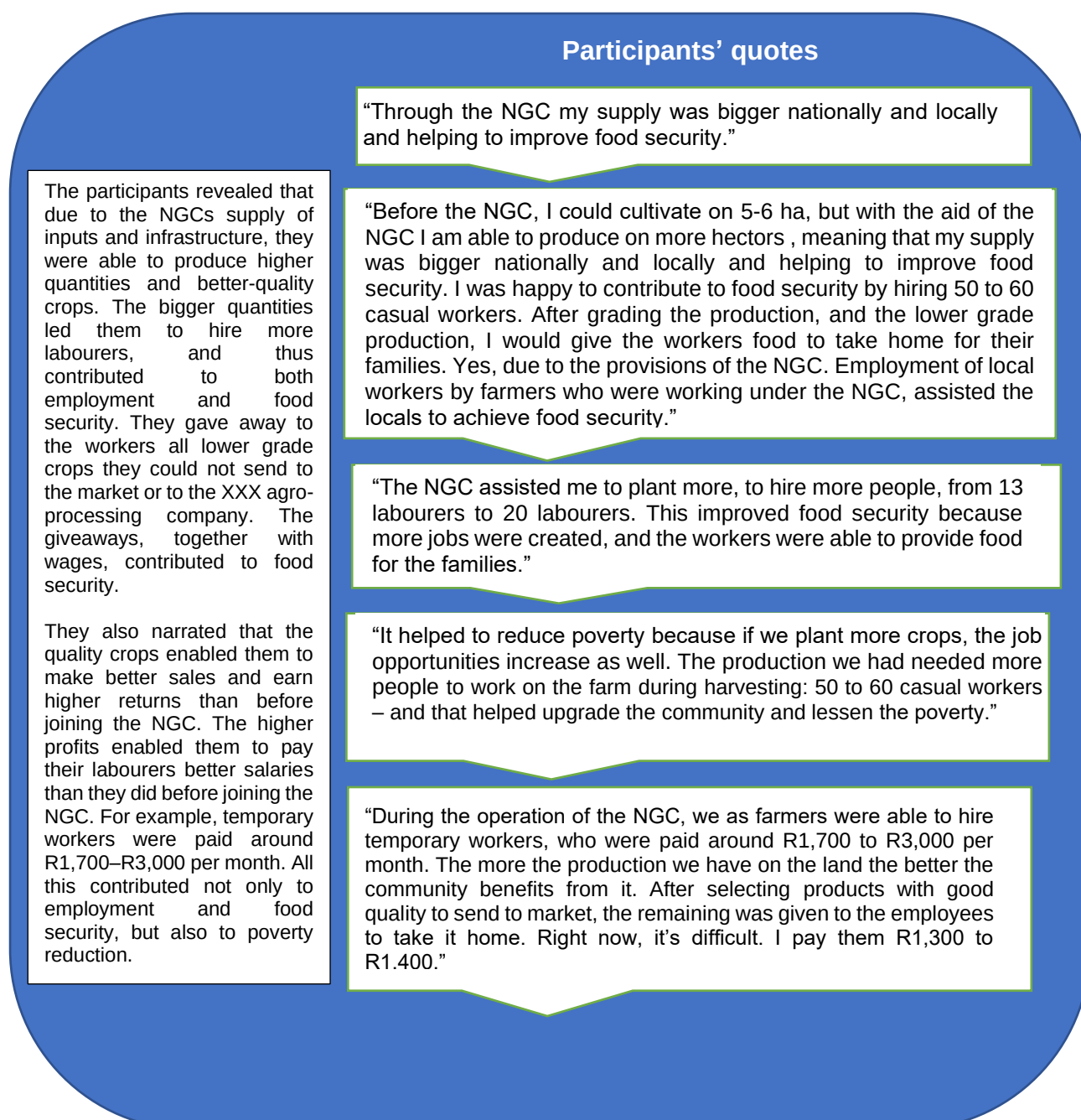
7.3.1.2 Category T1B: Community

The smallholder farmers noted that joining the NGC led to improved food security, employment creation and poverty alleviation. The smallholder farmers revealed that this enhanced the capabilities of the NGC to respond to the needs and demands of the communities, which is the *seventh principle of the cooperative principles* (see Section 5.2.2). They felt that the NGC had transformed their socio-economic standards and conditions and those of the surrounding communities. Such a view was evident in most of the responses to the question regarding whether the NGC's programmes had responded to the needs of the local communities in which they operated. Most of the participants indicated that the NGC did not have specific programmes that were aimed at benefiting the larger communities. However, by uplifting the smallholder farmers, the NGC was able to directly and indirectly, respond to the needs of their communities. Such direct and indirect influences were due to the direct benefits of the NGC to the smallholder farmers and the consequent multiplier effects.

They explained that, due to the high costs of agricultural production, poor market accessibility, and low returns, they contemplated abandoning farming in favour of other forms of business. However, when the NGC was introduced, they gained a lot of hope. Due to the NGC's support, they could produce sufficient agricultural products, such as tomatoes, pumpkins, maize and beans. Most participants elaborated that, although the contract with NGC was to only produce tomatoes and supply them to XXX agro-processing company. They used the revenues earned to cultivate and grow other crops, such as maize and beans. Thus, the NGC contributed to improving the food security of their households. Most of the participants attributed that the enormous incomes generated from NGC enabled them to also purchase foodstuffs they did not grow but desired to consume. On that basis, some of the smallholder farmers

reckoned that the NGC contributed to improving food security among the households of smallholder farmers. Such a finding corroborates the narratives of the smallholder farmers who expressed their views (see Figure 7.7).

Figure 7.7: The NGC responding to the needs of the community through food security, employment and poverty alleviation.



Source: By researcher from in-depth interviews with smallholder farmers.

Most of the smallholder farmers further highlighted that the NGC contributed enormously to employment creation. They elaborated that NGC created employment for the smallholder farmers who were about to become either redundant or seek employment or business opportunities in other sectors. Thus, by supporting smallholder farmers, the NGC created enormous employment opportunities for the surrounding communities. Most of the smallholder farmers attributed this to the fact that because they were financially supported by the NGC, in conjunction with the revenues earned from XXX agro-processing company and other crops, they could expand their scales of operation. The implication was that they had to employ more farmworkers, creating more employment opportunities for the surrounding communities. Such a finding is well elucidated and summed in the narratives of the smallholder farmers (see Figure 7.7).

Moreover, some participants explained that the NGC employed community members as security guards, office administrators, transporters and packers in the packhouse, and workers to load and offload the tomatoes for transportation to the market thus creating jobs in the community. Moreover, the NGC's support also brought a lot of business to the surrounding communities because the smallholder farmers hired farming equipment from other farmers who were not part of NGC for cultivating land. Thus, the NGC enhanced the capabilities of the smallholder farmers and enabled them to create income-generating opportunities for the surrounding communities, meaning that they could reduce the poverty level among themselves and the local communities. They elaborated that farmworkers who were drawn from the local communities were even paid more than before the NGC's establishment. For example, temporary workers were paid R1,700–R3,000 per month during the NGC, whereas before and after the NGC period, they were paid between R1,000 to R1,400. Such a view is echoed in the narratives of the smallholder farmers (see Figure 7.7).

The participants' assertions are in accord with Edeme *et al.* (2020) statement that “investments in infrastructure development improve not only agricultural production but also employment and wages” (see Section 3.3.4). The results indicate that the NGC fulfilled the SDG1 (see Section 3.3.2) of achieving productive employment with decent incomes and halving the number of people who suffer from hunger, thus ensuring food security (Musemwa *et al.*, 2018:31; UN, 2015:29).

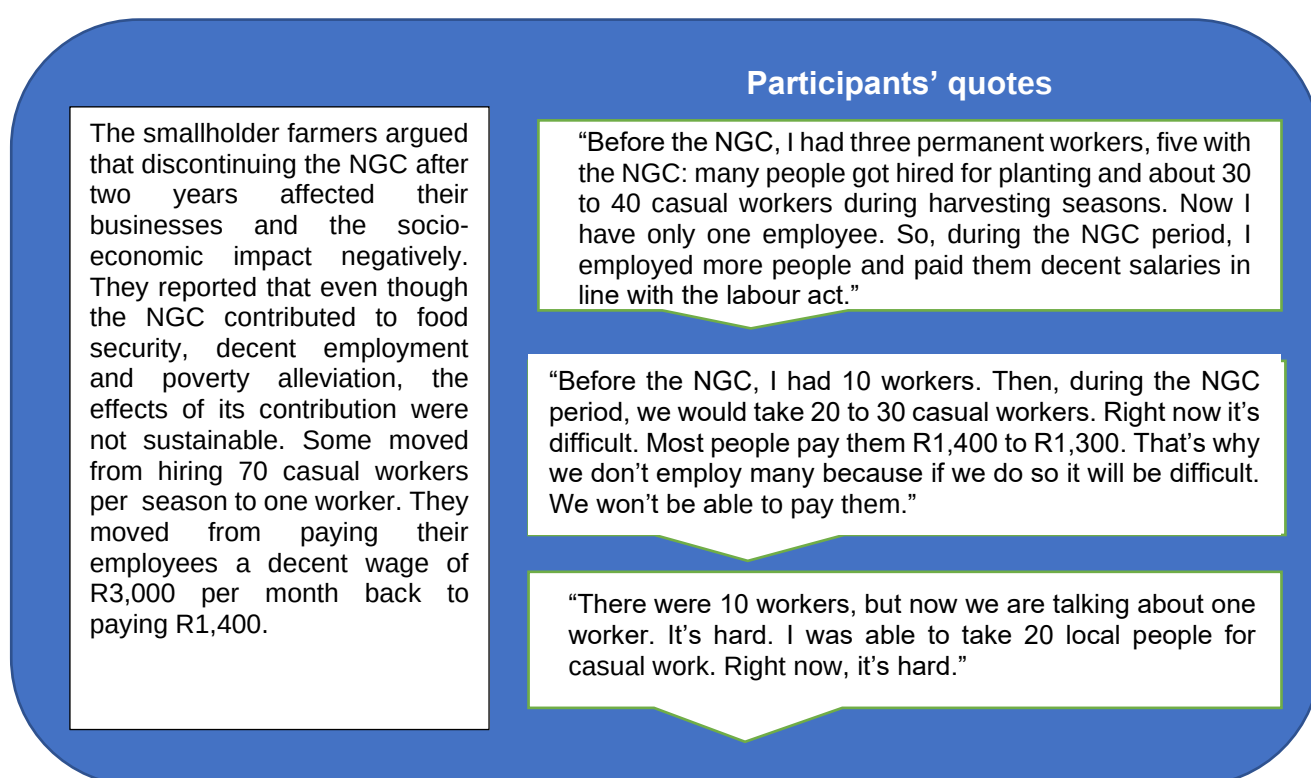
The above is also in accord with the TIPS, (2016:2) study, which revealed that between 2014 and 2016, the Limpopo Province agricultural sector paid the lowest wage of R1,200, below the regulated wage of R2,778 per month at the time (see Section 3.3.4). The sectoral Determination 13 for Agriculture establishes and regulates the conditions of employment for employees in the Farm Worker Sector, set the minimum wage for period 1 March 2018 to 28 February 2019 to R3,169 per month (South African Human Rights Commission, 2018:3), however, the Limpopo Province farmers could only afford to pay the lowest wage (R1200), which was below the regulated wage of R2778 per month, and was the lowest wage paid amongst all the other South African provinces (see Section 3.3.4). However, according to the NGC smallholder farmers' reports, joining the NGC improved their profitability levels such that between 2017 to 2019, which was the time the NGC was active, the NGC smallholder farmer members paid their workers up to R3,000 per month. Thus, even if the wages remained just below the minimum wage, the NGC's influence still uplifted the community.

Thus, through the creation of income-generating opportunities, the smallholder farmers stated that NGC influenced them to reduce only poverty levels in the surrounding communities and leverage food security. They elaborated that through the incomes earned from the farms, farmworkers were able to purchase the required foodstuffs. They further emphasised that this contributed to poverty alleviation because such people did not have sources of employment before the NGC's introduction. The smallholder farmers' views are in accord with The Committee on World Food Security-CFS (2014:6) and Grashuis (2020:79) (see Section 2.3.2) that the improvement of small-scale farmers' accessibility to critical agricultural inputs such as seeds, land, fertilisers, irrigation equipment, credit, water and the introduction of agricultural cooperatives in rural areas enables small-scale farmers to pool together resources and minimise the higher agricultural production costs that often discourage small-scale farmers, and that all these effectively enhance food security and facilitate poverty reduction (Grote, 2014:6; Hefferon, 2015:3895).

However, some smallholder farmers doubted whether the NGC had contributed to improving food security, employment creation and poverty alleviation. They explained that the NGC had good motives directed towards improving the performance of

smallholder farmers. However, it was just a pilot project that lasted for only two years; therefore, its direct impact on improving food security, employment creation and poverty alleviation cannot easily be determined. Such views are well reflected in their statements (see Figure 7.8). They reported that, even if the productivity and scale of operation of the smallholder farmers had increased, they have since declined following the NGC's exit. Consequently, farmworkers from the surrounding communities where the smallholder farmers were employed were now also unemployed. Those employed were paid R1,300, which is far below the allowable wage threshold.

Figure 7.8: NGC defeating its purpose in responding to the needs of the community.



Source: By researcher from in-depth interviews with smallholder farmers.

Even though this defeats the logic that NGC has influenced improved food security, employment creation and poverty alleviation, they reckoned that NGC would have contributed more if it had been in operation for a long time. They elaborated that the NGC improved community building because it was not only smallholder farmers who learnt agricultural skills from NGC, but also the youth and women who were employed

as farmworkers. They explained that such farmworkers were now more enticed to join the agricultural business because of the benefits they had seen NGC smallholder farmers get from agricultural production. In addition, some of the smallholder farmers revealed that they had been sharing the information and skills learnt from NGC with community members and farmers not part of NGC. In this way, the South African NGC fulfilled the *Fifth principle of cooperatives: Education, Training and Information* (see Section 5.2.2). Thus, with time, through government support, the participants stated that they remained optimistic that the positive outcomes of NGC in terms of the improvement of agricultural productivity would begin to bear fruit in the Vhembe District. Not only did the South African NGC meet the fifth principle of cooperatives, but through food security, employment and poverty alleviation, it fulfilled the *concern for community* principle, which is the seventh principle of cooperatives (see Section 5.2.2).

7.3.1.3. Theme one: Conclusion

From the participants' responses, it is evident that most of the smallholder farmers and communities still cherished the NGC because it demonstrated its efficacy in uplifting smallholder farmers in Vhembe District Municipality, despite its limited existence of operations, which was two years. It achieved this by providing inputs to smallholder farmers, including physical infrastructure, resource-based infrastructure and institutional-based infrastructure. The NGC also exhibited its efficacy by linking smallholder farmers with largescale commercial farmers and by integrating smallholder farmers in the larger agribusiness value chains. Thirdly, the NGC improved smallholder farmers' marketing capabilities, food security, employment creation and poverty alleviation among smallholder farmers and the surrounding communities. That signifies that, if given time, the NGC can contribute largely to uplifting smallholder farmers.

The following section evaluates the narratives on the critical drivers of the NGC's success in such a short time.

7.3.2. Theme two: Drivers of New Generation Cooperative's efficacy in uplifting smallholder farmers in Vhembe District Municipality

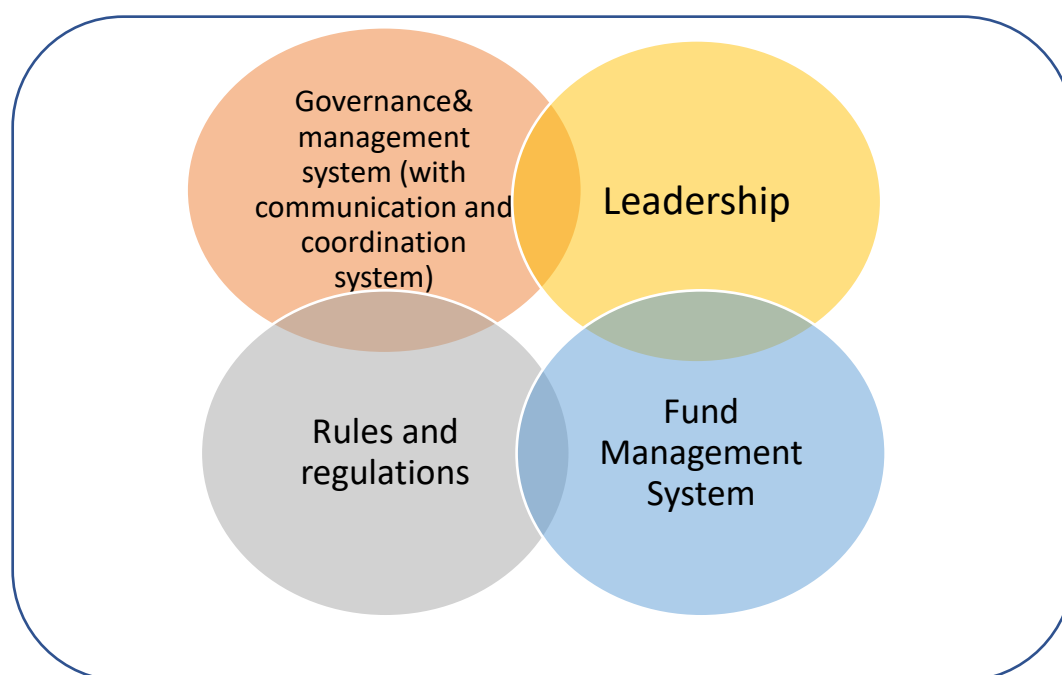
Finding 2.1

In the interviews with the participants, four categories were identified about the drivers of NGC efficacy in uplifting smallholder farmers in Vhembe District Municipality, namely management (category: T2A), farmers (category: T2B), finances (category: T2C) and performance (category: T2D). Although the management (T2A) category was considered to be a critical driver of NGC efficacy in uplifting smallholder farmers (see Section 7.3.2.1), the level of smallholder farmer cooperation (T2B) was found to be similarly critical (see Section 7.3.2.2). Furthermore, in addition to the drivers of management and farmer cooperation, the NGC's efficacy in uplifting smallholder farmers is measured on its ability to improve their financial independence (T2C) and reduce their reliance on government funding. Moreover, the smallholder farmers also shared in their interviews the performance factors (T2D) that they deemed important to improve the effective performance of the NGC (see Section 7.3.2.4). Thus, details of such themes and their accompanying narratives are evaluated as follows.

7.3.2.1. Category T2A: Management

The management's governance, leadership, rules and fund management systems played a crucial role in the NGC's efficacy in uplifting smallholder farmers. This category relates to how four management elements which are: (i) governance and management system (with communication and coordination system); (ii) leadership; (iii) rules and regulations; (iv) fund management system, impacted the NGC's efficacy. They are all shown on Figure 7.9.

Figure 7.9: Four management elements that impacted the NGC in uplifting smallholder farmers.



Source: By researcher from interviews with smallholder farmers

i) Governance and management system

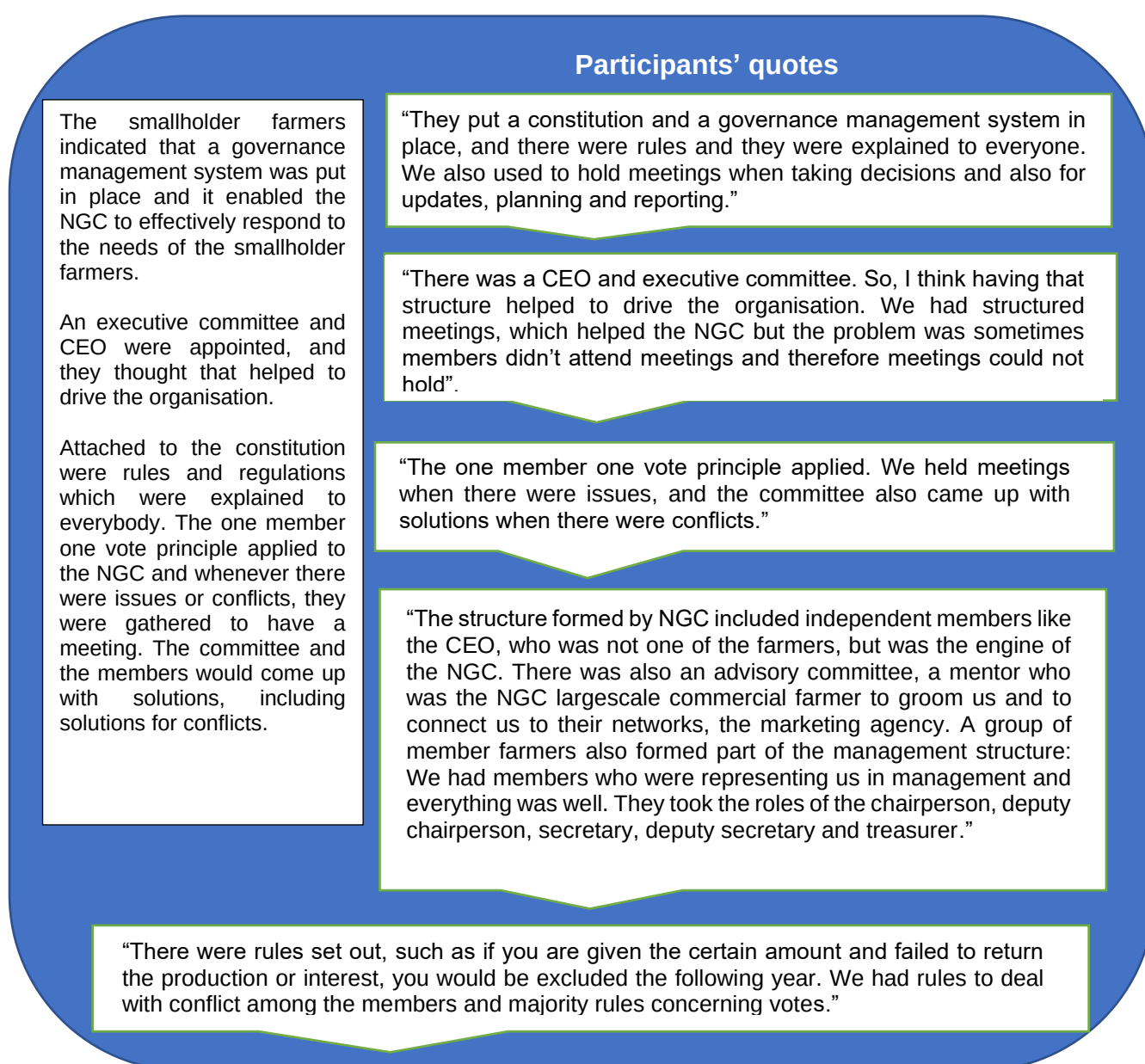
Most of the smallholder farmers cited governance and the management system as one of critical drivers of the NGC's success in uplifting the smallholder farmers. They elaborated that the governance and management system that was put in place set the vision and guided them in accomplishing all the activities that were critical for them and the NGC as a whole to achieve the desired outcomes of uplifting smallholder farmers. One of the early steps that should be taken to avoid governance challenges in cooperatives is to establish a set of procedures, policies and organisational framework to guide the cooperative business's direction, management, and control. Similarly, cooperative members should agree to the procedures, policies and structures, including the constitutional requirements agreed to by its members (see Section 5.7.2.2).

Most participants noted that the effectiveness of such NGC governance and management system explains why they were satisfied with NGC's contribution, albeit for a short period. They revealed that the NGC set operational rules and regulations that smallholder farmer members were expected to comply with to meet the NGC's

expectations. In terms of the operational rules, they stated that the NGC provided them with a certain amount of capital finance, from which each smallholder farmer was to produce and deliver the designated quantity of tomatoes to XXX agro-processing company. In the event of failure to deliver, as prescribed, they noted that the NGC's operational regulations were still friendly in that they did not exclude non-compliant smallholder farmers from future support. Most of the smallholders argued that the NGC understood the problematic context in which they operated. Therefore, the flexible rules motivated them to work even more. As they noted, this explains why most of the smallholder farmers performed well when the NGC was operational compared to before and even after the NGC exit.

Furthermore, most of the smallholder farmers stated that the NGC had an effective system of communication and coordination of activities as part of its governance and management system. They explained that the NGC held meetings with them every fortnight to exchange views and understand how to respond to their major concerns. Moreover, most of the participants stated that, in the case of emergencies, the NGC would call a meeting with them as desired. They asserted that this approach enabled the NGC to constantly stay in touch with them and to intervene when necessary. This is referred to by Hagedorn (2014:555) as "teaming", meaning that cooperative members and leaders collaboratively worked together to achieve a common purpose (see Section 5.7.2.2). Such findings are well detailed in the interview responses of the smallholder farmers (see Figure 7.10.A).

Figure 7.10 A: NGC governance management system, and leadership, rules and regulations.



Source: By researcher from in-depth interviews with smallholder farmers.

The structure created by the NGC included independent members such as the CEO, who was not one of the farmers but the NGC's engine. There was also an advisory committee, a mentor, the NGC largescale commercial farmer to groom us and connect to their networks, and a marketing agency. A group of member farmers also formed part of the management structure. Most of the smallholder farmers mentioned that the governance and management system at the NGC was based on a system of majority

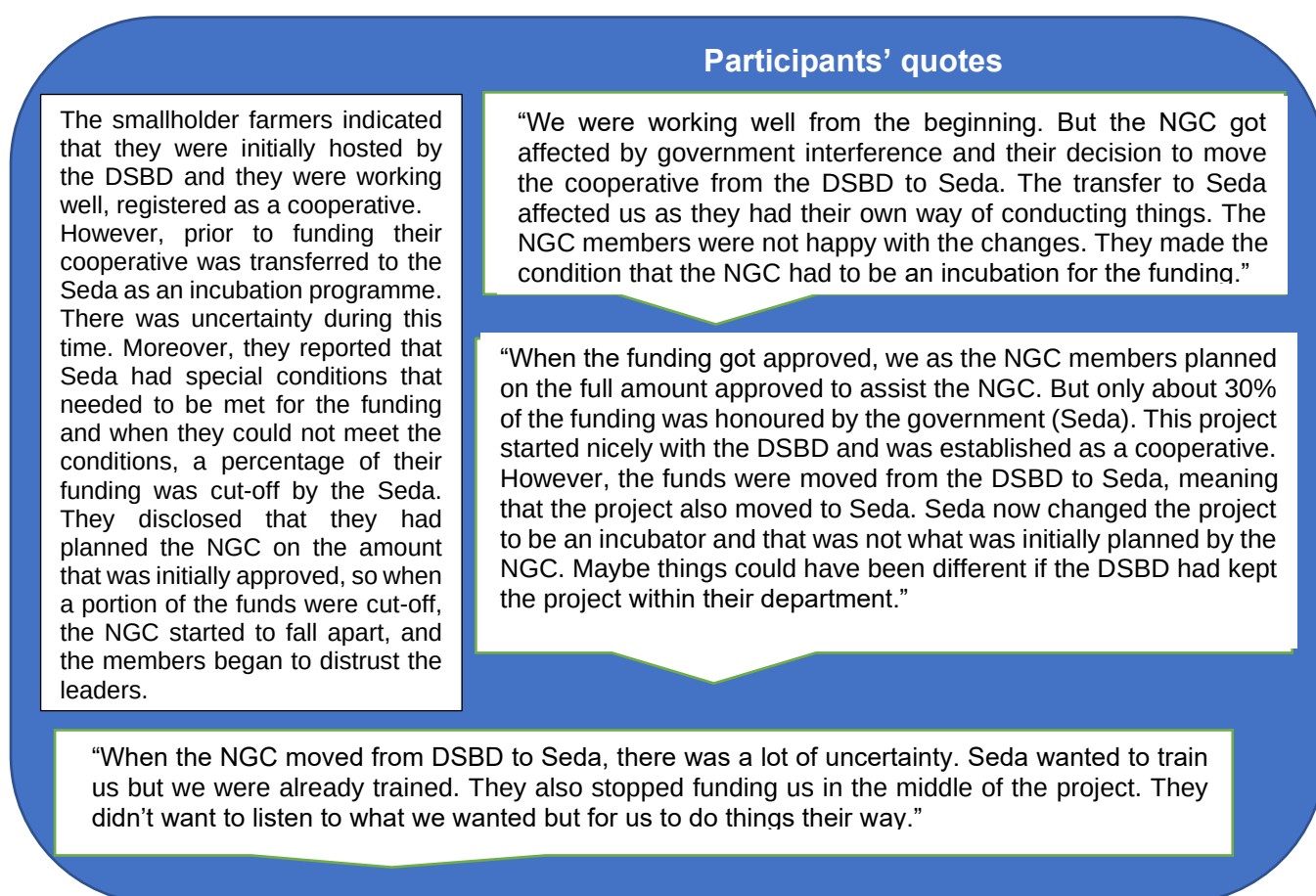
voting rule (see Figure 7.10.A). This, again, indicates that the South African NGC adhered to cooperative principles, in this case, the *second principle of democratic member control*, that members participate in policymaking and in making decisions by having equal voting rights of one member one vote (see Section 5.2.2). They explained that in the case of contentious issues, they would be subjected to a vote by the NGC members, and the decision and position adopted by the majority of the members would be adopted as the position of the NGC.

Most of the participants also mentioned that some smallholder farmers were elected to constitute the executive committee that coordinated activities (see Figure 7.10.A). The committee was noted by most of the smallholder farmers to have aided the communication and linking of NGC with smallholder farmers, as well as non-NGC smallholder farmers and NGC implementers such as the DSBD, SEDA, The Netherlands Embassy, TTT marketing agents, UUU impact investment company, VVV, the NGC largescale commercial farmer, WWW consulting company, XXX agro-processing company, YYY seedlings supplier, and ZZZ agricultural chemicals supplier. They elaborated that this management approach improved the common understanding and discerning of the activities that had to be performed to ensure the NGC achieved its critical objectives and goals. In addition, some of the smallholder farmers revealed that the NGC created a governance and management system that enabled the NGC, in collaboration with the NGC largescale commercial farmer, to act and operate as a mentor to smallholder farmers. They said the NGC leaders and managers guided them on how to farm in a way that produced quality tomatoes and how to market their products to the relevant customers.

The smallholder farmers also noted that the NGC had a member council and an executive management committee (EMC). The EMC consisted of a chairperson, deputy chairperson, secretary, deputy secretary, treasurer and CEO. Some farmers said that this structure was the NGC engine that drove effective activities to ensure they benefited from the NGC. Some of them added that there were situations in which the member council would make their own decisions and notify the smallholder farmers later, but that the governance and management system performed well to deliver the requisite outcomes to the designated smallholder farmers (see Figure 7.10 A).

However, some of the participants pointed out that the effectiveness of the NGC's governance and management system was undermined by the government intervening to have the NGC moved from the mandate of the DSBD to SEDA, which this created confusion because SEDA had a different operational approach and objectives than to the DSBD (see Figure 7.10.B). It introduced certain conditions the NGC needed to meet before funding. The farmers revealed that SEDA withdrew a percentage of the initially agreed funds because the NGC did not comply with certain conditions required for the incubation management. They believed that the government interfered by changing their model to an incubation, with which they could not comply. In addition, members started to ask the NGC leadership questions about the movement and the budget cut-offs, and no one gave them complete answers. They believed that trust was broken, and the NGC started to fall apart at this stage.

Figure 7.10 B: NGC governance management system (movement of funds from DSBD to SEDA).



Source: By researcher from in-depth interviews with smallholder farmers.

According to Figure 7:10 B, some smallholder farmers noted that the transfer to SEDA constrained the NGC leadership system's efficiency in uplifting smallholder farmers.

ii) Leadership

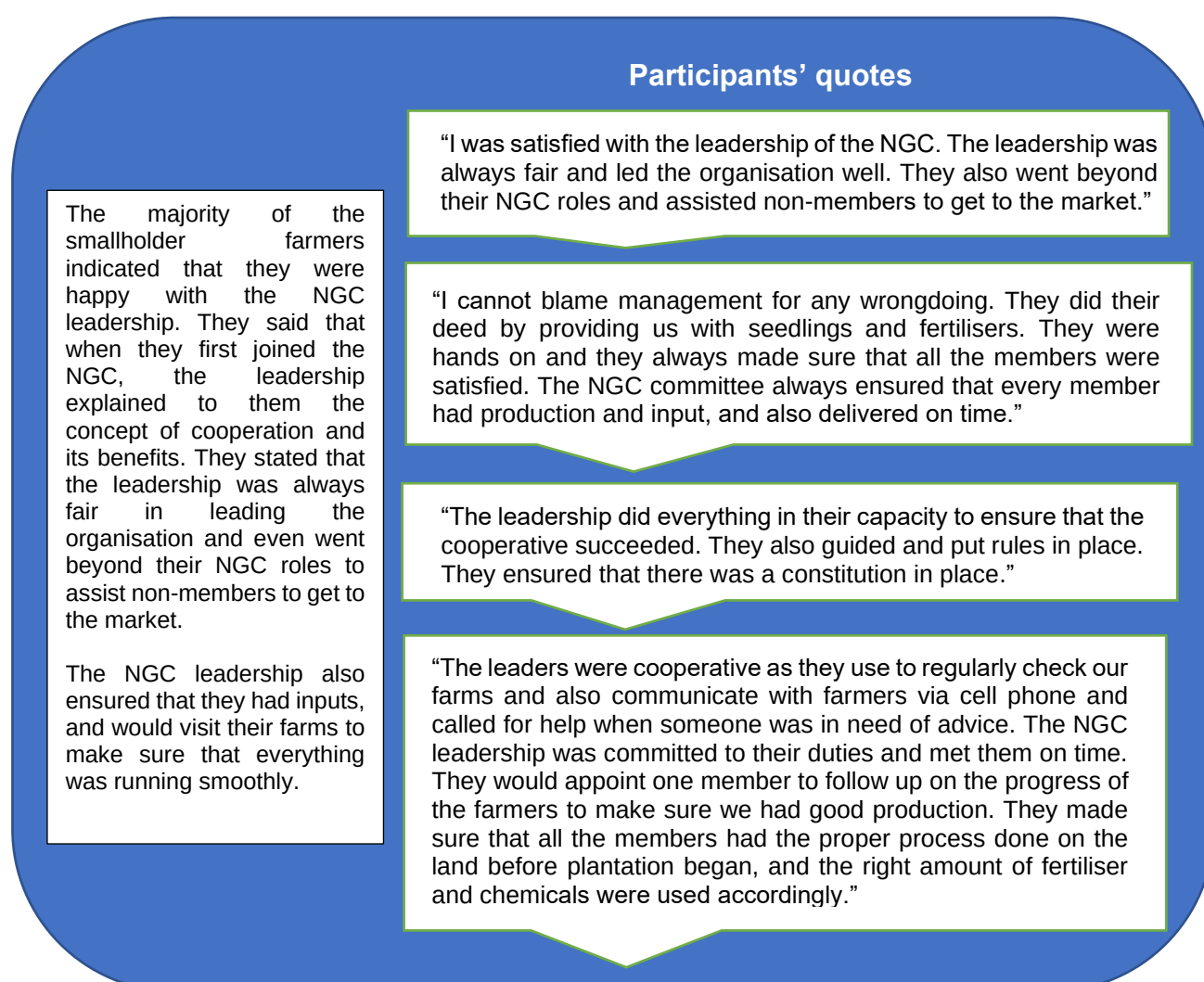
Despite the abovementioned limitations, most smallholder farmers indicated that the NGC had good leadership that successfully drove activities to most of their satisfaction. This is in accord with Hun *et al.* (2018: 82), Shen and Shen (2018:240), as well as Syden and Lee (2016:195), who argue that productivity and economies of scale (see Section 5.3.1) and access to input and output markets (see Section 5.3.2) are enhanced by joining a cooperative. The smallholder farmers narrated that when NGC was in its initial stages of formation, the NGC's leaders played a critical role in mobilising them by explaining to them the motive of the NGC's establishment, in particular, they motivated them to work together in the cooperative rather than alone. They were told that working together would enable them to share agricultural equipment and access seeds, fertilisers and chemicals at discounted prices from the suppliers. The participants stated that they were also told that operating as a cooperative would motivate the government to discern how smallholder farmers could be assisted as a group, as contrasted to helping individual smallholder farmers one at a time.

They further revealed that the NGC leadership set a common goal and motivated them to plan together, which enabled the sharing of ideas and information to improve the performance of the smallholder farmers that were performing poorly before the NGC's establishment. Moreover, most of the smallholder farmers stated that NGC also ensured all the agricultural inputs, such as fertilisers, seeds and chemicals, were sourced and availed to smallholder farmers on time. They also guided the process for distributing seeds, fertilisers and chemicals among smallholder farmers, as well as guiding decisions on the number of hectares a particular smallholder farmer could plough. If any smallholder farmer runs short of seeds, fertilisers or chemicals, the NGC leadership permits them to source more inputs. Such a finding is reflected in the smallholder farmers' narratives in Figure 7.11 A.

The participants stated that when transporting their tomatoes to the market, the NGC leadership was always available to ensure that the transporters (bakkie owners

contracted from the communities) transported the products from the farm to the packhouse and then to XXX agro-processing company. Most of them noted that the NGC leadership took the initiative to ensure they were paid by XXX agro-processing company. They said the leadership was committed and monitored their performance by constantly interacting with them to understand and respond to their needs. Most of the farmers stated that this enabled them to perform well because the NGC leadership would intervene when they had problems.

Figure 7.11 A: NGC leadership satisfaction.

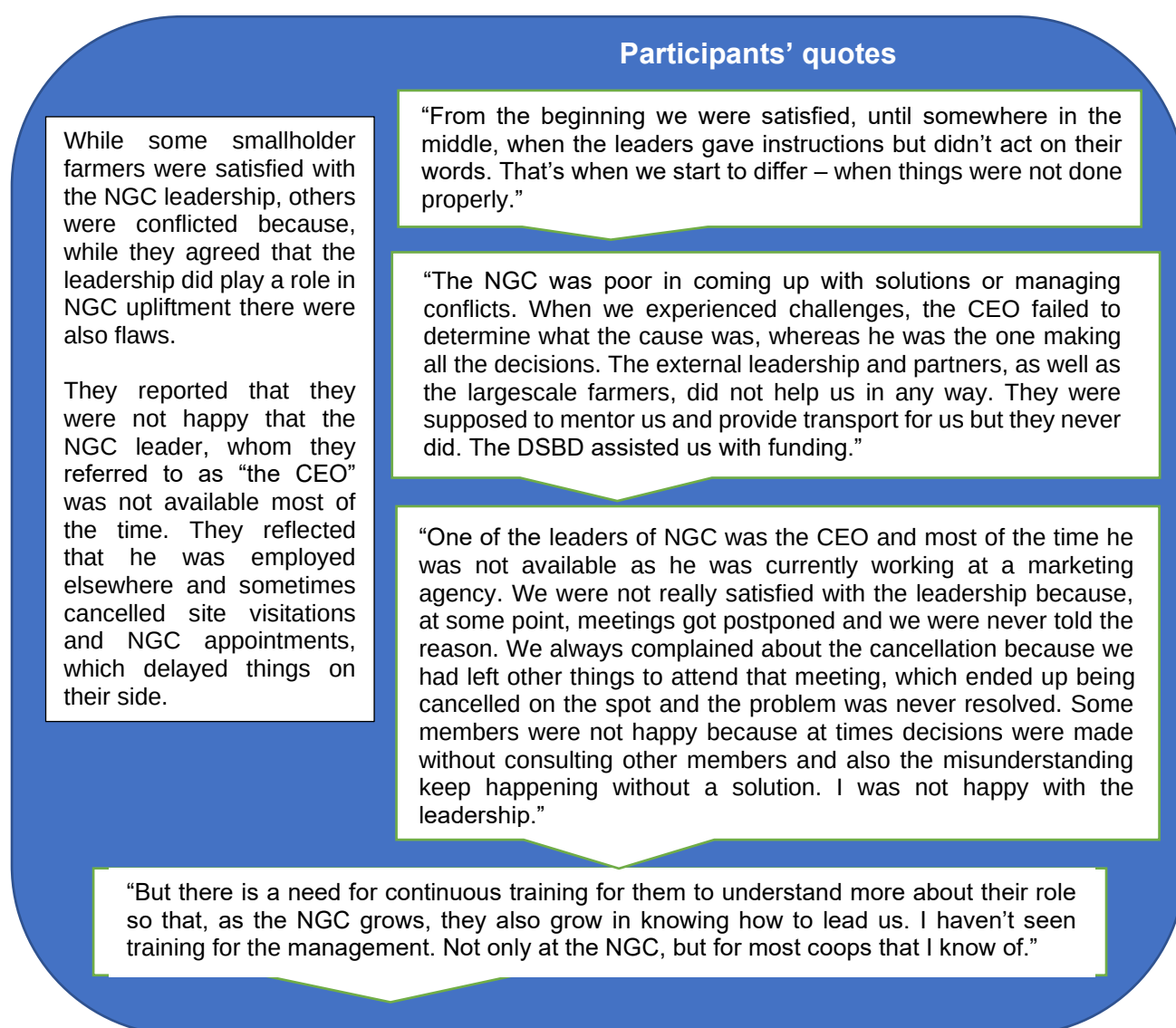


Source: By researcher from in-depth interviews with smallholder farmers.

After probing a bit further, some participants revealed that they thought the NGC leaders performed well because they had designated roles and responsibilities. They elaborated that the chairperson, secretary, treasurer and their deputies had clear roles

and responsibilities to avoid conflicts and sabotage. Moreover, the NGC leadership would consult them in all important decisions regarding operations, budgeting and the distribution of funds and inputs. Thus, according to these smallholder farmers, the South African NGC fulfilled the *third principle of cooperatives*: members should contribute equally to the cooperative. They democratically controlled their cooperative's capital, which is also a requirement of the third principle (see Section 5.2.2). While most members were satisfied with the NGC leadership, some indicated that, as the NGC progressed, the leadership also had flaws in managing the NGC, as shown below.

Figure 7.11 B: NGC leadership non- satisfaction.



Source: By researcher from in-depth interviews with smallholder farmers.

The smallholder farmers who were not satisfied with the leadership reported that the leaders gave instructions they did not act on. They reported that the NGC was poor in coming up with solutions or managing conflicts in times of challenges and that the CEO, who was the decision maker, could not address some of the issues. They also reported that the external leadership and partners, as well as the largescale commercial farmer, did not help them in any way. They explained that all these people were supposed to guide and mentor them, but they never did. They said the CEO was not always available because he was employed elsewhere and sometimes cancelled site visitations and NGC appointments, which delayed things on their side. (See also section 5.7.2.1) which advocates for “such initiatives can also be accomplished by appointing a **local champion** to be the organisational catalyst”. One of the farmers expressed that they had not seen training for the management, either at NGC or in other cooperatives. They, therefore, believed that there was a need for continuous training for the leadership to better understand their roles.

ii) NGC rules

Finding 7

Most of the smallholder farmers indicated that the rules set out by the NGC were one of the drivers of the enormous benefits they gained from the NGC (see Table 7.4 & Figure 7.12).

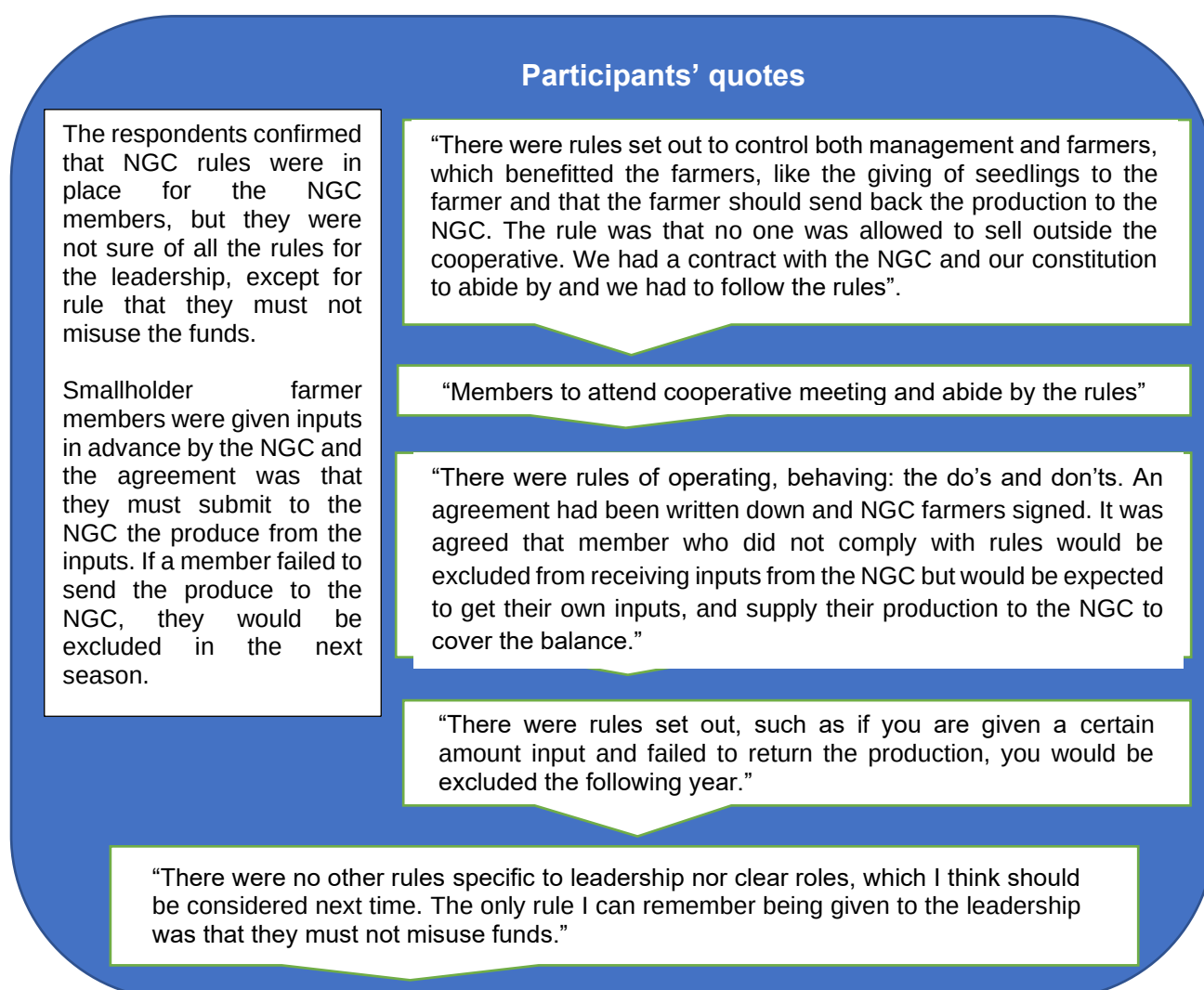
Table 7.4: NGC rules.

1.All NGC production is to be brought back to the NGC	5.Farmers will harvest and transport the product to the NGC premises in crates supplied by the NGC,
2.No side selling	6.The farmers will grade their harvested crops themselves,
3.Members to attend cooperative meetings	7.NGC does transport to the market and marketing.
4.Farmers will do the planting but will be assisted by the NGC in land preparation and machinery	8.The CEO has a full licence to carry out the necessary activities, place orders, take care of due payments, and set up an administration system that will be kept in the office.

Source: From the NGC organisational documents and in-depth interviews with smallholder farmers.

The NGC members drafted the NGC constitution, reflecting the rules and regulations they wanted to operate by. The participants explained that a contract was signed between the smallholder farmers and the NGC, thus committing them. The smallholder farmers revealed that the contract stated that they should abide by the rules of the NGC indicated in the table above. By accepting the NGC rules and regulations, the smallholder farmers initially met the first cooperative principle of voluntary and open membership. The farmers said that if any of the smallholder farmers did side selling, the punishment was that they would not receive inputs for the following season (see Figure 7.12 & Section 7.3.2.2).

Figure 7.12: NGC rules.



Source: By researcher from in-depth interviews with smallholder farmers.

In addition, the members had to attend NGC meetings, in which cooperative decisions were taken, and progress updates were discussed. If less than 50% of the members were present at the meeting, no decisions could be taken, which delayed decision-making. In terms of leadership rules, the smallholder farmers were not sure of all the rules given to the leadership, but they knew that the leaders had a rule that they must not misuse the funds. The rules motivated the members and the leadership to be transparent and accountable with the NGC fund management system.

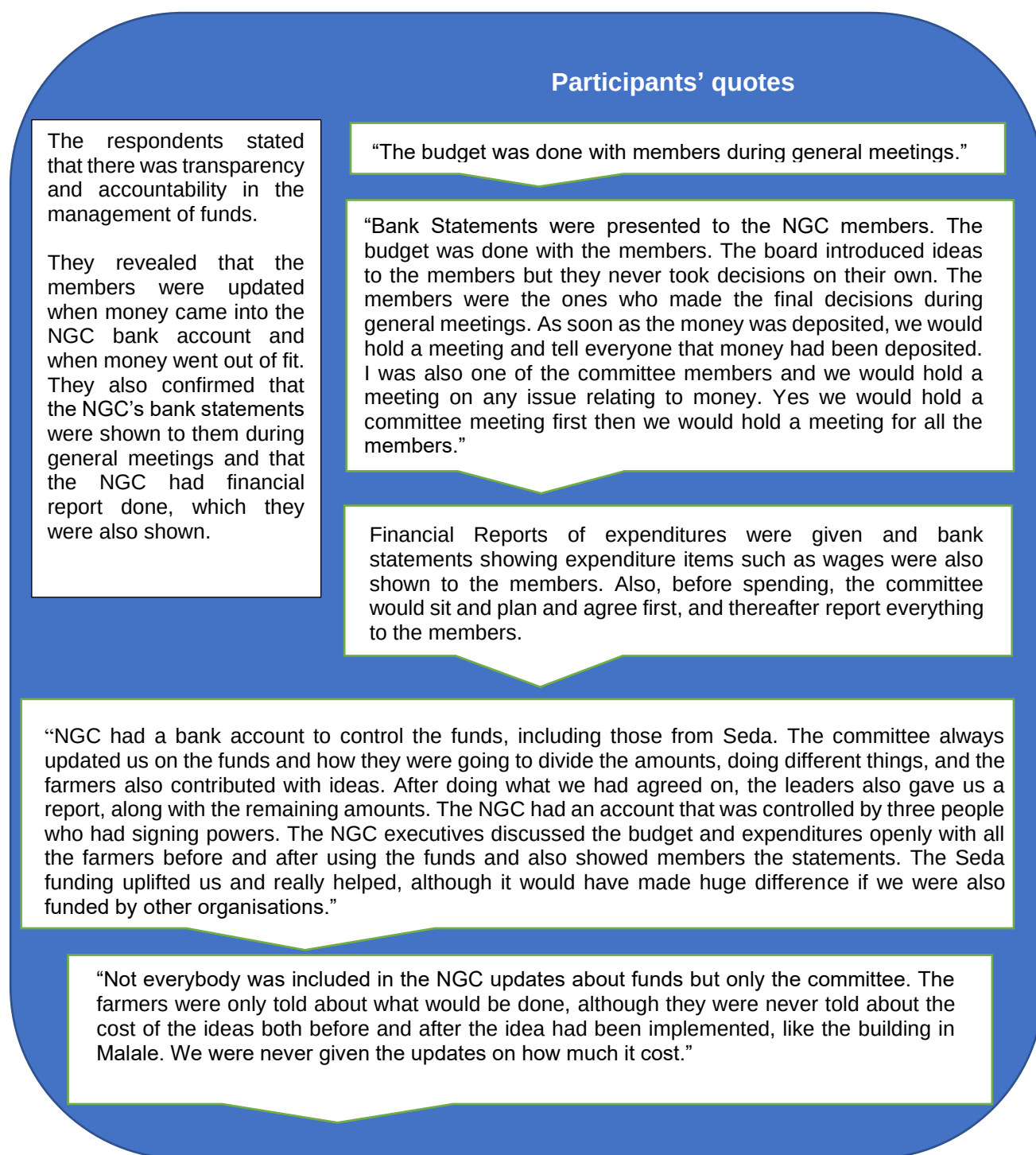
Finding 2.2

iv) Transparency and accountability in the fund management system

Most smallholder farmers noted transparency and accountability at NGC to have influenced the level of smallholder farmers' satisfaction with the NGC's activities. They stated that all decisions were made in a transparent way that entailed the involvement of smallholder farmers. Most participants explained that they were represented directly in NGC decision-making processes (see Figure 7.13).

For indirect representation, they explained that they were represented by the management committee comprised of the smallholder farmers elected to represent them in the NGC management. The management committee members consulted and engaged with ordinary smallholder farmers on the position that must be taken during the executive committee meetings. They elaborated that direct representation involved smallholder farmers directly engaging in the decision-making activities of NGC through periodic meetings in which the farmers were consulted and engaged in voting on a majority rule basis to reach the decision that had to be adopted by NGC. The participants stated that this high level of transparency and accountability was also reflected in NGC decision-making about financial issues and decisions. Most of the smallholder farmers indicated that the NGC had an effective accounting system to manage the funds. They confirmed that, even though they did not contribute any funds to the NGC, the funds that were received from the government and other funders were transparently used in ways that all the NGC leaders could easily account for.

Figure 7.13: NGC transparency and accountability on financial management and systems.



Source: By researcher from in-depth interviews with smallholder farmers.

Most smallholder farmers agreed that the NGC leadership involved them in all NGC financial matters and how such funds could be distributed or spent by the authorities. During budgeting, they explained that NGC leadership put everything to the smallholder farmers to decide what must be prioritised in the budget and spending decisions. They explained that such decisions were put to the vote using the majority rule during the meetings with smallholder farmers. Most noted that this enabled them to discuss and prioritise what was of major concern to them. After the funds had been spent, the NGC leadership provided them with the financial statement and reports so that they could assess whether the allocated funds had been spent following the smallholder farmers' decisions. Thus, although smallholder farmers did not contribute any funds and were therefore losing nothing, such a high level of transparency and accountability enabled them to assess whether there was any wastage, embezzlement or even theft of NGC funds. Most of the smallholder farmers said this approach enhanced their level of trust and confidence in NGC leadership.

When the NGC was founded, most of the smallholder farmers thought the NGC would be marred by corruption. However, they noted that these incidents were not reported at the NGC due to the high level of effective accounting, the financial management system, transparency and the accountability mechanisms that the NGC put in place. However, some of the smallholder farmers still pointed out that transparency and accountability issues undermined the confidence and trust of some of the smallholder farmers, namely that not all the smallholder farmers were involved in budgeting decisions. Rather, only the smallholder farmers that sit on the management committee were involved in budgeting and informed about spending decisions. They stated that the NGC management would make decisions and spend funds without informing the smallholder farmers about the costs incurred. To a significant extent, some of the smallholder farmers revealed that this affected transparency, accountability, and their trust in the NGC leadership. It is possible that the few farmers who said they had not been updated on budget issues were those who did not attend the NGC meetings. This was also confirmed by the farmers, who were satisfied with the NGC leadership's transparency.

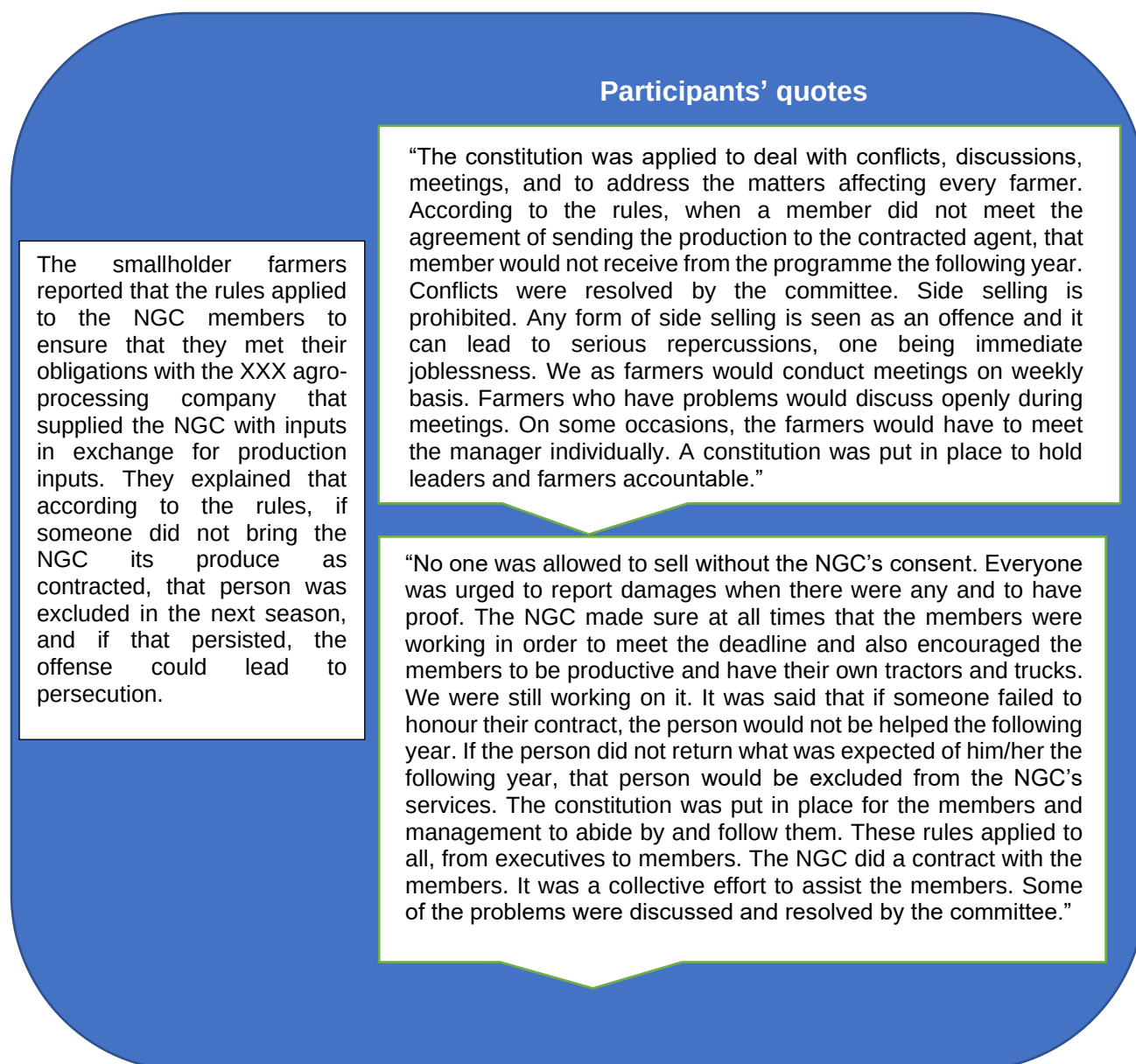
7.3.2.2. Category T2B: Farmers (smallholder farmers' cooperation with the NGC)

Most of the participants stated that the level of cooperation of smallholder farmers with NGC was one of the critical drivers of NGC's success in uplifting smallholder farmers. They elucidated that smallholder farmers' cooperation was important.

Most of the smallholder farmers stated that NGC strongly stressed the guidelines for compliance with the contracts to deliver all tomatoes to XXX agro-processing company. Moreover, they mentioned that side selling to other buyers of tomatoes and not XXX agro-processing company was prohibited, and failure to comply would lead to dismissal from the NGC. The problem of side selling in cooperatives is noted by Francesconi and Wouterse (2019:22), as well as Van Dijk (2015:6), to be one of the reasons for organisational degeneration in cooperatives, which can lead to the exit or the re-invention of the cooperative (see Section 5.7.2.4). Thus, they noted that most smallholder farmers cooperated with the NGC to ensure compliance with such regulations to enhance the NGC's smooth operation (see Figure 7.14 A).

The participants stated that most of them were motivated to cooperate with NGC because of the enormous benefits that would accrue from being associated with it. They explained that the NGC was providing them with all inputs and the market for their tomatoes; therefore, there was no reason for them not to cooperate. Moreover, some smallholder farmers noted that the NGC also cooperated and worked well with them. They explained that the NGC applied the constitution equally to everyone, whereby everyone was answerable if they did anything wrong. The NGC leaders exhibited their cooperation by providing farmers with all the required inputs at the right time and assisting with what was required at the right time. This form of cooperation between the NGC and the smallholder farmers was said to have created a conducive working environment for the NGC to uplift smallholder farmers, even within the limited time it existed.

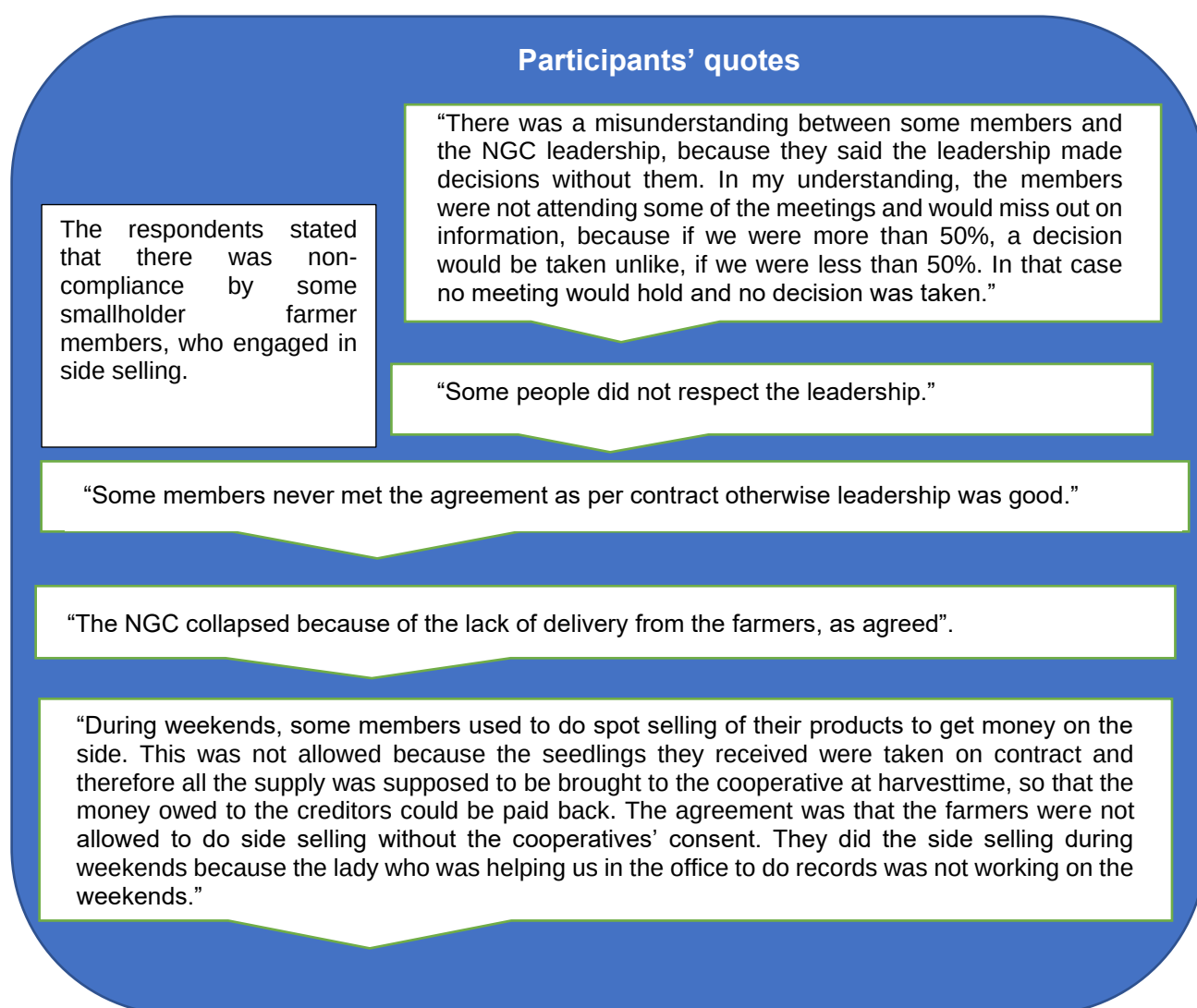
Figure 7.14 A: NGC farmers' cooperation



Source: By researcher from in-depth interviews with smallholder farmers.

However, despite the cooperation of most farmers, there was poor compliance by some smallholder farmers. Some respondents indicated that other smallholder farmers practised side selling. The members explained that the produce that had to be sent to XXX agro-processing company, which gave them inputs in exchange for production, came short due to side selling. Therefore, the leadership had to approach other local smallholder farmers to supply the NGC to make a difference. The participants reported that they could no longer trust one another.

Figure 7.14 B: NGC smallholder farmers non-cooperation.



Source: By researcher from in-depth interviews with smallholder farmers.

One of the members explained that misunderstanding arose and communication became difficult, even in meetings, due to the divisions that emerged among the smallholder farmer members. Some started to skip the meetings, which required a sitting of 50% membership to meet the quorum; otherwise, it could not be held. At times there were important decisions to be made, and when the meeting did not meet the quorum, the leadership took the decisions themselves. Thus, one of the members explained that some of the smallholder farmers did not respect the leadership. The farmers also revealed that during weekends, side selling would take place because, in the week, the management would do rounds of inspection on the farms. The smallholder farmers explained this was one of the reasons for the NGC's collapse.

Such a finding is exhibited in the smallholder farmers' statements in Figure 7.14 B. In this way, the NGC members did not fully meet the *first cooperative principle of voluntary and open membership*, which means that cooperative members must be prepared to accept the responsibilities attached to membership (see Section 5.2.2).

Yet, as NGC attempted to foster compliance by the farmers even amidst questions, some of the smallholder farmers still revealed that there was an attempt by NGC to create financial independence and autonomy as one of the critical drivers of NGC's success in uplifting smallholder farmers.

Finding 2.3

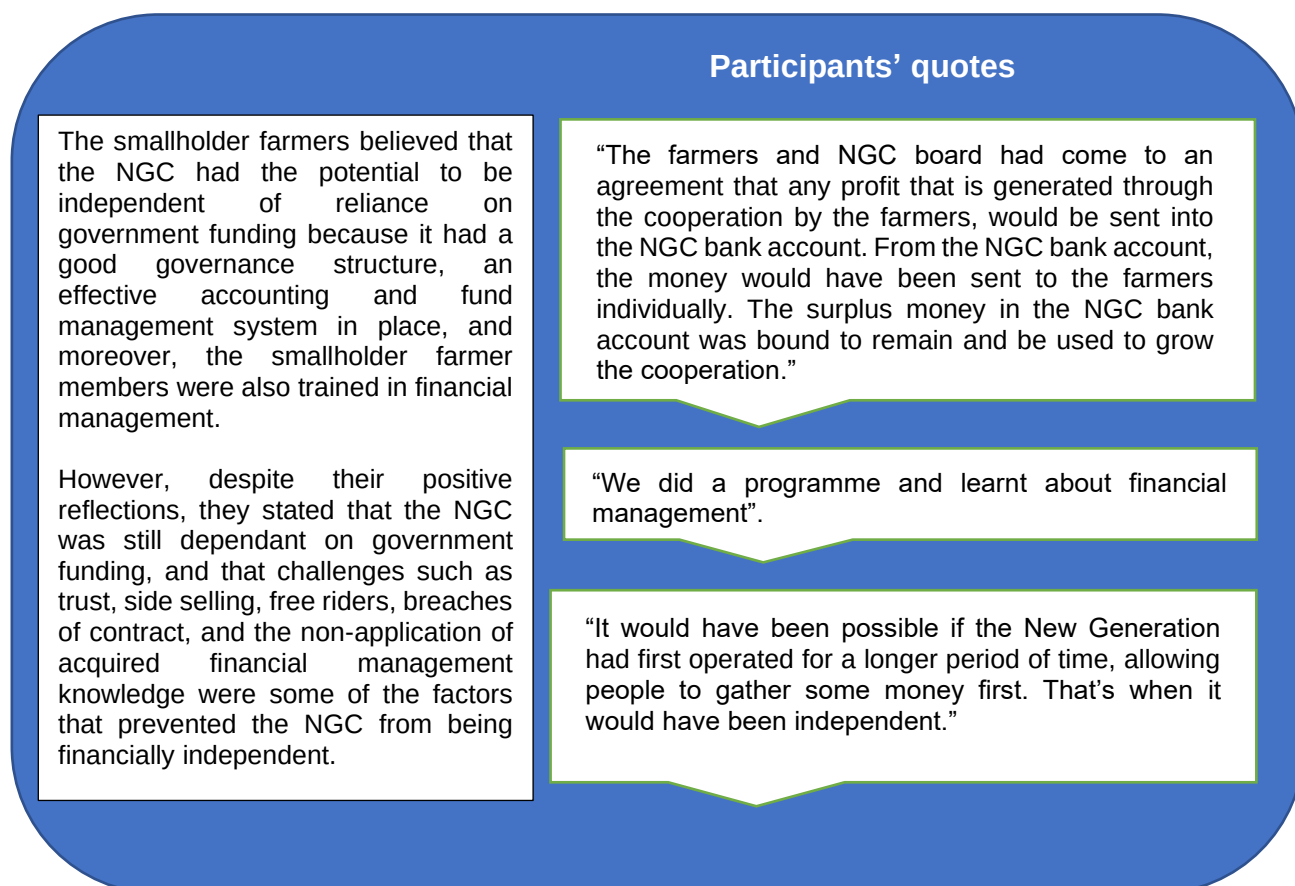
7.3.2.3. Category T2C: Financial Independence

Financial independence was recognised in most of the narratives as critical for leveraging the NGC's effective performance. Most smallholder farmers revealed that it enabled NGC to run smoothly and enabled farmer members to remain sustainable in the long run. In this context, most of the smallholder farmers' responses to the question required them to list and briefly describe the measures undertaken by the NGC to improve its financial independence and reduce reliance on government funding indicated that the NGC emphasised the financial independence of the smallholder farmers. To accomplish that, they reported that NGC created a system that enabled even smallholder farmers with limited capital finance to operate. This seemed to refer to the contract for the supply of inputs from YYY seedlings supplier, ZZZ agricultural chemicals supplier, and the contract with XXX agro-processing company.

Most smallholder farmers appreciated that arrangement because it enabled them to operate. They argued that, if given time, the arrangement could have permanently solved the challenge of lack of adequate capital among smallholder farmers. In addition, they revealed that the NGC's attempt to create financial independence was reflected in the arrangement whereby the smallholder farmers were required to deposit all the profits earned into the NGC account. From the NGC account, they explained

that the profits would be distributed to smallholder farmers. At the same time, a percentage of it remained in the account to cater for emergencies (see Figure 7.15.A).

Figure 7.15 A: NGC's financial independence.



Source: By researcher from in-depth interviews with smallholder farmers.

Most smallholder farmers stated that they recognised the importance of saving to become financially independent in the long run. They revealed that such an approach influenced a change in their behaviours because they had previously spent almost everything after selling their agricultural produce. Most of the smallholder farmers said that the advantages of financial independence were that the smallholder farmers could easily purchase land and agricultural inputs such as seeds, fertilisers and chemicals and hire and pay farmworkers, equipment and resources without depending on any other sources for financial support. To ensure that the NGC becomes financially independent, the smallholder farmers also indicated that it mobilised the initial operating capital from sources such as the DSBD and SEDA, as well as donations

from other sources. This enabled the NGC to financially support smallholder farmers and conduct training for the farmers on the best agribusiness practices.

Most of the smallholder farmers stated that due to the short period that the NGC existed, it was unable to be fully financially independent. When the smallholder farmers were asked to elaborate on the reasons why they had not gained financial independence from government funds, they mentioned the following reasons, as also narrated on Figure 7:15 B:

- The NGC programme existed for a short period.
- Not all the funds from the SEDA were submitted to the NGC; in other words, there was a shortfall in the grant paid to the NGC as compared to the amount they were promised initially.
- Breach of contracts: (i) Members did not meet the production deadlines and agreement, as per the contract, and (ii) side selling by some of the members.
- The NGC members lacked unity; there were factions among the farmers, and trust was broken by the side selling.
- Free riders.
- Although they attended NGC training and workshops on financial management, they could not put the knowledge they acquired into practice.
- The NGC focused on one type of crop instead of diversifying markets.
- Pests and diseases such as white flies and *tuta absoluta* affected them.

Figure 7.15 B: NGCs financial independence challenges.



Source: By researcher from in-depth interviews with smallholder farmers.

Moreover, most of the smallholder farmers stated that they could not become financially independent because of the credit they obtained for agricultural inputs from YYY seedlings supplier, ZZZ agricultural chemicals supplier and XXX agro-processing company. They revealed that the remaining percentages paid to them upon delivering

the tomatoes to XXX agro-processing company were insufficient. As this affected their capabilities, some of the smallholder farmers further stated that they could not produce and deliver tomatoes to XXX agro-processing company per the agreement. Thus, some smallholder farmers earned more and expanded their tomato production, while other smallholder farmers were unable to do so. Compounded with the fact that NGC only existed for a short period, most of the smallholder farmers stated that such incidents undermined the capabilities of NGC and the ability of smallholder farmers to become financially independent. This finding is derived from the smallholder farmers' statements in Figure 7.15 B.

Government handouts dependency by small businesses and agricultural cooperatives is listed as one of the challenges confronting the growth and sustainability of these businesses (see Section 5.3.2). The NGC was piloted in South Africa to present small businesses with the opportunity to grow and survive without government handouts, but rather to rely on self-help measures and thus earn more, increase the value of their productive assets and create jobs (DSBD, 2015:3; Galatoulas *et al.*, 2018:37). However, the smallholder farmers indicated that, as much as they earned an income from their buyers and ran the NGC, they were still dependent on government handouts. Consequently, the NGC was not yet *a self-sustainable, self-help or independent organisation as it still relied on government funding and thus did not fulfil the fourth principle of autonomy and independence* (see Section 5.2.2).

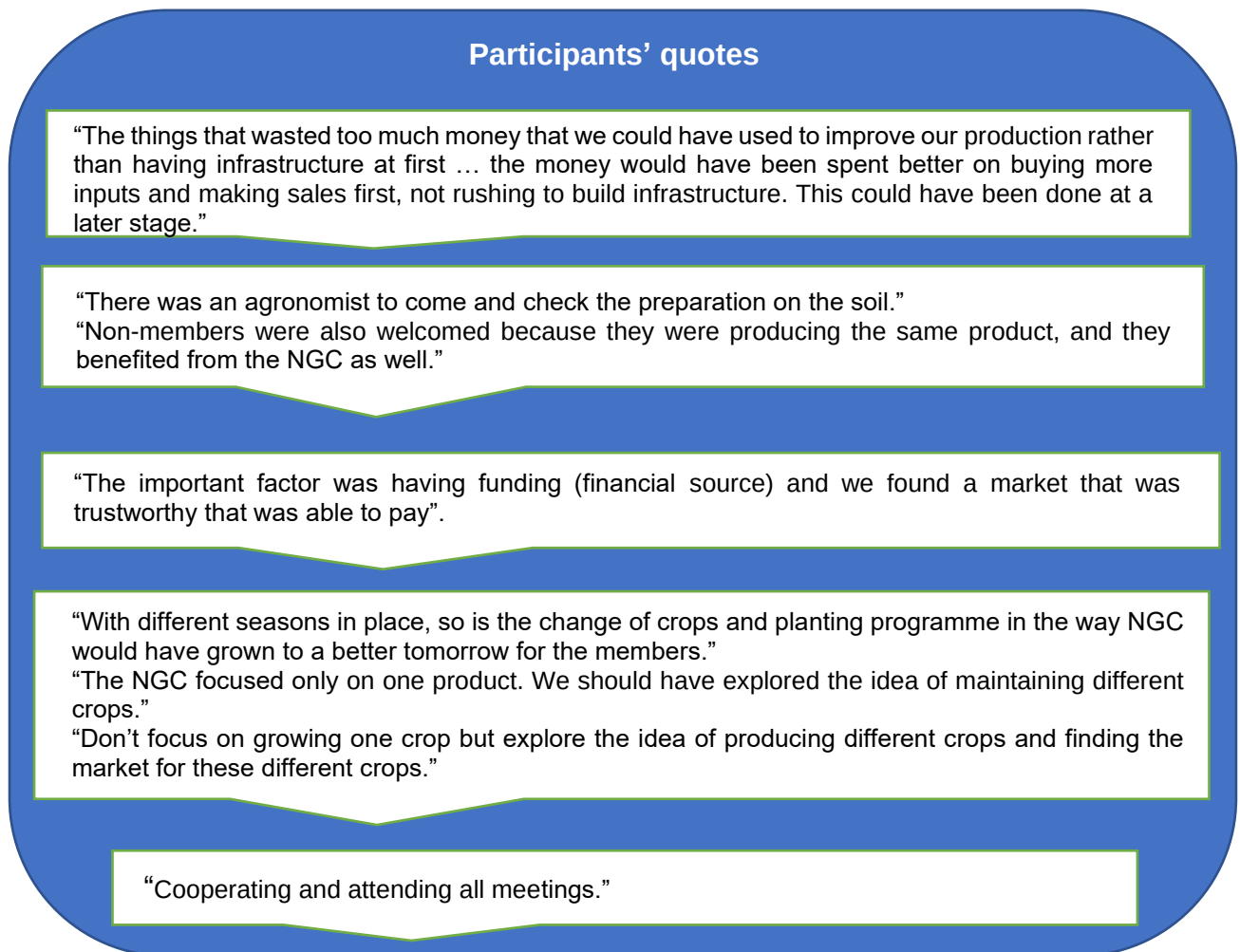
Besides narrating their status on financial independence, the participants also insinuated that other factors were important for improving the effective performance of the NGC.

Finding 2.4

7.3.2.4. Category T2D: Performance

For theme two, the drivers of NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality are 1) management, 2) the cooperation of farmers, and 3) financial independence. The smallholder farmers were asked to list and explain the other factors they thought were important for improving the performance of the NGC.

Figure 7.16: NGC Performance Factors



Source: By the researcher from in-depth interviews with smallholder farmers.

Figure 7.16 provides the smallholder farmers' statements where the following factors were deemed important to improve the performance of the NGC:

- Planting different crops to penetrate new markets for profits.
- Investing in production before infrastructure. They believed that if they did not construct the packhouse and rather rented space from local packhouses, the money used to construct the packhouse could have taken their operations and production further.
- Capital injection. They mentioned that the NGC should have also looked at other means of additional funding and not only relied on SEDA, which did not

fully pay them. That NGC programmes should have been implemented for a longer period.

- Securing trustworthy markets. The NGC did this well, and smallholder farmers believed it should continue.
- Soil preparation by an agronomist and the provision of inputs. NGC performed this very well, and smallholder farmers believed it should have continued.
- The NGC needs to sign contracts with all the stakeholders involved in the programme. They felt that the appointed NGC mentor member did not perform as they expected.
- Inviting non-members to participate
- Harsh punishments should be imposed on the members who failed to abide by the NGC rules.
- Agro-processing was important for improving the performance of the NGC.

They added that the members cooperating and attending all meetings would also have improved the performance of the NGC.

7.3.2.5. Theme two: Conclusion

It is evident from the results of theme two that some of the critical drivers of NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality were a sound governance and management system, good leadership, appropriate rules, transparency and accountability, financial independence and the smallholder farmers' cooperation with the NGC. Several factors, such as planting different crops, investing in production before infrastructure, capital injection, securing trustworthy markets, soil preparation by an agronomist, inviting non-members to participate, and agro-processing, were listed by the participants as improvements that would have made the NGC more effective.

7.3.3. Theme three: Challenges of the New Generation Cooperative's efficacy in uplifting smallholder farmers in Vhembe District Municipality

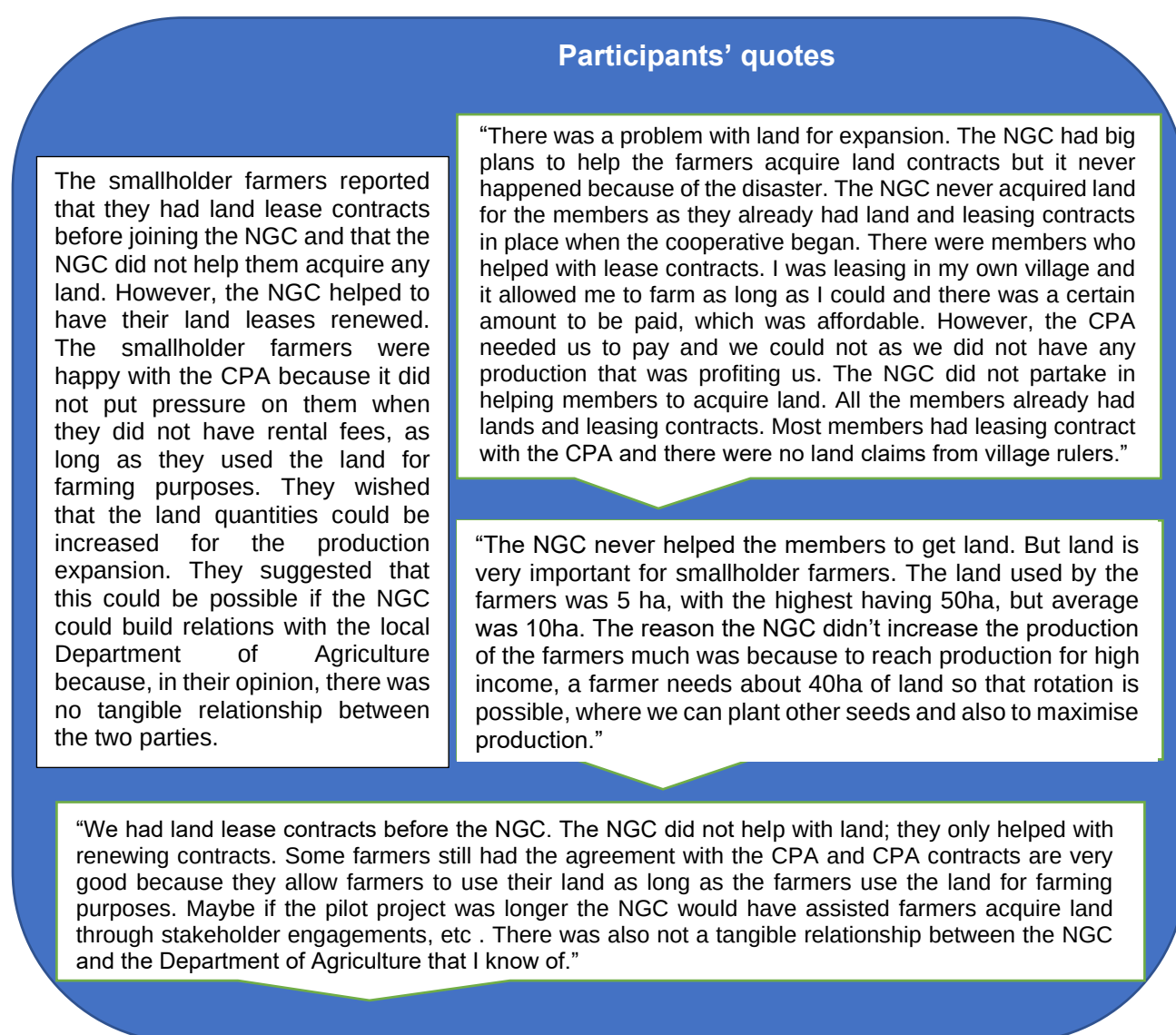
Four categories were identified in the participants' feedback about the challenges of NGC efficacy in uplifting smallholder farmers in Vhembe District Municipality, namely land (category: T3A), links (category: T3B), challenges (category: T3C) and training (category: T3D).

Finding 3.1

7.3.3.1. Category T3A: Land dynamics and complexities

Some smallholder farmers revealed that land was not an issue for some of them but was a challenge for others who had limited land for expansion. They explained that when NGC support was introduced, smallholder farmers needed land for expansion to produce the desired quantities and thus generate more revenues from the tomato supplies to XXX agro-processing company. It was not easy to find land for expansion. Thus, most smallholder farmers resorted to leasing land from their fellow villagers for expansion.

Figure 7.17: NGCs land dynamics and complexities.



Source: By researcher from in-depth interviews with smallholder farmers.

In response to the question regarding how the NGC had ensured that smallholder farmers benefited from the ongoing rural land reform by the Department of Agriculture, Land Reform and Rural Development, most of the participants indicated that they were delighted that the government had been able to provide land for farming, even before the NGC's establishment. They specified that this was through the CPA, and that the CPA was too lenient with them because sometimes they did not have rental fee, but still, the CPA allowed them to continue farming anyway (see Figure 7.17).

Although the smallholder farmers noted that, and even though some of them were now satisfied that they owned land, a challenge still arose from the fact that if they were to expand the scale of their agricultural land, additional land for expansion would be required. They reiterated that access to additional land was a challenge because farmland on sale in the market cost millions of rands, which most smallholder farmers could not easily afford, despite generating revenues from their farming business. Moreover, most of the available land in the rural areas was mainly small and meant to establish residential buildings. Thus, although many of the smallholder farmers resorted to hiring additional farming land, some of the smallholder farmers were unable to do so. This is in accord with the literature findings (see Section 4.4.2) that despite achievements in certain areas, it is reported that CPAs face various challenges, particularly socio-economic pressures, leading to the poor implementation of the Communal Property Association Act No 28 of 1996 (Goldman *et al.*, 2018: a253).

As some participants noted, this affected the smallholder farmers' capabilities to benefit as much as possible from NGC programmes. Combined with some farmers' poor attitudes, these limitations were also noted to have caused some smallholder farmers not to comply with the contract specifications relating to XXX agro-processing company. Some smallholder farmers revealed that the NGC had indicated a plan to help them access secured land lease contracts from the government to address such limitations. However, this did not happen due to certain setbacks because the NGC existed only for a short period and did not build any relationship with the local government structures.

One of the smallholder farmers stated that most farmers did not know whether the NGC realised that a smallholder farmer needs 10 to 40 hectares to practice crop rotation (see Figure 7.17). They explained further that crop rotation, in which a particular crop is planted in a specific field during a particular season and is changed with crops in the other seasons, maintains the land's health and fertility. However, they noted that most smallholder farmers could not do that due to limited land, which meant they had to cultivate the same crop on the same piece of land, year in and year out. As they noted, this leads to exhaustion and infertility of land in the long run. On the other hand, when the smallholder farmers leased farming land, the leases often came with conditions they had to comply with. In such conditions, such as paying monthly or yearly rent. The lease was terminated if they failed to do so. Most of them emphasised that such situations cause land insecurity and incidents that affect the sustainability of their agribusinesses in the long run. Thus, most of the smallholder farmers stated that they had turned to the government for help with farming land but that the response of the Limpopo Provincial Government is often slow, and the reception from the Vhembe District Department of Agriculture was relatively poor. Not only did they not provide land, they also received limited quantities of other inputs such as seeds, manure and fertilisers.

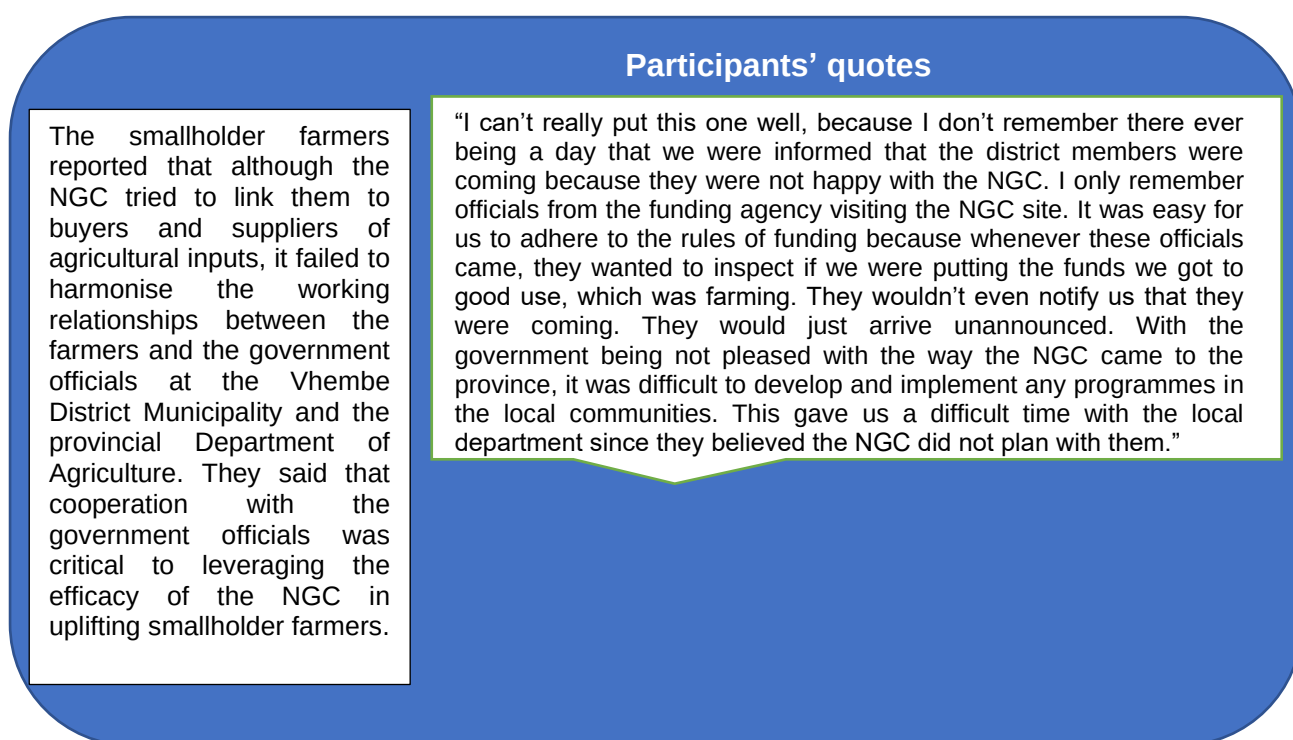
Yet, in addition to such land issues, some of the smallholder farmers were concerned that there was also poor networking by NGC to link smallholder farmers with all the essential government agencies and other critical players in the agricultural input and output markets.

Finding 3.2

7.3.3.2. Category T3B: Poor Linkage with Government Agencies and other Actors

Some of the smallholder farmers said there was also poor networking by the NGC to link smallholder farmers with the essential government agencies and other critical players in the agricultural input and output markets.

Figure 7.18: The NGC's poor linkages with government agencies.



Source: By researcher from in-depth interviews with smallholder farmers.

The participants elaborated that, although the NGC tried to link them to buyers and suppliers of agricultural inputs, it failed to harmonise the working relationships between smallholder farmers and the government officials at the Vhembe District Municipality and the provincial Department of Agriculture. Most of the smallholder farmers said that they recognised that cooperation with government officials was critical for leveraging the efficacy of NGC in uplifting smallholder farmers. Unfortunately, as they noted, they were disappointed that, from the initial stages of the NGC's establishment, most of the government officials within the local authorities were opposed to the establishment of the NGC. The implication was that the Vhembe District Municipality did not participate in supporting the smallholder farmers. They revealed that most of the government officials at Vhembe District Municipality reasoned that, since NGC was already assisting the sixteen NGC smallholder farmers, there was no need for them to get any form of assistance from the Vhembe District Department of Agriculture. Most smallholder farmers said that the Vhembe District Department of Agriculture did not give them any seeds, fertiliser or chemicals for an entire year whilst they participated in the NGC although it had supported them freely before. When it resumed supporting

them, it would either delay or provide limited quantities of seeds, chemicals and fertilisers that could not even cover a hectare. Several smallholder farmers explained that most of the top government officials at Vhembe District Municipality were dissatisfied with NGC because it dealt directly with smallholder farmers rather than establishing the NGC under the Vhembe District Municipality's authority.

In other words, the Vhembe District Municipality local authorities had desired the NGC to be established under Vhembe District Department of Agriculture so that any support the smallholder farmers could get from the NGC would pass through them. The participants noted that these desires were not met. Thus, there was tension between the NGC and Vhembe District local authorities, which the NGC leadership did not bother to resolve. The smallholder farmers' reasonings support findings by the DAFF's (2019:3) report, which recommended to the DLRD that the way forward in supporting smallholder farmers is to develop an integrated producer support model, and do away with any silo approach (see Section 4.4.5).

The smallholder farmers' poor linkage with government agencies and other critical stakeholders was also indicated in most responses to the question that required them to describe how the NGC linked smallholder farmers with government agencies such as the MERECAS, the RESIS and the LADA. Most participants reiterated that NGC did not link them to any credit schemes to ameliorate their operational capital-related issues. Instead, they noted that the NGC focused mainly on linking them with providers of agricultural inputs such as agricultural chemicals suppliers and seedlings suppliers. Through cooperation with such entities and the DSBD, the NGC provided them with chemicals, fertilisers and irrigation infrastructure. The Department of Water Affairs was also involved in teaching the farmers about water licensing. They also stated that NGC did not bring any other stakeholders on board that could offer the required additional local government support.

However, some of the smallholder farmers stated that although the NGC did not link smallholder farmers to any other credit schemes or funders, the NGC was already receiving funding from the DSBD, SEDA and SEFA (Small Enterprise Funding Agency). Thus, they stated that getting additional funding partners would have led to the duplication of support and a possible wastage of resources because the sixteen

NGC smallholder farmers were not the only smallholder farmers in Limpopo. Nevertheless, some of the smallholder farmers expected NGC to solve their financial challenge once and for all by exposing them to all the potential funders and credit schemes. As such, when NGC existed, they would remain sustainable by accessing the necessary funding and support from different organisations and actors in the agricultural production industry.

They also argued that the risk suffered by the NGC due to the budget cut-off by SEDA would have been absorbed if the NGC had other funding support from different organisations. Consequently, most of the smallholder farmers stated that they had expected the NGC establishment to cure all their challenges, but they still had the challenge they faced before the NGC's establishment, such as meeting the costs of expensive seeds, fertilisers, chemicals, water and electricity. In terms of electricity, they said they were disappointed with the NGC's failure to engage Eskom to discount or even provide measures to pay off the debt without cutting their electricity. Moreover, some of the smallholder farmers stated that there was also a challenge of having NGC to seamlessly link smallholder farmers with the factories that supplied agricultural inputs. They noted that the implication was that some smallholder farmers often received the supply of agricultural inputs such as fertilisers, chemicals and seeds late. The NGC did link NGC smallholder farmer members with other smallholder farmers in the area but not with other cooperatives. Thus, the NGC did not fulfil the *Sixth principle of cooperatives: cooperation among cooperatives*.

Yet, in addition to poor linkage with government agencies and suppliers of agricultural inputs, findings revealed challenges of NGC efficacy in uplifting smallholder farmers also to have emerged from certain aspects of other challenges and complexities.

Finding 3.3

7.3.3.3. Category T3C: Challenges

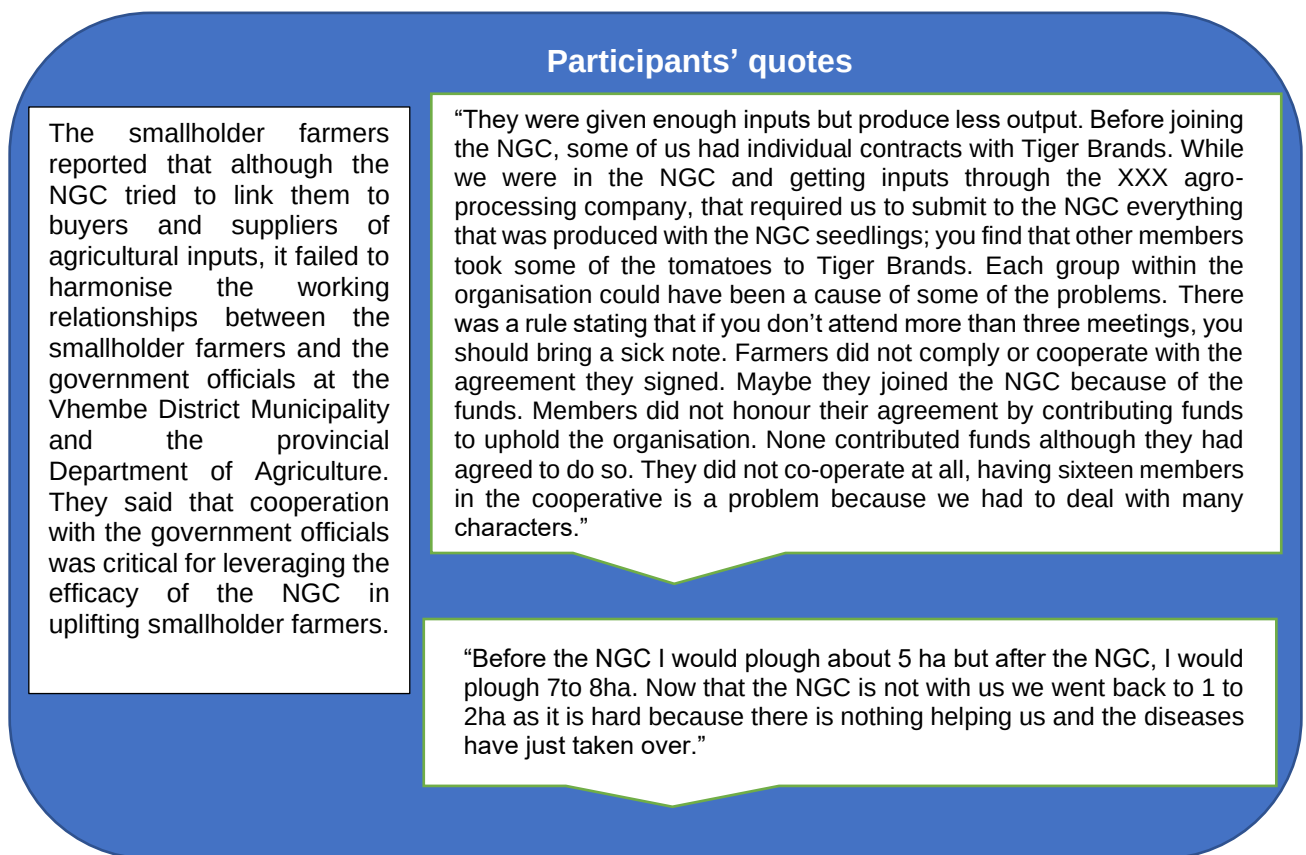
In this category, the participants indicated challenges such as governance and management deficiencies and insufficient operational capital affected the NGC's contribution to uplifting the smallholder farmers.

i) NGC governance and management deficiencies

Although most smallholder farmers were satisfied with the NGC's governance and management system, some highlighted deficiencies in this area. Firstly, they said the NGC did not negotiate good prices for tomato supply to XXX agro-processing company. Some stated that the NGC did not consult nor involve them in negotiations and conclusions of contracts to supply tomatoes to the XXX agro-processing company. Consequently, the credit arrangement that was reached between the NGC and XXX agro-processing company was not in their best interests. They said the contract left most smallholder farmers indebted to XXX agro-processing company. They said that the problem was exacerbated by the low prices XXX agro-processing company paid for the tomatoes compared to the prices that Tiger Brands (abuyer they used before the NGC) had previously paid them. Thus, although some of the smallholder farmers stated that such an arrangement secured the market for smallholder farmers' tomatoes, others argued that failure to secure the best deal reflected the deficiencies in the NGC governance and management system.

The consequence, they said, was that most of the smallholder farmers could not repay the credit offered by XXX agro-processing company or reinvest in further expansion of the agricultural production. Thus, they noted that some of the smallholder farmers became demotivated and started supplying less than they should. They said this indicated the failure of NGC management to motivate the farmers since some of them reverted to supplying Tiger Brands. Moreover, due to what they perceived as an unfavourable deal with XXX agro-processing company, some refused to comply with NGC regulations and constitution by resorting to side selling and other markets, although they knew they had to supply to their contracted markets. They noted this affected most smallholder farmers' capabilities to consistently meet their obligations to supply the required quantities of tomatoes to XXX, as stipulated in the contract. This result is reflected in most of the responses to the question regarding how the level of cooperation of smallholder farmers was critical for improving NGC's effectiveness in accomplishing its outlined activities. The smallholder farmers were asked to answer "yes" or "no" and to provide reasons. One of the smallholder farmers answered "no"; his reason is documented in Figure 7.19.

Figure 7.19: NGCs governance management challenges.



Source: By researcher from in-depth interviews with smallholder farmers.

Such a view signifies that the NGC management failed to negotiate the best deals for the smallholder farmers and failed to develop and use an effective control system to ensure that they complied with and delivered the required quantities of tomatoes, as stipulated in the contract with XXX. The result of some smallholder farmers delivering lower quantities and others delivering nothing was that XXX agro-processing cancelled all the payments to all the smallholder farmers. Thus, those smallholder farmers who had honoured the agreement felt that XXX agro-processing company owed them money, whilst XXX felt that it was owed by some smallholder farmers. Although XXX agro-processing company was operating within the rules of agricultural cooperatives that require responsibility of debt on the part of the cooperative as an entity, and not individual farmers, some of the smallholder farmers still felt that NGC management failed to negotiate a better deal whereby debts, which put some smallholder farmers out of business, could have been handled and managed. Some of the smallholder

farmers revealed that they held to pay for the debts that other smallholder farmers failed to pay. Consequently, they noted that if the NGC were to return, some would be sceptical about joining or joining without much personal commitment.

Secondly, some smallholder farmers revealed that one of the limitations of NGC was a lack of commonly held goals and objectives among smallholder farmers. They stated that each farmer was pursuing individual interests and goals, resulting in the smallholder farmers fighting each other while distributing inputs and funds. Moreover, some smallholder farmers formed cliques and groups that would work against others in NGC. Some groups sabotaged NGC board by agreeing or disagreeing to attend certain meetings. Participants revealed that such groups of smallholder farmers would refuse to attend meetings if the items on the agenda for discussions were not in their interests. Thus, they noted, in the long run, the NGC management failed to create cohesion among the smallholder farmers to influence the achievement of outcomes.

Thirdly, some smallholder farmers raised issues about including some largescale farmers in the management committee. They argued that largescale farmers had already made their money and therefore did not understand the needs, dynamics and circumstances of smallholder farmers. Therefore, they were not in a position to sit on a committee that decided issues for smallholder farmers.

Fourthly, others scoffed at the government planners and the NGC implementers who crafted the lifespan of the NGC pilot project to be limited to just two years. They argued that limiting NGC pilot project to just two years was not good because most smallholder farmers had not yet become financially independent and sustainable. As they noted, the implication was that when the NGC exited, most of the smallholder farmers who were members of the NGC were also put out of business, while some struggled again and faced the same challenges they were faced with before NGC establishment, and for some even worse. The farmers reflected such views when they were asked about the challenges and previously when asked about the NGC's performance factors in T2D (see Table 7.5).

Table 7.5: NGC challenges indicated by the smallholder farmers

Figure 7.10 B: Movement of funds and the programme from the DSBD to SEDA.
Figure 7.11 B: NGC's leadership non-satisfaction.
Figure 7.14B: Farmers' non-cooperation.
Figure 7.15B: The NGC's financial independence challenges.
Figure 7.18: The NGC's linkages with government agencies.
Figure 7.19: The NGC's governance management challenges.
Figure 7.20: The NGC's insufficient operational capital.

The participants revealed that there was also a challenge of accountability in the NGC governance and management system. They explained that the smallholder farmers were not informed about the decisions to purchase certain agricultural inputs in advance. Instead, they stated that most smallholder farmers were often only informed after the purchase and without the breakdown of how the amount spent was utilised on each item.

Yet, in addition to such accountability issues, some of the smallholder farmers still reiterated there were insufficient operational capital challenges NGC smallholder farmers experienced.

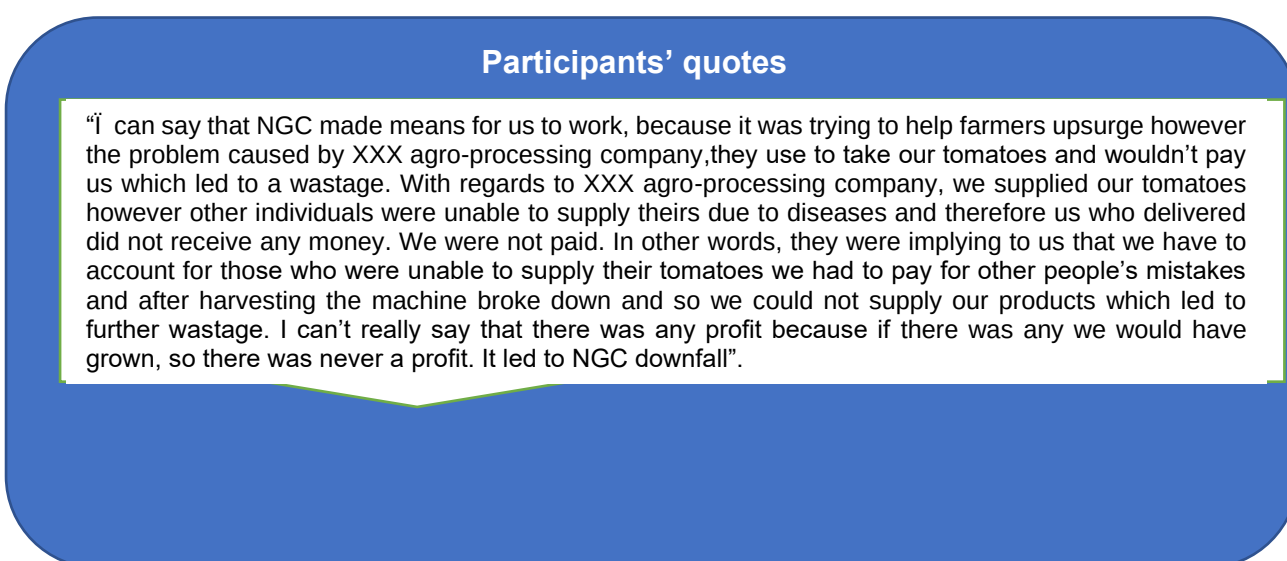
ii) Insufficient operational capital

Amid support by NGC, most of the smallholder farmers revealed that insufficient operational capital remained a major challenge for most of the smallholder farmers. They attributed this to the scale of operation of the smallholder farmers, which is often too small to enable them to generate the desired level of agricultural production and earnings from the market. Most of the smallholder farmers explained that, to break even, a farmer needs to cultivate an average of 20 to 40 hectares, but most of the smallholder farmers operate on only 2 to 3 hectares, which undermined their capabilities in generating the desired level of agricultural production and earnings to solve the challenge of insufficient operational capital. The other cause of insufficient operational capital was their agricultural products' low prices fetched from the market. Even after NGC's entry, most smallholder farmers revealed that the challenge of poor pricing was not resolved. They attributed this to the fact that the prices for tomatoes

that XXX agro-processing company was paying were lower than the prices that Tiger Brands used to pay. Thus, most participants said that the challenge of insufficient operational capital remained consistent before and during NGC existence and even after its exit. Such a finding resonates with the smallholder farmers' statements in Figure 7.20.

Most of the smallholder farmers stated that NGC tried to increase their earnings, but the problem was that it focused only on increasing the production and marketing of tomatoes and did not encourage production of other crops, such as butternuts, maize and chillies, that tend to fetch more earnings. Consequently, some smallholder farmers could not afford to hire more land for cultivation, hire and pay more farmworkers or even meet the costs of critical inputs such as energy or electricity for farm production. Most of the smallholder farmers elaborated that, due to the high cost of electricity, most of them were indebted to Eskom and had been disconnected by the time NGC came in. They explained that although NGC helped some of the smallholder farmers pay their bills, the challenge of indebtedness to Eskom persisted even during the NGC's existence. Most of the smallholder farmers could not generate enough revenue to meet all their farms' operational costs, including electricity.

Figure 7.20: NGCs insufficient operational capital.



Source: By researcher from in-depth interviews with smallholder farmers.

Many smallholder farmers also attributed their financial woes to a high level of indebtedness to XXX agro-processing company and other suppliers for the credit advanced for purchasing agricultural inputs. They explained that, in the end, when XXX agro-processing company failed to pay them due to the abovementioned indebtedness, it almost reversed all the gains they had made during the NGC's existence. The insufficient operational capital problem became a crisis among smallholder farmers, as it was before the NGC's introduction. Most smallholder farmers said that other incidents exacerbated their financial woes, such as the outbreak of diseases caused by white fly and *tuta absoluta*.

They noted their source of revenues was also affected by their lack of diversification by producing a variety of crops due to the NGC's over-emphasis on tomato production and limited farming land for producing other crops. Thus, while the NGC attempted to support them financially, the problem was that NGC was not financially independent but rather significantly dependent on government funding, which was compounded by the transfer of NGC from DSBD to SEDA, as indicated above. Such findings were corroborated in Figure 7.10 B.

Many smallholder farmers stated that the problem was also compounded by the high costs of agricultural operations, particularly the rising cost of electricity and the chemicals needed to treat the prevalent diseases associated with white fly and *tuta absoluta*. Moreover, since most had limited operational capital to invest in purchasing expensive equipment such as tractors, many smallholder farmers often had to queue for ploughs and tractors. Since ploughing takes time, most smallholder farmers took a long time to plough their fields for timely cultivation, as required for any good agricultural practice. This affected yields and, consequently, the earnings generated from agricultural production, resulting in a vicious cycle of insufficient operational capital among smallholder farmers.

Finding 3.4

7.3.3.4. Category T3D: Training

The participants indicated that the NGC conducted training and development programmes in this category through consultants such as Timbali, Kucheza and WWW Consultants. Some revealed that poor farming skills among smallholder farmers were still challenging. They explained that the NGC just trained them and provided inputs to farm tomatoes. Even though such skills improved their agricultural production and yield of tomatoes, it did not equip them with the critical skills for farming other products such as maize, pumpkin, butternut, chillies, onions, ginger, garlic and soybeans. As some smallholder farmers noted, this affected the extent to which NGC could contribute to uplifting smallholder farmers in Vhembe District Municipality effectively. In terms of tomato farming, they noted that they had gained valuable skills because the NGC facilitated them to attend two tomato farming training programmes at Tshipise Forever Resort conducted by Kucheza and WWW Consultants. They taught them how to use chemicals and fertilisers, plant, harvest, sell to the market, manage records, and finance skills.

They said that NGC and the DSBD also brought in Kucheza from The Netherlands to conduct agricultural training. The focus of this training was also on tomato farming and agricultural management. Kucheza's training programme was a simulation game based on real-life data and combined multiple aspects of farming, which helped them with informed decision-making. The game uses real-life data gathered during the identification process. It combines numerous elements of the farming business, both on an individual farm and farm cooperative or union level. Players accumulate knowledge, skills, and competencies throughout the game relating to agronomic farming, business management and cooperative entrepreneurship. WWW Consultants was a training provider funded by Netherlands Education Support Office, to train the NGC farmers. It taught them about soil properties and soil preparation, chemical applications, trellising open-field tomatoes, hygiene and plant physiology, post-harvest and quality standards, irrigation and fertigation. Other areas covered during the training included protected cropping or crop management, integrated pest management and sustainable farming, financial management and entrepreneurship.

Figure 7.21: The NGC's training.



Source: By researcher from in-depth interviews with smallholder farmers.

Most smallholder farmers stated that they became tomato farming experts and understood how to manage and use accounting records to detect where losses or profits were made. However, most noted tomatoes are not marketable or profitable compared to maize, pumpkin, butternut, chillies, onions, ginger, garlic and soybeans. They also revealed that most smallholder farmers struggled to implement the skills learnt in their actual farming and agricultural production. They elaborated that such weaknesses were evident when white flies and *tuta absoluta* attacked and the

smallholder farmers failed to apply the relevant disease control techniques to manage and mitigate the disease. Some smallholder farmers were still struggling with using chemicals and fertilisers and, thus, would either overdose or under-dose. Some also struggled with techniques to maintain their farming gadgets, drippers and irrigation equipment. Such a view is reflected in the smallholder farmers' articulations in Figure 7.21.

Moreover, after white fly and *tuta absoluta* invaded their farms, most farmers shifted to farming maize, pumpkin, butternut, chillies, onions, ginger, garlic and soybeans. However, because they were only well-informed about the technicalities of tomato farming, they could not apply the new skills and techniques to improve the production and yields of such products. Thus, while tomato production and yields increased during the NGC pilot project and continued for some smallholder farmers after NGC exit, the production and yields for other crops have remained the same as they were before the NGC. Some of the smallholder farmers reiterated that the situation affected their capabilities to diversify and produce several crops to avoid being significantly affected if one of the crops is affected by the disease, as was the case with the tomatoes. Moreover, some of them said that the NGC focused only on the processing and marketing of tomatoes in the quality management-enhancing way they were taught. Thus, they noted that even if they introduced other crops, they did not know how to process them in the quality way that had been taught concerning tomatoes. They said that since the NGC did not emphasise diversification, they now tended to produce such crops and sell in the areas around Limpopo where they earn the same profits.

Other interviewed smallholder farmers noted another challenge: they did not learn much from the largescale commercial farmer. They explained that the largescale commercial farmer the NGC had linked them with had visited them once and taught them how to use chemicals and fertilisers and how to prepare the soil for plantation. Since then, no largescale commercial farmer has visited for training again. They said only smallholder farmers with good working relationships with some managers on the largescale commercial farms would help where necessary. Most of the participants reiterated that the limited participation of largescale commercial farmers in training programmes limited the opportunities for them to learn how largescale commercial

farmers grew and maintained such a largescale farming business. Thus, they felt that if the NGC was to be re-introduced, it should bring largescale commercial farmers on board to take them step-by-step through all the processes of different crop production, as well as how and where to market agricultural products.

In addition, some of the farmers revealed that they were dissatisfied that they were told during project implementation to pay 15% of their SEDA funds for the training programmes. They explained that they were told all training programmes were covered under the NGC pilot business model, only to learn that they were required to pay the 15%. This affected the satisfaction and commitment of some of the smallholder farmers to NGC activities and missions.

7.3.3.5. Theme three: Conclusion

From the results about theme three, it is concluded that some of the challenges that marred the NGC's efficacy in uplifting the smallholder were poor farming skills, land dynamics and complexities, insufficient operational capital, NGC governance and management deficiencies and the farmers' poor linkage with government agencies and other critical actors in the agricultural input and output markets. The participants stated that it was difficult to find land for expansion to produce the desired produce and, thus, generate more revenues from the tomato supplies to XXX agro-processing company. Secondly, although NGC linked them to buyers and suppliers of agricultural inputs, it failed to harmonise the working relationships between the smallholder farmers and the government officials at the Vhembe District Municipality and the provincial Department of Agriculture. This caused the local authorities to oppose the NGC. Moreover, challenges to uplifting the smallholder farmers include governance and management deficiencies and insufficient operational capital. The participants indicated that the NGC conducted training and development programmes through various consultants that helped their businesses. However, they had not been aware that they had to pay for the training programmes from the production funds and SEDA grant but had thought the training was one of the pilot benefits.

Thus, to ameliorate these constraints, if NGC is adopted across South Africa, some smallholder farmers expressed a range of improvement measures that could be adopted to leverage NGC efficacy in uplifting smallholder farmers.

7.3.4. Theme four: Measures for improving the New Generation Cooperative's efficacy in uplifting smallholder farmers in Vhembe District Municipality

Finding 4

Two categories were identified in the participants' responses about the measures for improving the NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality, namely improvement (see Category: T4A) and partnership (see Category: T4B).

Concerning these categories, the propositions of most smallholder farmers may require government support using funding (T4A) (see Section 7.3.4.1). The smallholders also suggested that such initiatives should be accompanied with the improved linkage between smallholder farmers and largescale commercial farmers to enable the transmission of critical agricultural production skills (T4B) (see Section 7.3.4.2).

7.3.4.1. Category T4A: Improvement

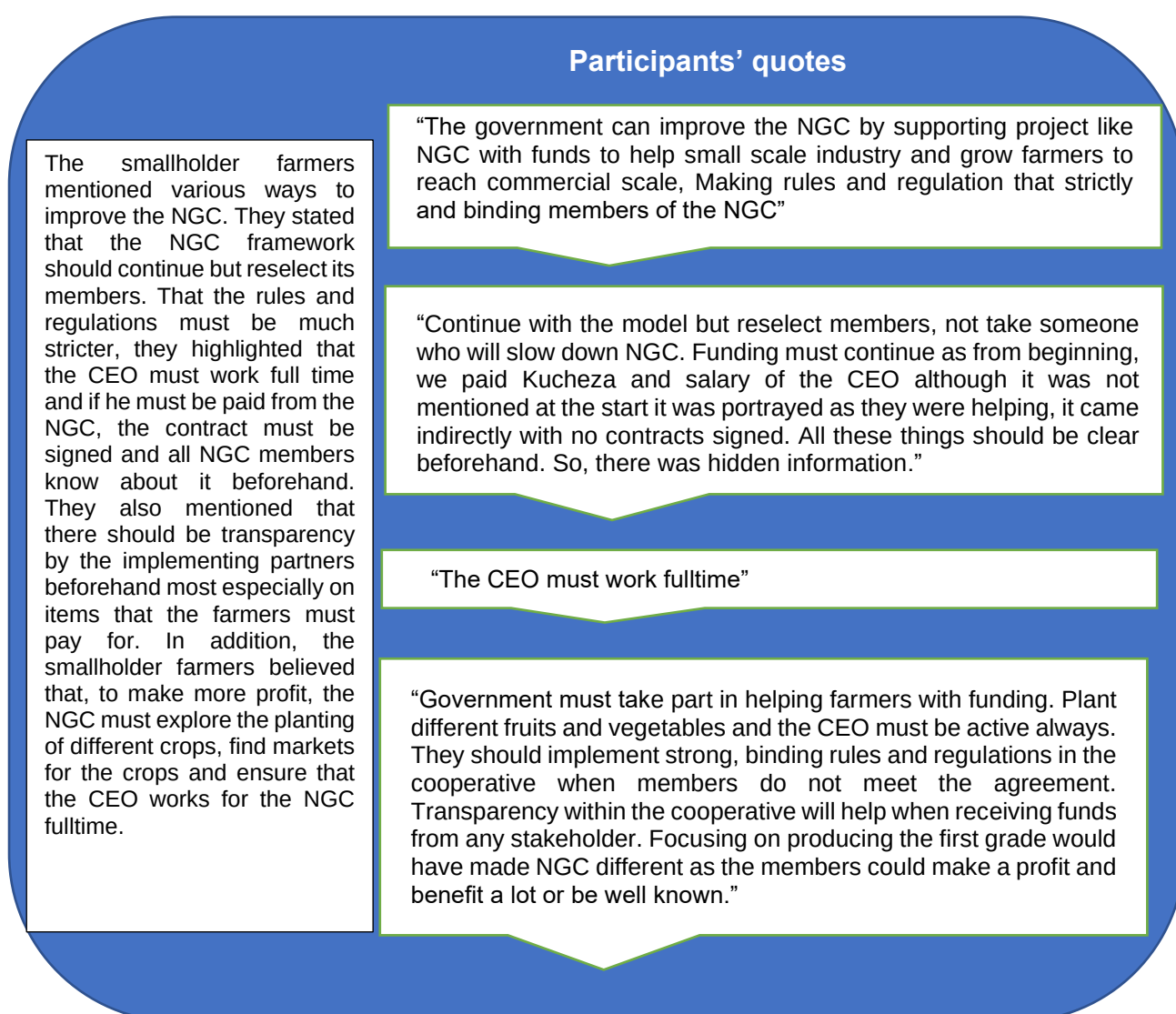
Most smallholder farmers suggested that the government consider improving the efficacy of NGC by increasing its funding and funding to the smallholder farmers. They argued that if it had not been for a few challenges, the NGC could have uplifted them and positively impacted employment creation, food security and poverty alleviation. However, to achieve that, most smallholder farmers suggested that the funding must not come only from the government. They argued that the government and NGC should also bring some other funding partners on board to improve the amount of funds advanced to the smallholder farmers. Most of the smallholder farmers further stated that such initiatives must be accompanied by thorough training, development, nurturing and mentoring of smallholder farmers to produce a variety of crops, not only vegetables but also fruits, grains and cereals. different crops, vegetables and fruits. They said this would enable smallholder farmers to increase their scale of agricultural

production to mitigate the challenge of low production. Moreover, most of them stated that if the NGC is introduced, it must also focus on searching and connecting smallholder farmers to the markets and buyers of different agricultural products, because they had learnt from experience that reliance on just one or two crops could be risky if natural disasters and diseases strike. They further stated that stringent rules should be put in place and enforced to ensure that smallholder farmers who join the cooperatives comply with all the rules of producing and delivering the prescribed quantities. Some smallholder farmers suggested that the NGC CEO must be more active and available (see Figure 7.22).

Some of the participants argued that there should be improved accountability and financial control by the ordinary members. They reiterated that smallholder farmers must be given the power to determine how the cooperative funds must be utilised across different items. But above all, they stated that there must be a stronger emphasis on unity and cooperation within the cooperatives. However, some smallholder farmers (especially the younger farmers) joined the NGC to get money by taking credits from XXX and not supplying any produce. These farmers diverted the money and used it for other purposes. In light of these problems with some members, it was suggested that membership in the cooperatives must be reviewed to include only serious smallholder farmers willing to work hard to become independent and sustainable medium- to largescale commercial farmers.

Some smallholder farmers insisted on measures to track how smallholder farmers use the money once the funds were paid by the cooperative or the government. To further eliminate free riders, they also proposed that funding to all the smallholder farmers must be based on the business plan and track record of good performance submitted by the smallholder farmers during the solicitation of funding from NGC and the government. Similarly, some of the smallholder farmers proposed a review of the cooperatives' management structure because the NGC experience signified that it could be challenging to control many members. Lastly, the NGC members suggested having a full-time CEO working on the project (see Figure 7.22). However, other smallholder farmers suggested the importance of improving partnerships.

Figure 7.22: Improving the effectiveness of NGCs.



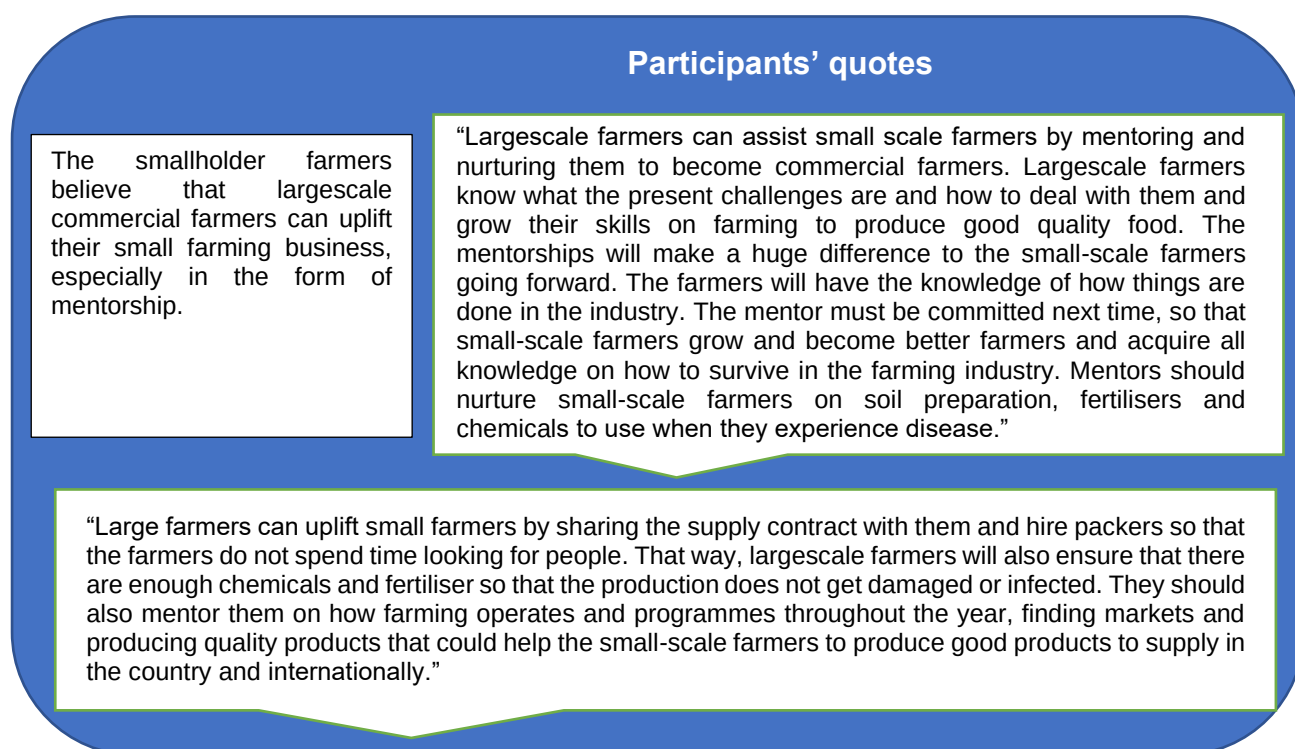
Source: By researcher from in-depth interviews with smallholder farmers.

7.3.4.2. Category T4B: Partnership

Most smallholder farmers stressed the need to improve the connection between smallholders and largescale commercial farmers if the government uses agricultural cooperatives to improve the performance of smallholder farmers. They stated that linking smallholder farmers with some willing largescale commercial farmers would enable the latter to teach, train, nurture and develop smallholder farmers to become viable, sustainable agricultural entities. The government should also support and provide other resources needed by the largescale farmers to teach, train, nurture and

develop smallholder farmers, because no largescale commercial farmers can provide this support using their own resources.

Figure 7.23: Improving largescale commercial farmers partnership with the NGC.



Source: By researcher from in-depth interviews with smallholder farmers.

Some of the participants explained that the largescale commercial farmers could also help by subcontracting some of their supply contracts to smallholder farmers. They reasoned that the largescale commercial farmers could do that because they produced and supplied to domestic and international markets.

In addition, some smallholder farmers reasoned that the connection with largescale commercial farmers was important. Largescale commercial farmers had an in-depth understanding of quality and cost control measures for running a profitable agricultural enterprise. They stated that linkages with largescale farmers would enable them to acquire the necessary techniques for producing quality crops that could perform well in the market. Moreover, the largescale commercial farmers could also train, develop and nurture smallholder farmers on the best cost control practices in agricultural

production to produce and sell quality and affordable agricultural products. To accomplish that, some suggested that smallholder farmers must be divided among largescale commercial farmers for an apprenticeship. They stated that through such an approach, it would be easy for smallholder farmers to learn and replicate the learnt skills in the farming businesses, as compared to when all the smallholder farmers are brought together. Only a few largescale commercial farmers are brought to lecture and teach them in theoretical ways. However, some smallholder farmers expressed scepticism that largescale commercial farmers would be genuine about helping them since they are competitors. Thus, they suggested that largescale commercial farmers would mentor smallholder farmers only if the government provided enormous financial incentives.

7.3.4.3. Theme four: Conclusion

From all these narratives, it is evident that the propositions of most smallholder farmers for improving the NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality may require the government to increase its funding of both the NGC and the smallholder farmers. They also stated that such initiatives must be accompanied by improved links between smallholder and largescale commercial farmers to enable the transmission of critical agricultural production skills from largescale commercial farmers to smallholder farmers through mentorship. They also expressed the need to diversify crops, which will improve their chances of earning more and continuously, especially if the markets are secured on time.

Findings from the interviews conducted with implementing partners are discussed next.

7.4. PART II: QUALITATIVE RESULTS FROM THE IN-DEPTH INTERVIEWS WITH THE IMPLEMENTING PARTNERS

Table 7.6 illustrates the narratives of the implementing partners, referred to as Project 2. Four themes were identified, with five interpretation categories based on the information derived from the interview transcripts.

Table 7.6 The thematic and categorical framework for empirical research results

	Category (A)	Category (B)	Category (C)	Category (D)
Theme 1: The <i>role</i> of NGC implementing partners in the implementation of the NGC pilot project	Responsibilities	Networking		
Theme 2: The <i>impact</i> of the NGC in uplifting smallholder farmers	Contribution			
Theme 3: The <i>complexities</i> of NGC implementation in South Africa	Challenges			
Theme 4: The <i>proposals</i> of the NGC implementing partners for improving NGC implementations	Improvement			

Table 7.6 illustrates the themes and categories derived from the interviews with the implementing partners as discussed in Sections 7.4.1 to 7.4.4 below.

7.4.1. Theme one: The role of the NGC implementing partners in the implementation of the NGC pilot project

Finding 5

Project 2, theme one, concerns feedback pertaining NGC's implementing partners' roles in the implementation of the NGC pilot project. Two categories were identified from the participant's interviews: responsibility (see Category: T1A) and networking (see Category: T1B).

7.4.1.1 Category T1A: Responsibilities

Category T1A indicates the roles and responsibilities undertaken by the implementing partners of the NGC. The partners listed their roles as to manage the project and coordination, ensuring the project was implemented in the right way and that they farmed in a better way than before by ensuring that they got the resources they needed; to oversee and find a market for the farmers products; to respond to the objectives of the project, and to fund the NGC. The organisational documents identified the following implementing partners' roles: provide mentorship, skills transformation, and bargaining power to smallholder farmers, and provide training and development. The smallholder farmers' interviews reported that the NGC provided the

necessary support for marketing, training, and development. However, although mentorship and funding were provided initially, the farmers indicated that it was not sustainable. They reported that a percentage of the funding was retained and not paid to them, which affected their planting programmes. Secondly, they reported that the largescale commercial farmer appointed to mentor them was only available when the programme started and that they did not benefit much from him. They wished that mentorship could have continued longer and that all the stakeholders had signed a contract with the NGC. This concurs to smallholder farmers' narratives.

7.4.1.2 Category T1B: Networks

Participants indicated the networks established to facilitate successful NGCs implementation in this category. The implementing partners' narratives on networks established are similar to those reported by the smallholder farmers (see Table 7.3). However, the implementing partners added that the NGC could work with SSS packaging materials company to manufacture and brand NGC packaging boxes. They further explained towlines of marketing that the NGC undertook. These were the national market through the agents, where the NGC sold class 1 and class 2 (first and second grade) of the production. Then there was also marketing through the processing company (XXX agro-processing company), where they sold the class 3 (3rd grade) production.

7.4.2. Theme two: The impact of the NGC in uplifting smallholder farmers

Finding 1

Theme two only has one category: T2A: Contribution. This category indicates whether the implementing partners agree to whether the NGC contributed to the upliftment of the smallholder farmers.

7.4.2.1 Category T2A: Contribution

The implementing partners agreed to the smallholder farmers' statements that the NGC contributed to the upliftment of smallholder farmers in the Vhembe District Municipality (see Section 7.3.1.1). They added that it also contributed to food security, employment and poverty alleviation in the Vhembe District Municipality communities

(see Section 7.3.1.2). Through the NGC, even those who performed poorly before the NGC's establishment did well when it was active (see Figure 7.24).

Figure 7.24: The NGC's impact and contribution to the upliftment of smallholder farmers.



Source: By researcher from in-depth interviews with implementing partners.

The implementing partners reported that 2019 was the most successful year since the NGC had ample time to plan production, unlike other years. They indicated that the concept was expected to grow from sixteen farmers to as many as two hundred and fifty farmer members to be more impactful. They agreed with the smallholder farmers that the relationship between the NGC and local government could have been improved. They emphasised that the relationship between the two entities could have given the NGC leverage due to the research done by the local Department of Agriculture on factors such as how many smallholder farmers were in the region, what the best cash crops were to grow in the region and similar planning information (see Figure 7.24).

7.4.3. Theme three: The complexities of NGC implementation in South Africa.

Theme three has one category, T3A: Challenges.

7.4.3.1 Category T3A: Challenges

When asked to describe the challenges experienced during the implementation of the NGC pilot project, the implementing partners identified governance and planning problems, spillovers, smallholder farmer issues and implementing partner challenges.

Finding 3.5

(i) Governance and planning challenges

The implementing partners indicated that the inception of the NGC was rushed and this impacted the planning of the pilot project. During the planning phase, they said that some of the smallholder farmers who were invited to participate were free riders who agreed with decisions during the meetings but did not deliver. Another challenge highlighted by the implementing partners was capital constraints. They emphasised that when a pilot project is initiated, committed funds should also be available for the implementation of the project. The smallholder farmers echoed this sentiment (see Section 7.3.3.3). As they noted, the funds were received late by the NGC and the NGC was moved from the DSBD to the SEDA, and with the transfer, it was further categorised as an incubation model by SEDA. It then had additional responsibilities and compliance measures that were not initially part of the plan. These findings are echoed in the implementing partner's narratives (see Figure 7.25).

The implementing partners explained that the model change caused confusion. The implementing partners were not convinced that the NGC constitution and rules were strong enough to safeguard the sustainability of the cooperative, especially the disciplinary measures. This resulted in some of the NGC stakeholders withdrawing from the pilot project. In addition, the implementing partners stated that the governance structure was a problem. The structure designed during planning was not fully implemented, partly due to budget constraints. As these challenges arose, trust was lost among both the smallholder farmers and the leadership.

Figure 7.25: The challenges during NGC implementation.



Source: By researcher from in-depth interviews with implementing partners.

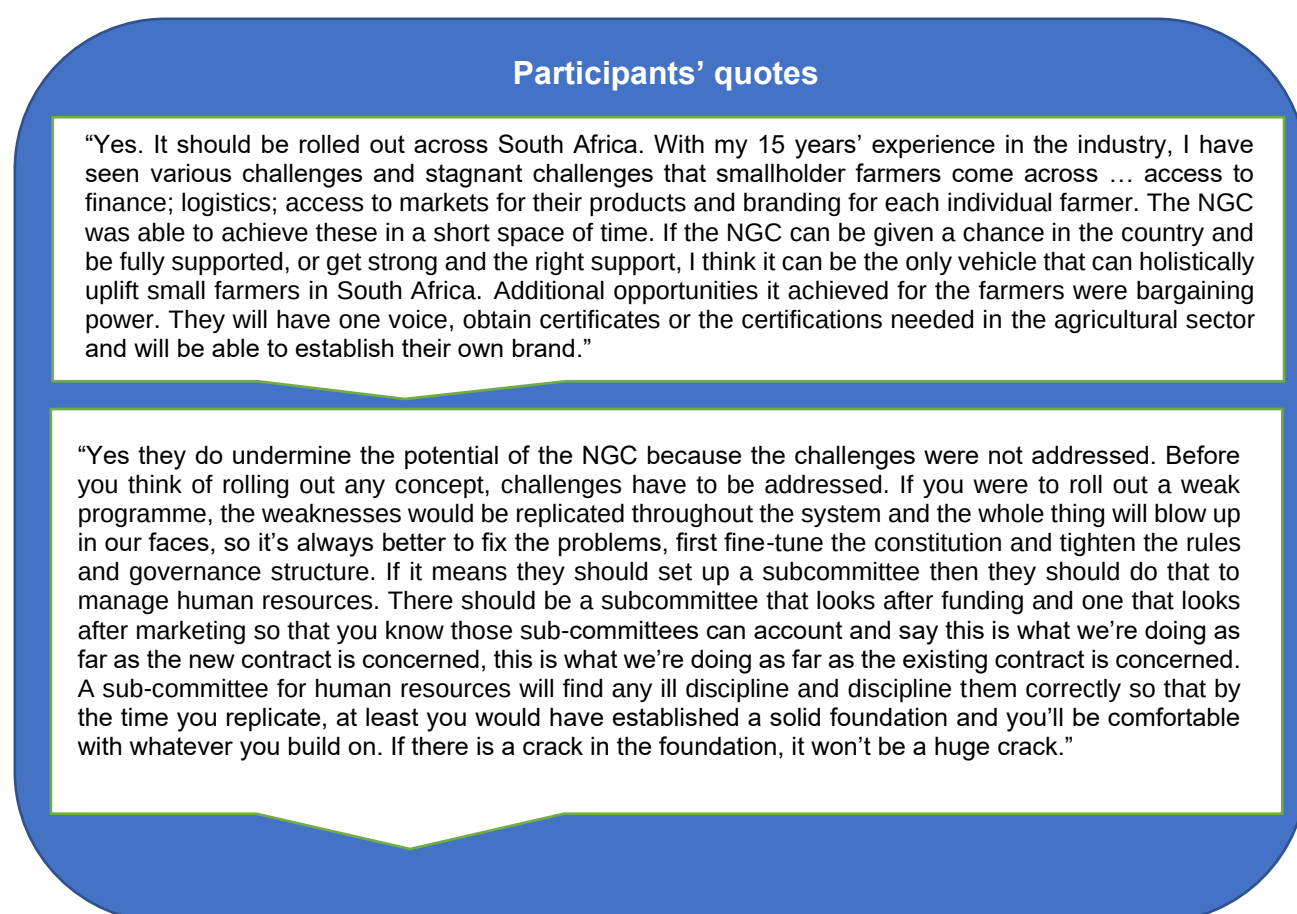
The implementing partners also mentioned that there were tensions between the NGC and the local government authorities. Nevertheless, they seemed happy that the NGC managed to secure local markets for smallholder farmers. They elaborated that they wished they had enough time to review the contracts with the suppliers and ensure that they were conducive to the smallholder farmers' growth because it was discovered later that the contract was not favourable to the farmers.

Findings 3.6

(i) Spillovers

When asked if they thought such challenges could undermine the NGC's implementation when rolled out across South Africa, the implementing partners answered in the affirmative. The NGC implementing partners mentioned both positive and negative spillovers (Figure 7.26).

Figure 7.26: NGC spillovers.



Source: By researcher from in-depth interviews with implementing partners.

They said it was the first time they had seen a programme that offered smallholder farmers various advantages holistically in one go, namely access to finance, logistics, access to markets and branding, skills development, mentorship, agro-processing. The NGC had a great deal of potential to achieve a lot in a short space of time. Other positive spillovers mentioned by the implementing partners were that the farmers could achieve bargaining power, have one voice, be able to achieve compliance certificates and establish their individual brands (see Figure 7.26). However, the NGC implementing partners added that NGC challenges could spill over to undermine NGC implementation if not addressed. They mentioned that before a concept is implemented, all the challenges and risks had to be addressed continuously, and the rules and governance structure tightened.

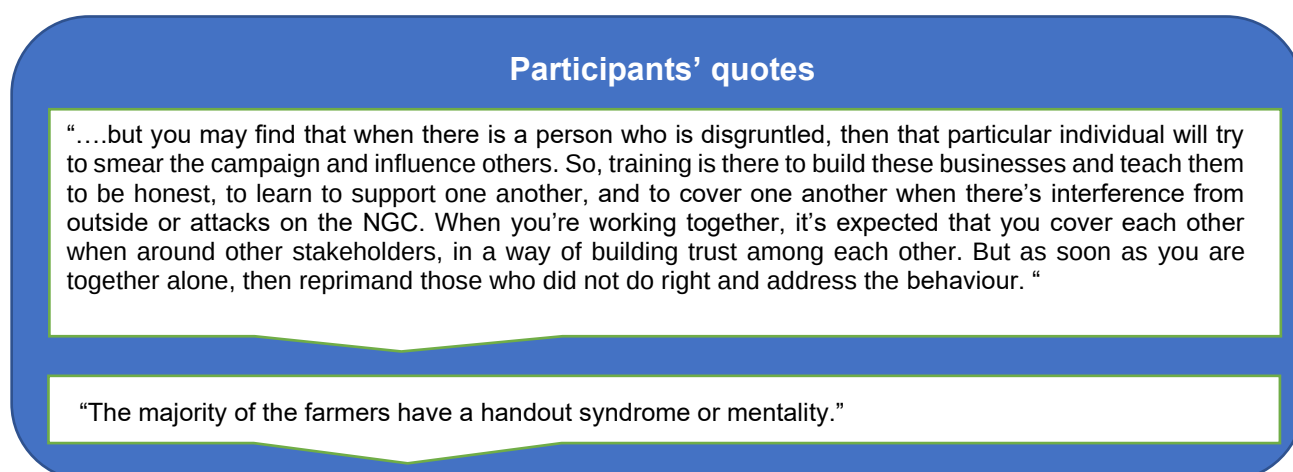
They recommended that the NGC should have subcommittees to manage the various departments, such as one to manage human resources and implement disciplinary measures, another to manage the funding, and one to take care of marketing. They argued that these subcommittees would pay immediate attention to the NGC's flaws and address them immediately. The NGC implementing partners believe that if this was done, it would have built a solid foundation by the time NGC was replicated.

Finding 2.5

(i) Smallholder farmer challenges

When asked to describe the farmer-related problems that affected NGC pilot project, the implementing partners agreed that there had been farmer cooperation challenges, as highlighted by smallholder farmers (see Section 7.3.3.3). They added that the farmers started to negatively influence each other and not raise issues they were displeased about in meetings. They did not support each other when outside interference and influences arose. The implementing partners also highlighted that the smallholder farmers still had a handout mentality (see Figure 7.27).

Figure 7.27: NGC smallholder farmers' challenges.



Source: By researcher from in-depth interviews with implementing partners.

In addition to smallholder farmer challenges, the implementing partners indicated there were implementing partner challenges that undermined the implementation of NGC project.

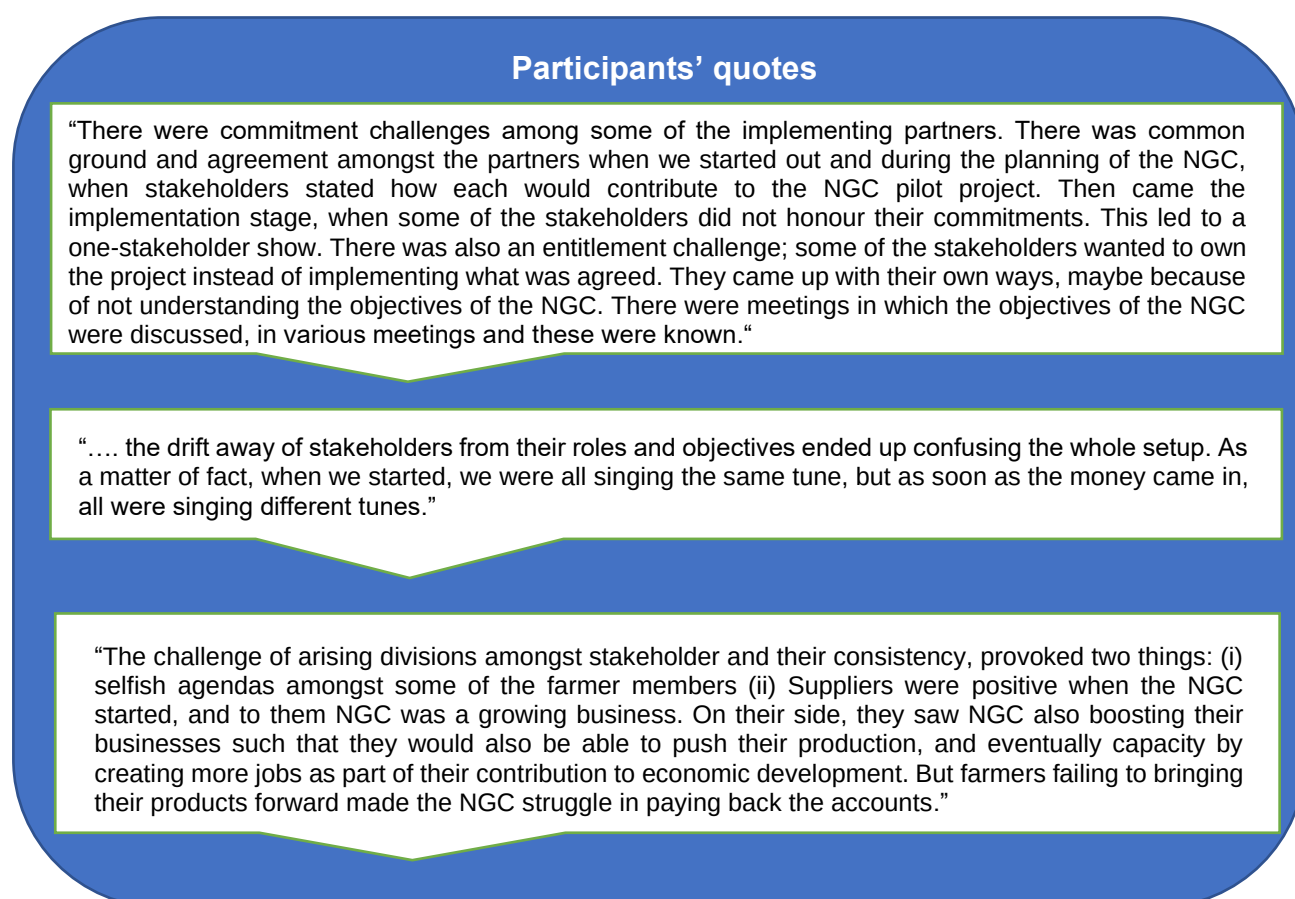
Finding 3.7

(i) Implementing partner challenges

The information gathered from the implementing partners on their own challenges was in accord with the claims made by smallholder farmers (see Section 7.3.3.3). The partners felt that during the planning and initial stages of the NGC, there was common ground and the stakeholders committed to supporting the pilot project. However, during the implementation stage, some stakeholders did not honour their commitments. For example, there was a lack of commitment on the part of some of them. A critical stakeholder who left early in the project, as indicated by the smallholder farmers, was the largescale commercial farmer, who was the appointed mentor for the NGC smallholder farmers for the duration of the pilot project. Moreover, some stakeholders wanted to own the project instead of pulling together, with each one carrying out their own roles and responsibilities. They stated that the ensuing chaos was as if the stakeholders were not taken through the NGC objectives.

The implementing partners indicated that the above challenges confused everyone, particularly when SEDA paid out the grant funds. These statements reflect on implementing partner narratives (see Figure 7.28).

Figure 7.28: NGC implementing partner challenges.



Source: By researcher from in-depth interviews with implementing partners.

The next section discusses implementing partners' statements on improving NGC implementation.

7.4.4. Theme four: The proposals of NGC implementing partners for improving NGC implementation.

Theme four has only one category, T4A: Improvement. This category identified proposals and suggestions for improving the implementation of the NGC in South Africa.

Finding 4

7.4.4.1 Category T4A: Improvement

During the in-depth interviews, the implementing partners were asked on what proposals they have to improve the implementation of the NGC. In their responses, the implementing partners mentioned five factors. That the NGC should have clear and inclusive objectives, criteria for NGC member selection, clear stakeholder roles, capital modalities, and marketing, their narratives are as follows:

(i) Clear and inclusive objectives

The implementing partners agreed with the smallholder farmer narratives that they did not get full support. The partners, therefore, linked the challenges to the objectives of the NGC. They thought that perhaps the problem was they had formulated objectives without consulting all the key stakeholders. Therefore, the implementing partners suggested that to improve NGC implementation, all key stakeholders should be invited to contribute to crafting of the NGC objectives. In that way, everyone would be clear and have buy-in. Secondly, the implementing partners said the long-term NGC vision should be clear from the inception stage. For example, how did the NGC see itself expanding in the next year regarding membership strength? In this manner, it would be easier to plan the long-term NGC budget.

(ii) Set criteria for NGC member selection

Setting the NGC member selection criteria was noted to be one of the factors that would improve the implementation of the NGC in South Africa. This is in consonant with the smallholder farmers' suggestions (see Section 7.3.4.1). The implementing partners agreed that sound criteria should be set to select NGC smallholder farmers. One of the implementing partners stated that the criteria should include that beneficiaries should be individuals *“who are in the agricultural sector, looking forward to growing, consistent and committed to the business, and the track record of the person or business must be verified. How the person keeps their records must also be checked.”*

(iii) Clear stakeholder roles

The implementing partners' narratives argued that all the stakeholders should understand their roles in the project. They must be trained to understand the NGC's objectives and what is expected of them as stakeholders. They again emphasised that the project's objectives must be thoroughly explained to everyone, so any confusion and limitations are ironed out from the get-go. There must also be clarity on the funding and funders' terms and conditions from the beginning because the movement of the pilot project from the DSBD to the SEDA affected the implementation of the NGC pilot project negatively. Some implementing partners added that if that should happen again, there should be a smooth transition and the parties responsible for the transition must ensure that all the support that the other government institution planned is carried over to and implemented by the receiving institution.

(iv) Other capital modalities

The interviews also clarified that the DSBD does not necessarily focus on primary production, so the future NGC needs to be careful with funding modalities to avoid non-alignment and disappointment. The DSBD can better support the smallholder farmers in accessing markets related to other big brands, exportation and agro-processing. However, the Department of Agriculture was explained to be the best key stakeholder for the NGC's primary production, most especially in supporting the supply of inputs. The implementing partners also indicated the importance of compliance with budget and grant release requirements. Smallholder farmers need to comply with such requirements to avoid budget cut-offs.

Secondly, the implementing partners suggested signing budget commitment letters to ensure that, even before funding is released to the contracted NGC, the leadership of the NGC can get a commitment from the grantor so that the NGC leadership can use this letter to acquire the resources needed to start with the project. They stated that in the pilot, NGC funds came in much later than expected due to internal government processes and the shift from the DSBD to the SEDA. Having a commitment letter can help to avoid such delays. They explained the commitment letter process as follows: *"As the NGC, we get the commitment letter from the sponsor; we use the letter to negotiate to get inputs or seedlings or the resources the NGC needs; we receive inputs, plant and harvest; sell the produce, get money (this will require the farmers to*

be honest and not do side selling); with the sales money, we pay back the suppliers and, in that way, we do not have to use the sponsor's funding for other things that can be covered by the commitment letter. The funds or liquid money can remain in the bank for other things." In their last statement, they indicated that *"this letter can be a key to open many doors."*

(v) Marketing

To make the programme successful, the implementing partners said marketing and access to markets must be identified in the early stages of the NGC. They believed this could eliminate the challenge of side selling and non-compliance by the smallholder farmers. The implementing partners further indicated that there must be harsh sanctions or legal proceedings for members who do side selling because it affects the investments of stakeholders and other members and breaks the members' trust.

7.4.5. Part II: Qualitative results conclusions

From the results of the Part II themes, it is concluded that, for theme one, the roles of the NGC implementing partners were clarified in the initiation stages of the NGC pilot project. However, they agreed with the smallholder farmers that the roles of the mentorship and funding stakeholders were not fully fulfilled. Regarding the networks built to facilitate the NGC's implementation, the implementing partners' responses were like those reported by the smallholder farmers (see Table 7.3). The data for themes two and three revealed that the NGC positively impacted smallholder businesses but experienced challenges, particularly during implementation. They indicated that the planning stage went smoothly, and the stakeholders and partners were given clarity on the NGC's objectives and their roles. However, many stakeholders stepped back during the implementation stage and became spectators. The reasons for this behaviour can be related to the implementing partners' statements that when the government moved the NGC from the DSBD to SEDA under an incubation model, it confused many stakeholders and smallholder farmers.

It is apparent from the findings that such challenges undermined the implementation of the NGC. The implementing partners suggested five factors as proposals for

improving the implementation of the NGC in South Africa. They indicated that the NGC should have a clear and inclusive objective, criteria for NGC member selection, clear stakeholder roles, capital modalities and marketing.

Part I and Part II of the interviews enabled eliciting of more than enough in-depth information about the efficacy as well as inefficiencies of NGC pilot project implementation to uplift smallholder farmers. As interviews were assisted in collecting the qualitative data, organisational documents were also used for data triangulation as part of credibility, validity and trustworthiness of research findings (Creswell & Creswell, 2018:331; Denzin & Lincoln, 2017:779; Leavy, 2017:153; Yin, 2016:87). The next part discusses findings from documents review.

7.5. PART III: QUALITATIVE RESULTS FROM THE DOCUMENT REVIEW

In addition to in-depth interviews with the NGC smallholder farmers and implementing partners, organisational documents were also reviewed to conduct triangulation (see Sections 6.10.2 & 6.10.3), and answer other questions not answered through the in-depth interviews.

7.5.1. Organisational documents reviewed

Nine documents were identified as useful to the review. These documents are listed in Table 7.7.

Table 7.7: Documents reviewed

	TYPE OF DOCUMENT	DESCRIPTION	RO	Findings
1	NGC 2015 focus group interview data	NGC farmer profiles collected by implementing partners before NGC implementation	RO ₂	NGC smallholder farmer profiles and challenges before the establishment of the NGC. Also used by the NGC implementing partners as part of the NGC design tools
2	NGC Founding Statement: CK Document	NGC registration documents	RO ₃	Establishment of the NGC, and design elements of the NGC. NGC founded in 2016 between sixteen smallholder farmers and one commercial partner
3	Memorandum of Agreement (MoA) between South Africa and the Government of the Kingdom of Netherlands	An MoA between South Africa and the Netherlands on cooperation in the field of cooperative societies	RO ₃	Article 3: (Objectives of the MoA): Design features of the NGC states that the NGC was to initiate high-impact investments, for improving production, processing& marketing efficiencies of cooperatives; to create job opportunities, address the triple challenge of unemployment, poverty and inequality; promote joint venture support for infrastructure development, logistics support and trade to grow market access; education, training and cooperative good governance
4	Memorandum of Association between the smallholder farmers and the commercial farmer and workplan	MoA and workplan to establishing business cooperation according to NGC	RO ₃	(Design features of the NGC) The aim and mission of the NGC; implementing partners; supporting activities; NGC leadership, rules and regulations; rights and obligations
5	NGC Meeting minutes: Resolutions of the executive committee	NGC Launch and preplanning meeting minutes on governance structure, constitution, and commercial farmer contribution	RO ₃	(Design features of the NGC) The aim and mission of the NGC; implementing partners; governance structure, roles and responsibilities; supporting activities; NGC leadership, rules and regulations; rights and obligations. NGC workplan
6	Financial Statements	Records conveying business activities and financial performance of a company	RO ₅	Assess the socio-economic impacts- income earnings
7	Payment schedules	Payments done by the NGC to farmers and suppliers	RO ₃ and RO ₅	To establish improvement of farmer finances/ income earnings; socio-economic impacts and compliance to contractual terms and conditions
8	NGC monthly reports	NGC monthly progress reports	RO ₅ and RO ₆	Assess level of implementation of the NGC practices and socio-economic impacts.
9	Contracts	NGC contracts with farmers and suppliers	RO ₆	To establish compliance to contracts. Assess level of implementation of the NGC practices

Source: By researcher from documents reviewed.

7.5.1.1. Challenges confronted by the NGC smallholder farmers before the implementation of the NGC

Finding 6

The 2015 focus group farmer profiles were reviewed and analysed to identify the challenges confronted by NGC smallholder farmers before they joined the NGC. The NGC pilot project initiation meeting states that the data was collected in 2015 during the NGC pilot project's initiation to determine the farmers' situation before joining the NGC and to assist in planning the NGC model. Findings from the documents reviewed are in consonant with those revealed by the participants during interviews and those discussed in the literature (see Section 4.3).

The challenges mentioned were similar to those from the literature findings, as shown in Table 7.2. However, the road infrastructure problems were not reported by the respondents during either the focus group interviews conducted in 2015 or the in-depth interviews conducted in 2022 during the NGC implementation. This might have meant that access or roads to farms had been improved before the data collection.

7.5.1.2. NGC responding to the farmers' needs

In support of T1A: Assistance, the documents reviewed, especially the monthly reports and meeting minutes revealed information that was in accord with what was reported by the respondents during the interviews, that the NGC was able to respond to the needs of the smallholder farmers such as access to funding and infrastructure (physical, inputs, resources and institutional). Although the NGC was planned to be funded for three years, from July 2017 to July 2020, it forfeited more than 10% of its grant funding for reasons not clarified in the progress reports. However, close to 90% grant funding that was paid as shown in the reports and it uplifted smallholder farmers, as shown in section 7.3.1.1. Table 7.8 shows additional findings from the documents reviewed.

Table 7.8: NGC's responses to the infrastructure needs of the smallholder farmers (inline to Table 7.2)

A	CHALLENGES IDENTIFIED IN THE LITERATURE		EMPIRICAL FINDINGS	
	From Chapter 4, literature review		From in-depth interviews: How NGC responded to the needs of the smallholder farmers	From document review and in-depth interviews
	B	C	D	
Category	Groups	List of challenges		
<u>Physical infrastructure</u>	Physical infrastructure and value-adding infrastructure	Roads, storage, processing facilities, preservation facilities	NGC built a Packhouse, storage and an office	NGC built an office, borehole, and a packhouse
<u>Input-based infrastructure</u>	Input-based infrastructure	Seeds, fertiliser, pesticides, farm equipment, machinery, transport	NGC supplied seeds, fertiliser, pesticides/chemicals, farm equipment, machinery(forklift), transport	NGC supplied seeds, fertiliser, pesticides/chemicals, farm equipment, machinery(forklift), transport
<u>Resource-based infrastructure</u>	Resources	Land, water, irrigation, farm power/energy	NGC helped extend land lease agreements, providing irrigation and energy	Provided irrigation
<u>Institutional infrastructure</u>	Poor access to technology	Access to technology	Not mentioned	Not mentioned
		agricultural research and development	Through the largescale commercial farmer, in the first year, the NGC farmers were warned about the white fly disease that could have destroyed their crops.	Through the largescale commercial farmer, in the first year, the NGC farmers were warned about the white fly disease that could have destroyed their crops.
	Asymmetry or lack of information	extension services, Information and communication services	The NGC was not consistent in building relationships with the local government. As such, the Vhembe local Department of Agriculture did not participate much in the NGC and the NGC smallholder farmers did not benefit from support rendered by the local government during the implementation of the NGC, including extension services	
	Marketing	Access to markets	The NGC linked farmers to three marketing streams. Grade 1,2, and grade 3 products. Grade 1 and 2 was sent to the market. These included the Johannesburg market. Grade 3 was sent for agro-processing to the XXX agro-processing company.	The NGC linked farmers to three marketing streams. Grade 1,2 and grade 3 products. Grade 1 and 2 was sent to the market. These included the Johannesburg market. Grade 3 was sent for agro-processing to the XXX agro-processing company.
	High transaction costs	high transaction costs	NGC lowered transactional costs	NGC lowered transactional costs
	Financial services	Lack of credit, capital or access to finance	NGC provided capital	Documents show that SEDA only paid out 3 tranches to the NGC instead of 4 tranches the reason that the NGC defaulted in terms and conditions
	Compliance and regulatory requirements	Poor quality, grades and standards; inability to meet products' standard specifications, international standards and good agricultural practices	NGC linked farmers to learn about GAP and water licences.	Branding, packaging materials and access to markets Soil sampling Soil preparation Contract with agro-processor Reduce transactional costs through shared logistics
	Lack of governmental support; extension support; Linkages, and networks	Linkages to other farmer organisations	NGC formed linkages to agro-processor, input suppliers (contracts) and commercial farmer	

Table 7.8 (Continued)

A	CHALLENGES IDENTIFIED IN THE LITERATURE		EMPIRICAL FINDINGS	
	From Chapter 4, literature review		From in-depth interviews: How NGC responded to the needs of the smallholder farmers	From document review and in-depth interviews
	B		C	D
Category	Groups	List of challenges		
	Human capital/ Education	lack of investment and negotiation skills; lack of access to skills development.	NGC trained farmers in bookkeeping and various agricultural production skills	The NGC complied and sought services for bookkeeping and had financial statements done during its operation. Also trained individual farmers on bookkeeping, financial management; cooperative governance, business implementation

Source: By researcher from literature review, in-depth interviews and documents reviewed.

Additional findings from documents reviewed not shared by the respondents during interviews were the following:

- Physical infrastructure: NGC built a borehole for the NGC offices.
- Institutional infrastructure: Through research, and risk management done by the largescale commercial farmer/ mentor: In the first year of implementing the NGC, the NGC farmers were warned by the largescale commercial farmer/mentor about the (oncoming) white fly disease that could have destroyed their crops. Smallholder farmers were not aware about the oncoming white fly, thus the research done by the largescale commercial farmer saved them
- Input-based infrastructure: Their crops were then protected against the white fly through chemical application.
- Institutional infrastructure: The NGC complied and sought services for book-keeping and had financial statements done during the time of its operation.

Not only did the NGC assist in smallholder farmer needs, it also contributed to the communities it operated in.

Finding 1.2 (links to previous Finding 1.2)

7.5.1.2. NGC contribution to socio-economic needs

In support of category T1B: Community, the NGC monthly progress reports show that the NGC contributed to socio-economic impacts such as employment, poverty alleviation and income earnings. Table 7.9 comprises a summary of information extracted and analysed from the monthly progress reports regarding NGCs employment contribution to the Vhembe District Municipality.

Table 7.9: Jobs created by the smallholder farmers before and after joining the NGC (combined statistics)

PERIOD	HECTARES PLANTED	TOTAL JOBS CREATED	PERMANENT JOBS	TEMPORARY JOBS	BREAKDOWN				
					Adult Male	Youth Male	Adult Women	Youth Female	Disabled Persons
Before NGC (from 2015 focus group data)	117 ha	471	133	245	Not known				
During NGC (from monthly progress reports)	48 ha	471	275	196	87	36	288	60	0

Source: Interpreted from the NGC Organisational documents.

- Youth and women employment:** The above table indicates that although the NGC did not manage to hire any disabled persons, it did include youth and women in its pilot programme, as desired by the South African government (see Section 4.4.5), thus uplifting them from hunger and poverty, and helping them to generate the required agricultural productivity to address food insecurity issues (Feil *et al.*, 2020:6).
- General employment:** Before the NGC's establishment, the 2015 focus group interview data revealed that the sixteen smallholder farmers planted on 117 ha and contributed to local community employment. Combined, they created a total of 378 jobs, of which 133 were permanent jobs and 245 were seasonal work opportunities in an average season. The ratio of average jobs created per hectare was, therefore, three jobs per hectare. The 2017/2018 NGC monthly progress reports show that the NGC business model increased employment

opportunities within the Vhembe District Municipality. On the pilot 48 hectares planted, the sixteen smallholder farmers created a total of 471 jobs, of which 275 were permanent jobs and 196 were temporary jobs. The ratio of jobs created per hectare during the NGC was almost ten jobs per hectare, which was higher than the three jobs per hectare achieved before joining the NGC. This was due to the assistance offered by the NGC to the smallholder farmers (see Section 7.3.1.1). The NGC, therefore, tripled the job opportunities on the smallholder farms – on half the land area normally used by the smallholder farmers in the past to create jobs.

The NGC also reduced high transactional costs and increased the sale revenues of smallholder farmers.

- **Costs and sales:** The 2015 focus group data indicate that the smallholder farmers never kept records of their operations before joining the NGC. Their seasonal yields from 2013, 2014 and 2015 cannot be fully traced to compare with the yields of 2017 to 2019 after they joined the NGC. However, the NGC reports show that, after joining the NGC, the smallholder farmers reduced their costs per hectare by 25% and increased their sales by 160%.

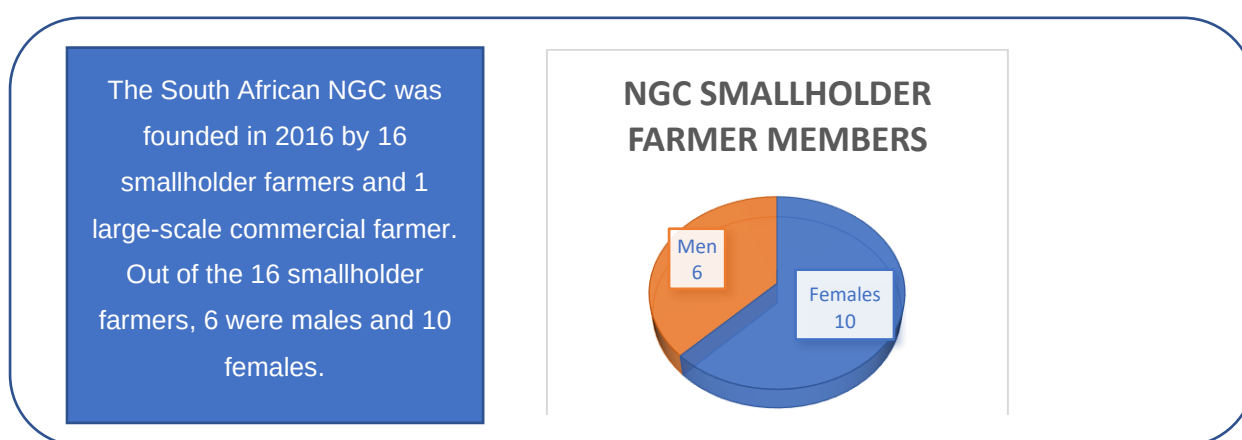
Thus, contrary to World Bank's Rural Strategy (2003), as cited in Bernstein (2013:23) (see Section 4.2), the NGC has demonstrated that despite the land size used, if smallholder farmers can be supported throughout the value chain, they can triple the number of job opportunities, reduce smallholder farmer costs by 25% per hectare and increase their sales by more than 150%. This result is in accord with Aliber and Mdoda's (2015:19) statement that smallholder farmers can make a direct and indirect economic contribution to the welfare and livelihoods of rural dwellers. Pienaar and Traub (2015:10) stated that a small farm that produces high-value crops on irrigated land and uses good quality fertilisers is not comparable to a small farm on marginal land that produces staple crops (see Section 4.2).

This attests to the value of NGC's efficacy in uplifting smallholder farmers (see Section 7.3.1.1) and the value of the NGC drivers (see Section 7.3.2).

7.5.1.3. Key design and implementation features of the NGC

The NGC company registration documents, MoA between the Republic of South Africa and the Government of the Kingdom of Netherlands, together with the memorandum of association between the smallholder farmers and the largescale commercial farmer and the workplan, the resolution by the executive committee meeting minutes and contract documents; all provided information on the design and implementation features of the South African NGC.

Figure 7.29: Establishment of the NGC



Source: Interpreted from the NGC's organisational documents.

Finding 7.1.1

Figure 7.29 shows data on the establishment of the NGC in South Africa. The NGC was founded in 2016 by sixteen smallholder farmers and one largescale commercial farmer. This is reflected in the NGC company registration documents (see Table 7.7). The NGC paid the NGC establishment fees, but contributions or membership fees paid by the members are not recorded. The implementing partners selected the sixteen smallholder farmers, but they had a choice to join or not join the cooperative. Maybe this was done because it was a pilot project. Hence it did not meet the *first cooperative principle of voluntary and open membership*, which means that the cooperative is open to anyone who can use its services (see Section 5.2.2).

Finding 1.2 (links to previous Finding 1.2)

The NGC consists of ten women and six males. Only one of the females is categorised as youth. In the review of this arrangement, the South African NGC did participate in ensuring that youth and women are integrated in developmental programs, as suggested by the Department of Agriculture, Forestry and Fisheries in (see Section 4.4.5). The increasing population highlights (see Section 3.3.2), the vulnerability of youth and women to hunger and poverty (FAO, 2021:5). The integration of women and youth in the NGC aimed to uplift them from hunger and poverty (Adenle *et al.*, 2019:101) can also help them to generate the required agricultural productivity address food insecurity issues (Feil *et al.*, 2020:2).

In the South African NGC documents review, females own an average of 20 hectares of land, while their male counterparts own 42 hectares of land. However, to further redress such disparities, Fox *et al.* (2016:13) suggest the importance of changing and transforming land ownership policies and laws to enable women to hold land ownership. Such initiative is critical for enhancing the capabilities of a large number of women engaged in agricultural production in developing countries to use agriculture to generate earnings that can enable them to turn around their poor conditions and low standard of living (Adenle *et al.*, 2019:101). Addressing the land disparity between women and youth is critical for the NGC female and youth members. The members also expressed this during the interviews, that they needed land for expansion to produce the desired quantities and generate more revenues (see Section 7.3.3.1).

Finding 7

7.5.1.3.1 Cooperative life-cycle framework

For this study, the CLCF, as a cooperative success factor, was further used to detail and frame all the key design and implementation features of the South African NGC as collected from the organisational documents, such as the MoA between the Republic of South Africa and the Government of the Kingdom of Netherlands, the MoA between the smallholder farmers and the largescale commercial farmer, the workplan, the resolution by the executive committee meeting minutes and contractual partnerships.

Section 5.7.2 explains the successful development, establishment, growth and sustainability of modern cooperatives (Francesconi & Wouterse, 2019:144). The CLCF phases are the economic justification and cooperative formation stage, the organisational design stage, the growth stage, the recognition and introspection stage and the restructuring choice stage. The important phases of the cooperative lifecycle require effective diagnosis and management of the complexities associated with each phase for the cooperative to grow and remain sustainable. Failure to do so has often been the major reason for cooperatives' failure (Hagedorn, 2014:555).

Finding 7.2

i) Phase 1: Economic Justification and Cooperative formation Stage

Economic justification to pilot the NGC was agreed on, in an MoA between the RSA and the Kingdom of the Netherlands. The objectives to pilot the NGC were to initiate high-impact investments, for improving the production, processing and marketing efficiencies of cooperatives to create job opportunities and address the triple challenge of unemployment, poverty and inequality; promote joint venture support for infrastructure development, logistics support and trade to grow market access; education, training and cooperative good governance.

During this stage, sixteen smallholder farmers and one largescale commercial farmer agreed to form the NGC and secured external start-up costs from the DSBD and SEDA. However, although the South African NGC complied with these phase 1 elements, no evidence could be found in the NGC organisational documents that the NGC complied with the rest of the CLCF phase one features for sustainable cooperatives, namely, to (i) internalise start-up costs or cooperative investments through membership contribution or fees, (ii) good public relations and (iii) obtain buy-in from locals, and (iv) appoint a local champion who will be the organisational catalyst. Instead, the in-depth interviews revealed the following on these aspects:

- *Need for farmers to internalise start-up costs as equity and patronage investments:* The registration documents of the NGC show nowhere that the farmers financially contributed to the establishment and registration of the NGC. In other words, there were no equity investments from the members. This might

have been the cause of non-cooperation, side selling, and dependence on government grants by some smallholder farmers. Alho (2019:161) emphasises NGC members must invest in equity in the cooperative “upfront” to purchase marketing rights when the cooperative is established, as it allows for a high cash patronage rate to be paid each year. Membership fees prevent property rights problems (Giannakas *et al.*, 2016: 372). Since there were no investment nor membership fees paid by the South African NGC members to join the cooperative, this may justify the free rider problem experienced by the South African NGC, as highlighted from the smallholder farmer narratives (see Section 7.4.3.1).

-Need for good public relations management and communication and buy-in from locals: In the review of the NGC workplan, it is nowhere mentioned that the local government shall form part of the NGC key stakeholders. During the in-depth interviews, the smallholder farmers indicated that there was resistance towards the NGC from the local government, which affected the participation of local government officials and extension officers in offering support to the NGC members. The farmers expressed their wish to improve the efficacy of the NGC in South Africa. The NGC should harmonise relationships between the government and the NGC and bring partnerships such as the MERECAS, RESIS and LADA on board (see Section 7.3.3.2).

- Need to appoint a “local champion” to be the organisational catalyst: The NGC documents show that the NGC CEO was the appointed organisational catalyst. However, during interviews, smallholder farmers expressed that the CEO was not local nor full-time on the project and was not always accessible when they needed something but visited the site now and then. To improve NGCs efficacy in uplifting smallholder farmers, the NGC members suggested the CEO must work full-time on the project and be available (see Section 6.4.4.1). Thus, linking that an organisational catalyst should be a “local champion” (see Section 5.7.2.1).

Finding 7.3

ii) Phase 2: Organisational Design

In this phase, Francesconi and Wouterse (2019:144) indicate four important factors, namely the cooperative constitution and the purpose of the cooperative, membership rules and responsibilities, governance structure, and marketing contracts, which are property rights as key for a sustainable cooperative design (see Section. 5.7.2.2).

- *Cooperative constitution and the purpose of the cooperative:* The NGC executive committee resolution minutes show that the NGC drafted a constitution, and clarified the purpose of the NGC. The South African NGC did meet the constitution requirement of successful cooperatives.

- *Membership rules and responsibilities:* The NGC executive committee resolution minutes and the contracts signed between the NGC smallholder farmers with the NGC contain membership rules for both the NGC largescale commercial farmer and the smallholder farmers. The NGC largescale commercial farmer rules were to collaborate with the NGC to buy inputs, marketing, technical and post-harvesting support, offer advice and provide logistics at cost. However, during the in-depth interviews, the smallholder farmers indicated they did not learn much from the largescale commercial farmer. In (see Section 7.3.3.4), they explained that the large commercial farmer visited them once and taught them how to use chemicals and fertilisers and to prepare the soil for plantation. Since then, most smallholder farmers stated that no largescale commercial farmers visited again for training. Most of the smallholder farmers revealed the limited participation of largescale commercial farmers in training programmes to have limited opportunities for them to learn how largescale commercial farmers do their things to emerge and maintain such largescale of farming businesses. Thus, they feel that if NGC is to be re-introduced again, it should bring largescale commercial farmers on board to take them step-by-step through all the processes of different crop production as well as how and where to market such agricultural products. The smallholder farmers also stated that the large commercial farmer was responsible for mentoring them for the duration of the pilot project. However, the largescale commercial farmer exited early in the programme for reasons not known by the farmers. They reflected that the remaining pilot

implementation stage was carried on without the mentor, which is indicated to be an institutional infrastructure requirement for NGC improvement (see Section 7.3.4.1).

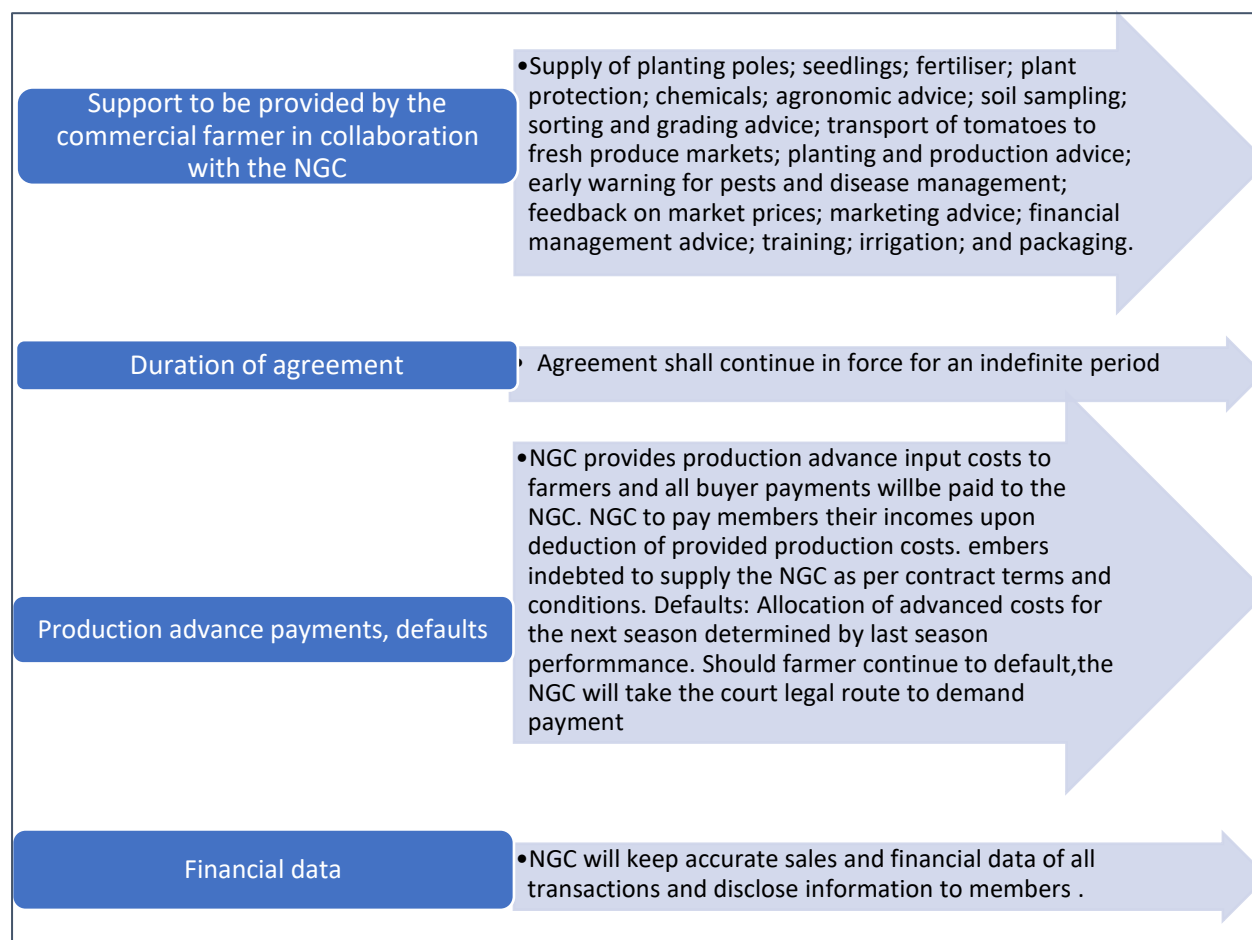
Finding 7.4

iii) Phase 3: Growth, Glory, and Heterogeneity

Unless well managed, it is often during the growth stage that problems can cause failure (see Section 5.7.2.3). There were signed contracts between the NGC and smallholder farmers on the terms and conditions of the agreements regarding the support to be provided by the NGC in collaboration with the largescale commercial farmer, the duration of agreement, production advances and payments, defaults and financial data. The NGC's financial documents indicate that the NGC compiled annual financial statements shared with the members. Therefore, the South African NGC did comply with the contract's NFC financial data management rules.

The contract between the NGC, largescale commercial farmers and smallholder farmers stipulates roles and responsibilities, including measures that will be taken when the farmers default in supply (Figure 7.30). From the recorded support that was contracted to be provided in contrast to the smallholder farmer in-depth interviews, the NGC did meet its roles and responsibilities. However, the South African NGC did not have a marketing agreement, and the members did not purchase shares of equity nor pay membership fee when joining the NGC. Giagnocavo *et al.* (2018:21) insist that for NGCs to succeed, there should also be a marketing agreement which states contractual rights and obligations to deliver a quantity and quality of the product to the NGC, and that NGC owners should be expected to purchase shares of equity (see Section 5.6.3). These contractual obligations could have instilled more loyalty for the members. This left the South African NGC open to property rights problems (see Section 5.7.2.3), such as the free rider problem. Moreover, default consequences are stated on the contract, namely, that, should the members not meet contractual delivery obligations, they will not get the supply for the next season and, should that continue, the matter should be dealt with in a court of law.

Figure 7.30: South African NGC contract between the smallholder farmers, the largescale commercial farmer and the NGC.



Source: Summary of the NGC contract.

Francesconi and Wouterse (2019:144) in section 5.7.2.3 suggest that during the growth stage, the cooperative needs to capture the market to create the desired values for the members, and if the property rights are vaguely defined, it can cause failure for the cooperative. It can be deduced that both from the interviews with the participants and the documents reviewed, the property rights of members were vaguely defined and there was no marketing agreement with each NGC smallholder farmer member. This implies that the South African NGC pilot was prone to growth problems from its establishment.

Finding 7.5

iv) Phase 4: Recognition and introspection and Phase 5: Restructuring Choice

The contract signed between the smallholder farmer members and the NGC shows no rules of exit nor the validity period of the contract, instead, the contract states the “agreement shall continue in force for an indefinite period”. When members defaulted, it shows nowhere on the documents how they were sanctioned or charged. The risk of degeneration is heightened by the separation of the organisation from its values and daily practices and the “weak exercise of internal democracy” to hold leaders and members accountable (DSBD, 2019:199). Other cooperative problems experienced in this stage include increased side selling and diminishing collective marketing (Van Dijk, 2015:6), which became the case for the South African NGC (see Section 7.3.3.3). This problem then confronts the cooperative with three choices: to enter a state of dormancy, exit the industry, or reinvent and start a new life cycle (Francesconi & Wouterse, 2019:22) (see Section 5.7.2.4).

The South African NGC suffered the abovementioned events as discussed in Part I and Part II of the interviews. Nowhere in the organisational documents does it show that the NGC had a strategy on recognition, introspection and restructuring choice. This implies that the South African NGC did not plan nor execute the recognition, introspection and restructuring choice. Since the NGC had no strategy to either enter a state of dormancy, exit the industry, or reinvent and start a new life cycle as advised by (Francesconi & Wouterse, 2019:22) to save the cooperative, the South African NGC degenerated and smallholder farmer interviews reflect that it is no longer in operation (see Section 7.3.3.3). It can thus be concluded that the South African NGC failed during the growth stage of the CLCF.

The CLCF shows the level of implementation of the NGC practices by the newly-formed NGC in South Africa. Additional findings of the level of implementation of the NGC practices by the South African NGC are discussed below.

7.5.1.4. Level of implementation of the NGC practices by the newly-formed NGC.

Finding 7.6

7.5.1.4.1. Documents review of MoA objectives

The MoA between South Africa and the Kingdom of Netherlands details the objectives of the South African NGC to be:

“To initiate high-impact investments for improving the production, **processing** and marketing efficiencies of cooperatives; to create job opportunities and address the triple challenge of unemployment, poverty and inequality; **promote joint venture support for infrastructure development**, logistics support and trade to grow market access; education, training and cooperative good governance.”

The narratives from the smallholder farmer interviews and the implementing partner interviews revealed that the NGC met its MoA objectives between the two countries of initiating high-impact investments, improved production, marketing efficiencies of cooperatives; creating job opportunities and addressing the triple challenge of unemployment, poverty and inequality; logistics support and trade to grow market access, education, training and cooperative good governance. However, it did not establish an agro-processing plant nor joint venture support for infrastructure development. They explained that it was still early to establish its own agro-processing plant, and the pilot project was implemented for a short period. Nevertheless, a contract with a local agro-processing company XXX, was established. On the joint venture support for infrastructure development, the NGC used the grant provided to them to build infrastructure. However, smallholder farmers were not happy with this decision. They explained that infrastructure costed the NGC a lot of money that could have been used for production. Instead, NGC hires other farmer facilities or approaches local government for infrastructure support. They expressed this delayed their growth as they could have used the profits from production to build the infrastructure instead.

Finding 7.7

7.5.1.4.2. Documents review of MoA between the NGC smallholder farmers and the NGC largescale commercial farmer

In reviewing organisational documents, the plan to establish an NGC in South Africa and a signed MoA between sixteen smallholder farmers and one largescale commercial farmer was fulfilled. Smallholder farmers revealed that they learnt some good practices from a commercial farmer during the period of the partnership. However, smallholder farmers and the implementing partners revealed that the commercial farmer left early in the project, and the objective of mentorship was not fully obtained.

Finding 7.8

7.5.1.4.3. NGC constitution, rules and regulations

The smallholder farmer, implementing partner interviews and documents reviewed show that the NGC constitution was drafted and agreed to, together with rules and regulations. However, smallholder farmers revealed that the implementing partner rules were not clear. Maybe that is why there was no full commitment from some of the implementing partners and key stakeholders. They also revealed that some smallholder farmers did not comply with the rules. They breached the contract and sold the production that was supposed to be supplied to the XXX agro-processing company via NGC to the streets. They also complained that the contract rates were very low. In general, the smallholder farmers and the implementing partners agreed that a good cooperative governance system was in place. However, during the implementation stage, they experienced governance challenges such as the non-cooperation of farmers to NGC rules such as non-attendance of meetings and the side selling mentioned. They narrated that the non-attendance to meetings by other smallholder farmers would delay decision-making because the NGC required that a quorum of 50% attendance be met for a meeting seating and decision-making. The implementing partners also echoed these views.

7.5.1.5. Conclusion

Nine documents, namely 2015 farmer profile focus group reports, NGC company registration documents, the MoA between the Republic of South Africa and the Government of the Kingdom of Netherlands, a memorandum of association between the smallholder farmers and the commercial farmer and the workplan, executive committee meeting minutes, monthly progress reports, financial statements, payment schedules, and contractual partnerships were identified and reviewed. The NGC documents reviewed gave the NGC case background information and the challenges confronting the South African NGC smallholder farmers before joining the NGC. The ways in which the NGC assisted smallholder farmers and communities in which they operate were also discussed.

The CLCF was used to discuss the key design and implementation features of the South African NGC and ascertain South African NGC design and implementation gaps, as reported by the NGC participants during the in-depth interviews. The CLCF and in-depth interviews helped identify the NGC gaps in phases 2, 3, and 4 of the CLCF. This section further validated the in-depth interview responses through the triangulation strategy. The chapter concluded by showing the level of the implementation of the newly-formed NGC based on the documents reviewed and in-depth interviews with the participants.

7.6. CHAPTER SUMMARY

In spite of limitations here and there, the responses of most of the smallholder farmers and NGC implementers signify the NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality. Positive factors were the improved input provision to smallholder farmers, their linkage with largescale commercial farmers and their integration into the larger agribusiness value chains. The NGC also improved the smallholder farmers' marketing capabilities and food security, employment creation, and contributed to poverty alleviation among the smallholder farmers and the surrounding communities. Input provision to smallholder farmers emerged from the responses of most of the smallholder farmers as one of the ways through which NGC contributed to uplifting them. The smallholder farmers emphasised that, before the establishment of the NGC, accessibility to the requisite agricultural inputs, such as

quality seeds, fertilisers, chemicals for planting and drippers, had been a challenge. They attributed such challenges to a lack of information about which agricultural suppliers offered cheap agricultural inputs and inadequate capital. However, following the introduction of NGC, this challenge was ameliorated because the NGC facilitated the supply of such inputs from XXX agro-processing company in exchange for produce. XXX also paid off the debt for the seedlings provided to smallholder farmers by YYY seedlings supplier.

In addition, most of the smallholder farmers and NGC implementers revealed that the NGC built the infrastructure that the smallholder farmers desperately needed. These contributions demonstrate how the NGC was able to respond to the smallholder's farmers' needs, as well as NGC's efficacy. Some smallholder farmers also revealed that the NGC bolstered their connections with largescale commercial farmers. They stated that this improved the capabilities of the NGC to respond to their needs because these associations enabled them to understand and appreciate the dos and don'ts of largescale commercial farming. This signifies that, if given time, the NGC can contribute enormously to uplifting smallholder farmers.

Most of the smallholder farmers' narratives and NGC implementers indicated that the critical drivers of NGC success and efficacy in uplifting smallholder farmers in Vhembe District Municipality can be attributed to the governance and management system that was put in place, leadership, transparency and accountability, financial independence and smallholder farmers' cooperation with NGC. However, the findings showed that NGC's efficacy in uplifting smallholder farmers was marred by various challenges identified by the smallholder farmers and the NGC implementers. These are poor farming skills, land dynamics and complexities, insufficient operational capital, NGC governance and management deficiencies and a poor relationship with government agencies and other critical actors in the agricultural input and output markets. Hence, to ameliorate such constraints, if the NGC is adopted across South Africa, the smallholder farmers and some NGC implementers' suggestions can be considered to improve the NGC's efficacy in uplifting smallholder farmers. Increasing funding of the NGCs and smallholder farmers and an improved linkage between smallholder farmers and largescale commercial farmers enabled the transmission of critical agricultural production skills.

Chapter 8 focuses on how the empirical research results presented in this chapter relate to the literature review presented in Chapters 2 to Chapter 5 in an attempt to address the research objectives of the study. Conclusions and recommendations are provided for each of the secondary research objectives to ultimately address the primary research objective. In conclusion, Chapter 8 also recommends an Eight Steps Business framework that can be used to improve the current NGC's performance.

CHAPTER 8

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

8.1. INTRODUCTION

This chapter aims to address the research objectives that were formulated in Chapter 1, section 1.6. It commences with a brief study overview, followed by conclusions and recommendations for each primary and secondary research objective. In support of the concluding remarks and suggestions made for each secondary and primary research objective, this chapter discusses the link between the literature discussed in Chapters 2, 3, 4, and 5 and the empirical research results. The chapter concludes by outlining the study's limitations and providing suggestions for future research.

8.2. OVERVIEW OF THE STUDY

To provide a context about the conclusions and recommendations of each research objective discussed in section 8.3, this section presents a summary of the study's objective, the main concepts addressed in each literature chapter (Chapters 2, 3, 4 and 5), and the research methodology (Chapter 6).

This study was conducted to evaluate the efficacy of the NGC business framework in uplifting smallholder farmers. The reason for pursuing this primary research objective is contained within the problem statement (see Section 1.4). To recapitulate, not much is yet known about the positive impact of the NGC introduced in Limpopo to improve smallholder farmers' performance and create jobs to catalyse rural socio-economic transformation since its piloted for the first time in South Africa.

Eventually, findings from Chapter 7 revealed that the NGC did uplift smallholder farmers to some extent. However, the NGC contribution to uplifting smallholder farmers was marred by the complexities and challenges it experienced until its collapse three years after its establishment. In the absence of a holistic business framework, it is unlikely that the discrete solutions proposed by the smallholder farmers and NGC implementers can effectively leverage the successful NGC replication for all the smallholder farmers in South Africa. Hence this chapter proposed

an eight steps business framework for NGC implementation that the government can use and replicate across South Africa (see Figure 8.1). Devising a holistic business framework was also suggested (see Section 4.4.5) by DAFF's (2019:3). Thus, it served as the motivation for undertaking this study to evaluate the efficacy of the NGC business framework and to formulate corresponding recommendations in the form of a framework to improve the functionality and sustainability of the NGC, if necessary.

A literature study was conducted about the key concepts of the research objectives and the problem statement (see Section 1.4 & 1.6). It was presented in Chapters 2, 3, 4 and 5 as follows:

- Overview of the agricultural landscape globally and in Africa (Chapter 2).
- Overview of the agricultural landscape in South Africa (Chapter 3).
- Challenges facing smallholder farmers in South Africa (Chapter 4).
- Literature and theories on developing and managing agricultural cooperatives (Chapter 5).

The key concepts of each literature chapter are presented in Table 8.1 below.

Table 8.1 Literature overview of Chapters 2,3,4 and 5

Key aspects	Reference
Chapter 2- Fundamental concepts in agriculture	
Agricultural concepts were discussed, and in contrast to agricultural science, agricultural economics is more consonant with the research topic, aim, objectives and questions that seek to use the concept of NGC to analyse the overall efficiency of agricultural science to generate the requisite inputs and influence the efficiency and effectiveness of the agricultural production process to create the desired outputs that accurately respond to the socio-economic needs of farmers and the society at large (market).	Section 2.2
Chapter 2- Agriculture's socio-economic contribution (Global and African)	
In general, an analysis of global and African agriculture's socio-economic contribution was presented.	Sections 2.3.1 and 2.3.2, Figure 2,1

	and 2.2, Table 2.1 and 2.2.
Chapter 3- Agriculture's socio-economic contribution- South Africa	
A contributory review of the South African agricultural socio-economic landscape. The significant contribution was enormous to the GDP, employment creation, food security, poverty alleviation, linkages with other sectors, and foreign exchange earnings.	Section 3.3, Figures 3.1 and 3.2.
Chapter 3- Measuring and improving agricultural efficacy and productivity	
Highlights how to measure and improve agricultural efficacy and productivity	Section 3.4
Chapter 4- Challenges facing smallholder farmers in South Africa	
Discussed the concept of smallholder farming and the comprehensive definition of smallholder farmers	Section 4.2
Discussed challenges facing smallholder farmers in South Africa and smallholder farming's support by the South African government. In the fourth chapter, government support programmes particularly implemented in Limpopo Province are also discussed.	Section 4.3
Elaborated on the smallholder farming's support by the South African government, and specifically, smallholder farmers' support by Limpopo Province local economic development.	Sections 4.4 and 4.5
Chapter 5- Literature and theories on developing and managing agricultural cooperatives	
Explored the literature and theories on developing and managing agricultural cooperatives. It focuses firstly on the contemporary notions of cooperatives in specific agricultural cooperatives and cooperatives in South Africa. It also reveals cooperative agricultural challenges in South Africa, how NGCs are a solution to challenges encountered by traditional cooperatives, and the reasons for their establishment. The chapter concluded by providing guidelines on critical success factors for agricultural cooperatives. Most notably, the critical	Sections 5.2, 5.3, 5.4, 5.5, 5.6 and 5.7, Figure 5.1

success factors discussed to guide the importance of the Cooperative Life Cycle Framework, adherence to cooperative values, ethics, and principles, and integration of agricultural cooperatives in value chain system. Two theories which are important in the establishment stage of the cooperative are also discussed. The Social Capital Theory and the Theory of Contracts.	Section 5.8

To address the study's primary research objective (see Section 1.6.1), secondary research (see Section 1.6.2) was conducted by means of a literature review and primary research was conducted through data collection for the empirical study. A qualitative research design was chosen for this study, where data was collected by means of in-depth interviews with sixteen smallholder farmers and two implementing partners who were part of the NGC pilot project.

8.3. ANSWERING THE RESEARCH OBJECTIVES/ CONCLUSIONS PERTAINING TO RESEARCH OBJECTIVES

This analysis is necessary to establish the contribution of this study to the body of knowledge pertaining the efficacy of the NGC in uplifting smallholder farmers in Limpopo Province. This section illustrates how the study's research objectives that were set in Chapter 1 (see Sections 1.6.1 & 1.6.2) were answered. The first six secondary research objectives are addressed first to answer the study's primary research objective. Thereafter, research objective seven is addressed. Table 8.2 indicates how the study's research objectives are linked to the literature reviewed and the empirical study.

Table 8.2. Summary of the linkages between the research objectives, literature review and empirical study

Research objectives	Literature reviewed	Empirical study
Primary research objective		
To evaluate the efficacy of the NGC business framework in uplifting the smallholder farmers in Limpopo Province.	Chapters 2,3,4, and 5.	In-depth interview questions: A1-10, B1-7, C1-7, D1-3. Documents reviewed.
Secondary research objectives		
1. To identify challenges confronted by South African smallholder farmers, in general, through a literature review.	Chapter 4	
2. To assess NGC smallholder farmer members' views on challenges they were confronted with before the implementation of the NGC in South Africa.	Chapter 4	In-depth interview questions: A1-A10. Documents reviewed
3. To identify and describe the South African NGC's key design and implementation features.	Chapter 5	In-depth interview questions: B1-7, C1-7 Documents reviewed
4. To measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution to uplifting their agribusinesses.	Chapters 4 and 5	In-depth interview questions: A1-10, B1-7, C1-7
5. To assess the socio-economic impacts (income earnings, food security, employment and poverty alleviation) that have emerged from NGC implementation.	Chapters 2 and 3.	In-depth interview questions: A6-10.
6. To analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa.	Chapter 5	In-depth interview questions: A1-10, B1-7, C1-7, D1-3. Documents reviewed.
7. To formulate corresponding recommendations to improve the functionality and sustainability of NGCs in South Africa, if necessary.	Chapters 2,3,4, and 5.	In-depth interview questions: A1-10, B1-7, C1-7, D1-3.

Conclusions and recommendations about each of the secondary objectives were made based on the empirical research findings presented in Chapter 7. The literature

review was presented in Chapters 2, 3, 4 and 5. The subsequent section provides the conclusions and recommendations related to each research objective.

8.3.1 Conclusions and recommendations

Secondary research objectives 1 and 2 assessed the challenges confronting smallholder farmers from literature review and empirical study. The recommendations are discussed from secondary research objective 2.

8.3.1.1 Secondary research objective 1

Secondary research objective 1 aimed *to identify challenges confronted by South African smallholder farmers, in general, through a literature review*. Research objective 1 was achieved through the literature reviewed in Chapter 4.

In addition, identifying challenges confronted by South African smallholder farmers was to understand, in general, the status quo of South African smallholder farmer development in South Africa. The intention was also to compare the challenges found in the literature with the challenges reported by the study participants (as revealed in secondary research objective 2). In other words, information from recent literature is used to avoid generalising conclusions from smallholder farmer challenges based on the answers from the sixteen smallholder farmers only when making recommendations to an NGC framework that can be replicated across South Africa.

Table 8:3 presents literature findings and conclusions about secondary objective 1.

Table 8.3 Conclusions and recommendations: Secondary research objective 1

LITERATURE FINDINGS: SECONDARY RESEARCH OBJECTIVE 1
From the analysis of various literature sources (see Section 4.3), smallholder farmers' challenges are physical infrastructure, input-based infrastructure, resource-based infrastructure, and institutional infrastructure. The physical infrastructure includes roads, storage, processing and preservation facilities (see Section 4.3.1); input-based infrastructure includes seeds, fertiliser, pesticides, farm equipment, machinery and transports (see Section 4.3.2); resource-based infrastructure includes land, water, irrigation, farm power/energy (see Section 4.3.) and institutional infrastructure have access to technology, lack of information, marketing and high transactional costs, financial services, compliance to regulatory requirements, lack of governmental support, training and education (see Section 4.3.4). They are further illustrated in Table 7.8.
CONCLUSIONS: RESEARCH OBJECTIVE 1
The government devised programmes to support smallholder farmers. However, not all programmes reach the targeted individuals. Smallholder farmers do not always have access to information about these programmes (see Section 4.4). Some of these programmes had challenges; most research capabilities remained at the commercial sector, and extension methods were outdated (see Section 4.4.1). The CPAs face internal challenges and are slow to allocate land to the beneficiaries (see Section 4.4.2). Some of the programmes, such as the MAFISA and MERECAS, did not achieve their intended objectives and others had a low proportion of youth and women beneficiaries. Audit findings regarding inadequate monitoring of the funded projects are also reported. The DAFF (2019:3) report highlights that a silo approach to supporting farmers must be done away with and substituted with a more holistic model.
RECOMMENDATIONS RESEARCH OBJECTIVE 1
Recommendation 1: An integrated producer support framework must be developed for effective farmer performance. Better management of the support programs will lead to better implementation and support to smallholder farmers.

8.3.1.2 Secondary research objective 2

Secondary research objective 2 was to *assess NGC smallholder farmer members' views on challenges they were confronted with before the implementation of the NGC in South Africa*. Secondary research objective 2 was addressed through documents reviewed and can be found in Table 7.8 and in-depth interviews with the smallholder farmers with findings discussed in (see Section 7.5.1.1) - **Finding 6**.

Assessing NGC smallholder farmer members' views on challenges they were confronted with before the implementation of the NGC in South Africa was to understand if joining the NGC would ameliorate those challenges. In that sense, joining the NGC will assist their farmer businesses. Findings from the documents reviewed are in consonant with those found in the literature (see Section 4.3).

Table 8:4 presents the literature findings, conclusions, and recommendations for secondary objective 2.

Table 8.4 Conclusions and recommendations: Secondary research objective 2

LITERATURE FINDINGS: SECONDARY RESEARCH OBJECTIVE 2
The same as Table 8.3
CONCLUSIONS: RESEARCH OBJECTIVE 2
The challenges mentioned were similar to those from the literature findings, as shown in Table 7.2. However, the respondents did not report the road infrastructure problem during the focus group interviews conducted in 2015 and the in-depth interviews conducted in 2022 during the NGC implementation. This might have meant that access or roads to farms had been improved before the data collection.
RECOMMENDATIONS SECONDARY RESEARCH OBJECTIVE 2
Recommendation 2: It is important also to hear solutions to challenges from the smallholder farmers and plan the solutions with them. Since the NGC was the pilot designed to meet the needs of the smallholder farmers, the planning and implementation of the NGC project should be driven by the smallholder farmers.

8.3.1.3 Secondary research objective 3

Secondary research objective 3 was identifying and describing *the South African NGC's key design and implementation features*. This objective was focused on in the literature study (Chapter 5) and the empirical study (Chapter 7). Research objective 3 was answered based on findings and its key design and implementation features revealed from documents reviewed and in-depth interviews. The South African NGC's key features and implementation features are discussed in **Finding 7.1** to **Finding 7.5**.

Conclusions are made both from the literature study and the empirical study followed by recommendations from the empirical study. Table 8:5 presents the literature findings, conclusions, and recommendations for secondary objective 3.

Table 8.5 Conclusions and recommendations: Secondary research objective 3

LITERATURE FINDINGS: SECONDARY RESEARCH OBJECTIVE 3
For a cooperative to be successful, it must adhere to the cooperative values, ethics and principles (see Section 5.7.1). The cooperative lifecycle is a framework that influences modern cooperatives' successful development, establishment, growth and sustainability and has five phases (Francesconi & Wouterse, 2019:144). The CLCF phases require effective diagnosis and management of the complexities associated with each phase for the cooperative to grow and remain sustainable. Failure to do so has often been the major reason for cooperatives' failure. The following are the different phases and a short discussion. • In Phase 1, the cooperative members must justify the need for the cooperative. NGC to secure start-up funds and appoint a local champion (see Section 5.7.2.1). Then the need to secure coordination and collaboration with the different partners (see Section 5.7.3, 5.7.4 & 5.7.5). • In Phase 2, of organisational design, the members must develop policies, rules, regulations, a constitution, a business plan, and a governance structure (see Section 5.7.2.2). • In Phase 3, the cooperative grows and becomes successful, with members facing the pressure of economies of scale and scope, and if not well managed, the growth

stage problems can cause cooperative failure (see Section 5.7.2.3). To avoid failure, the cooperative must make sure the property rights of customer marketing transactions, patron profit distribution, owner investment obligations, and member voting control are well-defined (see Section 5.6.3).

- In Phase 4, the members must do an introspection and restructuring analysis of the cooperative and come up with solutions (see Section 5.7.2.4).
- Lastly, in Phase 5, the members must decide on the restructuring choice (see Section 5.7.2.5).

CONCLUSIONS FROM LITERATURE: RESEARCH OBJECTIVE 3

Section 5.7 shows that critical success factors in designing and implementing agricultural cooperatives are adhering to the **cooperative values, ethics and principles** and managing the **cooperative lifecycle framework** by implementing the different steps effectively (Francesconi & Wouterse, 2019:144).

CONCLUSIONS FROM EMPIRICAL FINDINGS: RESEARCH OBJECTIVE 3

The NGC implementing period is crucial for its success. Allocating a defined budget to implement the NGC allows for proper planning and implementation. Maintaining a framework agreed to with the smallholder farmers is crucial for the programme's success. For success, the cooperative members must adhere to the seven cooperative principles (see Section 5.7.1) and manage the CLCF (see Section 5.7.2).

RECOMMENDATIONS SECONDARY RESEARCH OBJECTIVE 3

Recommendation 3.1: Programme period: The NGC implementing period must be longer than 2 years to allow for sufficient planning and implementation of the NGC.

Recommendation 3.2: Programme Finance: When shifting funds from one government agent to the other, there must be due diligence not to change the framework or impose terms and conditions that will defeat the purpose of the pilot project. There should also be no changes in budget amounts as this will affect the planting programme and funding of the governance structure and eventually contribute to NGC failure.

Recommendation 3.3: Cooperative Principles: Sufficient time must be allowed to implement the NGC to grow to comply with all the cooperative principles towards its success.

CLCF: The CLCF has five phases and is one of the frameworks that influence modern cooperatives' successful development, establishment, growth and sustainability (Francesconi & Wouterse, 2019:144). Recommendations for the South African NGC for each phase are below:

Phase 1:

Recommendation 3.4.1: Criteria for member selection is the key to a pilot project. The largescale commercial farmer member must have a contract with defined mentoring responsibilities on the relationship with the smallholder farmers and possibly incentives. The programme period must be defined and fulfilled. Members must contribute membership fees to join the cooperative and addition of funds to start-up of the cooperative. In that way, they will be committed to the cooperative, and it will prevent dependency on government grants and property rights problems (see Section 5.6.3).

Recommendation 3.4.2: The NGC must sustain relationships with local government and other network links. This will improve smallholder farmer access to local programmes and extension services (see Section 7.3.3.2).

Recommendation 3.4.3: There NGC must also have other funding mechanisms and not depend only on government funding.

Recommendation 3.4.4: Even before funding is paid to the NGC, the sponsor can draft the commitment letter which the NGC can use to secure other inputs with suppliers

Recommendation 3.4.5: The time spent by the CEO on the NGC is critical for NGC progress. The CEO must be available to address smallholder farmer needs at all times.

Recommendation 3.4.6: Decide on possible restructuring strategies (see Phase 5).

Recommendation 3.4.7: The agro-processing company that is part of the implementing partners should train and develop the NGC farmers on agro-processing business and processing. The ultimate goal of the NGC is to distinguish itself from the traditional cooperative by increasing the value of its production and earning more income through agro-processing. However, for the commitment of the agro-processing company and the largescale commercial farmer (mentor), the government should consider paying them financial incentives and or tax reductions so that they also get value out of their participation.

Phase 2:

Recommendation 3.5: The cooperative members must participate in formulating the rules, regulations, policies and the constitution of the cooperative, including agreeing on the governance structure.

Phase 3:

Recommendation 3.6.1: During the growth stage, the cooperative members must have continuous communication and updates and attend all meetings.

Recommendation 3.6.2: Trust must be built, and the management must be available to answer questions at all times.

Recommendation 3.6.3: If members do not comply with the rules, harsh sanctions must be imposed.

Recommendation 3.6.4: Skills audit done continuously and training and development done. Also, ensure that farmers are exposed and have access to technology as they reported to have that challenge and was not implemented in the NGC. This includes access to research and development to know the market trends and forecast climate changes and diseases so that the smallholder farmers are better prepared.

Phase 4:

Recommendation 3.7: The members must do continuous introspection of their cooperatives and be able to resolve the different challenges. If the challenges are beyond repair, in **Phase 5**, the members must decide on restructuring (see Section 5.7.2.5).

Phase 5:

Recommendation 3.8: The NGC must plan for the various restructuring strategies at Phase 1.

8.3.1.4 Secondary research objective 4

Secondary research objective 4 was to *measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution to uplifting their agribusinesses*. Secondary research objective 4 was addressed through in-depth

interviews with the smallholder farmers with findings discussed in (see Section 7.3.1.1).

Table 8:6 presents the literature findings, conclusions, and recommendations for secondary objective 4.

Table 8.6 Conclusions and recommendations: Secondary research objective 4

LITERATURE FINDINGS: RESEARCH OBJECTIVE 4
See smallholder farmer challenges mentioned in Table 8.4.
CONCLUSIONS: RESEARCH OBJECTIVE 4
Securing funds is a critical factor in starting an NGC in South Africa. Forming strong networks and partnerships with large agribusiness along the value chain is essential in smallholder farmer needs. This includes the recruitment of a mentor who will mentor the smallholder farmers. The NGC's supply of seeds, fertiliser, pesticides/chemicals, farm equipment, machinery(forklift), and provision of irrigation and transport make it possible for the smallholder farmers to start planting and creating employment in their nearby communities. Furthermore, the NGC physical infrastructure, such as the NGC office, borehole, and a packhouse, make it possible to run NGC operations. Branding, packaging and linking farmers to profitable markets enable smallholder farmers to increase their incomes. Training smallholder farmers on bookkeeping, financial management, cooperative governance, business management and agricultural production skills increase their productivity and profits. Ownership of land and land expansion is a requirement for expansion of the production of the small holder farmers.
RECOMMENDATIONS SECONDARY RESEARCH OBJECTIVE 4
Recommendation 3.4.3 above is also applicable here: It is important for the NGC to secure start-up and operational funds from various sources and not depend on one government agency. Recommendation 4.1: The NGC should form strong networks and partnerships with value chain stakeholders such as government, input providers, buyers (which can also include agro-processors), market agencies and export promoting agencies, training institutions, finance institutions, researchers and universities, community organisations,

largescale commercial farmers, regulatory authorities, other industry associates and suppliers.

Recommendation 4.2: Contracts with specific reference to the roles and responsibilities of everybody should be signed by the stakeholders.

Recommendation 4.3: The stakeholders should be trained on the objectives of the NGC, and they need to buy-in on these objectives.

Recommendation 4.4: NGC should recruit and have a contract with a largescale commercial farmer who will mentor the smallholder farmers for a defined period.

Recommendation 4.5: The commercial farmer must also receive incentives for mentoring the smallholder farmers so that it is also encouraged to do so.

8.3.1.5 Secondary research objective 5

Secondary research objective 5 was to *assess the socio-economic impacts (income earnings, food security, employment and poverty alleviation) that have emerged from NGC implementation*. Secondary research objective 5 was addressed through in-depth interviews with the smallholder farmers with findings discussed in (see Section 7.3.1.2).

Table 8:7 presents the literature findings, conclusions and recommendations about secondary objective 5.

Table 8.7 Conclusions and recommendations: Secondary research objective 5

LITERATURE FINDINGS: RESEARCH OBJECTIVE 5
By conducting a review of the literature in Chapter 4, and 5, it was emphasised that smallholder farmers and agricultural cooperatives have socio-economic contributions in South Africa, such as employment creation (Musemwa <i>et al.</i>, 2018:31; UN, 2015:29), poverty alleviation and food security (Mahadevan & Hoang, 2016:179-199). (See Sections 3.3.1, 3.3.2, & 3.3.3). Sihlobo (2018a:89) makes a significant point about women in this sector: firstly, women's incomes significantly impact food security. Secondly, every rand in income earned by

women achieves the same impact as R11 earned by men. In this regard, the authors conclude by pointing out a transformational area that the South African agricultural sector should strive for policy discussion to increase the effective participation of women and youth in agriculture to significantly increase their potential to address food insecurity (Mahadevan & Hoang, 2016:179-199).

However, women and a limited percentage of youths cannot generate the required agricultural productivity to produce food output that can address the unfolding food security issues (Feil *et al.*, 2020:1-11). There are high levels of income disparities among women, youth and men (Lowder *et al.*, 2016:16). To redress such disparities, Fox *et al.* (2016:13) suggest the importance of change and transformation of land ownership policies and laws to enable women to hold land ownership.

The DAFF's (2019:3) report also revealed weaknesses because although the country aims to support youth and women in agriculture, the programmes had a low proportion of youth beneficiaries.

Measuring agricultural productivity and efficiency is one of the approaches for discerning the overall efficacy of different agricultural programmes that have been adopted and implemented (Carmona *et al.*, 2019:385). This enables authorities to assess the improvement measures that can be undertaken to bolster agricultural productivity and efficiency to induce the desired socio-economic outcomes (Ariyaratne *et al.*, 2014:5). Tools such as the FAOs Framework for Measuring Agricultural Productivity and Efficiency can be used (see Section 3.4.1). It aids in evaluating the level of agricultural productivity and efficiency and its impact on stimulating the desired pace of economic development and growth.

CONCLUSIONS: RESEARCH OBJECTIVE 5

When the NGC assists smallholder farmers, they can contribute significantly to the socio-economy of South Africa by providing employment, food security, and poverty alleviation in their communities.

Women's incomes impact food security more than their male counterparts. If their effective participation in agriculture can be increased, that can significantly increase their potential to address food insecurity.

Even if their agricultural participation can be increased, there are high-income disparities among women, youth and men that can be addressed through land ownership policies and laws to enable women to hold land ownership.

Suppose authorities use tools such as the FAO's Framework for Measuring Agricultural Productivity and Efficiency to measure agricultural productivity and efficiency. In that case, they will be able to determine the level of agricultural productivity and efficiency and its impact on stimulating the desired pace of economic development and growth. In addition, they can assess the improvement measures that can be undertaken to bolster agricultural productivity and efficiency to induce the desired socio-economic outcomes.

RECOMMENDATIONS SECONDARY RESEARCH OBJECTIVE 5

Recommendation 5.1: Government programmes must prioritise including women and youth in agricultural programmes.

Recommendation 5.2: The government should consider transforming land ownership policies and laws to enable women to hold land ownership to improve efficiencies and boost the agricultural sector's productivity.

Recommendation 5.3: Agricultural programmes' productivity and efficacy should be measured and evaluated so that authorities can assess the improvement measures. Tools such as the FAOs Framework for Measuring Agricultural Productivity and Efficiency can be used.

8.3.1.6 Secondary research objective 6

Secondary research objective 6 was to *analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa*. Secondary research objective 6 was addressed through documents reviewed and in-depth interviews with the smallholder farmers and implementing partners. The key design and implementation features discussed in (see Section 7.5.1.3) and **Finding 7.1** to **Finding 7.5** were also reviewed in line with the literature findings to answer research objective 6. Thus, research objective 6 was addressed (see Section 7.5.1.4).

Table 8.8 presents conclusions and recommendations about secondary objective 6.

Table 8.8 Conclusions and recommendations: Secondary research objective 6

FINDINGS FROM DOCUMENTS REVIEWED: RESEARCH OBJECTIVE 6
Nine NGC documents, shown in Table 7.7 were identified and reviewed. These documents show the NGC case background information and the challenges confronting the South African NGC smallholder farmers before joining the NGC. How the NGC assisted smallholder farmers and communities in which they operate was also discussed. The CLCF was used to review the documents and, based on the review, discuss the key design and implementation features of the South African NGC and ascertain South African NGC design and implementation gaps as reported by the NGC participants during the in-depth interviews. The CLCF and the in-depth interviews helped to identify the NGC gaps in phase 2, 3, and 4 of the CLCF, as discussed in section 7.5.1.3.1 (see Findings 7.2-7.5).
CONCLUSIONS: RESEARCH OBJECTIVE 6
The objectives of establishing an NGC justify why they should be established. NGCs are established by members who see the need for the objective. NGCs should have a largescale commercial farmer as a mentor to the smallholder farmers. The NGC rules, regulations, and constitution guide members on how to comply with the NGC requirements. NGCs succeed more if they comply with the cooperative principles and successfully manage the CLCF.
RECOMMENDATIONS SECONDARY RESEARCH OBJECTIVE 6
Recommendations as per Table 8.5 and Table 8.6 above.

8.3.1.7 Primary research objective and secondary research objective 7

The primary research objective was to *evaluate the NGC business framework's efficacy in uplifting the smallholder farmers in Limpopo Province*. Since secondary research objectives 1 to 6 of the study were met as detailed under Sections 8.3.1.1 to 8.3.1.6, they thus answer the main research objective.

Before the establishment of the NGC, smallholder farmers were confronted with challenges that hindered their growth and socio-economic contribution (research

objective 2; section 8.3.1.2). To uplift smallholder farmers, the first NGC was therefore designed and piloted in South Africa (research objective 3; section 8.3.1.3). According to the smallholder farmers and NGC implementing partners, the NGC framework contributed to uplifting their agribusinesses (research objective 4; section 8.3.1.4). It contributed to their agribusinesses and the socio-economic impacts such as income earnings, food security, employment and poverty alleviation (research objective 5; section 8.3.1.5).

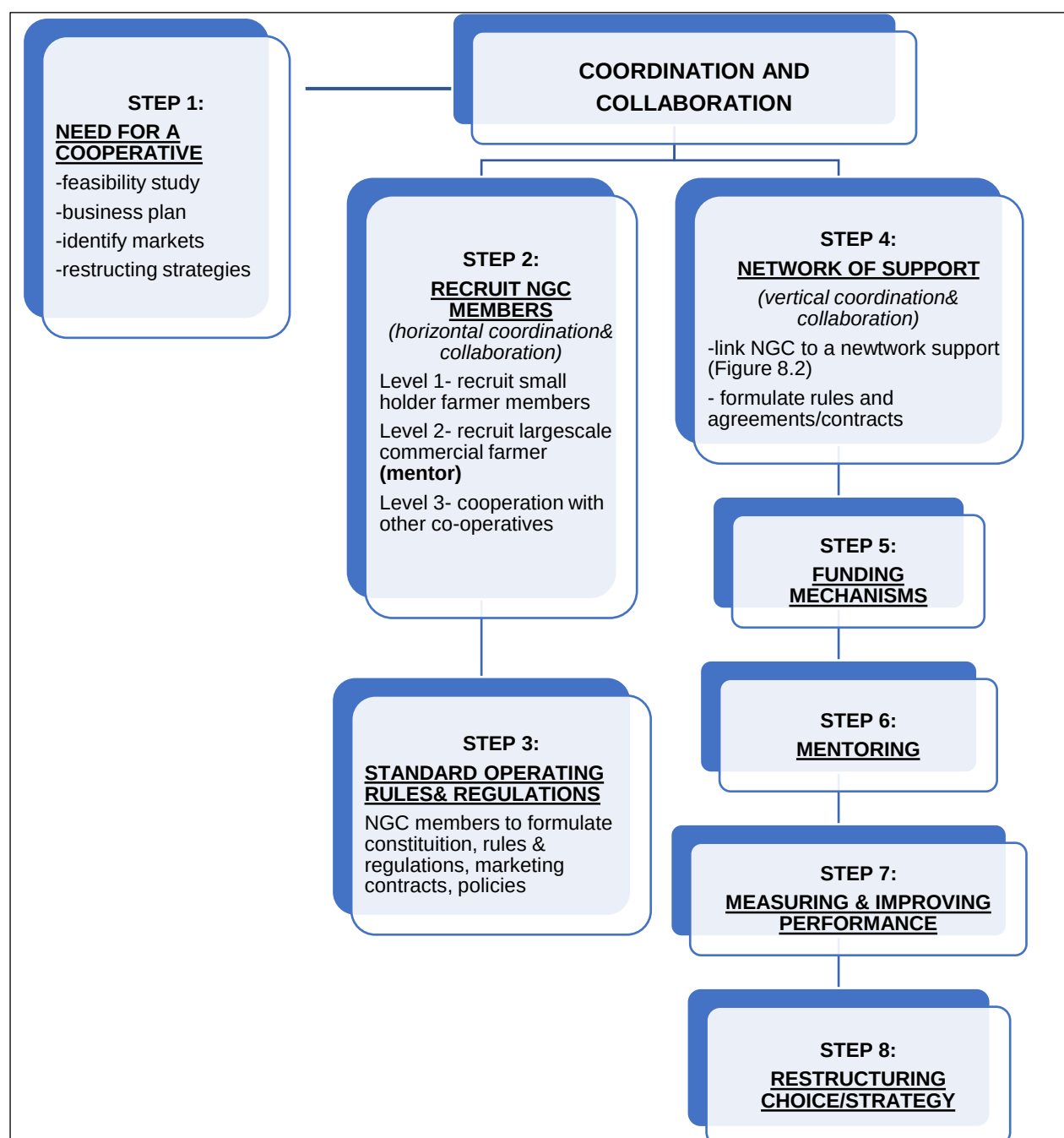
However, in its implementation, the NGC had its own gaps and complexities (Sections 7.3.3 & 7.4.3) and could not be implemented at the planned level. Moreover, there were also key design gaps (research objective 3; section 8.3.1.3). These lead to the last secondary research objective, 7, to *formulate corresponding recommendations to improve the functionality and sustainability of the NGCs in South Africa*. In lieu of the recommendations in Sections 8.3.1.1 to 8.3.1.6, the subsequent section presents a framework called the **Eight Steps Business framework** to improve the efficacy of the South African NGC in uplifting smallholder farmers.

8.4. THE EIGHT STEPS BUSINESS FRAMEWORK TO IMPROVE THE EFFICACY OF THE SOUTH AFRICAN NGC IN UPLIFTING SMALLHOLDER FARMERS

The framework offers eight steps that can be followed by the South African government in the implementation of the new NGC as shown in Figure 8.1 below.

The proposed framework is also underpinned by the **theory of contracts** and the **social capital theory** as discussed in Step 2 and Step 3 which are in the **establishment stage of the NGC**. Due to the immense intensity of the study, this research only focused on theories **applicable to the establishment of the cooperative** (see Section 5.8).

Figure 8.1: Eight Steps' Business Framework for using New Generation Agricultural Cooperatives to Uplift Smallholder Farmers



Source: Researcher's own compilation.

Nonetheless, the details of the Eight Steps Business Framework on Figure 8.1 are elucidated as follows:

8.4.1. Step 1: Determine the need for a Cooperative and its potential for success

Firstly, a need must be determined for the NGC establishment, and its potential for success must also be determined using several methods. Although an NGC can create jobs and bring financial benefits to a local economy, this should not be the driving force behind the NGC formation. The fundamental reason for starting the NGC should include an economic need to be fulfilled in the marketplace. The key questions to ask here are:

- Is there a customer market for the finished product?
- Can the NGC meet customer needs?
- Will the NGC benefit the stakeholders?
- Will the NGC earn a profit for its stakeholder?

Members must know enough about business and economic development, be enthusiastic about bringing solutions to the identified problems, and encourage the establishment of a sustainable cooperative. This must be done without influencing the decisions of the cooperative members. Once the need is established, the group of farmers can then seek the assistance of a facilitator to help them define possible problems, assess the resources available and narrow the focus on the key opportunities to alleviate the possible problems (Waner, 2014:2). The facilitator is referred to as the “local champion” who is the organisational catalyst to facilitate such initiatives (Carlberg *et al.*, 2006:19, cited in Francesconi & Wouterse, 2019:144).

A feasibility study must also be conducted during the formation stage. This is Phase 1: Economic Justification Stage of the CLCF by Francesconi and Wouterse (2019:144) depicted in (see Section 5.7.2.1) and **Finding 7.2**. This is followed by the development of a clear, definite business plan to help prospective members and partners precisely understand what they will be buying into by joining the cooperative (Waner, 2014:3). With the business plan, the stakeholders must also determine the market niche, and develop an effective marketing plan. The cooperative must also determine restructuring choices open to stakeholders should it reach the organisational degeneration stage. This was in **Finding 7.5** and is devised further as **Step 8** of the NGC proposed framework.

After Step 1, the next step is coordinating and collaborating with key resources (Step 2, Step 4 and Figure 8.2). Therefore, good public relations management and communication skills are important for coordination and collaboration to ensure enough buy-in from the community, producers and stakeholders, which is the next step of the framework.

8.4.2 Step 2: Members' Recruitment into NGCs

Once the feasibility study and the business plan are developed, the initial small group of farmers must recruit other members to join the new cooperative (level 1 of horizontal coordination). The coordination and collaboration building process needs to occur at two levels, horizontal and vertical coordination and collaboration. This is underpinned by **social capital theory** which focuses on ways in which social networks and the relationships among individuals within those networks can contribute to the development and success of cooperatives. In other words, social capital theory suggests that the relationships, norms, and trust within a community can contribute to the success of cooperative endeavours (Putnam, 2000) (see Section 5.8.1).

(i) Horizontal coordination:

Level one of horizontal coordination is recruiting smallholder farmers as new members of the NGC. However, the **social capital theory** warns against the size and structure of the cooperative, the diversity of its membership, and the level of conflict and competition within the group (Adler and Kwon, 2002:34). That a lack of trust or low levels of social capital can lead to low participation, poor decision-making, and even the failure of the cooperative (Putnam, 1993:78) (see Section 5.8.1). Therefore, it is important to understand and manage the dynamics of social capital in cooperatives in order to maximize its positive effects and minimize any negative impacts. To leverage on social capital, Putnam, (2000) advises that cooperative members and the NGC should build trust and cooperation, share information, secure resources, resolve conflicts. Conflict due to size of the NGC and mistrust amongst members were narrated by the smallholder farmers under **Finding 2.3 and Finding 2.4**, thus proving the validity of challenges arising from social capital.

The second level is of horizontal recruiting largescale commercial farmers to form part of the new NGC. Linkage with largescale commercial farmers enable NGC smallholder farmer members to understand and appreciate the dos and don'ts that largescale commercial farmers often practice to get the desired yields from agricultural production. The role of the NGC largescale commercial farmer is to mentor the NGC smallholder farmer members (Refer to Step 6).

The third level of horizontal coordination is the collaboration of the NGC with other cooperatives. Collaborating with other cooperatives will help the NGC grow and become more successful. It will further strategically harness the benefits of economies of scale and scope, facilitating the formation of a network of cooperatives at local, regional and international levels. This will fulfil the *Sixth Principle of Cooperatives: Cooperation among Cooperatives*.

The NGC should consider recruiting more women and youth members in line with recommendations 5.1 and 5.2 which state that government programmes should consider the inclusion of women and youth and should consider transformation of land ownership policies and laws to enable women to hold land ownership. This is also reflected in **Finding 1.2** (see Section 7.5.1.3 and Section 4.4.5), in which the South African government desires the youth and women to be included in developmental programmes. This would uplift them from hunger and poverty and also help to generate the required agricultural productivity to address food insecurity issues (Feil *et al.*, 2020:1-11).

Step 2 also requires the government to act through its provincial and district departments of agriculture to inform smallholder farmers across the country about the importance of establishing agricultural cooperatives for smallholder farmers. For smallholder farmers that may be sceptical and resistant, it is important to clearly motivate that the formation of agricultural cooperatives amongst themselves will enable them to pool resources and lower transaction costs, access cheaper inputs, access funding from different sources and access markets that were previously inaccessible to them. Thereafter, the government, through the district Department of Agriculture, must ensure that smallholder farmers formulate groups of not more than

100 smallholder farmers each though, with time, the number can increase as long as the particular agricultural cooperative can accommodate.

However, the criteria for joining the agricultural cooperative must be that a particular smallholder farmer must have operated in the agricultural production or farming industry for at least ten years. This will eliminate the tendencies for agricultural cooperatives to be abused, as in Vhembe, where some farmers were not serious. It will also prevent some people from establishing farming businesses just for the sake of accessing the benefits associated with joining and operating under agricultural cooperatives. Limiting the membership of the agricultural cooperatives to only the smallholder farmers that have been in operation for the last ten years will also influence the extent to which agricultural cooperatives for smallholder farmers can impact the improvement of smallholder farmers. This is because smallholder farmers that have been in operation for a long time are most likely to understand the dynamics of the agricultural industry to perform well even in the slightest activation.

The equity drive of the NGC must also be prioritised during this stage. The farmers must internalise start-up costs and attract external support to establish a cooperative. Even for the smallholder farmers that are considered not to have money, each member joining and operating under agricultural cooperatives for smallholder farmers must still be required to pay some minimal monetary start-up contributions/membership fee. This will render the members more serious and committed to ensuring that the established agricultural cooperatives for smallholder farmers become sustainable. It also prevents them from free rider tendencies explained in **Findings 2.2 and 7.4**.

Defining rules and standards of operation for the established agricultural cooperatives through sound contractual agreements, is also critical when recruiting NGC farmer members. The **theory of contracts** should be applied at this stage (see Section 5.8.2.2), and in Step 3, as it guides on determining member rights and obligations. This will mitigate the risks of side selling reported by the NGC members.

8.4.3 Step 3: Designation of Standard Operating Rules and Regulations

Regarding the designation of the Standard Operating Rules and Regulations (Step 3), all the newly established agricultural cooperatives for smallholder farmers must be required to develop a constitution outlining the rules and standards of their operations. Such a constitution must outline the new cooperative's vision, mission, goals and objectives. It must also detail the management structures of the agricultural cooperative for smallholder farmers. It must designate the position for the chief executive officer, the board and those in charge of managing the daily operations of the agricultural cooperative as an entity. The constitution of each new cooperative for smallholder farmers must also outline the voting rights that must be based on majority rule, as was the case with NGC in Vhembe District.

The constitution and the other operating rules, must also prescribe the quantities and quality of the agricultural products that each must deliver of the smallholder farmers to the NGC or to any other organisation designated by the NGC as the contracted purchaser of such agricultural products. This will fulfil *Cooperative Principle Three: Member Economic Participation*, which could be in the form of buying shares in a cooperative, delivering farm produce to a cooperative processing plant, and so on. This must be done in the form of marketing contracts or agreements (see Section 4.7.2.2). According to the South African NGC interview respondents, no marketing agreements were signed. It may be deduced that this made the NGC smallholder farmer members do side selling as they pleased.

It is also important that the constitution prescribes how the revenues generated from the sale of different agricultural products of the cooperative will be distributed among members and re-invested into the agricultural cooperative (see Figure 8.5). Procedures and rules for holding frequent meetings as well as the annual general meeting, must also be prescribed in the constitution for all the agricultural cooperatives. This must also be accompanied by the designation of how the activities of the agricultural cooperatives and members will be coordinated with other stakeholders like suppliers of agricultural inputs and purchasers of agricultural outputs. Suppose there is non-compliance, or ill activities such as side selling done by the farmer members. In that case, the constitution must clearly detail sanctions or legal

proceedings for members who do side selling because it affects the investments of stakeholders and other members and breaks the members' trust. Therefore, the **theory of contracts** plays a crucial role in shaping the governance and operations of cooperatives (Besen & Maskin, 1985:11). These measures will also safeguard against cooperative growth stage problems highlighted in the Cooperatives Life Cycle Framework (**Findings 7.1 to 7.5**). The breach of contracts should also be reported to the DSBD, who should give first-hand legal guidance to the cooperative.

8.4.4 Step 4: Coordination and Collaboration of a Network of Support

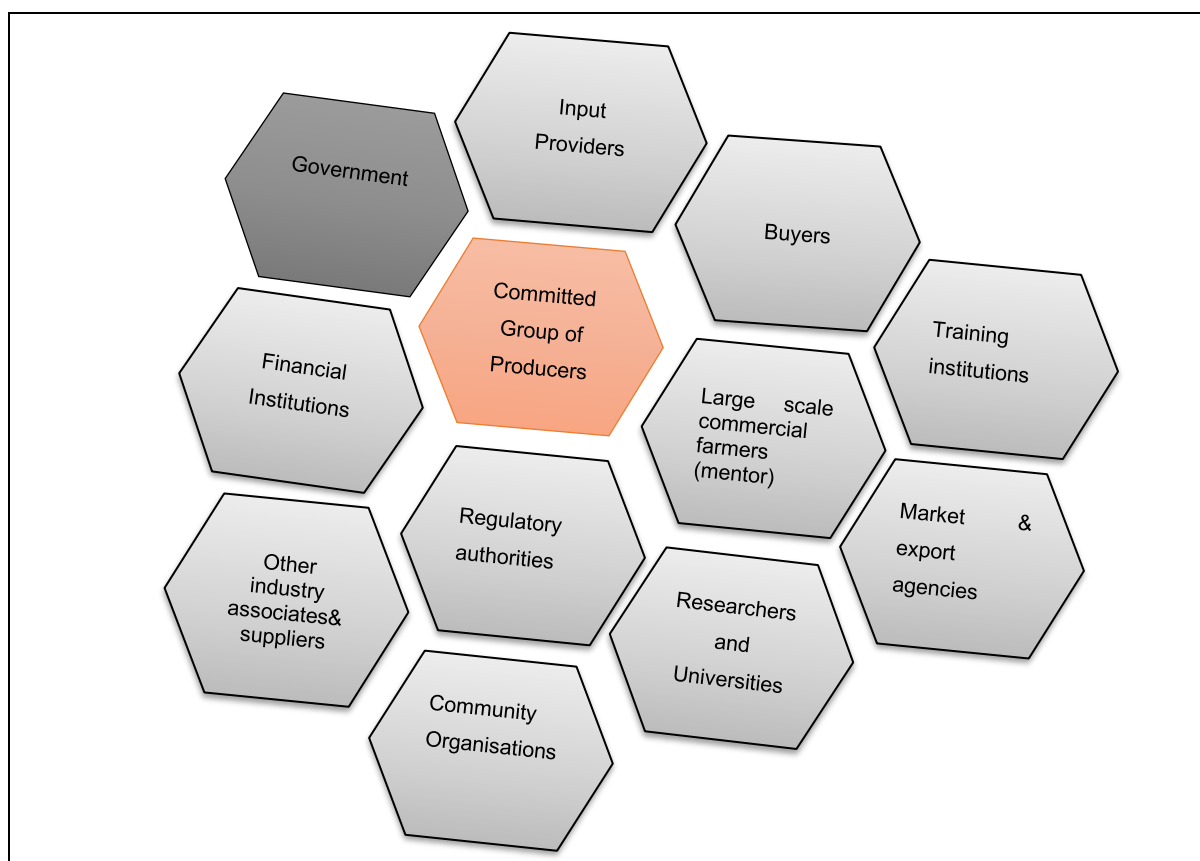
In addition to horizontal coordination and collaboration above, the NGC must also coordinate and collaborate on a network of support for the smallholder farmer members, which is vertical coordination and collaboration.

(ii) Vertical coordination and collaboration:

Vertical coordination and collaboration involves establishing network support stakeholders, finding synergies, and sharing information among the chain agents, private and public partnerships, to improve its performance.

The NGC must be able to coordinate with these stakeholders that are in the value chain for chain performance and upgrading. These entities are critical to the NGC's growth and are outlined in **Finding 5**. Value chain stakeholders include government, input providers, buyers, agro-processors, market agencies, export promoting agencies, training institutions, finance institutions, researchers, universities, community organisations, largescale commercial farmers, and regulatory authorities (see Figure 8.2).

Figure 8.2.: NGC Support Network



Source: By researcher from literature review and in-depth interviews

After collaborations, a stakeholder matrix clearly outlining the roles and responsibilities of each partner must be clearly defined (**recommendation 4.2**), and stakeholders should be trained on the objectives of the NGC. They must buy in to these objectives (**recommendation 4.3**). This should also include stakeholders' expectations from its relationship with the NGC. This will help avoid ambiguities, unexpected expectations, and duplication of efforts. With stakeholders like the input providers, contracts must be signed with the NGC.

Government agencies such as the DSBD should promote the establishment of the NGC. In line with its objective, the DSBD should provide financial and non-financial support to the NGC, including auditing the cooperative. Due to possible challenges that might require legal intervention, the DSBD must also handle disputes. As much as the DSBD financially supports cooperatives through SEFA and SEDA, the NGC should link smallholder farmers to various other credit schemes and **financial**

institutions so that they can access necessary funding and support even post the pilot stage (**recommendation 3.4.3**), which is **Step 5** of the framework. At a provincial level, the Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) should support the NGC with extension support and expertise, including sharing information on important issues such as the application of chemicals and fertilisers, giving warnings and assistance in seasons of diseases such as white fly and *tuta absoluta* and natural disasters. Together with the **community organisations** such as the **CPAs**, the DARDLEA should expedite the allocation of sufficient land to smallholder farmers to expand production and commercialisation efforts.

From the in-depth interviews with the participants, only one smallholder farmer confirmed to have registered for the GAP and obtained water licenses because of his consistency even after the NGC project. Therefore, in considering the importance of getting the GAP and water licenses, the NGC should together with the DARDLEA assist and guide the smallholder farmers to comply with **regulatory authorities** and regulations such as the GAP and also obtain water licenses (Department of Water Affairs).

Smallholder farmers adopt good agricultural practices. However, challenges often arise from specific international regulatory barriers that limit smallholder farmers (Devaux *et al.*, 2018:99). Typical challenges are the international regulation standards, sanitary and phytosanitary measures, prescribe new issues of conformity assessment and traceability that agricultural producers must comply with (Devaux *et al.*, 2018:99). Thus, even if the NGC supports smallholder farmers to comply with GAP and water licenses, smallholder farmer members may still find it difficult to export their products due to non-conformity to export and international standards (Agri-SA, 2016:41). This often renders most smallholder farmers unable to participate in the global trading environment. Yet, exportation to international markets is often a huge opportunity within the agricultural sector for smallholder farmers to address the dynamics in the domestic market (Vuyiseka & Bahta, 2021:117), as explained in (see Section 4.3.1). Therefore, considering the market and profit opportunities from export markets justifies that the NGC and **export agent** partner should support the NGC members to comply with all export regulations and standards.

In its collaboration efforts, the NGC must also link smallholder farmer members with other government agencies like the MERECAS to secure credit access, RESIS for irrigation support, and LADA for training and development and benefit from available government programmes instead of utilising acquiring these services using the injected capital. The South African NGC did not consider these government support programmes and used the start-up capital to access these services from private service providers. The smallholder farmer members later realised that instead of using the start-up capital for these resources and constructing the packhouse, they should have instead invested the funds for production activities. They should have considered building the infrastructure and acquiring other private services, from the production profits. In light of the above, it justifies that holistic and coordinated efforts between government agencies and cooperatives are advantageous. This was also suggested by DAFF's (2019:3) that the way forward is to develop a holistic integrated producer support model, integrating all the existing discrete farmer support programmes and areas that determine effective farmers' performance (see Section 4.4.5).

The NGC should also integrate and link smallholder farmers to the critical partners in the agribusiness value chain (Abate *et al.*, 2014:19; Abebaw & Haile, 2013:2) as shown in Figure 8.2. These are input providers, buyers, agro-processors, market agencies, export agencies, logistics suppliers, researchers & universities, and training institutions.

Signing contracts with the above stakeholders is important. However, even if such an arrangement creates opportunities for smallholder farmers to improve their capabilities to transition to real commercial farmers, Black *et al.* (2014:29) still note that contract farming is often associated with disrespect of contracts to operate to the disadvantage of smallholder farmers. The South African NGC farmer members also confirmed this. This implies that the DSBD must be involved in NGC contractual aspects; study contracts, interpret them to the smallholder farmers and even further suggest changes such that the contracts benefit both parties. The NGC should also register on government procurement databases to open up more market opportunities in addition to those linked through market agencies. Government procurement channels include

opportunities to supply fresh produce to government institutions such as public hospitals, schools and prisons.

From the NGC case study findings, it may be concluded that the most critical skills for NGC farmer members are: Financial Management, as many smallholder farmers reported that they are still dependent on government grants and did not prioritise building up the business and productions inputs with the start-up funds and were directed instead on infrastructure development. This implies that NGC smallholder farmers should also be trained in risk management and planning, and financial management to prioritise budget items. Risk management will also help prevent losses from diseases that affect the South African NGC crops due to lack of knowledge. Yet, other challenges experienced by smallholder farmers are human capital issues and experience, including access to skills development (Burgess, 2016:6); hence training providers must be part of the NGC support network.

However, the collaboration and coordination activities of the support network must include the designation of funding mechanisms.

8.4.5 Step 5: Funding Mechanisms

Clear designation of the mechanisms for the funding of agricultural cooperatives is vital for ensuring the effective operation and sustainability of agricultural cooperatives, as depicted in **Finding 7.2** and **Finding 2.4** (see Section 7.3.2.4. Category T2D). This was evident in the NGC case in Vhembe, where funding and financial sustainability of NGC became a problem without government funding. To deal with such a problem, the government must ensure that when or before the smallholder farmers establish the NGC, a suitable funding instrument is designed before the farmers commence.

The NGC members must contribute the initial operating capital to avoid dependency and grant-dependent mentality. The cooperative can then establish the office to meet the smaller daily operational costs like transport and paying for their farm services like electricity and water before the government can come into finance and support them (**recommendation 3.4.1**). Such evidence of the commitment of the smallholder farmers to meet minor costs and to operate will eliminate the wastage of government

funds on any form of organisation that emerges in the name of agricultural cooperatives for smallholder farmers to benefit from government funding. Such an approach will eliminate the situations in Vhembe where some households disguised as smallholder farmers obtained funding only to disappear after the funding. Thus, after the agricultural cooperatives have gotten smaller contributions from the smallholder farmers and have demonstrated their capabilities to operate, the government can fund them. In addition, the NGC members must similarly be trained to be financially independent (T2C) (see Section 7.3.2.3) and reduce their reliance on government funding in the long run. In this way, the NGC would be self-sustainable and independent, thus fulfilling *Cooperative Principle Four: Autonomy and Independence* (see Section 4.2.2).

But still, before the government advances the funding, each agricultural cooperative must provide the application as accompanied by the agribusiness proposal and plan as mentioned in **Step 1** above. The plan must outline the agricultural cooperatives' vision, mission, goals and objectives. It must also indicate the detailed action plans or a set of strategies that the agricultural cooperative will use to achieve its objectives and goals in the short and long term. The business plan must also reflect how the agricultural cooperative aims to remain sustainable by generating sales and revenues from its agricultural products even after the government funding is terminated. Thus, only the agricultural cooperatives for smallholder farmers must have viable and sustainable agribusiness plans that must be selected and funded by the government.

Maintaining government funding to agricultural cooperatives of smallholder farmers for at least ten years will enable the agricultural cooperatives and the smallholder farmers to become sustainable before the government cuts-off the budget. This will eliminate the incidents that occurred in Vhembe where the government funded NGC for just for two years and pulled out before the NGC could become sustainable. The government could have experimented it for at least five years to discern whether NGC and the associated smallholder farmers can become sustainable. However, the government must at least maintain its funding for agricultural cooperatives for at least ten years.

After offering to fund for ten years and still the agricultural cooperative does not become sustainable, the government must not fund such agricultural cooperatives

again, including the smallholder farmers that were part of such agricultural cooperatives to avoid resource wastage and the abuse of government. To offer the necessary funding, the government must activate and increase the number of financial resources allocated to its agencies like MERECAS and RESIS. These must also be accompanied by the initiatives for ensuring that the ongoing land reform programmes by the Department of Agriculture, Land Reform and Rural Development are prioritised and redirected to benefit only the serious smallholder farmers that are members of different agricultural cooperatives. Yet, as the agricultural cooperatives for smallholder farmers become fully operational, they will still have to be mentored and developed to become entities that effectively benefit the smallholder farmers.

8.4.6 Step 6: Mentoring Agricultural Cooperatives and Smallholder Farmers

Mentoring agricultural cooperatives and smallholder farmers is critical for ensuring that not only the agricultural cooperatives but also the individual smallholder farmers in the agricultural cooperatives perform well. This will enhance the extent to which the agricultural cooperatives can create value for the cooperatives and the members. To achieve this, the government will have to bring the willing **largescale commercial farmers** and the other players in the agricultural input and output markets on board. For the input markets, the government will have to contract the willing largescale commercial farmers and other producers of agricultural inputs to partner with and mentor agricultural cooperatives for smallholder farmers to perform. Since smallholder farmers and agricultural cooperatives are also competitors to largescale commercial farmers, the government must devise a strategy of financially motivating some of the largescale farmers to train, nurture, mentor and develop the smallholder farmers in the agricultural cooperatives on good farming practices. Such good farming practices must include preparing the fields for the cultivation of different crops, using chemicals and fertilisers, pesticides, and other proactive and reactive disease control measures. However, such training and mentoring programmes must not only focus on crop production but also on the smallholder farmers in the agricultural cooperatives engaged in animal husbandry and poultry farming.

At the same time, the government must also connect agricultural cooperatives and smallholder farmers with the producers and suppliers of agricultural inputs like seeds,

fertilisers, chemicals, pesticides and machinery and equipment willing to supply agricultural cooperatives with bulks of inputs at significantly discounted prices for a particular period. However, the training and mentoring programmes offered by largescale farmers for the smallholder farmers in the agricultural cooperatives must be for at least three years to ensure that the agricultural production skills learnt by smallholder farmers diffuse into the practices of the smallholder farmers in their businesses. This will fulfil Principle 5 of Education, Training and information.

However, as the government devises strategies for increasing supplies of agricultural inputs to improve the productivity of agricultural cooperatives for smallholder farmers, it must also devise ways through which they can easily sell the generated products in the market. That implies that for the agricultural output market, the government will need to bring on board the actors that process, manufacture and translate raw agricultural products into finished products. The government can use the similar framework used for an agro-processing company in Vhembe to get more processors and manufacturers of raw agricultural products to purchase agricultural products from smallholders in the agricultural cooperatives for usage as inputs in their industries. Since most agro-processors and manufacturers are often quality-conscious, smallholder farmers in agricultural cooperatives must also be trained and mentored to produce quality agricultural outputs. At the same time, the government can also offer some financial incentives or tax reduction measures to motivate the designated agro-processors and manufacturers to purchase and use raw agricultural products produced by emerging farmers in the agricultural cooperatives. However, as agricultural cooperatives and emerging farmers grow, it is also critical for the government to measure and improve their performance constantly.

8.4.7 Step 7: Measuring and Improving the Performance of Agricultural Cooperatives for Smallholder Framers

Measuring the performance of agricultural cooperatives will enable the government to assess the extent to which agricultural cooperatives are transforming the performance of smallholder farmers to be a critical catalyst of socio-economic development and growth in South Africa. Measurement and improvement of performance can be undertaken to accomplish that. This should be done on the smallholder farmer,

agricultural cooperatives, and the country's agricultural industry. At the smallholder farmers' levels, measurements can be undertaken by assessing the extent to which the programmes associated with agricultural cooperatives for smallholder farmers have ameliorated the smallholder farmers' challenges of poor access to relevant agricultural inputs and markets as compared to the periods before the introduction of agricultural cooperatives. This must be accompanied by the analysis of the number of revenues and profits generated by each smallholder farmer during the period that the agricultural cooperative was in existence.

Other areas for analysis include the number of people employed in farms, the output produced and the impact on food security. These enhance how the performance of smallholder farmers can be improved and how the performance of each smallholder farmer agricultural cooperative can be measured by assessing how they have been able to optimise the available agricultural inputs to create as many agricultural outputs as possible. Such analysis may require measuring agricultural cooperatives' cost efficiency, scale and scope economies, as well as agricultural cooperatives' economic viability and extra values created for the smallholder farmers that are members. At the overall country's agricultural industry level, the government can measure the overall contribution of the sector for agricultural cooperatives for smallholder farmers to the South African agricultural industry. That may require using FAO's (2018:5) Framework for Measuring Agricultural Productivity and Efficiency (see Section 3.4.1). Such a framework will require the South African Department of Agriculture, Rural Development and Land Reform as the main role player who could facilitate agricultural activities from smallholder farmers. They could also collect data, specify indicators, measure, and identify the sources of productivity growth in the smallholder farmers' sector.

Sources of productivity growth in agriculture can improve efficiency and effectiveness of smallholder farming operations in South Africa, leading to increased productivity and growth. These sources include technical efficiency through best practices, technology adoption, quality change, economies of scale and socio-economic contributions such as employment creation, poverty alleviation, enhanced food security and increased foreign exchange earnings. South African economists can also measure the overall socio-economic contributions of smallholder farmers in South

Africa on employment creation, poverty alleviation, enhanced food security and catalysing effects or multiplier effects of agriculture's linkages with other sectors as well as increment of foreign exchange earnings.

The growth of a cooperative can lead to unexpected problems that may cause failure, due to an increased number of members, who might end up wanting different things due to the growth of the cooperative (see Section 5.7.2.5). In such cases, the cooperative must consider restructuring as a solution.

8.4.8 Step 8: Restructuring choice/strategy

Based on **Findings 7.5**, if the NGC is not able to resolve the challenges it is confronted with, Phase 5 of the CLCF guides on how a decision affecting organisational longevity can be made in an attempt to minimise cooperative health constraints (Cook, 2018:12). The NGC can make either of four choices: to enter a state of dormancy (maintain the status quo position), spawn, exit the industry, or reinvent and start a new lifecycle (Cook, 2018:12; Francesconi & Wouterse, 2019:22).

The **status quo option** suggests the membership assumes exogenous forces will allow the continuation of the existing entity as currently structured. Generally, this option of inaction results from factional gridlock and the inability to reach a consensus regarding macro environment conditions, industry structure, degree of rivalry, or reluctance to adapt or change. Patron drift and substitution usually have drained membership patronage and leadership resources to the point where the exit is soon the optimal choice (Cook, 2018:12). This was the choice taken by the South African pilot NGC until members lost all communication with each other and partners and the organisation became dormant. However, there were three other options the South African NGC could have taken: spawning, exit and re-invention, in accordance to Figure 5.1 and as illustrated below.

Spawning is where a group of employees or patrons organise a separate venture that will interact with the parent organisation. The development of the separate entity addresses free cashflow concerns by establishing separate capital and governance pools (Cook, 2018:12). When the **exit** is chosen, the cooperative no longer bases

ownership rights on patronage. It may convert to an investor-driven firm, a hybrid, or liquidation, depending on cooperative asset valuation. **Re-invention** redirects the cooperative's purpose and/or culture by adapting major changes in strategy, for example, by reassigning claimant rights partially on investment, rather than patronage basis (Cook, 2018:13).

Considering the above, understanding a cooperative's life cycle helps co-operators learn from past successes or failures within the organisation as they re-examine and reformulate justification, design, and cooperative health metrics in phases 1 and 2 of the next life cycle. Therefore, although the South African NGC or any other cooperative's health may decline throughout a particular life cycle, degeneration is not imminent. The cooperative must be adaptive and seek out the chance to regenerate through multiple life cycles.

In other words, the Eight Steps Business framework will influence how NGCs can be used to improve smallholder farmers' performance and their overall socio-economic contributions to the South African economy. The Eight Steps Business framework has also been used to propose further a CLCF that can apply to South African NGCs as shown in the next section.

8.5 CONTRIBUTIONS TO THE COOPERATIVE LIFECYCLE FRAMEWORK

Section 5.7.2 discussed the CLCF, which was also used to evaluate the level of implementation of the South African NGC with findings discussed in (see Sections 7.5.1.3.1 & 8.3.1.3). As part of this study's contribution, the Eight Steps Business framework has further been embedded into the existing CLCF by Cook (2018) as well as Francesconi and Wouterse (2018) (see Section 5.7.2) to propose a CLCF applicable to the South African NGCs as shown in Table 8.9. Thereafter, the contribution to policy development is discussed.

Table 8.9: South African NGC Cooperative Life Cycle Framework

From literature reviewed, Cook, (2018) and Francesconi & Wouterse, (2018)	Implemented by the South African NGC	Contribution in addition to activities in literature and that were implemented by the South African NGC
PHASE 1:ECONOMIC JUSTIFICATION		
- Define the purpose of the cooperative, economic justification - Internalise start-up costs and/ attract external support to establish the cooperative - Local champion	- Defined the purpose of the cooperative/ economic justification - Attracted financial external support to establish the cooperative - Appointed CEO to do the facilitations done by the local champion	Maintain
		Contribution - CEO to be available when needed by the member and must not do other jobs outside the NGC - Do a feasibility study - Coordinate and collaborate network support, as illustrated on Figure 8.2. Local government to be priorities and to participate from the inception stage.
PHASE 2: ORGANISATIONAL DESIGN		
- Rules and regulations and embed the cooperative principles, Constitution - Property rights, incentives - Agree on penalties and key performance measures	- Established Rules and regulations and embed the cooperative principles - Had a constitution in place	Maintain
-	-	Contribution - Have a member recruitment criteria and recruit members - Do a business plan and a marketing plan - Farmers to sign marketing contracts - Enforce membership fees and member investments to avoid the free rider problems experienced by the South African NGC. The fees should not be too high so that members can afford them. The shortfall funds can then be from external support. Secure funds from various sources and not only one funder

		- Train partners on the purpose of the NGC and primary partners on their roles and responsibilities and they sign contracts - The government to consider tax incentives or other forms of incentives for the largescale commercial farmers (mentors) and agro-processors to encourage their commitment to the cooperative - Have a mentorship plan - Discuss available restructuring strategies should challenges arise
PHASE 3: GROWTH STAGE (Challenges discussed on section 5.5.2 arise)		
- Enforce rules and regulations	- Tried to enforce rules and regulations - Had meetings, but members did not attend	Maintain
		Contribution - Have sanctions and legal proceedings against members who do side selling and breach the contracts. Such members are to be reported to the DSBD, who should give first-hand legal guidance to the cooperative - Establish own agro-processing facilities. And also rent out the facilities, equipment, plant and infrastructure to generate funds - Continuous training and development and new trends in the market, exposure and access to technology; access to information through a central information centre - Reporting, monitoring and evaluation. The government and economists to measure the productivity and efficiency of the NGC using FAOs Framework for Measuring Agricultural Productivity and Efficiency
PHASE 4 and 5 (RECOGNITION AND INTROSPECTION, CHOICE)		
- Communication and meetings, recognition, and introspection of problems - Decide on restructuring choice	Members asked leadership for answers and solutions and received no direction. Partners and some leadership started to pull out.	Maintain

8.6 CONTRIBUTION TO POLICY DEVELOPMENT

The DAFF's (2019:3) report recommended to the DLRD that, instead of working in a silo approach to support farmers, the development of a holistic framework that integrates all the existing discrete farmer support programmes is crucial (see Section 4.4.5). After evaluating the piloted NGC project that was implemented in South Africa, an **Eight Steps Business framework** is proposed to the South African government to improve the efficacy of the South African NGC in uplifting smallholder farmers. It should be used in conjunction with the proposed CLCF (see Section 8.5).

In light of the above, the study contributes to developing policy proposals on the NGC framework that can be replicated in South Africa. Other policy development recommendations from this study are:

Recommendation 5.1: Government programmes should consider including women and youth in agricultural programmes.

Recommendation 5.2: The government should consider transforming land ownership policies and laws to enable women to hold land ownership to improve efficiencies and boost the agricultural sector's productivity.

Recommendation 5.3: Agricultural programmes' productivity and efficacy should be measured and evaluated so that authorities can assess the improvement measures. Tools such as the FAOs Framework for Measuring Agricultural Productivity and Efficiency can be used.

Recommendation 3.4.7: The agro-processing company that is part of the implementing partners should train the NGC farmers on agro-processing business and processing. The ultimate goal of the NGC is to distinguish itself from the traditional cooperative by increasing the value of their production and to earn more income through agro-processing. However, for the commitment of the agro-processing company and the largescale commercial farmer (mentor), the government should consider paying them financial incentives and or tax incentives to get value out of their participation.

Recommendation 3.6.4: Skills audit, leading to training and development should be done continuously. Ensure that farmers are exposed and have access to technology as they reported to lack technology skills, and no intervention of this kind was implemented in the NGC. This

includes access to research and development to know the market trends and forecast climate changes and diseases so that the smallholder farmers are better prepared.

Based on this recommendation, the government should consider policies on establishing a central information system with research and development to warn farmers on current and updated information, trends in the market, monthly forecasts on climate change and solutions available; warn them on diseases approaching which areas in the country and solutions available. It can be an **application** the farmers can also download and have on their gadgets. Such information can additionally be shared via **text messages** sent out to the farmers. This means that having a database of all farmers for each province and region is crucial for the government. **Awareness campaigns** of these services should also be done so that farmers are aware of such services, including those farmers in deep rural areas. An updated database can be achieved through a mapping exercise that should be updated every three years. However, an efficient **call centre** should also be available to answer any related questions the farmers might have. On all the abovementioned solutions emanating from recommendation 3.6.4, the eleven official South African languages should be considered for the awareness campaigns, the application, text messages, and the call centre services.

8.7 LIMITATIONS OF THE STUDY

Each academic research project has its delimitations, and what the researcher is not going to do is stated in the delimitations (Leedy & Ormrod, 2019:72). Therefore, the present study is not without its limitations. The limitations and delimitations of this study are as follows:

- Although there are many types of smallholder farmers in the Limpopo region, this research was restricted to the confines of the NGC case study, which involved only the sixteen smallholder farmers and one commercial farmer, who were the only registered members of this NGC.
- The study was limited to the smallholder farmer interview responses to answer the research questions. The implementing partners that were available to be interviewed were interviewed to get more interesting information that could be shared in the findings. However, only two out of seven implementing partners were available to participate in the interviews.

- The study results available are only for 2016/2017 to 2019/2020 NGC years of implementation. In other words, the evaluation of the project was restricted to the time frame of 2016 to 2020 due to the three-year Memorandum of Understanding between the government of the Republic of South Africa and the government of the Kingdom of the Netherlands on cooperative society cooperation which hosted the NGC. The NGC implementation period was therefore close to three years, and it was evaluated for this implementation period. Development programs, on the other hand, are usually evaluated for a longer period after implementation to observe the pattern of outcomes and trends over time, which was not the case in this study due to the NGC lifespan.
- Limitations on theory: For this study, the performance of the South African NGC was evaluated based on the socio-economic impacts, cooperatives principles theory and the CLCF theory. The social capital theory and the theory of contracts were also considered. These theories were found sufficient and able to answer the research questions. Although the FAO's Framework for Measuring Agricultural Productivity and Efficiency was discussed in the study, it was however not used to answer research questions due to NGC insufficient information at the time, and due to the restrictions of the research objectives (it was not part of the objectives). However, the framework is still included in the study as it offers recommendations in Step 7 of the **Eight Steps Business Framework**, not only for the NGC but also for other agricultural developmental programmes.
- Lastly, interesting problems that occurred during the empirical investigation but were beyond the scope of the analysis were neglected due to scarce financial capital and time constraints. The thesis was limited to its particular goals, and exploring knowledge beyond its scope was resisted, hence the researcher acknowledges the potential for further research possibilities which are discussed next.

8.8 RECOMMENDATIONS FOR FUTURE RESEARCH

In consideration of both the literature and empirical findings, this study recommends nine areas of scope for future research as discussed below.

FROM CHAPTER 3: OVERVIEW OF THE AGRICULTURAL LANDSCAPE IN SOUTH AFRICA

8.8.1. Census of smallholder agriculture in South Africa

This study provided evidence that smallholder farmers contribute to employment creation, and this concurs to literature from similar studies. There is however a gap of data in the **census of smallholder agriculture in South Africa**. In South Africa, a census has only been conducted **on commercial agriculture**, and the last data collected was in 2017. This census focused on the number of farming units, income and employment within the **commercial agriculture industry**. According to the Iowa State University (2022) and the United States Department of Agriculture (USDA), (2020:1), census of smallholder agriculture sector helps to formulate, evaluate, change, and propose policies and programs that help smallholder farmers. It helps to develop market strategies and create more efficient production and distribution systems. This includes identifying services and facilities needed in rural communities including where to locate processing and transportation facilities. Census of smallholder agriculture sector also helps to develop and improve methods to increase agricultural production and profitability, allocate local and national funds for farm programs (including extension service projects, conservation programs, farm loan programs, research, and land grant universities), and helps to develop grant proposals to address rural and agricultural issues. In this way, smallholder farmers benefit with new and improved farm programs and services tailored to their region and needs.

Recommended scope of future research 1:

Future studies should therefore focus on census of smallholder agriculture sector in South Africa, by region. They should also give data pertaining number of farming units, income and employment in the smallholder agricultural sector by region. Future studies can also do mapping of smallholder agriculture.

8.8.2. Measuring agricultural productivity and efficiency

Section 3.4 discussed “measuring agricultural productivity and efficiency”. In South Africa, the extent to which the application of agricultural productivity and efficacy measurement methodologies have cascaded to the provincial and farm levels and among smallholder farmers remains largely unclear. Yet, the literature implies measurement of agricultural productivity at the farm level determines the accuracy of the data used at the regional and national levels to aid in discerning the improvement initiatives that can be undertaken to spur the overall level of

agricultural productivity and efficacy in the country (Bjornlund et al., 2017b:690; McCullough, 2017:133; Roxburgh & Rodríguez, 2016:10).

Measuring agricultural productivity and efficiency remains one of the approaches for discerning the overall efficacy of different agricultural programmes that have been adopted and implemented (Carmona *et al.*, 2019:385). It aids evaluation of the level of agricultural productivity and efficiency as well as its impact on stimulating the desired pace of economic development and growth. This enables authorities to assess the improvement measures that can be undertaken to bolster agricultural productivity and efficiency to induce the desired socio-economic outcomes (Ariyaratne *et al.*, 2014:5).

Recommended scope of future research 2:

Future studies should evaluate the South African NGC's agricultural productivity and efficiency using the FAO's (2018:5) Framework for Measuring Agricultural Productivity and Efficiency discussed in the study. This is to discern and measure, in value terms the agricultural productivity and efficiency of the NGC.

FROM CHAPTER 4: CHALLENGES FACING SMALLHOLDER FARMERS IN SOUTH AFRICA

8.8.3. Evaluation smallholder farmer challenges in Vhembe District, Limpopo Province, South Africa.

Although there are many types of smallholder farmers in the region, to understand problems confronting smallholder farmers in the Vhembe District Municipality, this research was restricted to the confines of the NGC case study, which involved sixteen smallholder farmers who were registered members of the NGC. This study could have been a representative of the entire population and not only the research participants included in this study, but due to limitations of the study, it only focused on the NGC case study participants.

Recommended scope of future research 3:

In order to obtain a true and accurate representation of the target population and its geographic characteristics in evaluating challenges confronting smallholder farmers in Vhembe District, future research should comprise a larger sample size.

8.8.4. Future studies can also explore agricultural quality management as a predictor of smallholder farmers' effective market performance.

FROM CHAPTER 5: LITERATURE AND THEORIES ON DEVELOPING AND MANAGING AGRICULTURAL COOPERATIVES

8.8.5 Conduct a comparative study between traditional cooperatives and new generation cooperatives in South Africa.

With regards to the differences and similarities between traditional cooperatives and the NGC, the study only conducted a literature review and not an empirical research of these topics, and the discussions were within the scope of the current study, meaning, the study aimed to withdraw only the necessary theory and concepts required to underpin the current study.

Recommended scope of future research 4:

It would however be interesting to do a broader **comparative study to understand the main differences and similarities between the South African traditional cooperative structure, and /or the old New Generation Cooperative model that was implemented in the 90's, and /or between the current South African New Generation Cooperative.** This can be through comparing a traditional cooperative case study in Vhembe District, with the current NGC implemented in Vhembe District. This should also be implemented within the protocols of conducting a comparative research.

The comparative study will provide valuable findings on similarities and differences between these types of cooperatives, leading to a deeper understanding of the South African NGC under study. The study will also provide an opportunity to identify best practices and successful approaches, by comparing outcomes across the various cooperative models. This will contribute to the advancement of knowledge in cooperatives and the development of new theories and models, through the discovery of new relationships and patterns.

8.8.6 Theories

The current study only focused on two theories that are applicable to the **establishment stage of a cooperative**, the social capital theory and the theory of contracts. In addition to the **(i) establishment stage**, a business venture also goes through the **(ii) implemented/growth stage**

and at the end of the cycle it **(iii) regenerates or exits**. Due to the present magnitude of the study (400pgs), the researcher focused on theories applicable to the **establishment stage** of the cooperative venture only.

Recommended scope of future research 5:

Future studies should focus on theories applicable during the implementation/ growth stage of the NGC and the regeneration/ exit stage of the NGC. The studies should also show how the principles or framework derived from these theories contribute /do not contribute to the sustainability of the NGC.

Recommended scope of future research 6:

The **social capital theory** highlights that sustainability of NGCs can also be derived from the establishment of membership criteria. This is because dynamics in cooperative can arise from the size, structure and diversity of the cooperative members, leading to conflicts, competition within the group and loss of trust. To therefore enhance NGC constitutions, **future studies should explore the best strategies that can be applied to recruit NGC members. In other words, the study should give recommendations on membership criteria** (eligibility, admission and termination). This will extend the contribution made by Step 2 (Members' recruitment into NGCs) of the Eight Steps Business framework proposed by this study.

Recommended scope of future research 7:

The application of the **theory of contracts** helps to resolve conflicts that may arise between cooperative members or between the members and the cooperative. **A recommended scope for future research should focus on: Conflict management strategies in cooperatives, particularly the NGC.** Both the NGC implementing partners and the NGC smallholder farmer members reported that there were conflicts amongst the NGC members, which also contributed to the collapse of the NGC. The recommended future study will therefore mitigate the risk of business failure that arise from conflicts or that arise from lack of trust amongst cooperative members (social capital theory).

CHAPTER 8: THE EIGHT STEPS BUSINESS FRAMEWORK TO IMPROVE THE EFFICACY OF THE SOUTH AFRICAN NGC IN UPLIFTING SMALLHOLDER FARMERS

8.8.6. Eight Steps Business framework.

The study contributes by recommending an **Eight Steps Business framework**. This framework was not tested within this research as it was not part of the scope. Secondly, the pilot NGC project also collapsed before the end of its planned duration, making it impossible for the framework to be tested.

Recommended scope of future research 8:

Future research should evaluate the next NGC that will use the Eight Steps Business Framework in South Africa, intending to test the framework.

It is recommended that this study be an action research. This is because action research is a valuable approach for addressing complex and challenging problems, as it promotes collaboration, empowerment, and evidence-based change. Other action research advantages include:

- **Relevance:** Action research addresses real-life problems, making it relevant to the stakeholders involved and to the wider community.
- **Empowerment:** Action research empowers participants by involving them in the research process and enabling them to take ownership of the solutions generated.
- **Iterative process:** Action research is an iterative process that allows for ongoing reflection and revision, ensuring that solutions are practical and sustainable.
- **Contextual understanding:** Action research provides a deeper understanding of the context in which problems arise, leading to more effective solutions.
- **Collaboration:** Action research promotes collaboration between researchers and stakeholders, fostering mutual learning and building stronger relationships.
- **Improved practice:** Action research leads to improved practices and processes, making it valuable for organizations and communities.

Recommended scope of future research 9:

Other future studies can research and recommend ‘Winning funding models for South African NGCs.’

8.9 CHAPTER SUMMARY

The purpose of this chapter was to develop a framework to enhance the implementation of the NGC in South Africa. Out of the findings from Chapter 7 of this research, an Eight Steps Business framework for using NGCs to uplift smallholder farmers has been suggested as per Figure 8.1 above.

In addition to economic justification for the cooperative and recruitment of NGC members, the Eight Steps Business framework for using NGCs to uplift smallholder farmers requires the NGC to coordinate and collaborate with a network of support. This includes largescale commercial farmers, government agencies, input providers, buyers, training institutions, financial institutions, researchers and universities, community organisations, regulatory authorities, market and export agencies (see Figure 8.5). Devising a holistic business framework to support smallholder farmers in South Africa was also suggested by DAFF's (2019:3). Imposing harsh sanctions on farmer members who do not abide by rules and regulations, injecting sufficient capital to implement the NGC, and coordinating largescale commercial farmers to mentor the smallholder farmer NGC members proved to be key factors for the sustainability of the NGC. This includes a longer implementation period, as this will allow an extended period for crop diversification, better incomes, and accumulation of networks and partnerships for the sustainability of the NGC.

The chapter concludes by recommending scope for future research studies.

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APPENDIX A: LETTER OF INVITATION

CONSENT TO TAKE PART IN RESEARCH

Dear Respondent

I am studying towards my PhD (Doctor of Philosophy) degree in Business Management Economics and Sciences at the North West University-Potchefstroom Business school. I am conducting research on "*Evaluating the efficacy of the New Generation Cooperative business model in uplifting smallholder farmers: A case study*". I believe that my study will make an important contribution to the success of smallholder farmers, co-operatives and socio-economic development of communities.

You are part of our selected sample of respondents whose views we seek on the above-mentioned matter. We would therefore appreciate it if you could answer a few questions. The questions will be done in a format of an interview, and it should not take more than sixty minutes of your time.

There are no correct or incorrect answers, the questions are for you to best describe to us your experience or perception. We guarantee your complete confidentiality and anonymity. Please note also that your participation in this study is entirely voluntary and that you have the right to withdraw from the study at any stage. Your participation in the study therefore indicates verbal consent.

We want to thank you in advance for your co-operation.

Miss Lukhanyiso Mpongoshe

To verify the authenticity of the study, please contact Prof L.J Van Staden at 018-2852313 louis.vanstaden@nwu.ac.za.

APPENDIX B: INTERVIEW GUIDE 1:

NGC SMALLHOLDER FARMERS

INTERVIEW RESEARCH PROTOCOL

Title: “Evaluating the efficacy of the New Generation Cooperative business model in uplifting smallholder farmers: A case study”

SECTION A: NEW GENERATION COOPERATIVES’ EFFICACY IN UPLIFTING SMALLHOLDER FARMERS IN VHEMBE DISTRICT MUNICIPALITY

1. Explain in detail how the New Generation Cooperative has been able to effectively respond to the needs of smallholder farmers?

2. Describe how the New Generation Cooperative has facilitated smallholder farmers’ linkage with other largescale commercial farmers in Limpopo?

3. Explain how the New Generation Cooperative has aided smallholder farmers’ integration into the larger agribusiness value chains in Limpopo and other Provinces like Gauteng and North-West?

4. How has the New Generation Cooperative strengthened the marketing capabilities of your agribusiness as a smallholder farmer?

5. Explain how the New Generation Cooperative has contributed to improve sales, revenue and profitability of smallholder farmers in Vhembe District Municipality?

6. What kinds of value-adding agro-processing have The New Generation Cooperative invested in? If **Not**, also explain why?

7. List and describe in detail programmes that The New Generation Cooperative has implemented to respond to the needs of the local communities in which they operate?

8. Describe how The New Generation Cooperative has contributed to addressing food security Vhembe District Municipality?

9. Describe how The New Generation Cooperative has contributed to addressing poverty among the local communities in Vhembe District Municipality?

10. Explain how The New Generation Cooperative has contributed to addressing unemployment in Vhembe District Municipality?

SECTION B: DRIVERS OF THE NEW GENERATION COOPERATIVE'S EFFICACY IN UPLIFTING SMALLHOLDER FARMERS IN VHEMBE DISTRICT MUNICIPALITY

11. How has the governance and management system put in place enabled The New Generation Cooperative to effectively respond to the needs of smallholder farmers?

12. Explain the extent to which smallholder farmers are satisfied with the leadership of The New Generation Cooperative leaders?

13. Describe the kinds of rules that The New Generation Cooperative has put in place to hold leaders and smallholder farmers responsible and accountable for their actions?

14. Has the level of cooperation of smallholder farmers has been critical for improving effectiveness of The New Generation Cooperative to accomplish its outlined activities?
YES/NO

If **Yes**, explain how?

If **No**, explain why”

15. Does The New Generation Cooperative have effective accounts and financial system for managing the funds contributed from members as well as funds from government and other sources? **YES/NO**

If **Yes**, explain how?

If **No**, explain why”

16. List and briefly describe the measures that have been undertaken by The New Generation Cooperative to improve its financial independence and reduce reliance on government funding?

17. List and explain in detail the other factors that you think have been important for improving effective performance of The New Generation Cooperative?

SECTION C: CHALLENGES OF THE NEW GENERATION COOPERATIVE'S EFFICACY IN UPLIFTING SMALLHOLDER FARMERS IN VHEMBE DISTRICT MUNICIPALITY

18. How has The New Generation Cooperative ensured that smallholder farmers benefit from the ongoing rural land reform by the Department of Agriculture, Land Reform and Rural Development?

19. Describe how The New Generation Cooperative has linked smallholder farmers with government agencies like MERECAS, RESIS and LADA?

20. List and describe in details the governance and management challenges that The New Generation Cooperative is experiencing?

21. List and explain the agricultural or farming related challenges that smallholder farmers face to limit the positive impact of The New Generation Cooperative among local communities

22. Does The New Generation Cooperative frequently conduct smallholder farmers' training and development programmes on the required agribusiness management programmes?
YES/NO

If **Yes**, explain how?

If **No**, explain why"

23. Does The New Generation Cooperative link smallholder farmers with relevant suppliers of agricultural inputs like quality seeds and equipment?

YES/NO

If **Yes**, explain how?

If **No**, explain why"

24. List and Describe in detail what other challenges are affecting The New Generation Cooperative's contribution in uplifting smallholder farmers?

SECTION D: MEASURES FOR IMPROVING THE NEW GENERATION COOPERATIVE'S EFFICACY IN UPLIFTING SMALLHOLDER FARMERS IN VHEMBE DISTRICT MUNICIPALITY

25. List and describe in details the measures that you would suggest for improving The New Generation Cooperative's effectiveness in uplifting smallholder farmers in Vhembe District Municipality?

26. How should the government improve the effectiveness of The New Generation Co-operatives in South Africa?

27. How can largescale commercial farmers be engaged to partner with The New Generation Co-operatives in South Africa?

END OF INTERVIEWS AND THANK YOU FOR YOUR PARTICIPATION

APPENDIX C: INTERVIEW GUIDE 2:

NGC IMPLEMENTING PARTNERS

INTERVIEW RESEARCH INSTRUMENT: NGC IMPLEMENTING PARTNERS

SECTION A: NGC IMPLEMENTING PARTNERS' ROLES IN FACILITATING THE IMPLEMENTATION OF NGC PILOT PROJECT

Describe in details what you have been your roles in the implementation of NGC pilot project?

List and explain in details the kinds of networks that you have built to facilitate success NGC implementation in Limpopo as well as if NGC is to be rolled out throughout South Africa?

SECTION B: IMPACT OF NGC IN UPLIFTING SMALLHOLDER FARMERS

Do you think NGC has contributed to uplifting smallholder farmers in the area where it is piloted. If yes, why? If No, also provide reasons?

SECTION C: COMPLEXITIES OF NGC IMPLEMENTATION IN SOUTH AFRICA

List and describe in detail the kinds of challenges you have experienced or identified during the implementation of NGC pilot project?

Do you think such challenges can spill to undermine NGC implementation, should it be rolled out across South Africa? If Yes, provide reasons? If No, provide reasons?

List and describe the farmer related problems that you think affected the NGC pilot project?

List and explain in detail the NGC implementing partner challenges that you think undermined the implementation of NGC project?

SECTION D: NGC IMPLEMENTING PARTNERS' PROPOSALS FOR IMPROVING NGC IMPLEMENTATION

List and explain in details the kinds of proposals that you would suggest for improving NGC implementation if it is to be rolled out across the country?

End of Interviews
Thank you for Participating in the Study

APPENDIX D:

**THE LINKS BETWEEN THE IN-DEPTH INTERVIEW QUESTIONS,
THE LITERATURE AND OBJECTIVES OF THE STUDY**

LINKS BETWEEN THE IN-DEPTH INTERVIEW QUESTIONS, THE LITERATURE AND OBJECTIVES OF THE STUDY

Table D.1: The aims of in-depth interview questions and their relation to literature, objectives and interpretation categories. Project 1, Theme 1: NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality.

SECTION A: NEW GENERATION Cooperative'S EFFICACY IN UPLIFTING SMALLHOLDER FARMERS IN VHEMBE DISTRICT MUNICIPALITY			
In-depth interview question:			
A1. Explain in detail how the New Generation Cooperative has been able to effectively respond to the needs of smallholder farmers?			
Aim	To determine how did the NGC business framework respond to the needs of the smallholder farmer members. This information is useful in determining whether the NGC business framework in South Africa is capable of ameliorate challenges faced by smallholder farmers		
Research objective	Secondary research objective 2: Assess NGC smallholder farmer members' views on challenges they were confronted with before the implementation of the NGC in South Africa Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses.		
Literature	Chapter 3 and Chapter 4		
Theme	1: NGC's efficacy in upliftment	Category	(A) Assistance
In-depth interview question:			
A2. 2. Describe how the New Generation Cooperative has facilitated smallholder farmers' linkage with other largescale commercial farmers in Limpopo?			
Aim	To understand how the NGC facilitated smallholder farmers' linkage with other largescale commercial farmers and what was the benefit of the relationship		
Research objective	Secondary research objective 2: Assess NGC smallholder farmer members' views on challenges they were confronted with before the implementation of the NGC in South Africa		

	Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses.		
Literature	Chapter 3 and Chapter 4		
Theme	1: NGC's <i>efficacy</i> in upliftment	Category	(A) Assistance
In-depth interview question: A3: Explain how the New Generation Cooperative has aided smallholder farmers' integration into the larger agribusiness value chains in Limpopo and other Provinces like Gauteng and North-West?			
Aim	To understand how the NGC facilitated smallholder farmers' integration into the larger agribusiness value chains in Limpopo and other provinces and what was the benefit		
Research objective	Secondary research objective 2: Assess NGC smallholder farmer members' views on challenges they were confronted with before the implementation of the NGC in South Africa Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses.		
Literature	Chapter 3 and Chapter 4		
Theme	1: NGC's <i>efficacy</i> in upliftment	Category	(A) Assistance
In-depth interview question: A4. How has the New Generation Cooperative strengthened the marketing capabilities of your agribusiness as a smallholder farmer?			
Aim	To determine the capability of the NGC in strengthening marketing capabilities of smallholder farmers		
Research objective	Secondary research objective 2: Assess NGC smallholder farmer members' views on challenges they were confronted with before the implementation of the NGC in South Africa Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses.		
Literature	Chapter 3 and Chapter 4		

Theme	1: NGC's efficacy in upliftment	Category	(A) Assistance
In-depth interview question:			
A5: Explain how the New Generation Cooperative has contributed to improve sales, revenue and profitability of smallholder farmers in Vhembe District Municipality?			
Aim	To understand how the NGC contributed to Vhembe District Municipality smallholder farmers' sales, revenue and profitability		
Research objective	Secondary research objective 2: Assess NGC smallholder farmer members' views on challenges they were confronted with before the implementation of the NGC in South Africa Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses. Secondary research objective 5(a): Assess the socio-economic impact (income earnings) that have emerged from NGC implementation		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	1: NGC's efficacy in upliftment	Category	(A) Assistance
In-depth interview question:			
A6: What kinds of value-adding agro-processing have The New Generation Cooperative invested in? If Not, also explain why?			
Aim	To establish if the NGC invested in any kind of agro-processing venture/(s). And if so, which one/(s) were they, and what was their value add. To also understand the challenges encountered in agro-processing venture(/s)		
Research objective	Secondary research objective 2: Assess NGC smallholder farmer members' views on challenges they were confronted with before the implementation of the NGC in South Africa Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses.		
Literature	Chapter 3 and Chapter 4		
Theme	1: NGC's efficacy in upliftment	Category	(A) Assistance
In-depth interview question:			

A7: List and describe in detail programmes that The New Generation Cooperative has implemented to respond to the needs of the local communities in which they operate?			
Aim	To establish what programmes the NGC participated in, in the local community, and to determine the value and outcomes of those programmes, most especially how these programmes responded to the needs of the local communities in which the NGC operated in.		
Research objective	Secondary research objective 5: Assess the socio-economic impacts (income earnings, food security, employment and poverty alleviation) that have emerged from NGC implementation		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	1: NGC's <i>efficacy</i> in upliftment	Category	(B) Community
In-depth interview question:			
A8: Describe how The New Generation Cooperative has contributed to addressing food security Vhembe District Municipality?			
Aim	To establish ways in which the NGC contributed to addressing food security in the Vhembe District Municipality		
Research objective	Secondary research objective 5(b): Assess the socio-economic impacts (food security) that have emerged from NGC implementation		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	1: NGC's <i>efficacy</i> in upliftment	Category	(B) Community
In-depth interview question:			
A9: Describe how The New Generation Cooperative has contributed to addressing poverty among the local communities in Vhembe District Municipality?			
Aim	To establish in which ways did the NGC contribute in alleviating poverty in the local communities of the Vhembe District Municipality		
Research objective	Secondary research objective 5(d): Assess the socio-economic impacts (poverty alleviation) that have emerged from NGC implementation		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	1: NGC's <i>efficacy</i> in upliftment	Category	(B) Community
In-depth interview question:			

A10: Explain how The New Generation Cooperative has contributed to addressing unemployment in Vhembe District Municipality?			
Aim	To establish in which ways did the NGC contribute to addressing unemployment in the local communities of the Vhembe District Municipality		
Research objective	Secondary research objective 5(c): Assess the socio-economic impacts (unemployment) that have emerged from NGC implementation		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	1: NGC's <i>efficacy</i> in upliftment	Category	(B) Community
Research objective	Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses.		
Literature	Chapter 3 and Chapter 4		
Theme	1: NGC's <i>efficacy</i> in upliftment	Category	(A) Assistance

Table D.2: The aims of in-depth interview questions and their relation to literature, objectives and interpretation categories. Project 1, Theme 2: Drivers of the NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality.

SECTION B: DRIVERS OF THE NEW GENERATION Cooperative'S EFFICACY IN UPLIFTING SMALLHOLDER FARMERS IN VHEMBE DISTRICT MUNICIPALITY			
In-depth interview question:			
B11: How has the governance and management system put in place enabled The New Generation Cooperative to effectively respond to the needs of smallholder farmers?			
Aim	To establish how was the NGC governance and management systems structured and how did these NGC governance and management systems put in place enabled the NGC to effectively respond to the needs of smallholder farmers.		
Research objective	Secondary research objective 3: Identify and describe the key design and implementation features of the South African NGC. Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses.		

	Secondary research objective 5(a): Assess the socio-economic impact (income earnings) that have emerged from NGC implementation Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa.		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	2: <i>Drivers</i> of NGC's efficacy in upliftment	Category	(A) Management (B) Farmers (C) Finances (D) Performance
In-depth interview question: B12: Explain the extent to which smallholder farmers are satisfied with the leadership of The New Generation Cooperative leaders?			
Aim	To understand if the NGC smallholder farmers are satisfied with the leadership of the NGC.		
Research objective	Secondary research objective 3: Identify and describe the key design and implementation features of the South African NGC. Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses. Secondary research objective 5: Assess the socio-economic impacts (income earnings, food security, employment and poverty alleviation) that have emerged from NGC implementation. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa.		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	2: <i>Drivers</i> of NGC's efficacy in upliftment	Category	(A) Management (B) Farmers (C) Finance (D) Performance
In-depth interview question:			

B13: Describe the kinds of rules that The New Generation Cooperative has put in place to hold leaders and smallholder farmers responsible and accountable for their actions?			
Aim	To establish the kind of rules, systems, policies, principles and procedures the NGC put in place to hold leaders and smallholder farmers responsible and accountable for their actions?		
Research objective	Secondary research objective 3: Identify and describe the key design and implementation features of the South African NGC. Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses. Secondary research objective 5: Assess the socio-economic impacts (income earnings, food security, employment and poverty alleviation) that have emerged from NGC implementation. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa.		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	2: <i>Drivers</i> of NGC's efficacy in upliftment	Category	(A) Management (B) Farmers (C) Finance (D) Performance
In-depth interview question:			
B14: Has the level of cooperation of smallholder farmers has been critical for improving effectiveness of The New Generation Cooperative to accomplish its outlined activities?			
Aim	To determine if NGC smallholder farmers cooperate with the NGC. And if so, establish at what level is their cooperation. To thereafter establish if their level of cooperation has improved the effectiveness of the NGC to accomplish its outlined activities		
Research objective	Secondary research objective 2: Assess NGC smallholder farmer members' views on challenges they were confronted with before the implementation of the NGC in South Africa		

	Secondary research objective 3: Identify and describe the key design and implementation features of the South African NGC. Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses. Secondary research objective 5: Assess the socio-economic impacts (income earnings, food security, employment and poverty alleviation) that have emerged from NGC implementation. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa.		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	2: <i>Drivers</i> of NGC's efficacy in upliftment	Category	(A) Management (B) Farmers (C) Finance (D) Performance
In-depth interview question: B15: Does The New Generation Cooperative have effective accounts and financial system for managing the funds contributed from members as well as funds from government and other sources?			
Aim	To establish if the NGC has effective accounts and financial systems for managing funds contributed by members, the government and other sources. If not, what are the reasons. To understand how do those systems work and if they are effective or not. If not effective, why is it so. To understand if there was a joining fee to the NGC and if it was effective. To understand how are dividends paid, including how are farmer individual accounts with the NGC managed		
Research objective	Secondary research objective 2: Assess NGC smallholder farmer members' views on challenges they were confronted with before the implementation of the NGC in South Africa Secondary research objective 3: Identify and describe the key design and implementation features of the South African NGC.		

	Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses. Secondary research objective 5: Assess the socio-economic impacts (income earnings, food security, employment and poverty alleviation) that have emerged from NGC implementation. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa.		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	2: <i>Drivers</i> of NGC's efficacy in upliftment	Category	(A) Management (B) Farmers (C) Finance (D) Performance
In-depth interview question: B16: List and briefly describe the measures that have been undertaken by The New Generation Cooperative to improve its financial independence and reduce reliance on government funding?			
Aim	To establish measures that have been undertaken by the NGC to improve its financial independence and reduce reliance on government funding.		
Research objective	Secondary research objective 3: Identify and describe the key design and implementation features of the South African NGC. Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses. Secondary research objective 5: Assess the socio-economic impacts (income earnings, food security, employment and poverty alleviation) that have emerged from NGC implementation. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa		
Literature	Chapter 3 and Chapter 4		
Theme	2: <i>Drivers</i> of NGC's efficacy in upliftment	Category	(A) Management (B) Farmers

			(C) Finance (D) Performance
In-depth interview question: B17: List and explain in detail the other factors that you think have been important for improving effective performance of The New Generation Cooperative?			
Aim	To establish and explain in detail what have been the important factors for improving effective performance the NGC.		
Research objective	Secondary research objective 7: Formulate corresponding recommendations to improve the functionality and sustainability of NGCs in South Africa, if necessary.		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	2: <i>Drivers</i> of NGC's efficacy in upliftment	Category	(A) Management (B) Farmers (C) Finance (D) Performance

Table D.3: The aims of in-depth interview questions and their relation to literature, objectives and interpretation categories. Project 1, Theme 3: Challenges of NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality.

SECTION C: CHALLENGES OF THE NEW GENERATION Cooperative'S EFFICACY IN UPLIFTING SMALLHOLDER FARMERS IN VHEMBE DISTRICT MUNICIPALITY			
In-depth interview question: C18: How has The New Generation Cooperative ensured that smallholder farmers benefit from the ongoing rural land reform by the Department of Agriculture, Land Reform and Rural Development?			
Aim	To understand how has the NGC ensured that smallholder farmers benefit from the ongoing rural land reform by the Department of Agriculture, Land Reform and Rural Development?		
Research objective	Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses		
Literature	Chapter 2, and Chapter 3		
Theme	3: <i>Challenges</i> of NGC's efficacy in upliftment	Category	(A) Land

In-depth interview question: C19: Describe how The New Generation Cooperative has linked smallholder farmers with government agencies like MERECAS, RESIS and LADA?			
Aim	To understand ways in which the NGC has established government linkages for the NGC members most especially with agencies like MERECAS, RESIS and LADA?		
Research objective	Secondary research objective 3: Identify and describe the key design and implementation features of the South African NGC. Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses.		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	3: <i>Challenges</i> of NGC's efficacy in upliftment	Category	(B) Links
In-depth interview question: C20: List and describe in details the governance and management challenges that The New Generation Cooperative is experiencing?			
Aim	To establish in detail all the governance and management challenges experienced by the NGC. This includes property rights challenges.		
Research objective	Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses. Secondary research objective 5: Assess the socio-economic impacts (income earnings, food security, employment and poverty alleviation) that have emerged from NGC implementation. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa.		
Literature	Chapter 4		
Theme	3: <i>Challenges</i> of NGC's efficacy in upliftment	Category	(C)Challenges
In-depth interview question: C21: List and explain the agricultural or farming related challenges that smallholder farmers face to limit the positive impact of The New Generation Cooperative among local communities			

Aim	To explain in detail the agricultural and farming related challenges that smallholder farmers face to limit the positive impact of the NGC. This includes operational challenges faced by these smallholder farmers		
Research objective	Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses. Secondary research objective 5: Assess the socio-economic impacts (income earnings, food security, employment and poverty alleviation) that have emerged from NGC implementation. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa.		
Literature	Chapter 4		
Theme	3: <i>Challenges</i> of NGC's efficacy in upliftment	Category	(C)Challenges
In-depth interview question: C22: Does The New Generation Cooperative frequently conduct smallholder farmers' training and development programmes on the required agribusiness management programmes?			
Aim	To establish if the NGC conducts smallholder farmers' training and development programs on the required agribusiness management programmes. If it does, what programs are they and how have they helped in uplifting smallholder farmer businesses. To understand if there were any challenges associated with training programs and if any, what were they and how were they resolved.		
Research objective	Secondary research objective 3: Identify and describe the key design and implementation features of the South African NGC. Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa.		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	3: <i>Challenges</i> of NGC's efficacy in upliftment	Category	(E) Training

In-depth interview question:			
C22: Does The New Generation Cooperative link smallholder farmers with relevant suppliers of agricultural inputs like quality seeds and equipment?			
Aim	To establish if the NGC linked smallholder farmer members with relevant suppliers in the value chain. Which suppliers were they and how did each supplier uplift smallholder farmers.		
Research objective	Secondary research objective 3: Identify and describe the key design and implementation features of the South African NGC. Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa		
Literature	Chapter 3 and Chapter 4		
Theme	3: <i>Challenges</i> of NGC's efficacy in upliftment	Category	(B) Links
In-depth interview question:			
C24: List and Describe in detail what other challenges are affecting The New Generation Cooperative's contribution in uplifting smallholder farmers?			
Aim	To determine what other challenges are affecting the NGC's contribution in uplifting smallholder farmers		
Research objective	Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa. Secondary research objective 7: Formulate corresponding recommendations to improve the functionality and sustainability of NGCs in South Africa, if necessary.		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	3: <i>Challenges</i> of NGC's efficacy in upliftment	Category	(C) Challenges

Table D.4: The aims of in-depth interview questions and their relation to literature, objectives and interpretation categories. Project 1, Theme 4: Measures for improving NGC's efficacy in uplifting smallholder farmers in Vhembe District Municipality.

SECTION D: MEASURES FOR IMPROVING THE NEW GENERATION Cooperative'S EFFICACY IN UPLIFTING SMALLHOLDER FARMERS IN VHEMBE DISTRICT MUNICIPALITY			
In-depth interview question:			
D25: List and describe in details the measures that you would suggest for improving The New Generation Cooperative's effectiveness in uplifting smallholder farmers in Vhembe District Municipality?			
Aim	To establish what measures, in details, would smallholder farmers suggest in order to improve the NGC's effectiveness in uplifting their businesses.		
Research objective	Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa. Secondary research objective 7: Formulate corresponding recommendations to improve the functionality and sustainability of NGCs in South Africa, if necessary.		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	4: <i>Measures</i> for improving NGC's efficacy in upliftment	Category	(A) Improvement
In-depth interview question:			
D 26: How should the government improve the effectiveness of The New Generation Co-operatives in South Africa?			
Aim	To describe from the smallholder farmers perspective on how should the government improve the effectiveness of the NGCs in South Africa		
Research objective	Secondary research objective 7: Formulate corresponding recommendations to improve the functionality and sustainability of NGCs in South Africa, if necessary.		
Literature	Chapter 2, Chapter 3 and Chapter 4		

Theme	4: <i>Measures</i> for improving NGC's efficacy in upliftment	Category	(A) Improvement
In-depth interview question: D27: How can largescale commercial farmers be engaged to partner with The New Generation Co-operatives in South Africa?			
Aim	To determine how can large commercial farmers be engaged with the NGC and smallholder farmers.		
Research objective	Secondary research objective 7: Formulate corresponding recommendations to improve the functionality and sustainability of NGCs in South Africa, if necessary.		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	4: <i>Measures</i> for improving NGC's efficacy in upliftment	Category	(B) Partnership

6.4.2. Project 2

Table D.5 to Table D.8 present thematic and categorical framework results from Project 2, which is data from in-depth interview questions with NGC implementing partners interviews.

Table D.5: The aims of in-depth interview questions and their relation to literature, objectives and interpretation categories. Project 2, Theme 1: The role of NGC implementing partners in the implementation of the NGC pilot project.

SECTION A: NGC IMPLEMENTING PARTNERS' ROLES IN FACILITATING THE IMPLEMENTATION OF THE NGC PILOT PROJECT			
In-depth interview question: A 1: Describe in details what have been your roles in the implementation of NGC pilot project?			
Aim	To understand the roles of the NGC implementing partners in the facilitating the implementation of the NGC pilot project		
Research objective	Secondary research objective 3: Identify and describe the key design and implementation features of the South African NGC. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa.		

Literature	Chapter 3 and Chapter 4		
Theme	1: The <i>role</i> of NGC implementing partners in the implementation of the NGC pilot project	Category	(A) Responsibilities
In-depth interview question: A 2 : List and explain in details the kinds of networks that you have built to facilitate success NGC implementation in Limpopo as well as if NGC is to be rolled out throughout South Africa?			
Aim	To understand the networks that implementing partners established to facilitate the success of NGC implementation as well as if NGC is to be rolled out throughout South Africa		
Research objective	Secondary research objective 3: Identify and describe the key design and implementation features of the South African NGC. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa.		
Literature	Chapter 3 and Chapter 4		
Theme	1: The <i>role</i> of NGC implementing partners in the implementation of the NGC pilot project	Category	(B) Networking

Table D.6: The aims of in-depth interview questions and their relation to literature, objectives and interpretation categories. Project 2, Theme 2: The impact of the NGC in uplifting smallholder farmers.

SECTION B: IMPACT OF NGC IN UPLIFTING SMALLHOLDER FARMERS	
In-depth interview question: B 3: Do you think NGC has contributed to uplifting smallholder farmers in the area where it is piloted. If yes, why? If No, also provide reasons?	
Aim	To establish whether the NGC has contributed in uplifting smallholder farmers or not. If it has contributed, to also establish in what ways, and if it has not contributed, to understand why.
Research objective	Secondary research objective 3: Identify and describe the key design and implementation features of the South African NGC.

	Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	2: The <i>impact</i> of the NGC in uplifting smallholder farmers	Category	(A) Contribution

Table D.7: The aims of in-depth interview questions and their relation to literature, objectives and interpretation categories. Project 2, Theme 3: The complexities of NGC implementation in South Africa.

SECTION C: COMPLEXITIES OF NGC IMPLEMENTATION IN SOUTH AFRICA			
In-depth interview question:			
C 4: List and describe in detail the kinds of challenges you have experienced or identified during the implementation of NGC pilot project?			
Aim	To establish the kind of challenges experienced by the NGC implementing partners, including those they identified during the implementation of the NGC pilot project.		
Research objective	Secondary research objective 3: Identify and describe the key design and implementation features of the South African NGC. Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	3: The <i>complexities</i> of NGC implementation in South Africa	Category	(A) Challenges

In-depth interview question: C 2: Do you think such challenges can spill to undermine NGC implementation, should it be rolled out across South Africa? If Yes, provide reasons? If No, provide reasons?			
Aim	To understand if challenges confronting the current pilot NGC could undermine the roll out of other NGCs across South Africa, and why.		
Research objective	Secondary research objective 3: Identify and describe the key design and implementation features of the South African NGC. Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa.		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	3: The <i>complexities</i> of NGC implementation in South Africa	Category	(A) Challenges
In-depth interview question: C 3: List and describe the farmer related problems that you think affected the NGC pilot project?			
Aim	To determine what implementing partners think were the main farmer related problems and challenges that affected the NGC pilot project and how.		
Research objective	Secondary research objective 3: Identify and describe the key design and implementation features of the South African NGC. Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa.		
Literature	Chapter 2, Chapter 3 and Chapter 4		

Theme	3: The <i>complexities</i> of NGC implementation in South Africa	Category	(A) Challenges
In-depth interview question: C 4: List and explain in detail the NGC implementing partner challenges that you think undermined the implementation of NGC project?			
Aim	To determine what were the implementing partner challenges that undermined the implementation of the NGC pilot project and how.		
Research objective	Secondary research objective 3: Identify and describe the key design and implementation features of the South African NGC. Secondary research objective 4: Measure the views and perceptions of the NGC farmer members on the NGC framework and its contribution in uplifting their agribusinesses. Secondary research objective 6: Analyse the level of the implementation of the NGC practices by the newly-formed NGC in South Africa.		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	3: The <i>complexities</i> of NGC implementation in South Africa	Category	(A) Challenges

Table D.8: The aims of in-depth interview questions and their relation to literature, objectives and interpretation categories. Project 2, Theme 4: The proposals of NGC implementing partners for improving NGC implementations.

SECTION D: NGC IMPLEMENTING PARTNERS' PROPOSALS FOR IMPROVING NGC IMPLEMENTATION			
In-depth interview question: D 5: List and explain in details the kinds of proposals that you would suggest for improving NGC implementation if it is to be rolled out across the country?			
Aim	To establish what measures, and proposals, would implementing partners suggest for improving NGC implementation if it should be rolled out across the country.		

Research objective	Secondary research objective 7: Formulate corresponding recommendations to improve the functionality and sustainability of NGCs in South Africa, if necessary.		
Literature	Chapter 2, Chapter 3 and Chapter 4		
Theme	4: The <i>proposals</i> of NGC implementing partners for improving NGC implementations	Category	(A) Improvement

APPENDIX E: REVIEW OF QUALITATIVE DATA ANALYSIS



Dr Roland Goldberg

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12 November 2022

To Whom It May Concern:

PEER REVIEW OF LUKHANYISO MPONGOSHE'S QUALITATIVE DATA ANALYSIS

This letter verifies that I, Roland Goldberg (Senior Lecturer in marketing at the North-West University; Staff No. 20770626) meticulously reviewed the qualitative analysis of the transcribed data of Ms Mpongoshé's thesis entitled "Evaluating the efficacy of the New Generation Cooperative business model in uplifting smallholder farmers: A case study". Moreover, I reviewed Ms Mpongoshé's use of the Morse and Field approach towards analysing qualitative data. Conclusively, this letter confirms that Ms Mpongoshé's data has been rigorously analysed and verifies that the themes identified reflect both confirmability and dependability.

Yours faithfully

Dr RH Goldberg

APPENDIX F: LETTER FROM LANGUAGE AND TECHNICAL EDITOR



Dynamic Language &
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Tuesday, 08 November 2022

To whom it may concern

Re: Confirmation of language edit, typography and technical precision

The PhD thesis "Evaluating the efficacy of the New Generation Cooperative business model in uplifting smallholder farmers: A case study" by L Mpongoshe (27036804) was edited for language and technical precision. The referencing and sources were checked, and it complies with the Harvard guidelines specified by the 2020 NWU Reference guide.

Final, last-minute corrections remain the responsibility of the author.

Antoinette Bisschoff

BA Languages (UPE – now NMU); MBA (PU for CHE – now NWU); Translation and Linguistic Studies (NWU)

Officially approved language editor of the NWU since 1998
Member of SA Translators Institute (no. 100181)

Precision ... to the last letter