Master Thesis

Macadamia nuts - the new gold of South Africa?

Inclusive value chain integration of macadamia nut small-scale farmers in Limpopo, South Africa

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Abstract

The goal of the South African government to build a class of black African farmers is far from being reached. Nevertheless, the efforts of transforming the dual agrarian economy are increasingly realized through a focus on black small-scale farmers growing high-value commodity subtropical tree crops. The main aim is to uplift rural poverty by creating employment opportunities and income generation through exports. This research zooms in on the macadamia nut value chain taking an inclusive development perspective. It analyzes the implication of small-scale farmers’ integration into global value chains (GVC). Furthermore, it assesses the potential of the private-public partnership (PPP) between the government and the private sector in the form of value chain collaboration. The research was conducted in the Vhembe district of the Limpopo province, which is the poorest region of the country and where the skewed dual economy is strongly mirrored in the agricultural production system.

The evidence is drawn from in-depth interviews with various value chain stakeholders operating in the area, small-scale macadamia nut farmers from three local municipalities, two focus group discussions and multiple observations. Additionally, in order to create a detailed profile of the small-scale farmers data from a baseline survey including 141 respondents was used. Therefore, this research is grounded in the mix methods approach. The results show that the small-scale macadamia nut farmers are a rather privileged homogenous group of part-time farmers consisting of educated middle-age man with steady incomes from jobs and pensions that allow them to invest in their farms with the goal of creating a long-term income security. Nevertheless, they face many challenges in terms of entering the value chain as well as benefiting from being integrated into it. Therefore, the dual agrarian economy is not undergoing profound transformation. The joint effort of the government and the private sector in the form of a value chain collaboration however, focuses on inclusive integration, does not address the skewed market structure of agriculture in South Africa. Therefore, the pro small-scale farmer arrangements fail to tackle how the value chain is organized and how it operates within a larger socio-political context.

KEYWORDS: inclusive development, global value chain, value chain collaboration, small-scale farmers, high-value commodity tree crops.
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<tr>
<td>ANC</td>
<td>African National Congress</td>
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<tr>
<td>ARC</td>
<td>Agricultural Research Council</td>
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<tr>
<td>CASP</td>
<td>Comprehensive Agricultural Support Programme</td>
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<tr>
<td>CRDP</td>
<td>Comprehensive Rural Development Programme</td>
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<tr>
<td>DAFF</td>
<td>Department of Agriculture, Fisheries and Forestry</td>
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<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>GKSP</td>
<td>Gross kernel selling price</td>
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<td>GVC</td>
<td>Global value chain</td>
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<td>VCC</td>
<td>Value chain collaboration</td>
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<tr>
<td>MLAR</td>
<td>Market Led Agrarian Reform</td>
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<tr>
<td>NGO</td>
<td>Non-governmental organization</td>
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<td>PPP</td>
<td>Public-private partnership</td>
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<td>PTO</td>
<td>Permission to occupy land</td>
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<tr>
<td>SAMAC</td>
<td>The Southern African Macadamia Growers’ Association</td>
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<td>Subtrop</td>
<td>South African Subtropical Growers’ Association</td>
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Chapter 1. Introduction

Since 1994, the post-apartheid South African state has addressed the need to undo past injustices, transform the agrarian system and revitalize farming. This has been done primarily through a focus on the land reform program. Currently however, pro-smallholder farmer support models around high-value commodity crops are being explored in the form of public-private partnerships (PPPs). Therefore, the shift in government’s orientation is realized through an increased involvement of the private sector in transforming the dual agrarian economy. Arguably, smallholder farmers in South Africa are marginalized in the mainstream economy and suffer from a ‘double-barrelled exclusion’ first, excluded by the past regimes along racial lines, and now excluded by market forces (Chikazunga & Paradza, 2012). This can be partly explained by South Africa’s turbulent history that shaped a dual agriculture economy with on one hand well-developed commercial farming and on the other hand subsistence-based production in rural areas making it challenging to bridge the gap between the two.

Most smallholder farmers are located in the areas formerly known as ‘homelands’ or Bantustans, where low levels of productivity and technology use characterize their farming. This research zoomed in on the former Venda ‘homeland’ in the Limpopo province. Smallholder farmers’ participation in high-value commodity markets is poor as they face many constraints such as a lack of infrastructure, a lack of market access, high transaction costs, and a lack of information, business and negotiation experience (Baloyi, 2010). In the South African context constraints relating to farming in former ‘homelands’ also play a role such as the communal land tenure and an underinvested state system of agricultural extension that struggles to facilitate smallholders’ ‘graduation into commercial production.

In Sub-Saharan Africa, in order to increase small-scale farmers’ income multiple stakeholders such as governments, non-governmental organizations (NGOs) as well as researchers have advocated for integrating them into corporate value chains (VC) through fostering partnerships with the private sector (Bitzer, 2011; Oxfam, 2014). However, existing approaches to value chain integration tend to overlook diversified systems and orientations of small-scale farmers adopting a ‘one-size-fits-all’ approach focusing mainly on increased productivity and intensification. This has been especially prevalent in the case of tree crop farmers with high-value commodities such as cocoa or macadamia nuts that bear large growth potential and employment opportunities (Chamberlin, 2008). This study focuses on the specific case of macadamia nut small-scale farmers due to their potential to play a significant role in changing the rural livelihoods.

South Africa has been one of the most active countries in the process of value chain integration of small-scale farmers. Yet, research indicates (Barrientos, 2013) a tendency towards exclusion as well as adverse incorporation of farmers in the value chains. While, the PPP support has mainly focused on aspects of production
intensification and in many ways resembles the state support system, the question
that rises is how a diverse range of farmers can be supported and whether the
current support is addressing the smallholder’s constraints. However, the
government claims to have an inclusive focus, evidence shows that the support
programmes are not effective in reaching all the farmers and instead include a very
narrow group of commercially oriented part-time farmers. Nevertheless, the private-
public partnerships are assumed to have the potential to play a vital role in
integrating small-scale farmers into value chains in an inclusive manner. Thus, taking
that into account this research aims to answer the following research question:

*How is the value chain collaboration between the government and the private sector
stimulating inclusive value chain integration of small-scale macadamia nut farmers in
the Vhembe district of South Africa?*

In Chapter 2, the theoretical framework of this thesis builds on the inclusive
development approach, literature on value chain integration discussing
opportunities and risks and lastly, a debate on value chain collaborations (VCC).
Subsequently, in Chapter 3 the research design and methods are outlined followed
by Chapter 4 explaining the background of South Africa with a focus on the
agricultural policy environment as well as a providing a description of the research
location. Chapter 5 presents a macadamia nut value chain analysis. Chapter 6 offers
a profile of a small-scale macadamia nut farmer. Chapter 7 discusses prospects of
value chain collaboration, while Chapter 8 concludes the paper by offering research
and policy recommendations.

This research aims at gaining a more comprehensive and nuanced
understanding of the role of value chain integration in providing new economic
opportunities for smallholder farmers and the supporting role of the value chain
collaboration in accessing these opportunities. Therefore, the design of this research
has two different layers. Firstly, it aims at understanding the position of small-scale
farmers in regard to their integration in the global value chains in the specific context
of South Africa. Secondly, it analyses the role of value chain collaboration in
facilitating inclusive development of these small-scale farmers. Adopting an inclusive
development approach serves two functions. Firstly, it provides a framework for the
analysis centred around human agency and governance in value chains. Secondly, it
allows for developing determinants of inclusive value chain integration. The research
methods used in this study are a mix of qualitative and quantitative techniques
followed in order to decrease the limitations of each method (Bryman, 2012).

The purpose of studying this case and topic is twofold. This research aims at
contributing to the promotion of more inclusive arrangements between the
smallholder farmers and the other value chain actors mainly the private sector. Academically, placing the focus on the role of the value chain collaborations contributes to understanding new opportunities for connecting smallholder farmers to the value chain that lay outside of the scope of the critical literature (Cousins, 2011; Aliber et al., 2013). Furthermore, studying them from an inclusive development perspective aims at filling in this specific research gap.

The field research for this thesis was carried out within a larger framework of a four-year action research project titled: *Inclusive business – smallholder partnerships for greater food sovereignty and sustainable landscapes in Ghana and South Africa* funded by the Science for Global Development (WOTRO) division of the Netherlands Organisation for Scientific Research (NWO).
Chapter 2. Theoretical framework

As outlined in the previous chapter this research focuses on inclusive value chain integration of small-scale macadamia nut farmers in South Africa and the supporting role of the government and the private sector. The main objective of this study is to investigate prospects for successful value chain collaboration for the macadamia nut small-scale farmers. The theoretical approach of this study is thereby inclusive development perspective with emphasis on human agency and smallholders’ ability to determine terms of value chain engagement.

Firstly, the global value chain (GVC) analysis is explained. Secondly, I review the principles of inclusive development, followed by a discussion on farmers’ agency. Thirdly, I elaborate on farmers’ integration into the corporate value chains with a focus on risks and opportunities. Next, the role of institutional support in the context of value chain collaboration is discussed. Lastly, inclusive value chain integration is explained in more detail followed by a conceptual scheme.

2.1 Global value chain analysis

Globalization has led to significant shifts in the organization and governance of global industries (Gereffi, 2014) and its implications have become especially prominent in the food production systems. The concept of a global value chain has its roots in the notion of the Global Commodity Chain introduced by Hopkins and Wallerstein (1986). Today, the concept has gained popularity not only in academic literature. Consequently, it is used primarily as a tool for policy documents and development interventions. A useful definition of a value chain which guides this research is offered by Kaplinsky (2000: 121): “A value chain describes the full range of activities which are required to bring a product or service from conception, through the intermediary phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use.” Moreover, a value chain consists of a series of stakeholders linked by the flows of products, finance, information and services (Laven, 2010). Depending on their role they can be divided into value chain actors and value chain supporters. The actors are the individuals or organizations that produce, buy or sell the product. Value chain supporters on the other hand are individuals or institutions surrounding the chain actors providing services to them (Laven, 2010). In this thesis the value chain analysis is used as an analytical tool in order to explain the underlying processes and relationships shaping the macadamia nut value chain. This is done by presenting a bottom-up value chain analysis from the perspective of a small-scale farmer. Furthermore, small-scale farmers integration in value chain is discussed with an emphasis on their terms of engagement (Bolwig et al, 2010). Therefore, the inclusive development approach is used in order to gain a better understanding of how producers are affected by being integrated into the
corporate value chain. Additionally, focus is placed on the institutional support system in a form of value chain collaboration between the public and the private sector. However, the debate on inclusive integration of small-scale farmers is developing conceptually a clear operationalization of concepts is still absent. The next section of this chapter aims at presenting a set of dimensions guiding the inclusive development approach, while the last section attempts to link them with the concept of value chain integration.

2.2 Inclusive development approach

The theoretical framework of this study is grounded in the inclusive development approach applied to value chain integration and small-scale farmers’ terms of engagement (Bolwig et al, 2010). For the purpose of this research terms of engagement are translated into the ways in which the small-scale farmers are linked to the processing plants in the macadamia nut value chain. Therefore, the agency of small-scale farmers is central to this research, with a specific focus on the way in which agency and autonomy is stimulated through intermediary institutional support and knowledge transfer.

2.2.1 Defining inclusive development

In order to define the inclusive development approach two central concepts need to be addressed (Kanbur & Rauniyar, 2010). Firstly, a clear distinction between growth and development should be made. Growth has a narrow definition as an increase in real per capita income. Thus, pro-poor growth is focused on reducing income poverty (Kanbur & Rauniyar, 2010). The notion of development differs from growth in broadening the scope from income alone to other dimensions of well-being. Secondly, the term ‘inclusive’ is necessary to explain. Inclusive or ‘pro-poor’ development specifically addresses the issue of inequalities. The dominant orientation in value chain collaboration however, is the strong focus on income generation as means of poverty reduction. Nevertheless, based on Kanbur and Rauniyar this notion should be broadened as “‘Development’ brings into play dimensions of well-being beyond simply income, while ‘inclusive’ focuses attention on the distribution of well-being in society” (2010: 438).

The UNDP’s Human Development Index (HDI) can be seen as the best example of the distinction between growth and development taking into consideration two more indicators next to income, namely health and education. Therefore, parallels can be drawn to Amartya Sen’s (2000) classic capability approach, which focuses on the structures in place that enable people to self-manage their development and support their capabilities. Importantly, the diverse pathways and livelihood strategies leading to self-determined development are key to grasping the concept. Additionally, inclusive development approach is sensitive to marginalization of specific groups such as for instance women, children or
indigenous people (Kanbur and Rauniyar, 2010). Similarly, Sachs (2004) defines inclusive development by contrasting it with the pattern of perverse growth, recognized to be exclusionary and resulting in concentration of income and wealth (Sachs, 2004: 1804). Therefore, defining inclusive development as “development that includes marginalized people, sectors and countries in social, political and economic processes for increased human wellbeing, social and environmental sustainability, and empowerment” (Gupta et al., in press cited in Ros-Tonen et al., in press: 9) will serve as the basis for this research.

2.2.2 Applying inclusive development lens

The inclusive development approach is also useful in this study, because it focuses on the most marginalized groups in a non-discriminatory manner. Therefore, the typical value chain support includes redistribution of benefits such as land, transportation, water etc. However, structural support should address the problem of distribution through promotion of more equitable interactive governance contributing in this specific case to a fairer distribution of resources circulating in the value chain such as information, income and material resources. It is therefore expected that multi-level interactive governance provide the opportunities to realize the aims of inclusive development (Ros-Tonen et al., 2014).

In the specific case of small-scale farmers in South Africa inclusive development translates into countering historic patterns of unequal asset distribution as well as policies that disempower the poorest. Nevertheless, at a more specific level it entails improvement of the current value chain collaboration by adopting a new way of working within the framework of existing value chain relations. Thus, here empowerment should be understood as both the means and ends of marginalised groups and individuals to improve their wellbeing, form their food and farming systems and to participate in learning in order to respond to change and new risks of exclusion (Ros-Tonen et al., 2014).

2.2.3 Human agency

The inclusive development approach aspires to comprehend the complexity of poverty from a people-centred perspective. This research thereby takes farmers’ agency as a starting point. Drawing on Amartya Sen’s (2000: 53) viewpoint on poverty reduction “people have to be seen, in this perspective, as being actively involved – given the opportunity – in shaping their own destiny, and not just as passive recipients of the fruits of cunning development programmes.” Moreover, departing from this perspective on wellbeing enables to understand how people construct and shape their livelihoods in diverse ways following various strategies. Therefore, important to note is the fact that inclusive development is only promoted where external interventions are attuned with local livelihood orientations. In the case of Limpopo, small-scale farmers differ along many dimensions and are a largely diverse group (Aliber et al., 2013). Therefore, inclusive forms of support should allow small-scale farmers to follow more diversified pathways in ensuring their economic
viability.

Consequently, this analytical framework offers a valuable lens for understanding the extent to which value chain collaboration is fair, equitable and allowing for people to develop according to their own pathway. In the next sections, farmers’ integration in corporate value chains and the institutional context of South Africa are discussed in more detail. The main focus thereby is to understand the institutional relations shaping the value chain collaboration and their role in supporting access to economic opportunities through value chain integration.

2.3 Small-scale farmers’ integration into corporate value chains

Smallholder farmers can be defined as farmers producing for both subsistence and markets with limited access to land and mostly reliant on family labour (Chamberlin, 2008). However, they should not be understood as a homogenous group, because they vary along different dimensions such as: production objectives, farming scale, farming systems and kinds of market orientation (Cousins, 2014). The definition of a smallholder farmer in South Africa is highly contested in both political and academic terms (Chikazunga & Paradza, 2012). Classifications range from subsistence farmers to small-scale commercial farmers. Furthermore, the terms ‘smallholder farmer’, ‘emerging farmer’ and ‘black farmer’ are being used synonymously (Chikazunga & Paradza, 2012). In addition, currently the ‘emerging farmers’ are receiving a lot of attention from the policy makers targeted at graduating them into commercial production following a trajectory modelled on white commercial farmers. Yet, little is known about this group of farmers. In South Africa, there are an estimated 240,000 black farmers with a commercial focus, and between 2 and 4 million farmers producing food primarily to meet their domestic consumption needs (Greenberg, 2010). This research focuses on the first group addressing them from now on as small-scale farmers or emerging farmers.

The position of small-scale farmers in the corporate value chains has received a lot of attention in the last decade mainly from development agencies referring to “pro-poor value chains” (van den Berg, 2004), which became a basis for a policy approach. Accordingly, there are several criteria useful in assessing the extent to which a particular value chain is pro-poor. These include low levels of investment required to enter the chain. Secondly, low levels of knowledge needed and low levels technology use. Thirdly, pro-poor value chains do not usually require high risk taking. This set of dimensions is valuable in assessing the growth potential and opportunities for upgrading within the chain for the small-scale farmers as well as the risks they face by being integrated. Thus, the next section discusses the issue of upgrading within a value chain in the specific policy context of South Africa.

An increasing number of countries in the Sub-Saharan Africa implement
policies aiming at linking small-scale farmers to the private sector through various value chain engagements in hopes of ensuring job creation and economic opportunities. These partnerships are characterized by a strong focus on productivity gains and market access as means of generating income. Thus, they offer a narrow space for more inclusive and sustainable forms of market integration (Ros-Tonen et al., 2014). According to Bolwig at al. (2010: 173), "Many contemporary development policy prescriptions place emphasis on the potential for closer integration of poor people or areas with global markets. But the prospects for poverty reduction depend in great measure on the nature of the broader economic processes that, according to how they are configured, can either exacerbate or alleviate poverty, and also on the forms of local economic growth that impact on the lives of those stuck in long-term poverty or threatened with impoverishment." Therefore, the question whether value chain collaborations have the potential to addresses the structural constraints present in South Africa is open to debate.

2.3.1 The ‘graduation’ trajectory

In South Africa integration of the small-scale farmers into corporate value chains has been a joint effort from both the government and the private sector with a common agenda to create a class of commercial small-scale farmers that is self-sustainable and does not require constant financial support for survival (Greenberg, 2013). However, policies in place do not seem to accommodate diverse types of farmers focusing primarily on supporting the evolutionary trajectory from subsistence to commercial farming seeing viability in terms of economic returns (Cousins & Scoones, 2010). Therefore, the government’s focus trying to accommodate all small-scale farmers is not realized and contradictions in policy remain due to the evidence from the ground showing a narrow support system focused on upgrading within the value chain through production intensification. The ‘graduation’ thus, can be understood as a way of upgrading within a given value chain with the goal of reaching the ‘ideal’ commercial farmer model represented in South Africa by the white farmers. Therefore, as shown in Figure 1, both the government and the private sector recognize a need for support at the initial stage of the process. The process of graduation from subsistence to commercial farming has been supported in many cases by different actors such as: the government, financial institutions, academic institutions, organized agriculture, and cooperatives. In the South African context there has been a strong tendency to focus on the ‘emergent farmer’ category, which can be placed along the continuum between subsistent and commercial farmers (see Figure 1) and has received a relatively large amount of support.
Consequently, the trajectory presented in Figure 1 illustrates the dominant approach adopted widely in South Africa by a variety of institutions, such as departments of agricultural research and extension aiming at achieving modernisation of agriculture through the graduation process (Cousins & Scoones, 2010). Nevertheless, a key challenge in South Africa can be seen in embracing a new approach that goes beyond the ideas of viability based on economic returns (Cousins & Scoones, 2010). Furthermore, a more pluralistic, holistic and integrated approach acknowledging the diversity of farmers and their orientations is required in order to support different pathways of small-scale farmers in value chain integration going beyond the graduation rationale.

However, often integration of small-scale farmers into corporate value chains can be characterised by a strong profit driven agenda. Sectors such as sugar, poultry, cotton, tobacco and forestry have a long history of integrating small-scale farmers into value chains without governmental pressure, however recently the arena opened up for delivery of small-scale production of fresh fruit and vegetables to supermarkets (Greenberg, 2013). This can be seen as a consequence of a gradual expansion of supermarkets into rural areas and the black economic empowerment programme (BEE) (Greenberg, 2013). Nevertheless, the narrative of small-scale farmer integration into corporate value chains leading to a positive impact on their livelihoods has been challenged on a twofold basis. First, the structural constraints faced by small-scale farmers in the integration process. Second, referring to adverse incorporation (Hickey & du Toit 2007; Van der Ploeg, 2010). The sections below explain both rationales in more detail. Nevertheless, it is important to note that the two debates on value chain integration have a contrasting view on agency and farmer orientations in regard to autonomy and self-management of resources.
2.3.2 Constraints to value chain integration

Structural constraints faced by small-scale farmers in value chain integration can be divided into three general categories. Firstly, challenges regarding the availability and accessibility of the resources and competencies which are needed to deliver the products (Van Tilburg et al., 2012). Secondly, the manner in which the small-scale farmers need to be organized to meet the quantities and qualities their partners or consumers demand can pose a significant challenge (Van Tilburg et al., 2012). Lastly, issues arise regarding limited access to market information and working capital to manage their operations successfully (van Tilburg et al., 2012). Therefore, in order to improve small-scale farmers’ integration in the value chain and facilitate their entry they require enhanced access to assets, information, services and remunerative markets (Delgado, 1999).

Furthermore, especially producing for high-value commodity markets calls for means of production such as land, water, on-farm and off-farm infrastructure, labour force and capital (Baloyi, 2010). In turn, poor access to these means of production constrains the small-scale farmers in terms of securing the benefits from the high-value commodity markets. This is manifested mainly through the perpetual failure of small-scale farmers to research the quantity and quality standards required to supply the global value chains. According to Baloyi (2010), the participation of small-scale farmers in high-value markets is also constrained as a result of limited access to comprehensive agricultural support. Additionally, in South Africa the direct linkages between small-scale farmers and fresh produce markets, supermarkets and agro-processors are relatively limited and characterized by spot market relations. Thus, Baloyi (2010) concludes that the participation of small-scale farmers in high-value markets can only improve if they are ensured access to comprehensive agricultural support services that would address their constraints along the value chain. The specific context of the agricultural policy environment in South Africa will be elaborated on in Chapter 4.
2.3.3 Risks of adverse incorporation

On the other hand, the notion of adverse incorporation “captures the ways in which localised livelihood strategies are enabled and constrained by economic, social and political relations over both time and space, in that they operate over lengthy periods and within cycles, and at multiple spatial levels, from local to global. These relations are driven by inequalities of power” (Hicke & du Toit, 2007: 4). In the context of small-scale farmers’ integration into corporate value chains this concept indicates that even if farmers manage to get a foothold in the value chains they are unlikely to benefit from these arrangements due to skewed power relations against producers in the consumer-driven chains (Greenberg, 2013). Thus, when analysing the issue of their integration from an inclusive development perspective the above critiques should be taken under consideration.

Additionally, research from South Africa conducted in four poor neighbourhoods in the Western Cape shows that chronic poverty is not a product of globalisation and agro-food restructuring, however these processes are helping to change its character, making it harsher and desperate (Du Toit, 2004). Thus, poverty tends to limit forms of agency that are available to people reducing them to a dependent status in the complex and unequal power relations in the food production systems. Accordingly, addressing chronic poverty should start with tackling these power relations focusing on empowerment and differentiation rather than departing from the perspective of inclusion and integration (Du Toit, 2004).

Similarly, according to Van der Ploeg (2010) nowadays farmers from both the North and the South are facing the same consequences of the globalised and liberalised food markets governed by a limited number of food empires including: deprivation, insecurity and poverty. As a result, farmers tend to actively distance themselves from the upstream markets in the struggle for autonomy and decision space in engagements with the private sector. One of the coping mechanisms that farmers adopt is partial integration into markets (Van der Ploeg, 2010). However, patterns of these relationships vary; the partial integration argument tends to be neglected by the graduation rationale advocating full integration of small-scale farmers into the value chain. Whereas evidence shows that partial integration may be the preferred and most agency-enabling way for small-scale farmers to participate in the markets (Van der Ploeg, 2010).

2.4 Support for small-scale farmers through value chain collaboration

The problems explained above have their reflection in the institutional support system in place. Over the years many countries in Africa have realized the
importance of effective extension services in agriculture\textsuperscript{1} and developed such, with a goal of diffusing improved technologies and sustainable farm management practices in order to meet the increasing demand for food from the growing world population (Umali-Deininger, 1997). Furthermore, several countries including South Africa are undergoing a transformation of their extension services characterized by a strong involvement of the for-profit and non-profit private sector. The first issue that arises in this case is the responsibility for funding, which in turn influences the nature of the disseminated knowledge as well as the structure of the services (Umali-Deininger, 1997). On one hand it bears risks associated with commodification of knowledge. On the other hand, however, charging farmers a minimal sum for the extension services may support their rights as information consumers (Umali-Deininger, 1997). Therefore, the nature of the knowledge transfer facilitated through value chain collaboration is one of the central issues when it comes to forms of support for small-scale farmers.

Nevertheless participation of small-scale farmers in high-value commodity chains and ensuring equitable distribution of rents in the chain can only be met under several conditions. Numerous studies have argued that multi-stakeholder engagement has the potential to create inclusive value chain collaborations (Dentonia, Hospes & Ross, 2012). Thus, in this study value chain collaboration is understood as the public-private partnership between the government and the public sector aimed at facilitating small-scale farmer’s integration in the macadamia nut value chain. Bitzer (2012) argues that, since intersectoral partnerships reflect the dynamic nature of today’s relations between the government, the private sector and civil society they have the potential to bring innovation in terms of overcoming the challenges of globalization. The distinction that has to be made is between the instruments such as the extension services and the mode of delivery being the partnership model. Thus, in South Africa the instruments have not undergone change, but the mode of delivery seems to be transformed. However, from a governance perspective these partnerships have a positive effect on value-chain relations, because they involve multiple stakeholders in the decision processes, from a development perspective they are rather ambiguous (Bitzer, 2012). This can be explained due to the fact that these partnerships are mostly defined by a neoliberal agenda translated in the case of South Africa into privatization of development (Bitzer, 2012). Accordingly, they often reflect the increased importance of businesses and represent the decreased significance of governments through a managerial approach to solving sustainability challenges especially in food production (Bitzer, 2012). Thus, the responsibility of the state is accomplished through the PPPs. In this

\textsuperscript{1} Agricultural extension is the main tool of the government agencies many developing countries to bring scientific research and new knowledge to agricultural practices through education of farmers.
model the state develops and manages the logistics and the framework for the creation of markets and infrastructure while the private sector is responsible for developing the product and its distribution (Louw & Kapuya, 2012).

Therefore the question whether small-scale farmers can be truly supported through value chain collaborations remains open to debate. Similarly, there is limited evidence on how partnerships such as value chain collaborations deal with structural constraints faced by small-scale farmers (Helmsing, Bitzer, van der Linden, & van Wijk, 2009). This is especially surprising given the potential of these partnerships to bring structural change. Furthermore, the authors argue “that progress can be made by focusing on what is common in partnership initiatives, namely the construction of institutions that enable smallholders to participate in value chains” (Helmsing, Bitzer, van der Linden, & van Wijk, 2009: 17). Hence, it is crucial that the support received by the small-scale farmers through these partnerships is attuned with the constraints they are facing both on institutional and individual level.

### 2.5 Inclusive value chain integration

Returning to the idea of inclusive development discussed at the beginning of this chapter and attempting to apply it to value chain integration of small-scale farmers several dimensions come to the fore. As previously mentioned many development policies emphasise the need for integrating poor people or areas into the global markets in order to reduce poverty. However, global value chain analysis often overlooks this dimension and lacks insights into the impacts of value chain integration on poverty. Several studies have thereby advocated for revising the value chain model with a stronger focus on pro-poor implications (Bolwig et al., 2010; Nadvi, 2004, du Toit, 2004).

Even though, as previously mentioned inclusive value chain integration is difficult to operationalize, Helmsing and Vellema (2011) offer a valuable starting point by drawing attention to two aspects: “The terms of participation in the process of inclusion and the degree of alignment of value chain logics with the capacities of actors and institutions embedded in territorial business systems” (Helmsing and Vellema, 2011; 15). Thus, in this research the focus is placed on equal terms of participation in the value chain. They are used in order to assess the inclusiveness of the integration process. Another dimension, which is important to investigate, is the access to opportunities in the value chain. According to Ali and Son (2007: 12) inclusive development can be reached by inclusive growth which is “growth that not only creates new economic opportunities, but also one that ensures equal access to the opportunities created for all segments of society, particularly for the poor”. The third dimension of the inclusive value chain integration specific to the context of South Africa is the issue of rearranging existing power relations. It translates into transforming the dual economic system into a more equitable arrangement. Lastly, the question of aspirations of local people should be addressed and how these are
taken into account in the value chain (Fritz et al, 2009). Thus, these four dimensions will guide the analysis in this study.

Therefore, the inclusive development approach is used in this research in two ways. Firstly, it serves as a framework for the analysis placing the focus on people-centered benefits of value chain integration with emphasis on human agency and governance. Secondly, it allows investigating conditions and determinants of inclusive development in value chain integration along the dimensions discussed in this section.

2.6 Conceptual scheme

The conceptual scheme presented in Figure 2 highlights the main concepts of this research and aims at explaining their relationships. It has been constructed based on the Global Value Chain (GVC) analysis framework (Gereffi, 2014). However, it has been extended based on Bolwig’s et al. (2010) contribution to the value chain analysis. Thus, the main focus is placed on the value chain integration process.

Figure 2. Conceptual scheme
2.7 Conclusion
This chapter aimed at explaining the theoretical framework of this research that is grounded in the inclusive development approach, debates on agency and institutional support in the context of small-scale agricultural production in South Africa. The next chapter discusses the methodology adopted in order to answer the main research question.

Chapter 3. Research design and methodology
In this chapter the research design and methods are discussed. First, the central objective of the study is presented as well as the main research question and sub-questions guiding this research. Secondly, the operationalization of main concepts is explained based on an operationalization table found in Appendix 1. Thirdly, research techniques are elaborated on with a discussion on the units of analysis and sampling methods. The chapter concludes with a reflection on the ethical and practical considerations.

A mixed-methods research approach is adopted in this study. Therefore, in order to answer the research questions, I used a combination of qualitative and quantitative methods to increase triangulation of information in turn strengthening the validity of the research and reducing weaknesses of each method (Gorard & Taylor 2004). Moreover, the research design can be classified as convergent design due to the fact that data collection involved collecting both quantitative and qualitative data concurrently (Creswell & Clark, 2007). However, I prioritized the two types of gathered information equally, in the analysis I used the qualitative data to explain the quantitative figures. Thus, the nature of this thesis is explanatory (Creswell & Clark, 2007).

3.1 Research questions
The objective of this study is to understand the position of the macadamia nut small-scale farmers in the value chain and the ways in which their integration into this value chain is supported by both the state and the private sector. Furthermore, by taking an inclusive development perspective it aims at investigating the terms of engagement of the small-scale farmers in the value chain. This is carried out from the viewpoint of a small-scale macadamia nut farmer offering a bottom-up value chain analysis. Thus, ultimately this research aims at answering the main research question, which reads as follows:

*How is the value chain collaboration between the government and the private sector stimulating inclusive value chain integration of small-scale macadamia nut farmers in the Vhembe district of South Africa?*

The sub-questions outlined below serve as the basis for answering the main research
question:

1. Which stakeholders are present in the process of value chain integration of small-scale farmers and how is the value chain organized in terms of flows of product, money and knowledge?
2. What are the main risks and opportunities of value chain integration for small-scale farmers relating to the production process?
3. What is the macadamia nut small-scale farmer’s profile in terms of their capabilities and constraints?
4. In what ways are the farmers supported through the value chain collaboration model and who is benefiting from the support?

3.2 Operationalization

The operationalization table (see Appendix 1) translates the main concepts present in the research questions into clear and measurable indicators. Therefore, it was developed based on the main notions in the conceptual scheme, discussed in the previous chapter. It is categorized accordingly to the concepts of a) inclusive value chain integration and b) small-scale farmers. Furthermore, the operationalization table offers insight into the research methods used in order to answer all of the sub-questions.

3.3 Research techniques

3.3.1 Data collection

The data was gathered in the three local municipalities in the Vhembe district of the Limpopo province in South Africa (see Chapter 4) over a period of 9 weeks from 19th of January 2015 till 20th of March 2015. The primary method of data collection was in-depth, semi-structured interviews with macadamia nut small-scale farmers (for exact numbers see Table 1). Additionally, in-depth, open interviews were conducted with other value chain stakeholders. Moreover, throughout the entire duration of the fieldwork observations were made and recorded especially at the initial and the concluding stages of the process. Also, participatory methods involving focus group discussions were incorporated. Lastly, a team of researchers conducted a baseline survey with 141 diverse farmers in the region including 32 macadamia nut farmers, which was the first stage of the larger long-term research project. This data was used in order to paint a general picture of the smallholder farmers in the area addressing topics such as: assets, land ownership, association membership and food security.

Table 1 on the next page gives an overview of the conducted interviews. In total, 41 interviews were held. 20 small-scale macadamia nut farmers were interviewed on an individual basis and two focus groups with a total of 10 participants were held. Additionally, 19 interviews with 18 other value chain stakeholders were conducted. In most cases the interviews were individual, however
in a few instances there were other people present, with a varying degree of interaction. The interviews with farmers lasted from 9 minutes to 64 minutes. The focus groups lasted 75 and 107 minutes. During the first focus group participatory value chain mapping and constraints ranking were carried out in order to complement the data gathered through observations and semi-structured interviews. The second focus group involved beneficiaries of a project funded by the European Union (EU) and one of the processing plants in 2010 and revolved around this subject. Thus, it was aimed at disusing the support structures and understanding what kind of farmers benefit from them. The key informant interviews varied significantly from 30 min to 2 hours and were rather informal discussions.

<table>
<thead>
<tr>
<th>Type of actor</th>
<th>Type of interview</th>
<th>Number of interviews</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small-scale macadamia nut farmer</td>
<td>Semi-structured in-depth</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Focus group discussion</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Private sector</td>
<td>Open, informal, in-depth</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Government</td>
<td>Open, informal, in-depth</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Civil Society</td>
<td>Open, informal, in-depth</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>41</td>
<td>48</td>
</tr>
</tbody>
</table>

Table 1. Overview of interviews

In many cases after or before the interview the respondent offered a farm tour. Those served as basis for multiple observations regarding macadamia nut production. The observations were also valuable in understanding the setting of the farms and the constraints relating to it, since most of them very isolated and hard to reach. Furthermore, observations included a visit to macadamia nut processing plant, Farmers Information Day, Pricing Day at one of the processing pants, visit to a local Packhouse, study group for macadamia nut emerging farmers and study group for macadamia nut commercial farmers. The baseline survey was carried out in a span of two weeks in February 2015 by a team of researchers with a help of local translators. As previously mentioned the advantages of using different research methods can be seen in ensuring the reliability and validity of the research (Creswell & Clark, 2007).
Data was collected with a help of a research assistant or a translator during some of the interviews with small-scale farmers and the focus groups. Interview guide was redefined and developed after initial informal interviews with various farmers and other value chain stakeholders. Moreover, interview data was cross-referenced in between interviewees across institutional divides. After the interviews and attended events or gatherings, the researcher composed field notes recording impressions as well as the general setting.

Research materials in the case of the interviews, included a voice recorder and a notebook. During the focus groups the participants and the researcher used additional materials such as A3 and A4 sheets of paper and colour markers. Photographs of the setting were taken by the research assistant (see Picture 1). The open interviews with different stakeholders were not recorded, however, notes were taken during interviews and then transcribed on the same day. The semi-structured interviews as well as the focus group discussions were recorded and transcribed usually within a few days. None of the respondents declined to be recorded. The survey answers were registered using a paper questionnaire and then inserted into SPSS by research assistants. The observations were noted in a notebook and then transcribed. Additionally, I took photographs in order to complement the observations made during farm visits and events mentioned above.

Picture 1. Focus group discussion with farmers in the agricultural department in Makwarela.
3.3.2 Sampling

The sampling method used in order to reach macadamia nut small-scale farmers was mostly snowball sampling (Bryman, 2012). Furthermore, I used convenience sampling (Bryman, 2012) by relying on lists of small-scale farmers provided by the Department of Agriculture, Forestry and Fisheries (DAFF), lists from the macadamia nut processing plants in the region as well as South African Subtropical Growers’ Association (Subtrop) members’ lists. Nevertheless, in order to ensure internal validity of my research I aimed at also including respondents who were not a part of these networks. I have identified the other actors through observations and initial informal interviews with various farmers relying on purposive sampling method as well as prior connections of my supervisor. The samples for the interviews, focus groups and baseline study did not overlap with a few exceptions in order to ensure generalizability of the data (Bryman, 2012).

3.3.3 Unit of analysis

The overarching unit of analysis of this research is the macadamia nut value chain and specifically the terms of engagement of the small-scale macadamia nut farmers in it. Nevertheless, in order to investigate them this study has two different levels of analysis, the macadamia nut small-scale farmers and the institutional support structures. Thus, in accordance with my research question macadamia nut small-scale farmers serve as the first unit of data collection and the second one are the other value chain stakeholders. This allows for conclusions to be drawn about the macadamia nut small-scale farmers in the Vhembe district of Limpopo province in South Africa.

3.3.4 Data analysis

Qualitative data gathered from the semi-structured interviews as well as the open interviews was coded manually. The analysis was done using a deductive approach. The data analysis proceeded as follows. Open coding was done to create codes and labels based on the operationalization scheme. The quantitative data was analysed with the help of SPSS software by running descriptive statistics. Triangulation of finding was done in order to create a profile of a small-scale macadamia nut farmer using data from the semi-structured interviews to explain the figures from the baseline survey. The methodological choice to create a profile of the small-scale farmer rather than developing a typology stems from the fact that during the data collection I realized that the interviewed farmers are a rather homogenous group. Nevertheless, they vary along certain dimensions a typology would have been rather far fetched.

3.4 Ethical and practical Considerations

During this research, I critically evaluated my role as a researcher considering that
my knowledge, experiences and socialization are reflected in my work. Furthermore, the main ethical considerations relate to the participation of farmers in my research due to the power imbalances between the researcher and the farmers given the educational level and income. Nevertheless, two important principles were certainly followed during the entire research process. First being, do no harm. Second principle being, informed consent. Therefore, I always informed my respondents about the purpose of this research in order to avoid false expectations. Relating to the above I always ensured anonymity and confidentiality of my respondents. Additionally, I tried to interfere with the daily activities of the farmers as little as possible.

Nevertheless, the ethical concerns of this research are fairly limited. This is because the data gathered does not touch upon sensitive matters. Furthermore, since the aim of the study was to explore the relationships between different actors in the macadamia nut value chain, the interviewed representatives of different institutions spoke on the behalf of their organizations. Their names will be kept confidential, however the names of the organizations will be revealed. In addition to that, the thesis will be shared with the representatives of various institutions such as DAFF, Subtrop as well as main actors from the private sector. This will be done due to the nature of the research, which aims at informing these institutions about the concerns of small-scale macadamia nut farmers and ultimately fostering a more inclusive value chain integration. Additionally, since this research is a part of a larger four-year project at the University of Amsterdam, hopefully it will be used to inform fellow researchers in setting up learning platforms for multiple stakeholders operating in the research location.

On the other hand, it will be difficult to share the findings directly with the small-scale macadamia nut farmers due to technological constraints. Hopefully they will be able to benefit from it indirectly in a long term. Lastly, I have to reflect upon the fact that due to the set up of the research, I had to rely on the respondents to a vast extent in terms of logistics. Since their farms were isolated and I did not have a car we often agreed on a different meeting point. Thus, the interview was interfering with their daily farm or work activities to a certain extent. Nevertheless, I always conducted the interviews at a time and date convenient to the respondents.

The issue of reliability of this research should be firstly addressed in terms of the sample composition. The farmers that have been interviewed were mostly sampled through internal lists from various organizations such as mentioned above. Thus, the small-scale farmers that were not a part of the institutional environment were barely included in the sample. Thus, resulting in a bias of the sample consisting mostly of engaged farmers. However, there were a few farmers without any connection to the institutions that I managed to reach through snowball sampling. Nevertheless, it has to be noted that the group of small-scale macadamia farmers in the Vhembe district is fairly small and well-organized, so most of them have been engaged with the public or private sector due to the nature of the crop production.
Secondly, the reliability of the data could be hindered by the fact that I mostly worked without a translator conveying the interviews in English. This however, has been a conscious choice made after realizing on one hand that most of the small-scale farmers have completed tertiary education and are fluent in English and on the other realizing the amount of data that gets lost by working with a translator. Nevertheless, some of the interviews and both of the focus groups have been conducted with a help of a translator acting more as a research assistant. In the case of the interviews with the representatives of various institutions language was not an issue. Therefore, I believe that in general the choice to work mainly without a translator did not significantly compromise the gathered data.

Further the methods and the scope of this research bear a number of limitations. Studying only one tree crop does not allow me to draw general conclusions about high-value commodity chains. Also, the time span of this research (9 weeks) limited me in the amount of collected data due to difficulties in reaching the farmers. Thirdly, selecting three neighbouring municipalities in the same area may not be representative of the broader South African context.
Chapter 4. Research background

This chapter sets a background for this research and aims at familiarizing the reader with some of the key issues that shaped the dual agricultural economy of South Africa. This is done by firstly, presenting a brief profile of the country. Secondly, a detailed account of the agricultural policy environment is offered focusing on the land reform programme and on the small-scale farmers positioning them in a broader context of the agrarian transition in South Africa. Lastly, the research location in discussed at length in order to enable a full understanding of the context within which this research was conducted.

4.1 Country profile

South Africa has a population of 53 million people, with 79 per cent of the population being black African\(^2\), 8.9 per cent coloured, 8.9 per cent white, 2.5 per cent Indian or Asian and 0.5 per cent has another ethnicity. Accordingly, it is a multi-ethnic society characterized by large variety of cultures, languages and religions. The South African constitution recognizes 11 official languages with English, Afrikaans and Bantu languages spoken most commonly. In 1994 a long period of minority rule was ended and one of the most remarkable political transitions of the last century begun with the African National Congress (ANC) setting the political agenda. World Bank ranks South Africa as an upper-middle income country with the second largest economy in Africa after Nigeria and 34\(^{th}\) largest in the world (World Bank, 2014). Along with Brazil, Russia, India and China South Africa is a member of the BRICS emerging world economic powerhouses. Compared to its neighbours in Sub- Saharan Africa it has a relatively high GDP per capita of 12,700 USD (2014 est. CIA The World Factbook).

Nevertheless, South Africa has one of the most skewed income distributions in the world with a Gini coefficient estimated at 0.68 in 2008 (World Bank, 2014). However, pro-poor public spending has contributed to improvements of social development indicators in areas prioritized by the Millennium Development Goals such as primary education, gender, several health indicators as well as environmental sustainability (World Bank, 2014). Furthermore, social welfare programmes currently reach around 16 million people at 3.5 percent of GDP (World Bank, 2014). The country’s scores also improved in terms of the United Nations Development Program’s Human Development Index 2014 (UNPD 2013) estimated at 0.658. Life expectancy at birth is 62 years, while the adult literately rate is nearly 90 percent (World Bank, 2014). Nevertheless, several key development challenges still remain.

\(^2\) The black African population of South Africa consists mostly of indigenous people of the region and is culturally and linguistically heterogeneous. The white population of South Africa consists of descendants of Dutch, German, French and English settlers and is divided into the Afrikaners speaking Afrikaans and the English-speaking minority.
Poverty in South Africa is more prevalent in rural areas especially in the former ‘homelands’ or Bantustans, which were the territories set aside for the black African population under the policy of apartheid. As a part of the establishment of the Bantustans the black African population was subjected to a programme of forced mass relocation. People living in the Bantustans had few local employment opportunities and were mostly reliant on subsidies from the government. Hence till today, South Africa can be characterized as having a dual economic system perpetuating inequality and exclusion (World Bank, 2014). Between 40 and 50 per cent of South African’s population has been classified as living in poverty (World Bank, 2014). Whereas South Africa is self-sufficient in food production 14 million people are vulnerable to food insecurity, while 43 per cent of households experience food poverty (National Treasury, 2003).

Moreover, the post-apartheid South Africa struggles with youth unemployment, shortage of housing, large immigration from neighbouring countries (Zimbabwe, Burundi, DRC, Rwanda, Eritrea, Ethiopia and Somalia), high crime rates and violence and the second highest rate of HIV/AIDS in the world. Furthermore, since the end of March 2015 South Africa is facing a wave of anti-immigration violence started in Durban and Johannesburg with a rising death toll and thousands of foreigners fleeing the country.

### 4.2 Agricultural economy of South Africa

The importance of agriculture in South Africa should not be underestimated. The rural population of South Africa is 19.8 million people constituting 37 percent of the total country population (FAOSTAT, 2010). In 2014 the estimated labour force in agriculture was 1.09 million, 70.5 percent being male. The total country area is estimated at 121,909 thousand hectares with agricultural areas constituting 96 374 thousand hectares (FAOSTATS, 2011). Nevertheless, these figures are related to large-scale commercial farming enterprises and little is known about the influence of black small-scale farmers in terms of job creation, acreage and contribution to GDP.

In 2012, the top three agricultural commodities in terms of quantity produced were sugar cane, maize and milk. The top three crops produced between 2001 and 2011 were wheat, fresh vegetables and rice. The top three agricultural export commodities in terms of quantity were maize, oranges and wine, whereas the import commodities were wheat, cake of soybeans and palm oil (FAOSTAT, 2013). Therefore, agriculture is one of the main sources of county’s revenue. Importantly however, when the apartheid ended, 90 percent of the South African land was owned by the white population. Since 1994 only 8 percent of the land has been transferred to the black population. Today, it has been estimated that there are 40 000 commercial farming units (owned by both white and black population) operating
on 82 million hectares, producing 99 percent of formally marketed agricultural products and only 1.3 million farming households farming 14 million hectares.

4.2.1 The land reform programme

Land ownership in South Africa has been a source of conflict for decades. The history of dispossession, forced removals and racially biased use of land resources has shaped a complicated agricultural economy. Thus, historical inequality has informed much of the debate concerning the post-apartheid agrarian policies. The main problem faced by the state is how to reform a rather functional white-owned commercial agricultural sector and at the same time foster the development of African agriculture addressing the problem of vast underinvestment.

Therefore, it is useful to take the land reform programme in South Africa as a starting point in assessing the approach of the government towards developing black agriculture. The land reform programme was designed in order to change who uses the land, how they use it, and who benefits from the use (McCusker, 2004). In 1994, after the end of apartheid several specific steps were taken by the state in order to reverse the skewed land distribution and in turn facilitate rural development. The White Paper on South African Land Policy (1997) addressed principles of the land reform programme and areas in need of transformation. These included: (1) the injustices of racially based land dispossession, (2) the inequitable distribution of land ownership, (3) the need for security of tenure for all, (4) the need for sustainable use of land, (5) the need for rapid release of land for development, (6) the need to record and register all rights in property and (7) the need to administer public lands in an effective manner (Department of Land Affairs, 1997).

Land reform was divided into three programmes: restitution, redistribution, and land tenure. Redistribution aimed at providing a legal framework for individuals to purchase white farms following the willing-buyer, willing-seller model (McCusker, 2004). This model has its roots in the Market Led Agrarian Reform (MLAR) advocated by the World Bank (Fraser, 2006) and has shaped South African land reform. Importantly, it has been criticized on a twofold basis. First, the market-led approach is based on a voluntary model with market-related compensation for former land and thus favours a few black buyers who have the means to bring in capital. Secondly, in terms of land restitution the post-support programmes helping the new buyers to farm the land they acquired are very limited. Therefore, the land reform in general has been criticized as not being radical enough with the government acting cautious not to destroy the remaining commercial farming sector.

In August 2011, another crucial act has been released by the Minister of Rural Development and Land Reform, namely the Green Paper on Land Reform, aiming at addressing 15 years of policy implementation. Yet again, it has been criticized for
failing to answer key policy questions facing land reform in South Africa and not offering any serious proposals for public debate on the alternatives (du Toit, Cousins, Hall, Kleinbooi, Paradza & Ukpabi, 2011: 1). Nevertheless, since 1994 the land reform programme has been given priority over agriculture. Today, it is faced with two challenges: speeding up the land transfer and support for the productive use of transferred land (Greenberg, 2010). Yet, again the policies are aimed at changing the ownership of land instead of adopting a comprehensive focus on structural transformation of the agricultural production system. In terms of addressing the first challenge, the target of transferring 30 percent of white-owned agricultural land to black farmers has been deferred from 2014 till 2025 due to insufficient resources dedicated towards the programme (Greenberg, 2010). On the other hand, production support has transferred from white to black farmers as well as, to a certain degree, from large-scale to small-scale agriculture (Greenberg, 2010). In 2003 the Comprehensive Agricultural Support Programme (CASP) has been launched in order to support black small-scale farmers to take part in the markets.

However, the government interventions into the structure of the value chains have not challenged the existing power dynamics. Which explains why the agricultural economy of South Africa still presents a strongly divided picture with small-scale farmers mostly concentrated in the former ‘homelands’ characterized by poor land productivity and a lack of infrastructure. The resource base for ‘homelands’ by design has been inferior and traditional authorities governed the land. Till today, the land is in the hands of bureaucratic chiefly elites whereas about 31 percent of the South African population lives in the former ‘homelands’ (Cousins, 2008). Therefore, the contribution of the land reform programme to reducing inequality and addressing structural nature of poverty has been very limited due to the fact that the issue of disposition has not been tackled (Cousins, 2007). The map below presents the location of the former ‘homelands’ in the years of apartheid in South Africa. The research location is placed within the Venda ‘homeland’, the specifics of which will be discussed in Section 4.3.
4.2.2 The policy environment for small-scale farmers

Agricultural policies in post-apartheid South Africa need to address numerous complex issues, since agriculture is the backbone of the rural economy simultaneously shaping social relations and landscapes. As discussed in the previous section, historically agriculture in South Africa is based on the dispossession of the African population and their social, economic and political marginalization built on production methods depleting the soil, water and natural vegetation (Greenberg, 2010). Today, South Africa’s formal agriculture is characterized by high industrialization led by capital-intensive production (Chikazunga, 2012). Furthermore, as already mentioned, the concept of dual economy is important in this context. South Africa can be characterized as having an economy comparable to the industrialized nations on the one hand, and one comparable to the developing counties, on the other.

Therefore, the government increasingly places importance on the role of smallholder farmers as drivers of rural poverty alleviation and employment creation. Smallholders are experiencing pressure to actively participate in the formal agricultural sector by integrating their production into existing value chains (Chikazunga & Paradza, 2012). Nevertheless, they face numerous constraints hindering their upgrading into the ranks of commercial farmers. As discussed in Chapter 2, these include problems of larger agricultural structure as well as local
issues such as land tenure ambiguity, labour relations and a lack of resources. In addressing them the government has opted for a strategy focused primarily on skills transfer. Thus, it can be seen as a more gradual transition characterized by an increased involvement of the private sector. Therefore, the responsibility of the state is increasingly realized through public-private partnerships (PPPs), where the state develops and manages the institutional framework for the creation of markets and investments in infrastructure and research while the private sector is responsible for product development and distribution (Louw & Kapuya, 2012). The most illustrative example includes the Strategic Partnerships program, through which the government encouraged joint ventures between large-scale commercial farming enterprises and local communities reclaiming land rights through the state land reform programmes (Oxfam, 2014). Nevertheless, challenges involving putting together actors of different sizes, skills and commercial expertise remain.

Furthermore, the overall financial support from the government for the emerging farmers has been insufficient. The main instrument of the Department of Agriculture, Forestry and Fisheries (DAFF) namely the public extension service has been in steady decline over the last 15 to 20 years (Greenberg, 2012). The support for small-scale farmers has dropped and the services for commercial farmers have been privatized. The Comprehensive Rural Development Programme (CRDP) has been the latest attempt of the government to join agricultural support, land reform and rural development without increasing financial inputs in the rural areas (Greenberg, 2012). Up until today, the main strategy of the government concerning small-scale farmers has been a focus on reproducing the commercial agriculture model. This in turn bears the risks of class formation and differentiation of the rural society. Therefore, the main challenge should be to come up with an alternative strategy that transforms the commercial agriculture and agro-industry instead of trying to insert smallholders into large-scale, industrial, export-oriented models (Greenberg, 2012). At the moment, the policies designed to support small-scale agriculture can only result in marginally widening the producer base.

Therefore, a central challenge for South Africa today can be defined as embracing a new approach to the land reform by understanding viability and success in more pluralistic terms (Cousins & Scoones, 2010). Today, the dominant approach is strongly characterized by farm management techniques used in large-scale commercial farming based on notions of efficiency leading to a highly dualistic agrarian structure. Therefore, the policy debate in South Africa should shift from an economic perspective supported largely by powerful interests towards a diverse discussion inclusive of small-scale farming-based livelihoods (Cousins & Scoones, 2010).
4.3 Research location

The research was conducted in the former Venda ‘homeland’ in three local municipalities: Makhado, Thulamela and Mutale in the Vhembe district in the Limpopo province of South Africa. The Limpopo province consists of five districts: Capricorn, Mopani, Sekhukhune, Vhembe and Waterberg. The Vhembe district is composed of four municipalities (Makhado, Thulamela, Mutale, Musina) (Map 3) and is located in the northeast of the country bordering with Botswana and Zimbabwe in the North.
In the Vhembe district, Makhado municipality has the most significant concentration of commercial production of nuts and subtropical fruit in the whole of Vhembe district, centred around Levubu (Aliber et al., 2013). Furthermore, this area is a site of seven communal land restitution claims collectively comprising of more than 100 large commercial farms (Aliber et al., 2013). The agricultural system is divided into large-scale white-owned commercial farming and black small-scale farming. 70 percent of the 174 830 hectares of arable land is white-owned and used for commercial purposes. The small-scale macadamia nut farms are spread around the district and often remotely located resulting in poor access to roads and other infrastructure.

Limpopo has a population of about 5.7 million people, 62,000 of whom are working in the agricultural sector (Jacobs, Punt, Ramathoka & Masekoameng, 2009). The vast majority, 97 percent of Limpopo’s population is black African, rest being white, coloured and Indian. Limpopo province is one of the country’s prime agricultural regions renowned for the production of livestock, fruits, vegetables, cereals and tea (Baloyi, 2010). The sub-tropical climate in Limpopo is ideal for the commercial farming of mango, avocado, litchi, banana and macadamia nuts (Fraser, 2006). Thus, agriculture is the key economic sector in the province contributing to the economic growth and providing employment in the local communities. Consequently, agriculture is a source of economic support in terms of poverty reduction for the majority of people living in the rural areas (Baloyi, 2010). Nevertheless, Limpopo is South Africa’s poorest province with almost 78 percent of the population living below the national poverty line and persisting income inequalities especially in the agricultural sector (Jacobs, Punt, Ramathoka & Masekoameng, 2009).

Limpopo province has a history of isolation from the main urban and industrial centres of South Africa due to its northernmost location (McCusker, 2004). Both the labour force and livelihood strategies of the rural population have been characterised by outmigration of males and a strong prevalence of female-centred households (McCusker, 2004). Further, compared to the rest of the nation, people in this area rely more on subsistence production for their livelihoods. While income is generated mainly from the sale of crops, remittances, non-farm activities and pensions also play a vital role (Baber, 1996). However, labour migration and dependence on remittances leave rural households vulnerable to many risks. The province had a net out-migration of -62,927 from 2006-2011 (SSA, 2013).

The lower eastern region of Limpopo has some of the most productive agricultural land characterised by pockets of commercial farmland largely operated by the white population or corporations. Nevertheless, amongst small-scale farmers land use in Limpopo has dominantly an informal nature with a persisting low
proportion of farmers holding formal land deeds (McCusker, 2004). In Limpopo, there are two areas in which sub-tropical fruits can be grown, one being around Tzaneen and the second being the research location around Levubu. The subtropical fruits grown in the area are mangoes, litchis, and avocados. Most of the above are high-value tree crops due to their commercial potential. In addition, macadamia nuts have been classified as a subtropical tree crop and in the past decade received relatively strong attention from the government stressing the importance of the crop in terms of rural poverty reduction. Thus, the next chapter will elaborate in detail on the nature of the crop, the production process as well as present a value chain analysis.

4.4 Conclusion

In conclusion, this chapter aimed at presenting an overview of the agricultural policy environment in South Africa in order to understand the position of the small-scale farmers as a part of a larger governmental strategy. Furthermore, the discussed dual economy of South Africa is strongly vivid in the research location due to concentration of commercial production in the area as well as a rather energetic group of small-scale farmers growing subtropical tree crops. The next chapter zooms in on the macadamia nuts as one of the high-value commodity tree crops focused on by the government in the process of creating a class of black farmers.
Chapter 5. The macadamia nuts business

Macadamia nuts are amongst four most widely grown subtropical tree crops in South Africa next to mangoes, litchis and avocados. Between the four tree crops, macadamia nuts cover 44 percent of land used followed by avocado (34 percent). As previously mentioned, this chapter aims at painting a picture of the macadamia nut industry followed by an exploration of the crop and the production process from planting to packaging. Lastly, a value chain analysis is presented with a focus on small-scale farmers and their value chain integration.

5.1 The macadamia nut industry

As illustrated in Figure 3, the macadamia nut sector is rapidly growing experiencing an average of 20 percent increase in prices of nuts per kg every following year. On the whole the sector experienced tripled growth between the years 2000 and 2012. The predicted weighted average price for year 2015 is 16.17 USD per kilogram of kernel\(^3\) (Green Farms, 2015). The South African government has no regulations in place for the prices of macadamia nuts. In 2012 the gross value of macadamia nut industry was 32 million Rand (2.7 million USD) with 35 000 tons produced (DAFF, 2014).

\(^3\) Kernel refers to the soft edible part of the nut contained within the shell. Nut in shell refers to whole nut before cracking, but after outer husks have been removed (see Box 1).
Histortically macadamia nuts are indigenous to Australia, which is the largest producer of macadamia kernels in the world followed by South Africa, Kenya and the USA (see Figure 4), however recently South Africa overtook Australia in exported volumes of nuts in shell (see Figure 5). Nevertheless, macadamias are a niche product constituting only 1 percent of the global tree nut production (Green Farms, 2015). Importantly, macadamia trees take five to twelve years to reach their full production capacity. However, a good tree can produce nuts for 40 years. Thus, given the vast number of young trees yet to come into full capacity, the industry presents a large growth potential. The relatively long period before the trees reach productivity combined with high levels of inputs required in the first few years of production mean that the capital investment to return ration is very high. Therefore, the barriers to enter the ranks of macadamia nut farmers are immense, as it will be explained in the next chapters.
In South Africa macadamia nuts are primarily grown in tree provinces: Limpopo, Mpumalanga and KwaZulu Natal due to their subtropical climate. As mentioned in the previous chapter, this research zoomed in on three municipalities: Makhado, Thulamela and Mutale in the Vhembe district of the Limpopo province. The Limpopo province is the second largest macadamia nuts production area after Mpumalanga. The industry is almost entirely export-based with over 95 percent of the produce shipped overseas. The main importers of macadamia nuts are the USA, Europe (mainly the Netherlands) and Asia (mainly Hong Kong, China). The national market is dominated by large supermarket buyers such as Spar, Pick ‘n Pay and Woolworths. Locally macadamias are marketed through fresh produce markets with limited volumes, in 2012 reaching only 3.5 tons (DAFF, 2014) and directly to
processing companies. Nevertheless, the quality and quantity standards for the nuts required by the processing plants are often only met by commercial farmers with decades of farming experience. Therefore, it can be concluded that macadamia nut kernels are primarily a high-value export commodity.

5.2 Production process

The primary product of the macadamia nut tree is the kernel sold as snacks and chocolate-covered sweets. The nuts are usually fried either oil-roasted or dry roasted. Furthermore, macadamia nuts are sold as culinary ingredients mostly for ice cream manufactures and the baking industry. Additionally, oil can be extracted for the gastronomy and cosmetic industries. In the cosmetic industry the oil is used especially in soaps, sunscreens and shampoos. The husks are an excellent source of compost for fertilizers due to their high nutritious value. Whereas, the shells can be used as biofuel, however at the moment they are only used as such at the macadamia nut-processing plants. Moreover, the shells are used in plastic manufacturing and as a substitute for sand in the sandblasting process. The remaining press cake can be used for animal feed. The nuts are a valuable source of minerals such as calcium, iron, magnesium, manganese and zinc as well as monounsaturated fats and thus bear a large potential in contributing to food security. However, they are hardly consumed in South African households due to the novelty of the crop as well as a difficult cracking process.

After harvesting the product needs preliminary processing by the farmers through the procedure of de-husking, which involves taking the nut out of its outer shell. Later, the husks are often utilized by the farmers as fertilizer and used to pave pathways on farms. Additionally they are applied for mulching to avoid water seepage and breaking up of the soil texture under direct sunlight. The process of de-husking is tedious and time consuming when done manually and in most cases small-scale farmers do not own de-husking machines. Furthermore, farmers are advised to perform a preliminary sorting of nuts in shell before taking them to the processors by throwing the nuts into the water. The ones that float are usually of superior quality. This process is important, due to the fact that the processors require certain quality based on sample. It is usually done manually by the small-scale farmers. Lastly, farmers dry the nuts in shell, hence reducing their moisture content. However, this can only be done to a certain extent without cracking the nuts. Therefore, the value that is added by the farmers is very limited.
Picture 2. Macadamia nut tree bearing fruits (Beaumont cultivar).

Picture 3. Macadamia nut farm (mature trees in full production).
Most of the cultivars of macadamia nuts drop from the trees when they mature and then they are collected from the ground between February and July. It requires the area between the trees to be cleared of grass, leaves and branches as illustrated on Picture 2. As also shown on Picture 2 the spacing between trees is of crucial importance in order to let the trees develop freely as well as allowing the tractors to pass between them. The nuts must be collected regularly at least once a week in order for them not to lose quality by damage from mold and small animals. Thus, the harvesting season is the most active time during the year for the farmers. When the nuts arrive at the processing plant first they are weighed in shells. Secondly, the nuts are taken to the drying rooms on conveyor belts and from there they move on to the cracking machine. The machine cracks the nuts and sorts them accordingly to different sizes. Afterwards, the nuts still need manual sorting in order to remove the damaged nuts. Later, the nuts are washed, and dried again to reduce their moisture content down to 1.5 per cent. Lastly, the nuts are vacuumed packed. Importantly, the processing plants accept or reject the nuts from the farmers based on a 1kg sample, which they use in order to determine the quality of the nuts. Therefore, it can be stated that the processing plants are the primary value-adding actors in the macadamia nut value chain.

The most important on-farm practices in order to ensure quality and quantity of nuts are fertilization, irrigation and diseases and pests control. As previously mentioned new trees start producing nuts only after a couple of years depending on the care they have received. Most crucial is the supply of water since water stress often limits the growth of the tree as well as hampers the quality of nuts. The critical time being from July to November. On the other hand, fertilizers should not be applied to young trees, but they must first start growing and reach the age of minimum one year. Importantly, fertilizers can only be applied along with water otherwise they are likely to damage the tree. In terms of pests the most dangerous insect for macadamia nuts is the stinkbug that should be controlled chemically. Furthermore, as illustrated on Picture 2, macadamia nut trees need a lot of space to grow and should be planted with a distance of at least 3.5 meters apart within the row with 7 meters between rows. This has implications for small-scale farmers in terms of land size.

Thus, it can be concluded that macadamia nuts are very demanding in terms of care needed. Also, it is a risky crop to grow due to the multiplicity of factors that can impede their growth and quality of nuts. Furthermore, the advantages of scale and mechanization are significant and thus, difficult to overcome for small-scale farmers. Therefore, the question whether it is possible to be successful on a small plot using family labour is open to debate. As presented in Picture 3 macadamia management requires inputs such as fertilizers, labour and water intensively during certain seasons. Additionally, large-scale farms have the
advantage in terms of controlling the problem of insects, while the small-scale farmers typically do not have large isolated plots that can be sprayed easily. Importantly, starting a macadamia nut production requires substantial initial capital, relatively large farm as well as resources to invest in the farm during the early period of a lack of nuts and thus, a lack of returns. The aim of this section was to explain the production techniques in relations to factor inputs and value added in the process. The next section takes a relational approach and analyses the macadamia nut value chain.

![Macadamia nut management chart.](image)

**5.3 Macadamia nut value chain analysis**

In order to answer the question which stakeholders are involved in the process of integrating small-scale farmers in the macadamia nut value chain a value chain analysis is presented in this section referring to the entire system of production, processing and marketing of the macadamia nuts from inception to the finished product. It serves the purpose of discerning general characteristics, however it has to be noted that there is a lot of diversity amongst individual producers especially in terms of small-scale farmers. The macadamia nut value chain is also visually mapped in order to display the relationships between different stakeholders in terms of the flows of product, money, information and services (see Figure 3). Furthermore, based on the mapping of the macadamia nut value chain the stakeholders have been identified and divided into value chain actors and value chain supporters.

Value chain actors are defined here as individuals or organizations producing the product, buying or selling. Here the primary focus is placed on the small-scale
farmers and their relations with the processing plants. Value chain supporters are defined as other individuals and institutions surrounding the chain actors by providing services to them (Laven, 2010). Here the focus is placed on the government extension services as well as the private service providers (Subtrop) in terms of technical assistance and knowledge transfer. In addition, the analysis shows three different market channels: local, national and global. Again, the main emphasis is placed on the small-scale farmer in order to gain a bottom-up perspective. Thus, the value chain is less detailed closer to the consumer end. As previously mentioned, this analysis has been conducted based on primary data gathered through in-depth open interviews with different value chain actors as well as value chain supporters. Additionally, it includes the value chain perspective of the small-scale farmer by incorporating results from a focus group discussion during which the farmers conducted a participatory value chain mapping (see Picture 5 and 6).

5.3.1 The macadamia nut value chain

The chain actors are the farmers (small-scale and commercial), traders (local and global), processors (primary and secondary), retailers (supermarkets and fresh produce markets) and consumers (local, national and global). In most cases the small-scale farmers as well as the commercial farmers deliver their products directly to the primary processing plants where the macadamia nuts get dried, cracked, packaged and then marketed mostly overseas. In the case of small-scale farmers failing to achieve the quality and quantity standards required by the processing plants they try to sell their nuts in shell at local fresh produce markets usually through the intermediary help of a local trader. This, however, is a rare occurrence, because of low demand for macadamia nuts from local consumers as well as the fact that they should be dried and processed before they can be consumed. The value chain figure includes a distinction between small-scale and commercial farmers due to the previously discussed dual economy of agriculture in South Africa. In the case of macadamia nuts however, the commercial farmers are often also the owners of the primary processing plants and thus engage with the small-scale farmers to a certain degree offering them advice, information and occasionally in some cases providing financial services to the communal farms.

There are four main primary processing plants in the research area: Green Farms Nut Company, Royal Macadamia, Macridge and Zetmac. The latter however, does not work with small-scale farmers. Green Farms Nut Company’s joint venture with Suncoast Gold Macadamia together form Green & Gold Macadamias, the largest single marketer of macadamia nut products in the world. The nuts get dried, cracked, sorted, packaged and marketed by these companies. Different business models characterize all four companies, however, most of them are family owned and run businesses. Importantly, they have different strategies and approaches to
buying from small-scale farmers. Currently Royal Macadamia does not buy from individual small-scale farmers, but has some relations with the communal farm owners. On the other hand Macridge is a new processor in the region and their strategy primarily involves lowering the quality standards for small-scale farmers. As mentioned above, Green Farms is well-established in the area and builds on its reputation and long-term relationship with buyers. Furthermore, only recently they opened up for buying low quantities from small-scale farmers. However, they have long-standing relations with some small-scale farmers due to their involvement in a development project jointly funded with the EU in 2010. The picture below captures their presence in the region. All of them, however, prefer to buy nuts in bulk as one of the processors mentioned, “We want to introduce a pulling system for smallholders and pay them on samples and not actual price” (Interview 7). Therefore, small-scale farmers could potentially benefit from being organized in a cooperative structure in order to sell their nuts jointly. However, this is not the case at the moment.

Thus, the processing plants differ in regard to their engagement with small-scale farmers. As presented in Figure 3 the primary processors provide information for both small-scale and commercial farmers on the macadamia nut market, new developments as well as offer technical support. The notion of the capacity of the processors to support the small-scale farmers differs to a significant degree between the processors and depends mostly on their willingness. Nevertheless, some of
them have realized that in order to secure the nuts from small-scale farmers they need to start reaching out to them. This has come as a new development, which can be partly explained by the competition for the nut in shell market. One of the more actively involved processors mentioned, “In order to ensure the sustainability of the factory we cannot only get nuts from the white farmers, but they have to come from a subsector of the society” (Interview 8). Nevertheless, the two others were less involved with the small-scale farmers, as evident in this quote: “I want to work with communities, but the board is resistant due to a history of failure” (Interview 5). While another processor does not engage with the small-scale farmers beyond the value chain either: “In our eyes our major contribution is that we are giving them [emerging farmers] a place to take their nuts” (Interview 7).

Importantly, macadamia nuts are a very dynamic product and thus, many secondary value chains could be included in the analysis such as the macadamia oil value chain. However, since it is not the focus of this research it will not be discussed in great detail. Nevertheless, the possibilities for small-scale farmers who do not reach the quality standards for kernels could possibly be integrated into alternative value chains such as oil or biofuel that do not require superior product. As one of the three main processors explained, “We have 80 producers and 30 of them are emerging farmers. Our goal is to provide service to each and every farmer. We take inferior nuts for biofuel. We focus on accommodating Venda local farmers by lowering the quality standards” (Interview 7).

Remarkably, as presented in Figure 3 the macadamia nut value chain could possibly be facing new developments through opening a new market in China for nuts in shell allowing the farmers to directly export instead of relying on the primary processing plants. As one of the processors mentioned, “Nut in shell market is a threat to our organization [China]. The kernel market is the way to go in terms of long-term strategy. It is based on trust and good relationships. It is more safe than the nut in shell market” (Interview 8). Furthermore, the alleged occurrence of Chinese traders moving around the research location in search for macadamia nuts offering artificially high prices paying upfront regardless the quality and quantity seemed to pose a significant threat to the processors operating in this area. However, another cracking company represented stated, “Chinese market is nut in shell so the quality is lower, but the standards will rise in time soon. Quality will be demanded soon” (Interview 5). Interestingly enough, representatives from the processing companies interviewed have motioned it as a reason for securing the nuts from small-scale farmers, “If we don’t try to help [the emerging farmers] we will lose their crop to the Chinese” (Interview 6). However, there is no evidence.
suggesting the presence of the Chinese traders in the Vhembe district⁴, the discourse of uncertainty is widely spoken pointing to the possibility of change as vivid in the quote: “They have a big demand and a lot of money” (Interview 2).

5.3.2 The value chain collaboration model

The value chain collaboration in this case can be seen as the joint effort of the state and the private sector to create a class of black commercial farmers. Here it is important to discuss the contribution of the value chain supporters in the value chain integration of small-scale farmers. The chain supporters can be divided into the state, the private sector and other actors. The government is mainly present through providing technical advice to small-scale farmers in the form of extension services through the Department of Agriculture, Forestry and Fisheries (DAFF). Nevertheless, the extension services are not very effective in supporting small-scale farmers. As a representative from the government indicated, “Farmers still have an old mind-set that the extension officers will come to the farms at random, but now the strategy is that the farmer has to contact the extension officer if he needs something first. They have to show initiative. There is no focus on visits as such. The farmers still see support in terms of receiving something and not just advice. Our duty is to advise and not give handouts. Government must find you doing something” (Interview 10). This quote represents the act of shifting the responsibilities of the state towards the farmers by using the idea of a lack of initiative to disguise complex problems.

Parallel to it there are two schemes in place delivering inputs to small-scale farmers: Letsema focused on production inputs and CASP (see page 30) focused on on-farm infrastructure. Subsequently, the Fruit Production Massification programme addressing six commodities such as litchi, banana, mango, macadamia, avocado and citrus supports farmers, who aspire to produce commercially, prioritizing the ones who are already farming one hectare of the same crop. In summary, the government’s strategy is strongly emphasizing the need for the small-scale farmers to become commercial farmers through production intensification. As one of the representatives from the Agricultural Research Council (ARC) confirmed, “The government is subsidising trees in nurseries for the smallholders to get them cheaper under the condition that they plant a hectare of one crop. This way they are encouraging mass production” (Interview 1). Furthermore, the government has changed its support strategy to focus on a single commodity at a time, which resembles the private extension services: “The commodity approach was adopted in 2000. It is working very well. The extension officers enjoy it because they can develop interest in one crop and do more research about it. It stimulates interest and runs

⁴ During the fieldwork I have tried to learn more about the Chinese market from both the farmers and the processors, but discovered that it was nearly impossible to find any Chinese buyers or concrete experiences of farmers having sold to them.
smoothly” (Interview 10). The commodity approach seems to be working well for the extension officers, but in the case of farmers there are many that are not only specializing in one crop as it is explained in the next Chapter.

A key supporting private sector actor is the South African Subtropical Grower’s Association (Subtrop) managing the affairs of the South African Macadamia Growers’ Association (SAMAC), which comprises of growers, processors and marketers. Subtrop provides support to farmers also in the form of extension services, study groups and research. Interestingly, the study groups are divided into groups for small-scale and commercial farmers differing largely in information transferred. In organizing the study groups for the small-scale farmers Subtrop builds on the contacts of the government and the relationships between extension officers and farmers. The study groups are organized on a quarterly basis per commodity addressing production issues at the particular time of the year. The organization and logistics of the study groups lay within the responsibilities of the government extension officers. There is a nominal annual membership fee charged by Subtrop that the farmer has to cover (for emerging farmers 150 Rand [12 USD] per year). Furthermore, Subtrops also organizes joint commodity meetings once a year under the umbrella of Farmers Day, where small-scale farmers and commercial farmers meet. The set up of this meeting has a top-down nature with the commercial farmers presenting their farming techniques. In addition the ARC is a science institution conducting research and supporting innovation in the agricultural sector with a regional center in Levubu, Vhembe district, but their direct support for farmers is limited.

Subtrop seems to have a clear vision about how to support the small-scale farmers: “The main problems with the emerging farmers in the past have been: a lack of knowledge of farming at the time of restitution and bad management of the farms. It is not the case anymore. We organize study groups along with the extension officers in Venda region approaching necessities per time of the year” (Interview 3). Secondly, they see the public extension service as inadequate to assist the farmers: “Also when it comes to government support they give the fertilizers at the wrong time of the year. There is bad management of resources” (Interview 3). While the government has a different view on why the farmers are not receiving the support: “The reason some of the farmer do not benefit from the support is because they don’t want to work with the extension officers and thus are left out. Some don’t want to work with them, because they think it is a waste of time and these are the ones that complain that they are not getting enough support” (Interview 10). Therefore, the government does not seem to take responsibility for approaching the farmers and monitoring their progress. This can also be explained due to the fact that their farms are very isolated with poor road access and many of the extension officers are not required by the department to show initiative in this regard.
However, both Subtrop and the government appear to share the same opinion about the notion of ownership: “Last year when I started working with them [emerging farmers] they were waiting for entitlements [production inputs]. They were complaining that there are not getting enough stuff [production inputs]. The ones that have remained are the committed ones. They have to feel ownership over their farm and inputs to value the outputs” (Interview 3). While, the representative of the government concludes: “Before I leave this department I want to take this mind-set away that the farmers rely on the department. My biggest challenge is a farmer who is not self-reliant”. (Interview 10). It seems that the joint efforts of the government and the private sector strongly move away from providing other inputs than knowledge and instead attempt to create an sense of ownership amongst the farmers. Nevertheless, the scepticism about the current joint extension service approach of the government and the private sector has been criticized by one of the processors: “You have to understand their [emerging farmers’] limitations. They barely have the diesel to bring their nuts and getting to a study group is ridiculous” (Interview 7).

Importantly as presented in Figure 3 the government and Subtrop cooperate with the goal of creating a class of black commercial farmers. The DAFF started working with Subtrop about a decade ago as one of the representatives in the Department of Agriculture stated, “We are working with Subtrop since 2005/2006. It is a joint effort. We signed a memorandum of understanding for the study groups” (Interview 10). In November 2014 a regulation was sanctioned that all growers, nurseries, processors, exporters and importers are now required by law to register with SAMAC. This development is likely to impact the support and bears potential for change. Furthermore, a statutory levy has been set at 23 cents for every kilogram of nut in shell at 1.5 percent of moisture passing through the processor. This levy will be deducted by processors and consolidators of nut in shell. Moreover, every grower directly exporting directly nut in shell will be required to pay levies directly to SAMAC. Interestingly, the government requires 20 percent of the levy to be spent on ‘transformation’. “Transformation is broadly defined as getting black people involved in the macadamia industry. SAMAC will constitute a transformation committee to agree on transformation projects. The current thinking is that SAMAC will part-fund projects that industry role players are currently involved in or would like to start” (SAMAC, 2014). The statutory levy has got a highly unfavorable response from all of the processing plants, which intent to demand more from SAMAC. As one of the processors stated, “We will put pressure on SAMAC to support emerging farmers. We want SAMAC to bring in a guy to consult emerging farmers” (Interview 7). The same processor also concluded, “Putting money into emerging farms is a mistake because the cant manages themselves. Instead focus on training. If you don’t have the money you will not innovate. I wouldn’t put any money in any African project” (Interview 7).
This opinion proves the shared stance of the private sector that the way to support the small-scale farmers should be concentrated around skills transfer.

5.3.3 Risks and opportunities of value chain integration

In order to understand how are the small-scale farmers integrated into the macadamia nut value chain it is useful to discuss the risks and opportunities of value chain integration. Central here becomes the issue of quality and quantity requirements strictly linked to the production process explained above. As one of the respondents from ARC mentioned, “The main issue for the smallholder is reaching the quality. They cannot penetrate the market with their products. They lack information” (Interview 1). Nevertheless, the question arising here is what kind of information do they still lack? Furthermore, as one of the main processors outlined, “The processing fee is charged to the farmers. The money they receive for their nuts depends on the quality of the kernel. 80 per cent of the work in the factory is manual labour. Thus, the processing fee increases with defect.” (Interview 2). Therefore, farmers face a significant risk if their nuts do not meet certain quality criteria. This risk is perpetuated by the fact that if the processors reject their nuts based on sample due to inferior quality and/or low quantity they hardly have an alternative market to sell their nuts. This is because the processing plants supply the national market and the demand at the fresh produce market (local markets) is very low.

Secondly, as previously mentioned the decision to plant macadamia nuts is essentially enterprising, since the trees don’t produce nuts for the first few years and if they don’t receive proper care the nut-less period extends. This particular risk has been captured by one of the processors stating, “They worry about what they will eat today and not in 4-5 years. A strategy should be designed to get over the first poverty hump. A 4 year bridging period to care about the trees without returns is too long. Government is not doing enough. Incentives are not there if the returns are not immediate” (Interview 9). Similarly, a land issue activist mentioned, “People shifted from cabbage to macadamia. Farms are producing something they don’t eat using resources to export” (Interview 4). Nevertheless, as explained in the next chapter the small-scale macadamia farmers are not food insecure and their motivation to start planning macadamia nuts is not motivated by subsistence reasons.

When it comes to opportunities, the financial returns on macadamia nuts seem to be very promising. As mentioned by one of the processors, “Macadamias are the highest paid commodity in South Africa” (Interview 7). The discourse of returns with low inputs is prevalent amongst the processors who attempt to prove it with such calculations, “An average smallholder has 1,000 trees on 3 hectares; 320 trees per hectare mean 4 tons per hectare. The price is 40 Rand per kilogram of nut in shell. So 40 Rand times 4,000 kilograms gives 160,000 Rand per hectare [13,250 USD]” (Interview 8). Nevertheless, the small-scale farmers do not reach the quantity foreseen in these calculations, neither the quality required to achieve such high returns per kilogram. Thus, the possible returns tend to be exaggerated and, these
figures seem unlikely. Furthermore, as explained by a representative from the ARC, “*For macadamia there is a low demand on the local market, but high demand on the export market. Smallholders know they can get a lot of money if they export. Also if they export the government will support them more*” (Interview 1). His statement seems to be confirming the government’s strategy to push for exports and value chain integration of small-scale farmers with very limited consideration of the risks embedded in this approach.

**Box 2. Pricing day at Green Farms Nut Company**

During the annual pricing day at one of the processing plants, namely Green Farms the offer for year 2015 has been presented to the invited farmers. Most of the commercial farmers have been supplying to Green Farms for decades and have strong relationships with them based on trust. However, the small-scale farmers invited to the meeting were possibly there for the first time. Nevertheless, the company owners emphasized: “*We go the extra mile*” and spoke the discourse of loyalty, transparency and commitment: It is important to understand the conditions under which they engage with the farmers as well as the offer itself in order to fully grasp the flows of money and product in the value chain.

**Offer for year 2015 (estimated gross kernel selling price GKSP, style per kg):**

<table>
<thead>
<tr>
<th>Style</th>
<th>Price (USD)</th>
<th>Price (R)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Style 0</td>
<td>18.40</td>
<td>209.76</td>
<td>large wholes</td>
</tr>
<tr>
<td>Style 1</td>
<td>17.40</td>
<td>198.36</td>
<td>medium wholes</td>
</tr>
<tr>
<td>Style 2</td>
<td>16.15</td>
<td>184.11</td>
<td>small wholes</td>
</tr>
<tr>
<td>Style 4</td>
<td>15.35</td>
<td>174.99</td>
<td>halves</td>
</tr>
<tr>
<td>Style 5,6,7</td>
<td>14.75</td>
<td>168.15</td>
<td>chips and pieces</td>
</tr>
<tr>
<td>Darks</td>
<td>11.25</td>
<td>128.25</td>
<td></td>
</tr>
</tbody>
</table>

Weighted average price is 16.17$ per kg. This year individuals will be paid by style based on an anticipated exchange rate of 11.40R = 1.00$.
It is a 17 % increase in price compared to last year.

**The following cost will be deducted from the kernel income:**

- Processing fee: 5.60 R/kg dry nut in shell
- Marketing fee: 4% of GKSP
- Logistics: 4.03 R/kg kernel
- SAMAC levy: 0.23 R/kg dry nut in shell

* In the line with International Food Safety requirements a sample test from every supplier will be taken for Maximum Residue Levels (highest level of a pesticide residue that is legally tolerated in or on food or feed when pesticides are applied correctly). The cost of the test is borne by the grower and amounts to an estimated cost of 1,269.00R (Vat included).

**Terms of payment:**

- 80% paid within 30 days from deliver estimated on sample results
- 10% paid on 30th November 2015
- 10% paid on 29th February 2016
- Profit share (agterskot) paid around March 2016 made out of 40% price increase and 60% exchange rate.

(Source: Green Farms Nut Co. 2015 season’s kernel price offer).
5.4 Conclusion

In conclusion, the value chain dynamics at the moment of research have been captured in Figure 3 below. The blue boxes signify the value chain collaboration, while the red boxes signify the value chain under study. The green circle shows where the research focus is placed, namely on the terms of engagement between the black small-scale farmers and the primary processors. The other actors in white boxes are shown in order to get a full understanding of the larger framework within which the value chain operates. Hence, the distinction between local, national and global as well as nut in shell and kernel value chains. The farm laborers and the processing plant employees have not been included in this figure due to the fact that they have not been studied. Moreover, this chapter presents a broad picture of the value chain and the farmer-specific analysis follows in the next chapter.

It is important to note however, that it offers merely a snapshot of the macadamia nut value chain at a given time and that the relationships between different stakeholders are far more complex and ever changing as illustrated by the interview data. Therefore, it is paramount to look beyond the value chain analysis in order to understand the subtleties underlying all of the outlined relations. Consequently, the value chain analysis should be seen as more of a tool helping to understand the complex social reality in which it is embedded. That is why the next chapter focuses on the macadamia nut small-scale farmer in an attempt to present a comprehensive profile.
Figure 6. Macadamia nut value chains: local, national and global.
Chapter 6. Profile of a small-scale macadamia nut farmer in Vhembe

This chapter presents a picture of a macadamia nut small-scale farmer by creating a farmer’s profile drawing on similarities and differences of the respondents. First, demographics of the farmers are explained briefly in the relation to other farmers. Secondly, a more comprehensive characterization is offered by discussing production strategies in relation to the value chain. This is done with an emphasis on farmers’ capabilities and constraints that they face.

This chapter is based on 20 in-depth semi-structured individual interviews with small-scale macadamia farmers. Moreover, it is complemented with data gathered through two focus groups with a total of 10 farmers during which a participatory constraints ranking was conducted. Additionally, it has been extended by figures gathered through the baseline study with a range of 141 black farmers including 32 macadamia nut farmers. The qualitative data is used in this chapter to explain the figures from the baseline survey and expand on the given answers. Thus, it allows for drawing general conclusions about the macadamia farmers in the particular research area and possibly in South Africa.

Picture 9. Full-time farmer (right) with the research assistant (left) at his macadamia nut orchard.
6.1 Meeting the farmers

There are 86 black macadamia nut farmers registered with the DAFF in the Vhembe district. This study zoomed in on 30 of them in three local municipalities. I surveyed an additional 32 through the means of the baseline study. Nevertheless, some of the farmers incorporated in the sample may not have been registered with the department of agriculture. By placing the macadamia nut growers in a broader context of the other three subtropical tree crops (mango, litchi and avocado) it becomes apparent that they constitute a minority: 61 percent of the surveyed farmers grew avocados (n=86, N=141), followed by 56 percent growing mangoes (n=79) and 47 percent litchis (n=66), while as previously mentioned only 23 percent grew macadamia nuts (n=32). Moreover, 84 percent of the macadamia nut farmers also produced avocados (n=27) and litchis (n=27) and 53 percent grew mangoes (n=17).

![Part-time farmer with his harvested macadamia nuts.](image)

59 percent of the macadamia nut farmers were male (n=19, N=32), but 70 percent of them reported that the household head is male (n=21, N=30) of an average age of 62 years (SD=13). Thus, it is evident that men approaching the pensioner age of 65 years mostly grow macadamia nuts. Moreover, data from the
baseline survey confirms that the vast majority of farmers completed secondary or tertiary education (n=27, N=29). When it comes to occupation 37 percent of the household heads were pensioners (n=11, N=30), followed by 23 percent being self-employed full time farmers (n=7) and 13 percent being employed civil servants (n=4). Therefore, based on their occupation the farmers can be divided into: (1) pensioners full-time farmers, (2) full-time farmers, (3) part-time farmers, and (4) full-time professionals.

![Pie chart showing employment of the household head](image)

Figure 7. Employment of the head of the household.

Importantly, the average land size of the macadamia nut farmers was 6.83 hectares (SD=4.47), which is slightly bigger than the average land size of all the surveyed farmers being 6.21 hectares (SD=10.84). Also, the data confirms that a vast majority, 89 percent of the macadamia nut farmers have permission to occupy land (PTO) (n=25, N=28) and only 4 percent have title deeds (n=1). Interestingly, half of the macadamia nut farmers reported that they do not use all the land they own (n=16, N=32). This was explained mainly due to the lack of inputs (n=3, N=10).

The estimated agricultural income in the past 12 months amongst the macadamia nut farmers was 18 185 Rand [1 497 USD] (SD=21 666.84), which is significantly lower than the average estimated agricultural income amongst all the farmers being 27,192 Rand [2,238 USD] (SD=78 902.12). However, in the case of macadamia nut farmers the biggest source of household income seems to be agriculture (n=11, N=31) followed by wage labour (n=8), grants (n=6), pensions (n=5) and remittances (n=1).

Additionally, I interviewed 12 farmers in Makhado municipality, 5 in Mutale municipality and 3 in Thulamela municipality (see Map 3). The first focus group with 6 participants included farmers from Thulamela municipality and the
second one included 4 farmers from the region of Mashau in Makhado municipality. Out of 30 farmers interviewed a vast majority were men (27 male, 3 female). All of the respondents acquired the land and started farming between the years 1970 and 2012, with the majority beginning in the 1990s. However, due to the novelty of the macadamia crop they mostly started planting it between year 2000 and 2015. As explained by one of the farmers, “You know macadamia nuts is a new crop all together, because before all those farmers where dealing with avos [avocados], guavas and a little bit of mango” (Interview 12).

Nevertheless, there were a few early adopters who began with macadamia nut production long before the states support begun. The early adopters of the crop became familiar with it mostly through contact with white commercial farmers and their personal relationships with them (not necessarily labour based relations). The rest of the farmers got to know about macadamia nuts due to the government’s focus on the crop, which started around year 2000 as explained in this quote: “Actually the department of agriculture motivated people who are to start farming to go for macadamia and I also wanted to join them because they were giving us some support” (Interview 22). In 2002 many of the farmers received support in terms of subsidized seedlings (50 percent) in order to overcome the initial investment required.

The interviews showed that a majority of the macadamia nut farmers is aspiring to follow the trajectory of the commercial farmers (see page 12). They have been encouraged by the department extension officers as well in some cases exposure to the commercial white farmers farming macadamias in the Levubu region for decades. As one farmer explained, “Long way back maybe in year 2000 we traveled with my cousin to Levubu. [...] so when I looked at the view I was very much pleased to see how they were planted [macadamia trees]. And when I see the fruits [nuts] I got under a tree and checked. I even asked questions about these trees and they [commercial farmers] explained to me. They explained to me that this tree can make a lot of products like oils and the shells you can decorate the road with” (Interview 21).

Another farmer mentioned. “I retired and came back from Johannesburg and found out that there is nothing to do. The only thing to do was to make a farm. So I got a friend Paul Thomas, a commercial farmer. He is the one who advised me by that time. I also joined another commercial farmer who was farming with oranges. So I tried oranges but I was told oranges will give me some problem so then I focused on macadamia with the encouragement from Paul Thomas. So that is why I could progress because I got advice from him” (Interview 24).

Importantly, two of the female interviewees have inherited their macadamia farms after the death of their husbands and felt the responsibility to take care of the farm as illustrated by the quote: “I became interested [in farming] because it is the
work of my husband and I cannot leave what he has started. Because he was using the money for it so it is better for me to carry on with that thing” (Interview 27).

Due to the nature of the crop production the farmers generally had the initial financial capital to invest in establishing and maintaining the farm for a period of several years up until the trees start to produce nuts. As explained, “The most crucial thing is finance, you know this business of farming it needs a lot of money. If you don’t have enough money it pushes you out of the system” (Interview 12). Therefore, as explained above most of them were part-time famers or weekend farmers with professional careers mainly in the public sector such as teachers, government officials, police officers, mechanics, school administrators and preachers. Consequently, generally they have completed secondary or tertiary education.

Most of them were men ranging from middle age to pensioner between 40 and 80 years old. Thus, they were investing in their farms predominantly from their salaries and grants. As mentioned, “Yes we are putting a lot from our own salary. You pay the workers, you buy machines to pump water, water pipes, in fact the irrigations system you must buy from your own pocket. While we acknowledge and appreciate what we get from the government you must also take your money to buy fertilizers, chemicals to spray the grass. Almost everything” (Interview 30). Another one stated, “Imagine I’m using my own efforts, my own little salary” (Interview 24).

Nevertheless, they all want farming to be their main income-generating activity, however usually it is not the case. Mostly, they are the heads of the household with often grown-up children married and out of the house. Interestingly, their children rarely showed interest in being involved in the farm and continuing the agricultural legacy as expressed by one of the farmers, “The one who is at home [the only son living at home] sometimes when you ask him to go and do something he can go but he is not that much interested” (Interview 20). Thus, they are usually singlehandedly managing their farms.

Furthermore, most of the farmers employ one or two permanent workers on their farm, however during harvest season they hire additional part-time laborers. In some cases the wife helps on the farm. They are passionate about farming and see their macadamia farms as a long-term investment, a retirement plan as mentioned, “Macadamia is a long time investment” (Interview 26). Thus, they can be characterized as having an entrepreneurial drive and a rather progressive outlook on farming. Interestingly, most of them had no prior knowledge of farming before they acquired the land as exemplified by the statement, “Actually, when I started to plant macadamia I was just interested in farming. I didn’t have any idea I was just interested in farming” (Interview 20).
Their motivation for starting the farm in many cases was to become self-reliant. Therefore, their orientation can be characterized as commercial. When asked for the reason to start farming one of the farmers answered, “You know when looking at the situation I wanted to be financially independent. If you work for yourself it is fast and easy to accumulate money and if you do that, but I know there are also so many problems behind being self employed, but if you stick to your goals you have to persevere” (Interview 12).

The qualitative data confirms that the small-scale macadamia farmers are a rather homogenous group with PTOs for their fields acquired from traditional authorities ranging from less than a hectare to 40 hectares. Important to note is that they do not own title deeds for the land, which has many implications such as the lack of possibilities for loans as mentioned by one of the farmers, “So that is why if you go to the bank and you say I can assure you this is my land they will ask you where is the deed. If you don’t have the deed and have a PTO they will not accept, because they know that at the end of the day they will have a problem” (Interview 14).

By having a closer look at the interviewees the definition of the smallholder farmer needs to be extended in the context of South Africa to all black farmers who hold PTOs. This is because the studied group cannot be seen as intrinsically smallholder farmers due to the following. Firstly, most of them do not rely on family labour. Secondly, they are not very skilled and have little farming experience. Additionally, they do not produce for subsistence purposes. Lastly, they are strongly supported by the state and in some cases by white commercial farmers. Nevertheless, they still face similar constraints to smallholder farmers. These are explained in the next section.

6.2 Small-scale farmers’ capabilities and constraints

As mentioned before, the macadamia nut small-scale farmers usually started their farm by planting a different crop. Often it has been the case that the small-scale farmers first acquired a couple of hectares and then expanded gradually. However, usually less than half of their farm is devoted to macadamia nut production. This is because of the scarcity of high quality seedlings as well as their price, which is relatively high at around 30 Rand per plant (2.5 USD). As illustrated by the quote, “Nurseries are not producing. They tell you to book. There at Levubu I booked 400 and it rained and when I went there they said you are number 45. I will wait until September this year. It is a great challenge” (Interview 26). Thus, often they are diversifying their production, which makes defining them as strictly macadamia nut farmers rather problematic. Additional crops they grow include mainly other subtropical tree crops such as mangoes, litchis and avocados, which they usually
started planting before the macadamia nuts. Some of the farmers however, also plant cash crops as well as maize for household consumption and quick cash.

Nevertheless, all farmers admit that macadamia nuts are the most important crop for them and almost all of them want to expand their fields and plant more macadamia nut trees. This is illustrated by the quote: “In 5-10 years time I can see a bigger farm, good trees and if possible if I can get enough funds I can extend this farm and add more trees, because I don’t think these trees are enough. We always tell ourselves that we want to be commercial farmers, big ones, because we don’t want to remain small-scale farmers for 5-10 years. I must grow bigger, extend the farm, add more trees.” (Interview 22). Also, many of them want to move away from the other crops they are growing and focus only on macadamia nut production. This is due to several reasons as one of the farmers mentioned, “Macadamia is more important because when I compare macadamia and avos [avocados], avos have a lot of problems like black spot and other diseases but with macadamias the problem is only the stinkbug, which is not a big problem” (Interview 24).

Usually, interviewed farmers reported having an average of between 300 and 600 trees planted on their orchards. The trees are often young and have not yet reached full production capacity. In the case of small-scale farmers it takes a lot longer for the tree to start producing nuts mainly due to the lack of water as exemplified in the quote: “Macadamia they take long. They take almost 7 years before you can harvest. Especially in a dry land like this. It will be 8 years maybe” (Interview 28). He adds: “They take long to bear fruits. We are cultivating in dry land. That is the reason why they take so long. We don’t have water. Look at what those plants at Maclands [commercial farm] look like. They have 2 years and now they are big, because they got water” (Interview 28).

Also, as mentioned before some farmers are not using all the land they own due to a lack of labour force, time constraints or shortage of resources. Mostly, they draw on hired labour, which tends to be very casual. Furthermore, their level of mechanization is quite low. They seldom own tractors, spraying equipment or other machinery. Nevertheless, they realize that the machinery is crucial while running a macadamia nut farm as shown by the quote: “If you don’t have modernized equipment you can’t make it, you won’t. It needs modernized equipment.” (Interview 18). Moreover, an irrigation system is usually not in place on the farm or is not functioning. The problem of water has been also identified during the focus group as the most pressing problem through the participatory constraints ranking.

Importantly, the quantitative data also verified that the farmers who did grow macadamia nuts produced rather low volumes or have not started producing nuts yet. As one of the farmers mentioned, “It is gold this thing. It has money. Although, I have not yet tested it. I can feel and I hear from others that this thing pays” (Interview 22). Only 53 percent of the farmers reported to have produced a certain volume of nuts last year (n=17, N=32). Out of the ones who have produced nuts last
year 94 percent have sold them (n=16, N=17). Assuming that one bakkie (pick-up truck) full of nuts equals 1 tone (1000kg) of nuts and fits 25 crates of nuts, one crate equals 40 kg of nuts. Taking this calculation as more or less accurate, on average the surveyed farmers estimated their production to be 2,245 kg of macadamia nuts last year (SD=3 592).

Most of the farmers who did sell their nuts in the last season supplied them to local fresh produce markets (n=5, N=23), followed by local villagers (n=3) and local company (n=3). Two of them reported to sell to buyers or traders (n=2) and one to a non-local company (n=1). Surprisingly, the main reason for choosing a buyer for the crops was identified as transport 35 percent (n=10, N=29), followed by high price 31 percent (n=9), cash payment 21 percent (n=6), no reason 10 percent (n=3) and use of agents 3 percent (n=1). On the contrary, the interviews have shown that one of the main reasons for choosing a buyer for the nuts was a good relationship with the processor based on the quality of the product as exemplified below: “R: I always go to Macrdige [processing plant]. This year I’m planning to go there as well. It is my customer. I: so do you have a good relationship with them? R: yes, because of the quality. I produce quality. And I know that this nut is not good and this one is good. I sort it before I supply” (Interview 26).

Nevertheless, many of the farmers were motivated by strictly financial incentives as well as terms of payment played a crucial role as illustrated by the quote: “There at Green Farms [processing plant] they cut the payment. There are too much cuts in the payment. They can’t give you the whole amount. They split it into 3 payments. At Macridge [other processing plant] it is only 2 payments or sometimes one” (Interview 26). Another farmer mentioned comparing the buyers, “I will still take them to Macridge. And I will also consult Green Farms. So I will decide after my talk with Macridge and Green Farms where I take the rest” (Interview 30). Thus, it seems that the bargaining position is with the farmer as long as he or she produces quality nuts.
Furthermore, 67 percent of the surveyed farmers would not consider growing macadamia nuts (n=73, N=109). The vast majority, 93 percent of farmers explained it due to not having enough land (n=39, N=42) and 7 percent were simply not interested (n=3). If they considered going into macadamia nut production 96 percent were motivated by profit (n=24, N=25) and a good market motivated 4 percent of the farmers (n=1). Thus, the motivation has been confirmed as mainly being profit-driven.

The interviews have shown that the main constraints the farmers are facing are the lack of financial and natural resources (land, water) as well as a lack of agricultural implements (machinery, herbicides and pesticides, fertilizers). Secondly, other issues arisen such as: labor, fires, theft, a lack of infrastructure (roads), price fluctuations and damage caused by animals. As one of the farmers stated, “It needs money because in terms of labor when you employ people you must expect that at the end of the day they want payment. So if you don’t have money it is a problem. And you must have water. It needs a lot of equipment” (Interview 28).

Importantly, in terms of farm inputs the main expense amongst the macadamia nut farmers were workers’ wages (n=9, N=32), followed by fertilizers (n=8), seeds (n=4), herbicides and pesticides (n=4), fuel (n=2), fencing (n=2), irrigation (n=1), equipment (n=1) and general farm improvement (n=1). 81 percent of the macadamia nut farmers hired labor (n=25, N=31). On the other hand, the money on which the agricultural income is spent in the case of macadamia nut farmers is usually the farm. Again, it is mostly fertilizers (n=10, N=28), followed by labor force (n=6), herbicides and pesticides (n=6), groceries (n=4), seeds (n=1) and fencing (n=1). Thus, it can be concluded that the income from the farming activities is typically reinvested in the agricultural production.
Above all, the usual source of seeds in most cases was purchase 72 percent (n=21, N=29). The same applies to the usual source of pesticides, herbicides and fertilizers 72 percent (n=23, N=32) and the source of farm implements 69 percent (n=20, N=29). A vast majority, 87 percent of the macadamia nut farmers sees a need to improve the agricultural production (n=27, N=31). Furthermore, only 29 per cent of macadamia nut farmers have irrigated land (n=8, N=28) and only 13 percent owns a tractor (n=4, N=32). While, 68 percent of the macadamia nut farmers have done intercropping in the last 5 years (n=22, N=32). The reason for that could be seen as
household consumption as one farmers mentioned, “You know I decided to join this farming community knowing that if you are a farmer for instance having the macadamia trees you can plant the vegetables then by doing that the money that I will get for macadamia I can spear it because most of the things I will get for free” (Interview 22).

6.3 Conclusion

In conclusion the small-scale macadamia nut farmers are emerging as a class of petty commodity producers (Cousins, 2007) with initial investment capital, but a lack of knowledge about farming. Their main constraints are in terms of intensification of production include: a lack of infrastructure and a lack of resources. The next chapter shows the nature of the institutional support system in place and assesses how it addresses the constraints faced by the farmers as well as expands on the potential of the value chain collaboration.
Chapter 7. Inclusive value chain integration

The aim of this chapter is to discuss the institutional support system in regard to the process of integration of small-scale farmers into the macadamia nut value chain and the potential of the value chain collaboration based on the data presented in the previous two chapters. Therefore, the purpose of this chapter is to present a debate on the inclusiveness of the integration process as well as analyze the efforts undertaken by the government and the private sector through this lens. It argues that the support that the farmers are receiving is not aligned with their constraints. Furthermore, it questions the inclusiveness of the institutional support system in place based on its top-down nature.

7.1 Institutional support system and its beneficiaries

The macadamia nut farmers are very well connected and strongly embedded in the institutional support system. There are two main ways in which the macadamia nut farmers are receiving support. The government is providing support in terms of inputs aimed at production intensification such as subsidized seedlings and free fertilizers. While, as previously mentioned the joint efforts of the private sector and the government are primarily focused on knowledge transfer. As presented in Figure 11, the quantitative data confirms these findings. 69 percent of the macadamia nut farmers reported to have benefited from a government agricultural programme (n=22, N=32). With the majority of the farmers receiving support in the form of study groups (n=7, N=23), followed by fertilizers (n=3), starter packs/inputs (n=3) and general training (n=3). Some of them however, benefited in multiple ways (n=4). The study groups were briefly mentioned in Chapter 5 (see page 50) and are elaborated on in Box 3 (see page 71).

![Nature of the received support (N=23)](image)

Figure 11. Agricultural support received by farmers.
Additionally, 75 percent have received extension advice in the last 12 months (n=24, N=32). However, the type of advice has not been specified due to its often informal nature the trainings received by farmers have been classified as: production, marketing, storage, record keeping and conflict management. 69 percent received production training (n=22, N=32). The production training was given mostly by a government agency (n=19, N=23) and was either about macadamia nuts (n=9, N=21), avocados (n=8), litchis (n=3) or vegetables (n=1). Furthermore, the production training was largely free (n=19, N=22). Marketing training was received by 63 percent of the macadamia nut farmers (n=20, N=32). Similarly, it was largely given by a government agency (n=15, N=20) or a private company (n=3). However, in this case it considered mostly avocados (n=9, N=17) followed by macadamias (n=5). Again, it was generally free (n=18, N=19). Half of the macadamia nut farmers reported receiving training about storage (n=16, N=32) by a government agency (n=13, N=16). Also it was addressing primarily the avocado crop (n=8, N=15) followed by macadamia (n=4). Almost all of the farmers received it for free (n=15, N=16). Similarly, half of the macadamia nut farmers received free (n=9, N=11) training about record keeping (n=16, N=32) from a government agency (n=12, N=16) on the subject of avocados (n=6, N=11) followed by macadamia (n=3). Lastly, 28 percent of the farmers (n=9, N=32) received free conflict management training by a government agency (n=7, N=23) about avocados (n=3, N=5), macadamia (n=1) or maize (n=1).

The efforts of the government have been captured well by one of the farmers, “The government is busy training us left and right so we can become the farmers they want” (Interview 12). Interestingly, this shows that some of the farmers are aware of the dominant graduation trajectory set out for them by the state. It also highlights the fact that it is a rather top-down approach not taking into account different paths or notions of success. Nevertheless, most of the interviewed farmers stated that they are not receiving enough support to overcome their challenges. One of the farmers identified the problem with support as “With this technical support there is no problem. The main problem is with infrastructure, equipment, irrigation, because that one is installing progress. Because once we have irrigation system it will be easier for us to harvest quickly and to have income so we can come up with other infrastructures in the field like packhouses and a place were we can put a de-husker and de-husk macadamia nuts from the field. Because they need to be de-husked as soon as possible before they can be sent to the processing company” (Interview 28).

Importantly, 75 percent of the macadamia nut farmers reported to be involved in a farmer’s organization (n=24, N=32) with their spouse mostly being a member (n=12, N=19). This is probably because the farmers themselves are usually employed and cannot attend the meetings during workdays. Interestingly, as previously mentioned 69 percent of the macadamia nut farmers belonged to a study group (n=22, N=32), however not necessarily to the macadamia commodity study
Again, most of them were a part of the avocado study groups (n=8, N=13). They saw the benefits from the study groups in terms of training (n=9, N=17) and market information (n=8, N=17). Similarly, the interviews have shown that the farmers value the study groups and see their benefits in terms of knowledge transfer as one of the farmers stated, “Yes it is useful, because you can’t farm something you don’t know. So they gave is really big knowledge” (Interview 22). The observations created during one of the study groups for macadamia nut small-scale farmers are presented in the box below. Important to note is the new belief that macadamia are the ‘new gold’ of South Africa, which is prominent amongst the small-scale farmers even though most of them have not received returns on their investments.

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5 See Box 3 for a detailed description.
Box 3. Observation notes from a study group

On a sunny Tuesday morning at X’s farm in Tshakhuma a quarterly study group for emerging farmers on the subject of harvesting and marketing of macadamia nuts took place. The farm was remotely located on a top of a hill overlooking a dam. A narrow, steep, dirt road led to the orchard. Farmers started slowly arriving at 10 am, some along with their extension officers, others in groups. Several farmers began to gather around a building in which the meeting took place, while the extension officers and X took care of arranging chairs and crates for everyone to sit. Meanwhile others walked through the orchard busy discussing farming matters and comparing opinions on the practices they saw on X’s plot. The farmers seemed to know each other well and respectfully exchanged greeting. Around 11am the meeting started. It was held entirely in the Venda language. There were around 15 farmers (including 3 females) and 7 extension officers present. The study group opened with a prayer led by one of the female farmers. The extension officer from Mutale municipality was coordinating the meeting and introducing the following sections and speakers (see picture below). However, first he welcomed the farmers from respective municipalities. Unfortunately, the Subtrop expert who was supposed to give the information on harvesting techniques and advice on marketing was absent and instead an expert from the ARC was invited. Interestingly, the meeting lasted two hours, however the training took only around 30 minutes. The rest of the time was devoted to social matters and questions.

The interaction between the participants was quite limited. All the speakers always stood in the front and the farmers did not interrupt them. After the formal greetings followed by the technical training words of encouragement from the extension officer and a successful farmer begun. Their speeches centered around the economic promises of macadamia nuts and the farmer repeatedly chanted the phrase: “This is the gold of South Africa”. The extension officer stressed the importance of following procedures in the production process. He kept on picking up macadamia nuts from the floor and throwing them back on the ground saying, “There goes your 50 cents if you don’t follow the procedures.” trying to make the farmers realize the value of the nuts. Thus, the study group had a rather social character and the knowledge transfer function was not as extensive as one might believe. Hence, it seemed to serve building social capital and morale rather than skills.
Moreover, the quantitative data largely confirmed the results from the interviews. Generally, the macadamia nut farmers struggled to produce what they have envisioned. Their main constraint in production is the shortage of water. Thus, resulting in a prolonged initial period of a lack of nuts. Many of them have not been able to harvest yet due to several other factors such as fires, a lack of equipment and a lack of financial capital to hire labor. Therefore, most of the farmers are not able to reach the quantity or the quality required by the processing plants. Consequently, the ambitious goal of the South African government for a class of small-scale black agriculture to contribute to job creation and food security is far from being reached. Even though, interestingly some of the farmers are very aware of the role expected from them by the government: “And besides if you look at the government it cannot alone provide jobs. But if we start this small-scale businesses some of the people we will hire them so as a result we will be employing people for elevating poverty and all that” (Interview 12).

7.2 Entering the value chain

The evidence presented in Chapters 5 and 6 shows that subtropical tree crop small-scale farmers are receiving a substantial amount of attention from the government and the private sector. The state has invested into several programmes aimed at creating a class of black small-scale farmers that are intended to uplift rural poverty by creating jobs and generating income from exports of their high-value commodity crops. Importantly, the goal of this process is to upgrade small-scale farmers into commercial modes of operation through intensification and mass production.

Nevertheless, the small-scale farmers are still facing substantial constraints in entering the corporate value chains. In the specific case of macadamia nut farmers their challenges are based on several obstacles. Thus, based on several criteria suggested by Van den Berg (2004) it can be argued that the focus on the subtropical tree crop value chains and in particular macadamia nuts is not a pro-poor strategy. Firstly, as explained in previous chapters it calls for a relatively large level of investment from the farmers. Thus, the entry barriers are high. Secondly, it requires a substantial level of knowledge and technology use. Since none of the subtropical crops is indigenous to South Africa farmers have no relationship with them and no prior knowledge they can capitalize on. Here important to note is that the only people who have the knowledge of subtropical crop production in South Africa are the white commercial farmers growing them for decades in this area. Also, as discussed in the previous chapter the small-scale macadamia farmers in most cases are not farmers per se. Thus, they don’t have the necessary agricultural skills in the first place. This can be explained due to the history of land dispossession in South Africa and the lack of relationship between the farmers and their land as one of the interviewees stated, “Apartheid taught people how to be employed. It had taken people away from agriculture from their fathers. The link to land was diminished.”
Additionally, the lack of relationship with the land can be explained by the fact that most of the farmers are civil servants and see farming more as their hobby or passion. Nevertheless, this is slowly shifting and some of the interviewed farmers understood the potential of their land and its importance as illustrated by the quote: “I have taken him [my son] to make level one [tertiary vocational education] for agriculture. So that he must have interest in that thing, because they [the government] encourage us every day. Farming must from me go to the child. It must be a family thing. Not for me only. It must go to the family. That is why I thought no I cannot leave farming like that, because he [dead husband] do for us I must take it and teach the children and the children will teach their own children. It must go like this” (Interview 27).

However, the issue of technology use referring to machinery still remains central due to the fact that the small-scale farmers simply lack the equipment to run their farms and especially as it has been argued macadamia nut production requires high levels of mechanization. Thus, the government has launched the CASP programme in 2009 for grant dedicated to infrastructure, however its scope is very limited reaching 3 to 4 farmers in the Vhembe district per year. Lastly, starting a macadamia nut farm is a strategy that demands high-risk taking. As it has been explained it is mainly due to the fact that macadamia trees do not produce nuts for an initial period of several years. Additionally, the quality and quantity discussion is central to the debate on risks as well as the lack of alternative markets. Therefore, taking into consideration these four indicators (Van den Berg, 2004) it can be concluded that macadamia nut value chain is not a strategic choice for rural poverty alleviation and the state’s investment in macadamia should be questioned.

7.3 Possibilities for upgrading within the value chain

A key aspect that shapes the opportunities for small-scale farmer in the value chain is the nature of the relationships between the small-scale farmers and the processors. The linkages in the value chain can be typologized into three different relationships: spot market relations, persistent network relations and horizontal integration (Van den Berg, 2004). The spot market relations are characterized by the actors making the transaction on the spot negotiating the price, volume and other requirements. The persistent network relations are defined by a higher level of trust and a certain level of interdependence. Thus, here the actors decide for transacting with each other on a long-term basis. Lastly, the horizontal integration refers to a situation where the actors share the same legal ownership and one organization controls different processes throughout the value chain. In the case of the small-scale macadamia farmer the relationships with the processors can be placed somewhere along the continuum between spot market relations and persistent market relations depending on the quality of nuts, volumes delivered and nature of prior contact. Interestingly, on the other hand the commercial farmers have
relations with the processors that can often be defined as horizontal integration. This is because of the legal ownership of the processing plants and their business models that rely to a great extent on the nuts coming from their shareholders. As one of the processors mentioned, “80 percent of our product comes from our shareholders [commercial farmers]”. (Interview 5). Therefore, the opportunities for small-scale farmers to compete with their products are extremely low. Especially, when the value chain (from production through processing to marketing) is controlled by a single family which has been the case in the research location. Thus, arguably the types of linkages between the actors in the value chain shape the opportunities available in the value chain excluding some and including others based on social capital.

Moreover, even if the small-scale farmer manages to get a foothold in the macadamia nut value chain the growth potential and opportunities for upgrading are quite limited. The main upgrading strategy is the product upgrading by increasing the quality of the nuts mainly by pest control and timely watering. This strategy has been strongly supported by the government and the private sector as the main scenario leading to income generation. Secondly, the process upgrading referring to the efficiency of production has also been stressed through a focus on increased quantities of nuts produced by improved management of resources such as land, water and other inputs. Nevertheless, both product and process upgrading have been addressed with an approach focusing on knowledge transfer, while as one of the Subtrop representatives working with the small-scale farmers mentioned, “Smallholders struggle mainly with financial resources. They have the knowledge” (Interview 3). Lastly, functional upgrading referring to the actor’s activities in the chain is worth discussing in greater detail due to the fact that it does not seem to be considered by the farmers or other actors. There are hardly any possibilities for the small-scale farmers to assume a different role in the value chain leading to greater benefits from adding value to their product. This is because there are no alternative markets, and thus it becomes nearly impossible to circumvent the processors. Secondly, because the investment required to become a (local) processor is beyond the reach of a small-scale farmer. Nevertheless, the possibility to export directly nut in shell for the Chinese market bears the potential to disturb this dynamics on a short-term basis.

Thus to sum up, as one of the processors explained some of the farmers included in the Vhembe Farms Project, jointly funded by the European Union and Green Farms, managed to upgrade their production due to other sources of income. “Some [small-scale farmers] were successful, because they had other sources of income mostly teaching. Others couldn’t make it work. 4-5 years is too long to wait for the trees to produce and live without any income. Some farms were burned down. Of the 15, 7 are quite successful. These are the ones who have other jobs. 7 of them
are producing and have a supply agreement with Green Farms, but quick cash is luring them” (Interview 9). Here again viability and success are understood in term derived from productivity and economic returns.

7.4 The potential of the value chain collaboration

It can be argued that the formation of the PPP in the form of a value chain collaboration between the government and the private sector has instead shifted the responsibilities for upgrading farmers towards the private sector. The private sector on the other hand has focused its efforts primarily on a top-down knowledge transfer strategy. This has been realized by quarterly study groups meetings of different subtropical commodities (avocados, macadamia nuts, litchis and mangoes) where technical training is given by an expert from Subprop and additional symposia and event trying to bridge the gap between the small-scale and the commercial farmers. Importantly, participatory observations conducted during study groups with emerging as well as commercial farmers point to the fact that that study groups for small-scale farmers are modeled on meetings for commercial farmers organized by Subtrop for many years. Therefore, the dual economic structural is mirrored here as well, since these groups are inherently separate. As one of the farmers mentioned, “I think it is necessary that we maybe together [emerging and commercial farmers]. The problem that I see is one. The big farmers I have seen that they don’t have much problem that small farmers have according to the contribution. They contribute quite a large sum of funds, but the emerging farmers if you ask him or her to contribute a 1000 Rand you are expelling him or her” (Interview 20).

Beyond the study groups, the value chain collaboration also operates through the previously mentioned statutory levy put in place in November 2014 and charged to all macadamia growers by SAMAC (23 cents per kilogram of nut in shell 1.5 percent of moisture passing through the processor). The government in turn requires 20 percent of the revenue from the levy to be spent on upgrading the small-scale farmers broadly defined as ‘transformation’. Nevertheless, again it seems to be a highly top-down strategy due to the fact that there is no black representation is SAMAC. Furthermore, the small-scale farmers have not had the chance nor have been asked to bring forward proposals on how to spend the revenue generated from the levy. Therefore, the decision making power regarding the type and nature of the support is concentrated in the hands of the commercial farmers and SAMAC. Interestingly, as one of the farmers stated, “Because the best things that the study groups should do is to give experimental things so the emerging framers can see. Because it doesn’t help to talk and talk and talk then you don’t show. To me it doesn’t help much to talk. I think the best thing is to do it while people can see. Because during the study group we can have the equipment when it is pruning time they must show how we do it with the equipment” (Interview 20). These types of
suggestions have been overlook and is seems that there is no room for change from below.

7.5 Conclusion

Hence, based on the analysis above the inclusiveness of the value chain integration of small-scale macadamia nut farmers can be questioned on several principles. Firstly, the macadamia nut value chain is difficult to enter and thus is not a pro-poor value chain. Secondly, within the chain the opportunities for upgrading are limited. Lastly, while the value chain collaboration focuses its efforts on inclusive integration it does not address the skewed market structure of agriculture in South Africa. Moreover, the support of the government favors black farmers with commercial orientation, but lacks investment. Therefore, the pro small-scale farmer arrangements fail to address how the value chain is organized and how it operates within a larger socio-political context.
Chapter 8. Conclusions

In this thesis some key issues came to the forefront. This research discussed the integration of small-scale macadamia nut farmers into global and national value chains with a particular focus on the risks and opportunities as well as their terms of engagement. Additionally, it aimed at assessing and exploring the potential of the value chain collaboration in place in the form of a public-private partnership. By adopting an inclusive development framework for analysis the research goal was placed on understanding the social dimensions and impacts of value chain integration on the small-scale farmers as well as the rural environment. I have done the above by conducting a bottom-up value chain analysis and creating a profile of a macadamia nut small-scale farmer in Vhembe, South Africa.

Hence, the aim of this thesis was to comprehend their motivations and farming strategies related to the value chain. The question that has been answered in this study was: How is the value chain collaboration between the government and the private sector stimulating inclusive value chain integration of small-scale macadamia nut farmers in the Vhembe district of South Africa?

In order to answer the this question a value chain analysis served as a tool to identify the main chain stakeholders and place the small-scale farmers in relation to them in a larger framework. Additionally, it was answered with a mixed methods approach combining quantitative and qualitative data. In this concluding section I will therefore discuss the main findings and offer recommendations for future research and policies.

8.1 Summary and discussion

The results show that the small-scale macadamia nut farmers are a rather privileged homogenous group of part-time farmers. On average they are educated middle-age men. They have steady incomes from their pensions or jobs as civil servants that allow them to invest in their farms with the goal of creating long-term income security. Nevertheless, they face many challenges in terms of entering the macadamia nut value chain as well as benefiting from being integrated into it. The main value chain stakeholders involved in the process are the government and the private sector operating in a value chain collaboration model.

Yet, the dual agrarian economy is not undergoing profound transformation envisioned by the government. The joint effort of the government and the private sector in the form of a value chain collaboration however, focuses on inclusive integration, does not address the dual economy in South Africa and the rearrangement of power relations. Hence, the pro small-scale farmer arrangements fail to tackle how the value chain is organized and how it operates within a larger socio-political context. The situation described above reveals a mismatch between the pro small-scale farmer arrangements and the skewed market structure that cannot be addressed by a narrow focus on providing support to the farmers.
Therefore, the leading idea to integrate small-scale macadamia nut farmers into the global value chain on terms resembling those of commercial farmers is fault.

8.3 Recommendations

This thesis has shed some light on the pro small-scale farmer arrangements set out by the South African government in order to transform the skewed agricultural economy. Therefore, the recommendations focus on the potential of the value chain collaboration and how it can be improved in order to be more inclusive. However, its potential to bring truly transformative change is questioned in the previous section of this chapter.

8.3.1 Recommendations for further research

There are numerous subjects that would be worth pursuing in future research. One of them is to investigate more in-depth the impacts of creating a class of black small-scale farmers on the social relations in the rural community and in the long-term poverty alleviation. This could be done in a longitudinal study by focusing on their abilities and motivations to contribute to this ambitious goal. Secondly, interesting is also the issue of communal farms (CPAs) and their integration into global value chains and the impact it has on their beneficiaries. This research set out to tackle this topic, however due to the complexity of the communal structures as well as the limited time of the fieldwork I abandoned this idea. Lastly, in the light of the newly adopted statutory levy for all macadamia nut growers and processors (see page 54) it would be of immense importance to understand how decisions are made within the structures of SAMAC regarding the spending dedicated to emerging farmers. This point brings me to the recommendations for the value chain collaboration discussed below.

8.3.2 Recommendations for the value chain stakeholders

In terms of improving the inclusiveness of the value chain collaboration black small-scale farmers have to be incorporated into the decision-making processes of SAMAC. The government’s requirement of 20 percent revenue from the statutory levy to be spent on broadly defined transformation seems to be step forward towards tackling the dual nature of the agricultural economy. Nevertheless, this can only be realized if the black small-scale farmers are given a voice in SAMAC and thus become empowered through decision making on the issues that strictly concern them. Furthermore, in my many interviews it became apparent that they have a many voices, different visions and strategies to improve their farms even if only within the dominant graduation trajectory leading to commercial farming. Therefore, these should be taken intro consideration. Secondly, seeing as many of the small-scale farmers struggle to produce necessary quality and quantity of nuts alternatives to the kernel value chain should be explored. These could include for instance the oil value chain for the cosmetic industry that has lower standards. Thirdly, the government should not underestimate the potential benefits of the collective action.
Thus, the value chain collaboration should promote arrangements that allow farmers to jointly market their nuts in order to overcome burdens such as transportation issues and quantity requirements. Lastly, the ‘graduation’ trajectory from subsistence to commercial farming that is heavily promoted by the government and the private sector needs to be revised in order to allow for more diverse pathways and farming systems.
References


### Appendix 1: Operationalization Table

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<th>Concept</th>
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<th>Variable</th>
<th>Indicator</th>
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<td>Why did the farmers start farming macadamia nuts? Which crop is most important to the farmer? Where does the farmer see his farm in 5 to 10 years?</td>
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<th><strong>Production resources</strong></th>
<th><strong>Human capital</strong></th>
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<th><strong>Focus group 2: participatory constraint raking with small-scale farmers</strong></th>
<th><strong>Baseline survey</strong></th>
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Appendix 2: Interview guide interviews with farmers

General questions
1. What is your name?
2. Where is your farm?
3. When did you start farming?
4. How much land do you have?
5. Do you own the land?
6. How did you acquire the land?
7. Do you employ people on your farm? How many? For what?
8. Do your family members help at the farm?
9. Is farming your main income generating activity? If no, what else do you do?
10. How do you invest in your farm? Where is the money coming from? What is it spent on?
11. What did you do before you started farming?
12. Why did you decide to start farming?
13. What crops do you grow?
14. Which crop is the most important to you?

Macadamia nut production questions
15. How many hectares of your orchard are devoted to macadamia nut trees?
16. How many macadamia nut trees do you have?
17. When did you start planting macadamia nuts?
18. How did you get to know about macadamia nuts?
19. Why do you farm macadamia nuts?
20. How many tons of nuts do you produce per season?
21. Where do you sell your nuts? Why?
22. Do you get a good price for them?
23. Where do you buy the plants?
24. What are the main challenges you face in macadamia nut production and marketing?
25. Do you know what is the quality of your nuts?
26. How do you check the quality of your nuts?
27. Is growing macadamia nuts risky? Why?

Institutional support questions
28. Are you a member of any farmers’ organizations? Which ones? How do you benefit from them?
29. Do you take part in study groups or trainings? If yes, who is giving the trainings? How are they organized? Since when do you attend them? What are they about?
30. Do you get any support from the government? What kind of support do you receive from them?
31. What is your relationship with your extension officer?
32. Do you get any support from the private sector or the commercial farmers? What kind of support do you receive from them?
33. Do you get any support from other organizations? What kind of support do you receive from them?
34. Do you find the support you receive valuable? Which one do you value the most?
35. Do you feel you are receiving enough support to overcome your challenges? If not what else do you need?
36. How do you see your farm in 5 to 10 years time?
37. What does it take to become a successful small-scale macadamia nut farmer?
Appendix 3: List of respondents

Value chain stakeholders’ interviews

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Farmers’ interviews

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Focus groups

**FG 1/ Date: 17.02.15/ Location: Makwarela**

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**FG 2/ Date: 26.02.15/ Location: Mashau**

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