THE EFFICACY OF SMALLHOLDER TOBACCO FARMERS ON RURAL DEVELOPMENT IN ZIMBABWE

By

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Declaration

I declare that this thesis, submitted in fulfilment of the degree Philosophiae Doctor in Environmental Geography at the University of the Free State, is my own independent work, which I have not previously submitted for a qualification at another university or faculty.

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Abstract

The aim of this thesis is to assess the efficacy of smallholder tobacco farming as a tool for socio-economic transformation in rural Zimbabwe. The study was carried out in the Marondera District of Mashonaland East Province. This thesis was prompted by the need to establish the extent to which smallholder tobacco farming contributes to poverty reduction. The research was based on a comparative analysis of earlier resettlement areas that were set up between the 1980s and early 1990s, the recently established fast track resettlement areas that were established after 2000, and the communal areas. The novelty of this study partly lies in the analysis of the socio-economic contribution of tobacco farming using a dual theoretical framework combining the Sustainable Livelihood Framework and Entitlement Approach in a dynamic macroeconomic environment. The thesis assesses how the macroeconomic environment that has prevailed in Zimbabwe since 2000 has influenced production of tobacco as a livelihood option.

Based on a mixed method research design encompassing observations, key informant interviews and focus group discussions, as well as a questionnaire survey, and qualitative and quantitative data were collected and analysed thematically in a manner that provides basis for co-validation. The quantitative data were analysed in SPSS V16.0 and MS Excel 2013 environments, where correlation and regression analyses were undertaken. Correlation analysis was used to determine the variables which were related to tobacco output in the three farming areas. The results from the study showed the different sources of tobacco funding and how the prevailing economic conditions affected investment into tobacco farming. Furthermore deforestation, erosion and pollution were identified as the major problems resulting from tobacco farming.

The study concludes that tobacco farming has an enormous potential to reduce rural poverty. This is reflected in the increase of asset ownership and income among tobacco growing households in all farming areas. However, these improvements have taken place at the expense of the natural environment, whose capacity to provide key natural resources has been degraded. The study recommends an increase in provision of government funded extension services, capitalization, as well as energy supply and infrastructural development programmes in order to enhance sustainability.

KEY WORDS: Efficacy, Livelihood, Smallholder, Development, A1 Farmers, A2 Farmers, Communal farmers, Old Resettlement farmers, Fast track Resettlement Farmers, Contract farming

Dedication

I dedicate this thesis to my lovely wife Chipo. I really appreciate the moral support you gave me.

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List of Acronyms

AFC	Agricultural Finance Corporation
AGRITEX	Agriculture Research and Extension Services
AREX	Department of Agriculture and Rural Extension
ASFG	African Smallholder Farmers Group
ASPEF	Agricultural Sector Productivity Enhancement Facility
AU	African Union
CAADP	Comprehensive African Agricultural Development Programme
CGA	Commercial Growers Association
DFID	Department of International Development
ECA	Economic Commission for Africa
EMA	Environmental Management Agency
FAO	Food and Agricultural Organisation
FGDs	Focus Group Discussions
FISP	Farmer Input Support Programme
FTLRP	Fast Track Land Reform Programme
GDP	Gross Domestic Product
GNU	Government of National Unity
GoZ	Government of Zimbabwe
Ha	Hectare
HOH	Head of Household

IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IPCC	Intergovernmental Panel on Climate Change
ITGA	International Tobacco Growers Association
KII	Key Informant Interviews
LDC	Less Developed Countries
LRRP	Land Reform and Resettlement Programme
LSC	Large Scale Commercial Farmers
Mash-East	Mashonaland East
MDG	Millennium Development Goals
MDGs	Millennium Development Goals
MLRR	Ministry of Lands and Rural Resettlement
MTC	Mashonaland Tobacco Company
NGO	Non-Governmental Organization
NRs	Natural Regions
NT	Northern Tobacco
PPPs	Public Private Partnerships
RBZ	Reserve Bank of Zimbabwe
RDC	Rural District Council
SLA	Sustainable Livelihood Approach
SLF	Sustainable Livelihood Framework

SPSS	Statistical Package for Social Scientists
SSC	Small Scale Commercial
TIMB	Tobacco Industry and Marketing Board
TIPS	Trade and Industrial Policy Strategies
TTL	Tribal Trust Land
TTA	Tribal Trust Act
TRB	Tobacco Research Board
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
US$	United States Dollar
USDA	United States Department of Agriculture
WB	World Bank
WHO	World Health Organisation
ZANU PF	Zimbabwe African National Union – Patriotic Front
ZAPF	Zimbabwe Agricultural Policy Framework
ZED	Zimbabwe Export Directory
ZIMSTAT	Zimbabwe National Statistics Agency
ZimVac	Zimbabwe Vulnerability Assessment Committee
ZLT	Zimbabwe Leaf Tobacco
ZTA	Zimbabwe Tobacco Association

CHAPTER 1 INTRODUCTION

1.1 Introduction

Interest in tobacco farming is growing rapidly in Africa with many small scale farmers taking up tobacco farming as a way of supplementing their household incomes. Tobacco is one of the most important agricultural commodities in Zimbabwe. It is the country's top export cash crop and flu-cured tobacco contributed 23% share of total export earnings in 2015 (National Budget Statement, 2016). In 2000, Zimbabwe was the world's second largest exporter of tobacco, after Brazil. By 2011, Universal Corporation which is the biggest tobacco-leaf merchant in the world rated Zimbabwe as the sixth-largest exporter of flu-cured tobacco with Brazil topping the list, followed by the USA, Argentina, China and Tanzania (Marawanyika, 2011). From 2000 tobacco production became dominated by smallholder farmers taking over from the large scale commercial (LSC) farmers. By 2012, 13,000 farmers produced 60% of tobacco under contract arrangements. In the 2012-2013 farming season approximately 300,000 smallholder farmers in Zimbabwe grew tobacco (Hanlon et al, 2013). Rukuni et al (2006) acknowledged that the Fast Track Land Reform Programme (FTLRP) transformed the agrarian sector. Former LSC farms were subdivided into small (A1) and medium/large sized (A2) farms. Tobacco production has been a highly rewarding crop for the large scale commercial farmers in Zimbabwe (Rukuni et al, 2006). Therefore, a research based inquiry to ascertain the contribution of smallholder tobacco farming to rural development in the old resettlement, fast track resettlement and communal areas is imperative.

This research study investigates whether tobacco farming contributes positively to the livelihoods of smallholder farmers in Marondera District of Mashonaland east province. In

Zimbabwe, many smallholder farmers in the communal, old and fast track resettlement areas started farming tobacco during the period of national economic decline, especially between 2000 and 2008. There has been little research to document the livelihoods of smallholder tobacco farmers during and after this period. The study aims to assess how the macro-economic environment has influenced trends in tobacco production and its contribution towards poverty reduction in communal, old resettlement and fast track resettlement areas in Marondera District in the aftermath of this crisis. A comparison of production trends, assets acquired and household incomes earned across the three farming areas was done.

In this study the livelihoods of smallholder tobacco producers were assessed using indicators such as employment creation, income generation, household food security and living standards, ownership of farm and household assets and infrastructural development. Baiphethi and Jacobs (2009) proposed that increases in agricultural production have the potential to improve the livelihoods of poor people in the following ways: by increasing food availability, by meeting household food requirements using income from tobacco farming, by creating new employment opportunities and increasing rural wages, by stimulating off-farm employment through backward and forward linkages attached to agricultural production together with multiplier effects in the broader economy, bringing down food prices thereby increasing the real incomes of food deficit households, and by empowering households with the means to diversify their diets, thus resulting in an improvement in their nutritional status. Tobacco farming can be used as a strategy for attaining food security, even though tobacco farming is not an edible crop. Households can raise sufficient income from tobacco farming to meet household food requirements. Gwata (2011)

argues that tobacco farming provides small scale farmers with an important safety net against increased climate variability.

In Zimbabwe, the majority of the smallholder tobacco farmers used to live in communal areas, where climatic conditions are unfavourable for commercial agriculture and more than 70 percent of Zimbabwe's population lived in these areas. With the advent of the Fast Track Land Reform Programme (FTLRP), smallholder tobacco farmers have been allocated land in areas where soils and climatic conditions are more suitable for agriculture (Rukuni et al 2006). This makes it imperative to undertake a comparative analysis of the performance of smallholder tobacco farmers in communal, old and fast track resettlement areas.

In an attempt to describe smallholder farmers various definitions have been advanced (Machethe et al, 2004; Botha and Treurnicht, 1997; The Farmer Support Services Working Group, 1997; Catling and Saaiman, 1996; Van Zyl et al, 1991; Eicher, 1990). The main criteria that have often been used is to define smallholder farming involve the categorisation of farmers according to the size of land, reason for producing (subsistence or commercial), levels of income earned (whether poor or rich), and, in South Africa, race (whether one is black or white and, or whether one was historically disadvantaged or not) (Eicher, 1990). Generally, the term "smallholder farmers" is used to describe rural producers, predominantly in developing countries, who produce using mainly family labour and whether the farm is the principal source of income (Ellis, 1988). In Zimbabwe the term is loosely used to refer to indigenous small scale black farmers.

There is a general view amongst scholars that smallholder tobacco production can be used as a basis for rural development. However, according to Burkey (1993) the field of development is a contestable jungle inhabited by counter theories, approaches, paradigms and programmes. A general overview of development literature will support this standpoint. Thomas (2004:12) argues that "development is a concept which is contested both theoretically and politically, and is inherently both complex and ambiguous." Development agencies have limited the meaning to poverty reduction and the attainment of Sustainable Development Goals. According to the Oxford English Dictionary generally, development means an "event constituting a new stage in a changing situation" or the process of change *per se*. Where development is not qualified it implicitly refers to something positive or desirable. With reference to a society or to a socio-economic system, development usually pertains to improvement either in the general state of the system, or in some of its constituent elements. Development may be a result of some deliberate action executed by a single agent or by some authority pre-ordered to bring about favourable improvement to society. Examples of such actions include development policies and private investment in all their forms. Kingsbury (2004) defines development as a process that brings change towards the attainment of self-reliance and contentment, a process that enables individuals, groups, communities and countries to obtain the means that make them responsible for their own livelihoods, welfare and future. All the above definitions share the view that development is a conscious process that brings change towards the improvement of human well-being and welfare. Development involves the production, distribution and consumption of resources in the environment. Within the context of this study development means positive improvements or changes in the standard of living through asset acquisition, income generation, as well as improvements in ownership of livestock and infrastructure. Rural development

encompasses poverty reduction, employment creation, generation of economic returns and infrastructural improvement.

In most developing countries the majority of the people live in rural areas. This means that rural areas have more influence on national development in terms of labour supply and demand considerations. In developing countries, the lack of development of the rural areas has been manifested as severe poverty. This explains why rural development planning has been preoccupied with the need to reverse the various inequalities in income, employment, resource access, ownership, control and use, as well as food utilization and access (United Nations Department of Economics and Social Affairs, 2014). In 2014 roughly 40% of the African population lived in rural areas (United Nations Department of Economics and Social Affairs, 2014) and more than 75% of the rural population earned a living through agriculture (FAO, 2014). This reality is evident in Zimbabwe. In Zimbabwe over 70% of its population lives in rural areas. The majority of the people directly or indirectly depend on agriculture and its associated activities (IFAD, 2001). It is estimated that 3.6 million Zimbabweans are food insecure and need relief (ZIMVAC, 2011).

An analysis of the spatial patterns of development in Zimbabwe inevitably reveals variations in the process of development from one region to another (Conyers, 2010). These variations are due to the fact that in some regions development is based on agriculture while in others it is based on mining, industrial and urban growth. Three quarters of the Zimbabwean population is said to be

living in extreme poverty. Confronting the ever increasing rural to urban income gaps may help to overcome this problem. De Janvry (2003) 'asserts that no one can climb out of poverty without access to assets of some kind, particularly land and education. He further states that dealing with rural poverty often requires either increasing rural households' access to land or diversifying their off-farm activities- by introducing what he terms "pluriactivity". This study aims to generate insights on how smallholder tobacco farmers have benefited from the land reform programme by making a comparative analysis between communal, old and fast track resettlement farmers.

The perceived role of agriculture in growth and development has changed significantly in the last half of the 20th century. Basing on the dual economy model, early theorists perceived economic development as a growth process that required the factors of production to be reallocated from a primitive, low-productivity agricultural sector to a modern highly productive industrial sector with increasing returns (Lewis, 1954). As a traditional sector, agriculture was seen to contribute passively to development by providing raw materials and food to the industrialization process. According to Blunch (2006) the dual economy approach has been recently challenged but it has influenced development economics and development policy, either explicitly or implicitly, for a period exceeding half a century. According to the dual economy approach the role of agriculture is merely to build the industrial sector in particular. Agriculture is viewed as having no role as an engine of growth in the long term. In examining the growth of the agricultural sector and the service sector in Côte d'Ivoire, Ghana and Zimbabwe for three decades, Blunch (2006) found little empirical support for this view. However, an opposing view states that there are synergies

which point to a degree of interdependence between the two sectors, meaning that the sectors 'grow together' or, similarly, that their externalities have a spill over effect. Advances in the understanding of inter-sectorial dynamics at all levels have the potential to facilitate policy implementation which may increase economic growth ultimately boosting peoples' livelihoods in Africa and elsewhere (Blunch 2006).

In 2009 almost half of Zimbabwe's population was considered as food and nutrition insecure (UN, 2009). The main causes for this state of affairs were low agricultural productivity and declining soil fertility (Donovan and Casey, 1998; Mupangwa, et al, 2008), non-functional input and output markets (Jama and Pizzaro, 2008) and an adverse macro-economic environment. In Zimbabwe, smallholder farmers in the arid and semi-arid regions are the ones most vulnerable to this situation. Mudimu (2004) identified an increase in the production of higher-value cash crops as contributing to the worsening food crisis.

The growth of an economy results in the declining relative significance of the agricultural sector to national development. There will be more bias towards manufacturing and tertiary industries (Dorward, 2004). Dorward (2004) further argues that this, combined with the increasing understanding of the diversity of the poor rural people's livelihoods and with challenges in increasing agricultural production in areas dominated by poor rural people today, has aroused questions about the role of agriculture for rural economic development and poverty eradication, about the benefits of efforts to directly support agricultural growth and development, and about the best approach to promote such growth. This thesis focuses on rural development, embracing

the role of smallholder tobacco farming in poverty reduction, employment creation, returns and infrastructural improvement. A comparative analysis is made between smallholder farmers in old resettlement schemes, the more recently established fast track resettlement schemes and communal farms.

The climate and geography of Africa and their effect on local institutions have an impact on development. However, inappropriate policies that include neglecting agriculture and weak institutions take a leading role in explaining the slow growth (Bryceson, 1996). Recently there has been accelerated growth in and across Africa. An analysis of agricultural production by Kuyvenhoven (2008) reveals that nature's adverse effects can be effectively handled and attempts to cope with the application of technology for intensification within the farming sector are under way. The expected adoption by the smallholders has not taken place at the expected pace (Kuyvenhoven, 2008). To achieve sufficient adoption of intensification technologies, actions which are time and location specific need to be implemented. Positive changes in governance and a revitalisation of agricultural priorities across Africa have given rise to favourable conditions for renewed and targeted external aid that has the potential to sustain agricultural development (Kuyvenhoven, 2008).

In an effort to reduce the socio-economic disparities between the whites and blacks the Government of Zimbabwe (GoZ) has instituted a number of policies including the land reform programme. In Zimbabwe most people rely on agriculture as their source of livelihood. Traditionally, communal farmers in rural areas used to grow cotton and maize but due to a fall in prices of maize and cotton farmers have now shifted to tobacco farming because of attractive

prices on both local and international markets. This has had adverse effects on food security. Agriculture in Zimbabwe is mainly rain fed and production is currently threatened by several factors including climate change and variability, as well as progressive land degradation associated with human induced activities (ZIMVAC 2014).

Crop diversification is a common risk management strategy among resource poor farmers, who have limited access to crop insurance (International Finance Corporation, 2011). By diversifying their activities farmers are able to mitigate risks. Specifically, farmers are increasingly embracing tobacco production which has a guaranteed market and the capacity to fetch much higher prices compared to most food crops. For decades, the tobacco industry has been encouraging countries and farmers to produce more tobacco, thus bringing unparalleled economic transformation to farmers, their communities and countries (Hu and Lee, 2015). Smallholder farmers find themselves in a vicious cycle of poverty while tobacco farming affords them the opportunity to break this cycle and increase household income in the short term. Despite the aforementioned increase in the number of farmers, less attention has been given to a comparative analysis of the contribution of smallholder tobacco farming towards rural development across a land ownership gradient (Magadlela 1997).

1.2 Statement of the Problem

The GoZ liberalised the economy in 1990 and embarked on the FTLRP in 2000 but since these developments research that informs agricultural policy development has been given limited

attention. It is the aim of this research study to help fill this gap. Tobacco production has shifted in favour of the smallholder sector, which now accounts for 60% of crop area and 30% of production (Marawanyika, 2011). However, despite this shift towards increasing smallholder tobacco farmers, little or no research has been done in order to determine the effect of tobacco production on reducing rural poverty on farm ownership gradient (from old resettlement schemes, new resettlement schemes and communal farmers).

The prevalence of poverty in Zimbabwe is high, with the percentage of people who are considered to be poor at 63% and 16% are estimated to be in abject poverty; poverty is more widespread in rural households with about 76% identified as poor relative to urban areas (ZIMVAC, 2014). Agriculturally, national cotton, tobacco and soya bean producer prices averaged out at US$0.35/kg, US$3.71/kg and US$0.50/kg for the whole 2014/15 marketing season respectively (ZIMVAC, 2014). Thus, in this regard, compared with the increase in smallholder tobacco farmers and the high producer prices among some of the crops produced in Zimbabwe so far, it becomes imperative to examine how tobacco production can be used as a tool to reduce the number of rural households that are poor. Moreover the three types of farming areas have different spatial and operational levels of planning. More so, Zimbabwean farmers have struggled for a long time to get sufficient funding. The study also examines how funding constraints have affected the livelihoods of smallholder farmers who are based in the old and fast track resettlement areas, as well as communal areas.

1.3 Study Aim

The aim of this study is to assess the efficacy of smallholder tobacco farming as a tool for socio-economic transformation in Zimbabwean rural areas.

1.3.1 The objectives of this study are to:

- Determine investment, income and production trends among smallholder tobacco farmers in Marondera district.
- Examine how the environmental problems caused by smallholder tobacco farmers affect rural livelihoods.
- Assess the challenges faced by the smallholder tobacco farmers in Marondera district.
- Assess the contribution of smallholder tobacco farming in the (communal, old resettlement and fast track resettlement) areas in poverty reduction.
- Recommend sustainable policies and strategies for tobacco farming.

1.4 Research Questions

1. What are the investment, income and production trends among smallholder tobacco farmers in Marondera district?
2. What are the environmental problems caused by smallholder tobacco farming?
3. What are the challenges faced by the smallholder tobacco farmers in Marondera District?
4. How is smallholder tobacco production contributing to the reduction of rural poverty in communal, old resettlement and fast track resettlement areas?

5. Which policy formulations and strategies can be adopted to make tobacco farming sustainable?

1.5 Significance of the Study

Agriculture is the backbone of economic growth in Sub-Saharan Africa, since on average it accounts for 70% of overall employment, 40 percent of total exports, and a third of the region's GDP (World Bank, 2008; Muir-Leresche, 2006). Manufacturing activities are agro-based with a third to two-thirds of these activities relying on agricultural raw materials (Jaffee, 1992). About 75% of the poor in Southern Africa are rural mostly smallholder farmers who rely mostly on agriculture for their livelihoods (Gollin, 2010; Salami et al, 2010). Hence efficiency and effectiveness in this sector is a prerequisite for national development. This research study seeks to undertake a comparative analysis between communal, old resettlement and fast track resettlement small scale tobacco farmers to determine the extent to which tobacco farming has reduced poverty in these areas. Due to a volatile macro-economic environment, limited government assistance and donor withdrawal from supporting small scale farmers there is need to determine if smallholder tobacco farming can help rural communities cope better with challenges that prevail in their socio-economic environment.

Zimbabwe is facing serious economic challenges. Its economic performance was at its weakest in 2007 but has improved since the adoption of the multi-currency system. However, the contribution of smallholder tobacco farmers to rural livelihoods and the economy as a whole has not been fully investigated after the hyperinflationary period. There was a significant decline in agricultural, mining and manufacturing sectors substantially since 2001, leading to company closures and job losses. In the first quarter of the year 2001 approximately 25,000 jobs were lost

in the manufacturing sector (ECA, 2010). This poor performance by the economy has forced the government to explore agriculture as an alternative economic sector to grow the economy. The goal was to stabilise the economy, by speeding land resettlement. Thus, the GoZ has embraced agricultural development as the springboard for economic growth. The government embarked on an ambitious and chaotic land reform and redistribution exercise, targeted at changing the organisation of the agricultural sector prioritising small-holder farmers (Scoones, 2011). This initiative by the GoZ was meant to achieve economic growth and income equity, by stimulating growth in smallholder farming through land redistribution and increased government funding of these activities. However, this approach raises questions on (i) the roles of the agriculture sector particularly smallholder tobacco farming in improving rural livelihoods, and (ii) the rationale of the government's focus of an agricultural influenced development strategy based on land reform. These concerns warrants an investigation of the contribution of smallholder tobacco farming to rural livelihoods across a land-use gradient, covering the communal, old resettlement and fast track farming areas.

In Zimbabwe, most rural households rely on agriculture either directly or indirectly. The agricultural sector contributes largely to economic development. Thus, agriculture obviously is a critical stimulating sector in development (Diao eta al 2010). While agriculture-led growth has been vital in poverty reduction and transformation of Asian economies the extent to which smallholder tobacco farming has contributed to rural development in Africa, and Zimbabwe in particular, has not yet been sufficiently investigated, especially following a macro-economic meltdown and the implementation of the FTLRP between 2000 and 2009. Moreover, no

investigation of the role of smallholder tobacco farming across different farming sectors in Zimbabwe has been done. There are contrasting views regarding the role of smallholder farming as a tool for rural development in Zimbabwe (Masvongo et al 2013). One view states that chronic food insecurity and undernourishment are dominant among smallholder farmers whose main source of economic activity is agriculture (Wiggins and Keats, 2013). The contrasting view maintains that despite all these challenges, the smallholder model holds: with the right support from national governments, smallholder farmers can (in various rural settings) substantially reduce rural poverty (Wiggins et al 2010). Most African countries have faced challenges in stimulating a successful agricultural revolution. Agricultural productivity in Africa is lagging behind compared to other regions of the world. This has given rise to debates at the international development community level on the role of agriculture, particularly smallholder farms, in African development (Diao, 2010). This study analyses whether smallholder tobacco production can contribute to the development process in Africa today. There has long been a general agreement amongst the donor community and developing country governments that growth in agriculture will have a direct benefit to the rural poor. However the difficulties of achieving the expected development outcomes in the rural areas and the resultant failure of agricultural projects have brought some pessimism (Collin et al, 2001).

There is scepticism on whether agriculture can sustainably generate desired economic growth in Africa. This emanates from the poor performance of the agricultural sector and weak institutions to propel rural development, and deteriorating agro-ecological conditions in several African countries (Diao, et al, 2010). Hart (1998) is one of the pessimists of agriculture - propelled development and suggests that the sector's strong growth-linkages worked effectively for Asia's Green Revolution but is weaker today in a highly integrated global setup. Hart (1998) further

states that long-term decline in global agricultural commodity prices has undermined the profitability of agriculture as a business. These emerging conditions make it difficult for agriculture to promote economy-wide growth, as well as facilitate the economic transformation that happened in the past successes of the Asian countries (Hart 1998). Consequently, agriculture's sceptics are less optimistic of the African agricultural industry. They suggest that mining and manufacturing are better and viable alternative growth avenues. However, despite conflicting opinions on the significance of agriculture and industry in stimulating overall economic growth, there should undoubtedly be less contention on the role of agriculture in fighting rural poverty given the dominance of agricultural incomes for Africa's poor populations. Surprisingly, even agriculture - propelled development proponents have conflicting views over what should be the priority of an agricultural driven development master plan for low-income Africa (Dorward, 2004).

Achieving the Sustainable Development Goals (SDGs) of ending all forms of poverty and hunger by 2030 in Sub-Saharan Africa needs high prioritisation of smallholder tobacco farming since tobacco is a lucrative economic option for the majority of rural farmers. Smallholder tobacco farming is for now a feasible strategy for realising improved rural economies and rural poverty eradication in the developing countries (FAO, 2016). Although tobacco farming comes with a cost and ecological footprints it is one of the most appropriate economic activities necessary for reducing rural poverty and for promoting overall agricultural productivity. Increasing agriculture productivity as alluded to earlier in this chapter often stimulates growth and has strong effects on poverty reduction because of the high numbers of people engaged in the sector (DFID, 2007). Smallholder tobacco farming is a rural livelihood resilient strategy to

reduce persistent poverty in rural regions and may help to secure food security in Southern Africa since the farmers will increase disposable income (Ellis 2000). In Zimbabwe, although the concept of smallholder tobacco farming is not new, the adoption of tobacco farming as a livelihood strategy is happening in unprecedented proportions due to the Fast Track Land Reform Programme (FTLRP). According to Rukuni et al (2006) the question is whether such growth in the number of smallholders and the area they use will translate into increased agricultural productivity. This calls for an analysis of the contribution of the smallholder tobacco farming sector to rural livelihoods.

1.6 Definitions of Terms

A1 farmers: a model of the FTLRP that focuses on smallholder production either as village arrangements or small, self-contained farms with an average farm size of around 37 hectares (Scoones et al., 2011).

A2 farmers: a model of the FTLRP that focuses on commercial production at a slightly larger scale than A1 farms with an average farm size of 318 hectares (Scoones et al., 2007).

Burley tobacco: is a light air cured tobacco variety which is primarily used for cigarette production (Magadlela, 1997)

Communal farmers: consists of farmers occupying land that prior to 1 February 1983, was referred to as Tribal Trust Land (TTL) in terms of the Tribal Trust Act (TTA) of 1979 (Anseeuw, et al, 2012).

Contract Farming: is defined as a forward legally binding agreement which specifies the obligations of farmers and buyers as partners in business such as the quality and the price required (Will, 2013).

Efficacy: the capacity to produce a desired or anticipated result (http://www.merriam-webster.com/dictionary/efficacy).

Entitlement: is a "set of different alternative commodity bundles that a person can access by exploiting various relationship networks that are influenced by various social, political, and legal factors open to someone in this position" (Sen, 1990: 23).

Fast Track Land Reform farmers: farmers who were allocated land in 2000 when the Zimbabwean government expropriated land from the Large Scale Commercial (LSC) farmers (Zikhali, 2008).

Old Resettlement farmers: farmers who were allocated land during Zimbabwe's first land reform programme soon after independence, especially between, 1981-1987.

Rural Development: is the improvement in overall rural community conditions, including economic and other quality of life considerations such as the environment, health, infrastructure, and housing (USDA, 2006).

Smallholder Farmers: Resource-poor, subsistence farmers. These are also defined as those farmers owning small-based plots of land on which they grow subsistence crops and one or two cash crops relying almost exclusively on family labour (Department of Agriculture Forestry and Fisheries, 2012).

Sustainable Livelihoods: According to Carney (1999) a livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base.

1.7 Methodology

The study area is located in Marondera District of Zimbabwe and covers Wards 19, 20, 21 and 22. Marondera District is situated in Mashonaland East Province. The research philosophy guiding the study falls within the social constructivism paradigm and the study is partly qualitative in nature. However, the positivist approach was also adopted because it allowed the researcher to make more independent observations. Thus, a mixed method approach was adopted to validate data collected in the study using both quantitative and qualitative approaches. The researcher used several data collection tools. Out of a population of 2020 farmers, a sample of 323 farmers was proportionally randomly selected, including 103 from the communal areas, 110 from the old resettlement areas and 110 from fast track resettlement areas. A questionnaire survey was administered on the selected farmers, alongside 7 key informant interviews and 4 focus group discussions. In this study, the researcher also used the observation method in order to identify the assets and forms of infrastructure that the farmers have acquired using earnings from tobacco production. Data were collected between November 2014 and June 2015, a period covering the planting, harvesting and curing stages of tobacco production. Before commencing with the actual field survey, a pilot study was done. This helped in eliminating and rephrasing ambiguous questions from the questionnaire. Frequencies of dominant responses were used to assess the changes in livelihood outcomes, challenges faced by tobacco farmers and problems caused by tobacco farming. The quantitative data were analysed in SPSS V16.0 and MS Excel 2013 environments. Thematic, correlation and multiple regression analyses were the main methods used in analysis of quantitative data.

1.8 Limitations of the Study

Financial resources greatly limited the researcher to studying in only four wards of one district. Mashonaland East, as a province has nine districts. Marondera District was purposely selected since it receives the highest rainfall within the Province hence, results clearly represent distinct characteristics of the three farming types within the comparative analysis. Each ward has one AGRITEX officer hence there was no alternative view on the technical questions of tobacco farming which could have helped to reduce bias. Politically, the district is very volatile and the local councillor in ward 22 was not free to share information. He viewed the researcher as trying to get information which could be used against him or land reform beneficiaries. This was despite the fact that the researcher had sought authority from the Provincial Administrator to conduct the research. An approval letter was present with all the necessary letter head and stamp. Since the research was self-funded the researcher only conducted twenty questionnaires for the pilot study, which might not have been enough to adequately shape questionnaire. Consequently, a mixed method approach was necessary so as to validate the collected data. To increase participation of respondents the researcher politely explained that the research was purely academic and that their identities would not be reviewed to anyone. They were initially sceptical about the question which required their grower number. Even though ethical consideration requires that the names of respondents should not be captured, they knew that they could be identified by their grower number. This question was necessary because the researcher wanted to ensure that the sample only included tobacco farmers. Other smallholder farmers not practicing tobacco farming were not part of the sampling frame.

1.9 Structure of the Thesis

This study consists of six chapters, which are arranged as follows: Chapter 1 presents the background of the study. It gives a preliminary outline of smallholder tobacco farming related issues, including sources of funding, production, marketing and the contribution of smallholder tobacco farming to poverty reduction. The chapter consists of the problem statement, aim and objectives, justification of the study as well as the delineation of the scope of the study. Chapter 1 also provides information about the limitations of the study and definitions of important terms which characterize the scope of the study. Chapter 2 reviews existing literature on smallholder tobacco farming, covering subjects such as financing, contribution to poverty alleviation and associated challenges. The analysis involved a concentric approach from global trends cascading down to regional, national and finally local trends. The assessment of the significance of the two theoretical frameworks adopted in the study was also undertaken including the Sustainable Livelihood Framework and Entitlement Approach. Chapter 3 presents the physical and conceptual delimitation of the study. It clearly outlines the research methods that were adopted in this study. In this thesis a mixed methods approach was adopted and this includes both quantitative and qualitative approaches. The research philosophy used was premised on both positivist and interpretivist paradigms. Chapter 4 presents the results of the study. The findings were based on an assessment of the efficacy of smallholder tobacco farming in rural development in Zimbabwe. Chapter 5 discusses the research findings. It examines whether the findings concurred or contradicted findings from previous studies. It focuses on meaning that can be derived from the results and presents a cause-effect analysis based on the interaction between facts and theory. Chapter 6 consists of the conclusion, lessons learnt from the research as well as the policy implications and the recommendations of the study.

1.10 Summary

This chapter provided an introduction to aspects of smallholder tobacco production and its contribution towards the reduction of rural poverty. The chapter presented the background to smallholder tobacco production in Zimbabwe and the changes that have taken place in recent years. The statement of the problem, aim of the research and the specific objectives of study were also stated. The next chapter reviews the scholarly literature on which the study was based including the theoretical framework which guided the study.

CHAPTER 2 THE THEORETICAL AND CONCEPTUAL ISSUES OF SMALLHOLDER TOBACCO FARMING: A REVIEW

2.1 Introduction

In Zimbabwe more than a hundred white farmers started tobacco production in 1905 (Haviland, 1951). Since then tobacco has been a vital crop in Zimbabwe's economic growth and is amongst the country's top export crops. Tobacco processing companies buy the crop at auction floors and prepare it for export. Today three groups of farmers in Zimbabwe are engaged in tobacco farming production namely the large scale commercial (LSC), small-scale commercial (SSC) and smallholder (communal and resettlement) farmers. SSC farmers are not as advanced as LSC growers, most of them produce the crops at a higher level and have better access to essential equipment compared to smallholders (Chivuraise, 2011).

Prior to the year 2000, smallholder farmers were only slightly involved in tobacco production. Smallholder farmers were about 16 000 in total (eight times more than commercial farmers). In developing countries, smallholder commercial agriculture is based on cash crop production and in Zimbabwe tobacco production has been embraced as an important smallholder cash crop (Moyo, 2004).

Up to 2000, the LSC farmers had political influence and economic power emanating from their strong production base and outputs. They produced mainly for export. Exported commodities included tobacco, horticulture, and beef and they anchored the Zimbabwean economy. The private agriculture service sector (financial consultants, irrigation specialists, agronomist and other technical experts) heavily relied on the LSC farm business operations and contributed

much to the GDP. The contribution of the farmer's resources and expertise to economic growth was significant (Forum for Food Security in Southern Africa, 2014).

Kang'ethe and Serima (2014) note that smallholder commercialization has been the thrust of both the colonial and post-colonial governments. The LSC farming sector emerged with colonial rule in 1890. It consisted of white settlers together with a subsistence smallholder farming sector composed of the native population. LSC farmers were privileged to receive political and policy support from government and were encouraged to increase agricultural production compared to smallholder producers. This situation persisted until independence in 1980. The approach of the new government was to promote equity and to boost agricultural productivity. However, it was imperative to maintain productivity in the LSC sector. To realise these goals, the new government empowered the smallholder farmers through extensive research and extension and the establishment of marketing depots in rural areas. This agrarian policy brought about the agricultural revolution of the 1980s and 1990s (Kang'ethe and Serima, 2014).

Before 2000, smallholder producers comprised communal, resettlement and SSC farmers. A1 farmers increased the base of smallholders and today they comprise the bulk of the agricultural producers in the country. The question is whether such a surge in the number of smallholder producers and the area they cultivate will mean increased agricultural production (Kang'ethe and Serima, 2014). Tobacco is grown by the bulk of smallholder farmers due to its prospects for increasing returns and spreading risk. However, it is yet to be proven if the potential has been translated into visible economic growth.

2.2 The Land Reform Programme and Rural Poverty

According to ZIMSTAT, UNICEF and World Bank (2015) the majority of poor Zimbabweans reside in rural areas where they depend mainly on farm-based income. Visible development within the sphere of agricultural and non-farm economic activities is a springboard for the success of sustainable poverty reduction efforts in rural areas. One key determining factor of whether a household has the ability to earn a living and stay out of poverty in the rural areas of Zimbabwe is availability and access to sufficient stocks of assets, based on access to and land ownership. Baiphethi and Jacobs (2009) argue that access to land and the related conditions and terms in which it is accessed have an impact on the capacity of households to produce food and commercial crops for their own subsistence and marketing. Land and agrarian reforms are frequently considered as an efficient strategy in poverty alleviation in areas where the majority of people are based in rural areas, although not entirely making a living on land (Jayne et al, 2003). Where there is inequality in access and ownership to land, redistribution is often considered as a way of assisting land constrained households out of persistent poverty (IFAD, 2001). Equity in land distribution has multiplier effects that have been linked to enhanced income growth. In a study that was conducted in 69 countries Gugerty and Timmer (1999) observed that equity in agricultural and non-agricultural assets distribution can form the foundation for poverty, reducing productivity growth. In China efficient and coordinated distribution of land is often cited as the reason why its human development indicators fare better than India (Banik and Hansen, 2016).

2.3 Zimbabwe's Fast Track Land Reform Programme

Zimbabwe's armed struggle was crystallised around unacceptable levels of white oppression and deprivation of blacks from land. In September 1980, motivated by agreements made at the Lancaster House Agreement, Zimbabwe embarked on an ambitious land resettlement programme merely five months after gaining its independence. The programme aimed at redressing imbalances in land ownership, and by increasing ownership of land among the landless blacks, while strengthening the commercial agricultural sector. The first phase of the land reform and resettlement programme (LRRP), which began in 1981 had seen 71 000 families resettled on 3.5 million hectares of former commercial or government owned land by 1997. These farmers were resettled from marginalised communal areas. This was below the targeted 162,000 families and 8.3 million hectares (Chiremba and Masters, 2003). In 1998 the government started the second phase of resettlement (LRRP2). This was followed by an accelerated fast track land reform (FTLR) phase in 2000. In August 2002, the government announced an end to land redistribution. In the 1990s, there was general discontent with the slow pace in the allocation of land to the indigenous population. Regardless of over twenty years of land reform, 4,500 white farmers still owned 28% of the land against over a million black farmers who struggled in mainly unproductive and dry communal areas (Mushunje, 2005).

The FTLRP started in July 2000, with vicious invasions of white owned LSCFs. According to Zikhali (2008), resultantly, the GoZ passed legislation to institutionalise the FTLRP and adopted two key implementation models, namely A1 Model (to decongest communal areas experiencing harsh land access constraints), and A2 Model (to advance agricultural commercialisation at various scales).

2.4 Tobacco Cultivation in Zimbabwe after 2000: The Rise of Smallholder Farmers

The agrarian reforms of 2000 transformed the organisation of the tobacco sub-sector. Zimbabwe had 15 000 registered tobacco growers in 1998 and by 2011 the predominantly smallholder tobacco growers had increased to more than 64 000 (TIMB, 2011). In in Makoni District in Zimbabwe, Mutami (2015) found that the majority of smallholder farmers are in the communal areas, small scale resettlement areas and SSC areas and most of them own less than 35 hectares of land. Most of the smallholder tobacco producers benefited from the FTLRP, but they lack resources to sustainably produce the crop. Rukuni (2006) points out that in Zimbabwe tobacco production has been highly lucrative for commercial farmers.

2.5 Organisation of Smallholder Tobacco Farming in Zimbabwe

The Tobacco Industry Marketing Board (TIMB) is a body that undertakes a regulatory and advisory role in tobacco production in Zimbabwe. Its functions include but are not limited to registration of tobacco growers. It is mandatory for companies wishing to contract farmers for tobacco production to sign separate agreements with both the Ministry of Agriculture and the TIMB. In return, it is a requirement for farmers to sell their crop to the contracting company.

Farmers sell their tobacco to processing companies at auction floors which prepare it for export. In the history of tobacco production in Zimbabwe, contract farming agreements are a more recent development. There has been a surge in the number of contracted smallholder tobacco producers from the mid-2000s. The Zimbabwe Tobacco Association (ZTA) and the Commercial Growers Association (CGA) are responsible for linking smallholder farmers to potential contract companies (Zimbabwe Tobacco Association, 2000). The commercial enterprises involved in contract farming include Northern Tobacco and Zimbabwe Leaf Tobacco.

According to Dawes et al (2009) the ZTA started assisting the smallholder farming sector in 1995 and before that it was only confined to the welfare of the LSC sector. Support for smallholder producers has varied over the years. This support includes tillage services, input provision and technical assistance. There has been an increase in the ZTA's smallholder membership from 300 farmers in 1995 to 2 000 farmers in 2000. New members were enlisted from Guruve, Shamva, Marondera and Karoi. Of the 18,000 smallholder tobacco producers registered in 2006/07, about 4,500 were ZTA members. The FTLRP and the disturbance of the LSC sector since 2000 has resulted in cutbacks in tobacco production, and the ZTA is now less able to support its smallholder members. The ZTA's membership records enabled the identification of competent growers around the country and a thriving supporting scheme for these farmers was started. The tobacco companies that followed suit include the Northern Tobacco and Zimbabwe Leaf Tobacco in 2005 and Tribac in 2006. Services that were provided to the processing companies included farmer selection, extension support and input distribution. Later on the Northern Tobacco and Zimbabwe Leaf Tobacco (ZLT) worked independently from the ZTA (Dawes et al, 2009).

2.6 Definition of Smallholder Farmers

Various definitions of smallholder farmers have been proposed which are context, country and ecological region specific (Machingura, 2007). Dixon et al (2005) are of the view that smallholder producers have limited access to resources compared to other farmers in the sector. In developing countries the term smallholder farmers is usually used to refer to rural farmers whose main source of labour is the family where the farm is their primary source of income (Ellis, 1988). In Zimbabwe the term is used loosely to refer to indigenous black farmers (Masvongo et al, 2013).

Ben (2007) considers smallholders as large populations of rural farming households who produce on a small scale basis. Panda (2007) also notes that the smallholder sector is characterised by small size of landholding and factors of production are limited leading to small scale production. In this study a smallholder farmer is defined as a farmer who practises agriculture on a small scale rarely exceeding 6 ha of cropped land but producing for both the market and for subsistence.

In a study in South Africa, Trade and Industrial Policy Strategies (TIPS) observed that smallholders differ from 'subsistence' farmers in that they produce crops or livestock for sale and subsistence. Size of holding varies relative to sectors (TIPS, 2009). Hall (2009) pinpoints that smallholders have a higher degree of labour-intensity compared to commercial farmers. Generally, there is dependence on household labour for most of the farming activities. Hall (2009) further states that the term appears to refer to small-plot agriculture producers whose enterprise contributes only part of household income and is therefore not clearly separate from subsistence farming. Smallholders, according to Hall (2009) often form part of another broad and undifferentiated category of the 'rural poor'.

The definition and use of the term smallholder is so conflicting. It refers to *inter-alia* farmers who produce for the market as a supplement to other income sources, to those producers who regularly market their surplus after meeting their needs and also to SSC producers whose primary focus is to produce for the market. Size of landholding and degree of production for the market can be implicitly or explicitly used to differentiate smallholders from other producers in the sector. The use of labour that includes household/family, co-operative and hired is also another criterion used to define smallholders (Cousins, 2010). Cousins (2010) further notes that

sources and access to capital, though rarely discussed can be used to differentiate smallholders from other sectors.

2.7 Agricultural Funding

Sources of agricultural funds take different forms, including personal savings, government, banks which can be international, regional or national, commercial companies through contract schemes and Non-Governmental Organisations (NGOs). Contract farming has, however, been the dominant source of funding in most developing countries.

2.7.1 Global patterns and trends in contract farming

Contract farming can be defined as an agreement between a company and farmers in which the company provides inputs to the farmer and in return the farmer sells the produce to the company (Eaton and Shepherd, 2001). Moyo (2014) notes that world over contract farming has grown rapidly. Cotton and tobacco are wholly produced on contract farming in Mozambique, Malawi, Zambia, Turkey, the United States of America (USA), Brazil and China. The USA, Brazil and China are the world's leading tobacco leaf producers. However, production in all these countries has tumbled due to health concerns, litigations and pressure from anti-tobacco lobbyists like the World Health Organisation (WHO) (Baris et al, 2000).

Latin America has witnessed a rapid growth in contract farming since the 1950, particularly in the production of bananas in Honduras, barley in Peru, and vegetables and grain in Mexico. Banana corporations such as Chiquita, Dole, Del Monte and Fyffes all had contract farming operations in 2009 (UNCTAD, 2009). In Brazil by 2009, over 70% and 30% of poultry and soya production, respectively, was produced through contract farming.

According to UNCTAD (2009) 60% of Unilever's raw materials in 2009 were sourced from an estimated 100000 small and large contracted farms in the developing countries. This arrangement facilitates backward and forward linkages between the small scale production and the manufacturing sector. In 2008, 16 00 farmers from India, South Africa, Uganda, Tanzania and Zambia contracted by SAB miller (UK). In addition Grupo Bimpo, which is a Mexican company, contracted more than 3000 suppliers in Latin America. A Japanese company Kitoku Shinryo in 2008 contracted approximately 2000 farmers in Vietnam, Cambodia and Thailand (through a joint venture).

2.7.2 Agriculture financing and contract farming in Africa

Agriculture in Africa is underdeveloped due to the low levels of per capita income. Generally, the bulk of the population lives in rural areas characterised by fragile livelihoods which are sensitive to shocks and trends that have had a negative bearing on small scale agriculture initiatives. Smallholders constitute approximately 85% of farmers in Africa and the average farm size is roughly 1.6 hectares (ha) (KPMG, 2013). FAO (2009) reported that in developing countries approximately US$ 11 billion per year must be invested in agriculture if there is to be enough food to feed the growing population. Under the Maputo Declaration of 2003 African heads of state and government agreed to set aside 10% of their budget for agriculture. In 2010, of the 44 countries for which information was available, only 9 had reached or surpassed that target. A total of 22 countries allocated at least 5% of their national budgets to spending on agriculture (Blein et al, 2013). In 2010, Zimbabwe failed to reach the Maputo declaration target, with only 6.4% of national budget allocated to the agricultural sector (Annual National Budget 2010).

In Sub-Saharan Africa, contract farming is gaining acceptance amongst smallholder farmers. Most contract farming projects are now the initiative of the private sector, contrary to the 1980s when government had full or partial control or ownership over contract-farming arrangements. In 2007 Mozambique had nearly 12% of its rural population involved in contract farming and all cotton was grown through contracts (Swinnen and Maertens, 2007). More than 50% of the tea and sugar that was produced in Kenya in 2007 was under contracts, adding to the huge number of contract growers of horticultural exports. In addition, in 2009 crops with successful contract-farming operations in Uganda included coffee (Bolwig et al, 2009). Similarly, the Alliance One expanding programme in Malawi contracted tobacco farming in 2007 (Swinnen and Maertens, 2007).

2.7.3 Funding of agriculture in Sub-Saharan Africa

Smallholder farmers in Sub-Saharan Africa, like those in other developing regions, face numerous constraints that reduce their productivity. Smallholder farmers often lack the necessary capital, and their access to credit is restricted by the lack of collateral. This constrains their ability to make profitable investments in farming activities that depend on expensive input requirements (Minot, 2011). Most smallholder farmers in Africa rely on savings from their low incomes, which restricts opportunities for expansion.

Contract farming has drawn interest from researchers and policymakers due to its ability to solve agricultural funding constraints in Sub-Saharan Africa. Ragghianti (2014) posits that in contract farming, the contractor provides the farmer with technical assistance, seeds, fertilizer, and other inputs on credit and in return there is a guaranteed price for the farmer's produce.

Tobacco Contract Farming in Malawi

According to Minot (2011), Malawi is the biggest tobacco exporter in Sub-Saharan Africa, with exports valued at US$ 590 million in 2008. In 1993, as a result of economic reforms which liberalized tobacco exports, an estimated 200,000 smallholders engaged in Burley tobacco farming for export, which resulted in documented increases in smallholder income and even translated into higher maize yields due to the fact that tobacco income facilitated fertilizer purchases for maize production. Orr (2000) and Jaffee (2003) cited in Minot (2011) concur that contract farming, however, was constrained by the condition that tobacco must only be sold on the auction floor.

Minot (2011) states that in 2005, a separate section of the auction floor in Malawi was allocated for contract buyers. In 2007 and 2008 two large buyers (Limbe Leaf and Alliance One) established contracts with groups comprising ten tobacco farmers. The groups reduced the cost of distributing inputs and technical assistance and the members took group responsibility for the loans they received. Approximately 95% of the tobacco is purchased from farmer groups at pre-arranged prices, but with no provision of inputs on credit, while 5% include the provision of inputs on credit. For the farmer's groups, production is closely monitored and inputs are provided when needed, leading to higher yields compared to non-contract farmers.

The Zambian Case Study

Examples of farmer support schemes that have been effectively implemented recently include Zambia's Farmer Input Support Programme (FISP). The farmer input subsidy programme enabled SSC farmers in Zambia to have access to fertiliser and seed and other agro-inputs. The

programme was initially meant for the maize sector, but was later extended to include non-maize agricultural activities. The FISP has led to a biased over-production of maize and limited the development of other agricultural sectors. To deal with the imbalance, the government formulated a broad based agricultural sector reform strategy. The first step of this strategy was the introduction of the electronic voucher system which targeted beneficiaries and funded a more diversified crop range. The electronic voucher system was piloted in 10 districts of the country in the 2012/13 agricultural season. It has promoted the diversification of agricultural production (KPMG, 2013).

Agricultural Financing in Zimbabwe

Agriculture financing continued to develop remarkably since the dollarization of the Zimbabwean economy in 2009 with a growing focus on value chain financing and also the ever-increasing role of merchants in crop financing. Historically, banks provided the greatest support for agriculture financing and agriculture was one of the prime sectors targeted for financing by commercial banks. Since the year 2000 contract farming has featured prominently in agricultural financing, but there appears to be marginal benefits being derived by farmers with more of the benefits accruing to contractors rather than the farmers (Malaba, 2014). Malaba (2014) opines that commercial banks have also moved towards commodity based financing—financing on a selection basis, targeting commodities on the basis of repayment prospects within the value chain system. During the 2013/2014 agriculture season, banks made available US$620 million for agriculture financing. US$343 million (55%) was allocated to the tobacco farming sector which reflects the recognition among financiers of the efficiency and effectiveness of tobacco repayment arrangements. Banks are thus targeting financing crops with well-structured and

organized value chains such as tobacco, sugar cane and soya beans (Malaba, 2014). The financing of the 2015/16 season is summarized in Table 2.2

Table 2.1 Zimbabwe Banks agricultural financing during the 2015/2016 season

Category	Amount	% of total financing
Tobacco	598146427.00	70.8
Maize	80538000.00	9.5
Soya	25000000.00	3.0
Cotton	34500000.00	4.1
Livestock, including poultry	60113973.00	7.1
Other	46259897.00	5.5
Total	844558297.00	100.0

Source: Adapted and modified from Zimbabwe national Budget 2016 Report (www.zimtrade.co.zw/img/pdf/2016_national budget_final_2pdf).

Traditionally, commercial bank loans were the major source of funding for agriculture in Zimbabwe LSC farmers. This was possible because the LSC farmers had title deeds which they used as collateral security. The Agricultural Finance Corporation (AFC) which was created in 1924 and was government owned provided credit to farmers. By 1970 African smallholder farmers with title deeds to their land were able to access financing from the bank (Makina, 2009). In 1980, the new government broadened the AFC bank's mandate to include communal farmers who had no collateral to back up the loans but the government subsidised interest rates. Small Scale Commercial (SSC) farmer's loan repayments were erratic and the scheme ultimately became unsustainable (Makina, 2009). Agribank succeeded the AFC in 2003 and faced the same predicament.

Donor funding and official development aid were crucial in promoting agricultural development, especially small-scale and communal farmers. Donors withdrew after the adoption of the FTLRP

by government in 2000. Government mandated the Reserve Bank of Zimbabwe (RBZ) to spearhead agriculture revitalisation through facilities such as the Agricultural Sector Productivity Enhancement Facility (ASPEF), Agricultural Mechanisation Programme and Grain Procurement and Commodity Producers Support Prices Programme (AMPGPCPSPP) (Makina, 2009). China's Exim Bank supported the programmes but the hyper inflationary environment and low producer prices resulted in farmers diverting inputs and implements to other uses. Due to liquidity challenges faced by banks, dwindling government support to agriculture and donor pull out, value chain players were engaged in agriculture financing to assist small-scale producers that faced critical credit constraints (Moyo, 2014).

According to KPMG (2013) financing makes it possible for the farmers to acquire modern forms of farming technology. Moreover, funding schemes like contract farming minimise the gap between the needs of smallholders and their market. However, smallholders are always vulnerable to capital constraints and do not have the capacity to adopt new technology. Moreover, contract farming enables smallholders to meet exact standards which are expected further down the value chain, delivering the scale benefits typically associated with large-scale producers (KPMG, 2013). Economies of scale have the advantage that the firm reduces transport and inputs cost. Moreover, contracting firms possess a comparative advantage in the areas of marketing and technical knowledge, as well as product trace ability and quality (KPMG, 2013). Hazell *et al* (2006) purports that contracting smallholders can have several benefits that include poverty reduction, as the poor often own and operate small farms, often creating multiplier effects since they use locally-hired labour, and usually spend income within nearby locales.

Agriculture needs massive investment for it to be successful. In this regard, Zimbabwe has failed to meet the target of the Comprehensive African Agricultural Development Programme (CAADP) which encourages agriculture investment in order to eradicate poverty in Africa. The CAADP has been urging governments to allocate 10% of their national budgets to the agriculture sector. Table 2.2 shows that Zimbabwe has been missing this target. Value chain programmes that include contract farming and public-private partnerships (PPPs) are vital if agriculture is to succeed as a tool in fighting rural poverty (Moyo, 2014). However, to attract investment it is imperative to have a stable macro-economic and political environment (Anseeuw et al, 2012).

Table 2.2: Zimbabwe national budget allocations to the Ministry of Agriculture (2009-2014)

Year	Total budget (US$)$10^9$	Agric allocation (US$)	Agric research and extension allocation (US$)$10^6$	Agric research as a percentage of Agric allocation
2009	1 391	34 314 162		
2010	225	144 000 000	0.72	0.50
2011	27	122 159 000	4.4	0.45
2012	34	226 000 000	0.72	0.32
2013	38	159 400 000	2.07	1.30
2014	36	155 200 000	4.9	3.00

Source: Adapted from the annual national budget 2016 Report (www.zimtrade.co.zw/img/pdf/2016_national budget_final_2pdf).

After the introduction of the multi-currency system in 2009 in Zimbabwe the major limitation facing farmers, agribusinesses and the agro-processing industry has been the accessibility of

financial resources and services from the banking and financial sector. The financial sector in Zimbabwe faces the challenge of a limited domestic deposit base, which reduces the ability of banks to provide credit to the private sector, mainly the small-scale sector, on affordable repayment terms (Anseeuw *et al*, 2012).

Anseeuw & Wambo (2008), cited in the Development Planning Division working paper series No. 32 of the Development Bank of Southern Africa point, out that since 1995 Zimbabwe has allocated between 2% and 7.5% of its annual budget to agriculture. This is less than the 10% of the national budgets recommended by the CAADP in order to boost food security and rural development. The inability to provide adequate budgetary support has resulted in underfunding of agricultural support services and infrastructural development.

2.7.4 Tobacco financing and production in Zimbabwe

Contracted tobacco production is on an upward trend. In the 2014 agricultural season 165.5 million kg of tobacco was sold at an average price of $3.32/kg. A total of 49 143 growers were contracted by sixteen merchants who were licensed by TIMB. In the 2013 cropping season, 113 million kg were sold at a price averaging $3.74/kg (ZIMSTAT, 2014). Table 2.3 compares the numbers of contracted and non-contract growers in 2014. ZIMSTAT (2014) stated that 87 166 growers supplied tobacco at various auction floors. In 2013, 78 579 producers successfully delivered their tobacco. Approximately 38 023 growers (44%) marketed their tobacco at auction floors while the remaining 43 143 growers (66%) sold their produce through contract.

Table 2.3 Contract and non-contracted active tobacco growers (2014)

Farming sector	Auction	Contract
Small Scale Commercial	2 744	4 455
A2 Resettlement	4 257	5 129
A1 Resettlement	13 569	17 918
Communal	17 453	21 641

Source: Adapted and modified from ZIMSTAT (2014:9)

2.7.5 Tobacco Contract growers by class

In Table 2.4 it is evident that smallholder tobacco farmers have widely embraced contract farming, accounting for 20, 18 and 8 % of the A1, communal and small scale commercial farmers, respectively (Table 2.4).

Table 2.4: Distribution of contract growers by class

Contracted grower class	Growers' number	Mass (kg)	USD value	USD/kg (Price)	Market share (%)
A1 resettlement	1719800	42 197 031	128 656 613 00	3.05	20
A2 resettlement	5 12900	66 719 505	244 081 345 64	3.66	30
Communal	21 64100	38 452 893	115 667 801 00	3.01	18
Small Scale commercial	4 44500	18 003 087	60 035 556 64	3.34	8
Total	4914300	165 451 529	548 574 163	3.32	76

Source: Adapted and modified from ZIMSTAT (2014:25).

2.7.6 Auction and contract growers by province

Many smallholder farmers in Zimbabwe have warmly embraced auction and contract farming. In Mashonaland East the province where the study is located, 6 400, 2 144, 4 826 and 1 396 of A1, A2, communal and small scale farmers, respectively, sell tobacco through the auction and contract arrangements. The numbers of the contracted farmers are significant, giving hope that smallholder tobacco farming has the ability to fight rural poverty if it is well managed. Table 2.5 shows the number of farmers who used auction and contract farming in different provinces and classes in 2014.

Table 2.5 Auction and contract growers by Province, 2014

Province	A1 Resettlement	A2 Resettlement	Communal	Small Scale Commercial	Grand total	%
Manicaland	6 656	1 458	5 613	1 315	15 042	17
Mashonaland Central	9 430	2 540	11 754	2 251	25 975	30
Mashonaland East	6 400	2 144	4 826	1 396	14 766	17
Mashonaland West	8 840	3 163	16 455	2 186	30 644	35
Masvingo	87	32	189	31	339	-
Matebeleland		2	4	1	7	-
Midlands	74	47	253	19	393	-
Grand total	31 487	9	386	39 094	7 199	100

Source: Adapted and modified from ZIMSTAT (2014:26)

2.8 Tobacco Production Trends (output)

According to the Zimbabwe Tobacco Yearbook (1992) in 1992, Zimbabwe was second to Brazil in flue-cured tobacco global production. Between 1994 and 1996, export earnings from tobacco surged from US$ 407 million, reaching a peak of US$ 545 million in 1995, before falling to US$ 462 million in 1996. In the 1990s the tobacco industry employed about 500 000 people and also contributed to fixed capital formation, a vibrant institutional setup and investment in enormous warehousing facilities, which were rated as the world's biggest (Zimbabwe Export Directory, 1998). However, there were 15 000 registered tobacco growers in 1998 and 9600 were burley growers and 800 oriental growers. The value of exported tobacco sharply decreased from US$ 640 million in 2001 to US$ 240 million in 2002 and subsequently increased to US$ 396 in 2004 (FAO, 2004).

Table 2.6: Trends of tobacco growers in 2014

Sector	2012/13 Season	2013/14 Season	% change of growers from (2012-13) to (2013-2014)
A1	38 020	37 805	-1
A2	8 218	11 720	30
Communal areas	36 494	48 292	24
Small scale commercial	8 546	8 639	1
TOTAL	91 278	106 456	14

Source: Adapted and modified from ZIMSTAT (2014:8)

The fluctuations in tobacco exports witnessed in the late 1990s and the turn of the millennium, can be attributed to a lot of factors that include, a volatile macro-economic environment which

had an impact on farmer's access to inputs agrarian reforms of the farming sector which ushered in more smallholder farmers with limited agricultural expertise. The droughts that occurred in 2001/02 and 2003/04. As well the inability to access modern technology and loans (Van Burren, 2001). The organization of the tobacco sub-sector has been transformed since the FTLRP in 2000. By April 2001, 2 706 farms with a total of 6,086,605 ha of land had been set aside for compulsory acquisition and re-distribution. From July 2000 and February 2001, 51,543 households were resettled on 2,083,301 ha of land (FAO, 2001). The Ministry of Lands and Agriculture (2005) reported that tobacco productivity declined from 2200 kg/ha in 1998 to about 700 kg/ha in 2001. The tobacco production trends between 1999 and 2000 are as shown in Table 2.7.

Table 2.7: Tobacco production by sector (1999-2000)

	1999			2000		
	No. of growers	Total area (ha)	Total harvest (tonne)	No. of growers	Total area (ha)	Total harvest (tonne)
Flue-cured tobacco						
LSC	1 791	77 875	188 056	1 766	76 110	230 299
SSC	441	1 010	920	461	1 164	1 290
Communal	1 571	1 756	1 011	2 557	2 959	1 951
Resettlement	3 365	3 928	2 038	3 734	4 566	3 282
Co-ops	26	193	119	19	158	125
Total	7 194	84 762	192 144	8 537	84 957	236 947
Burley tobacco						
LSC	74	1 820	2 856	72	1 094	2 584
SSC	365	332	150	449	398	201
Communal	6 222	2 484	2 302	6 674	2 670	3 037
Resettlement	2 234	2 056	1 392	2 888	2 775	2 313
Co-ops	8	32	31	8	24	28
Total	8 903	6 724	6 731	10 091	6 961	8 163

Key: LSC = large-scale commercial. SSC = small-scale commercial.

Adapted and modified from FAO Statistics, (2004:56)

FAO (2013) established that there has been significant a increase in the area planted and the number of smallholder farmers producing burley tobacco in the last two decades. However, crop productivity has remained stagnant. Farmers have embraced a number of production techniques developed by the Tobacco Research Board (TRB) before and after independence. The technologies include improved tobacco seed, seedbed fumigation and crop fertilization. Extension advice on tobacco growing is primarily provided by the Department of Agricultural,

Technical and Extension Services (AGRITEX) while the training of smallholder farmers is done at the Trelawney Training Centre which is funded by government and managed by the ZTA. The training covers all aspects of small-scale tobacco production, rotation and farm finance. After completing training, farmers are assisted with money and equipment to start producing the crop. Smallholder tobacco yields average one tonne per hectare and are still much lower compared to the 1.8 tonnes per hectare produced by large-scale commercial farmers. The production performance of the LSC farming sector was attributed to the use of more fertilizer compared to the smallholder sector. There was timely implementation of key husbandry practices such as early planting and weeding, topping and harvesting. Burley tobacco is capital intensive, and is constrained by inadequate labour and lack of draught animals (Shumba et al, 2006). The emergence of contracting arrangements by private companies has mobilized smallholder producers because of the market guarantees.

Contract farming has been in existence for a long time in Zimbabwe funding crops such as tea and cotton. Schemes that include sugarcane production in Triangle, an agricultural town situated in Chiredzi District in Masvingo Province, have operated as contracted out-grower schemes for a very long time (Moyo, 2014). Woodend (2003) is of the view that when the FTLRP started in 2000, the government spearheaded a variety of contract farming initiatives but with limited success. In Zimbabwe tobacco contract farming started in 2004 (Dawes, et al, 2009). At that time tobacco finance and production were on the decline. The disorderly and violent FTLRP in 2000 led to a surge in tobacco producers from 8 537 in 2000 to 60 047 in 2012 (TIMB, 2012). The new tobacco farmers took over a vandalised and dilapidated tobacco infrastructure which

negatively affected the quality and quantity of tobacco delivered at the auction floors. New communal smallholder tobacco farmers had no collateral and limited expertise in tobacco production and found it difficult to access finance from commercial banks that had for a long time financed the tobacco industry. Economic challenges resulted in the economy waning leading to limited credit facilities for communal farmers. Tobacco production decreased from approximately 237 000 kg in 2000 to 48 700 kg in 2008 (TIMB, 2012; Dawes et al, 2009).

The TIMB (2012) identifies insufficient inputs, technical expertise and finance as the key reasons for the decline in production. Tobacco production is a capital intensive venture which requires specialised inputs and technological know-how for a quality crop that fetches better prices on the market (Bijman, 2008). There was a conviction that contract farming funded by tobacco merchants had the ability to enable SSC farmers to acquire the required inputs and capital culminating in an improvement in productivity, foreign currency generation and income (Dawes *et al,* 2009). According to the Contract Farming Theory and research findings in developing countries, this bargain has the potential to benefit both parties (Minot, 1996). Opposing views point out that the relationship is exploitative (Simmons, 2002; cited by Minot 2011) and call for the crafting of a well-informed and coordinated policy to guide the process. For the GoZ, an intervention to enhance tobacco production became urgent because tobacco was the leading export crop contributing 25-30% of export earnings and 8.2% to GDP (FAO, 2003). More so, 33% of the labour force in 2003 was employed in the sector. Critical budgetary challenges and withdrawal of donor support resulted in poor support for agriculture infrastructure and finance, leading to government's call for an integrated financing model.

Moreover, the production of tobacco is shunned by donors due to its associated health hazards and global anti-smoking movements. In addition donors avoid resettlement areas since they are classified as problem areas. In Zimbabwe, tobacco is being grown extensively hence an increase in the uptake of contract farming by smallholder farmers. The major source of funding for the SSC sector is contract farming companies and this has a knock-on effect on rural economies. The funds are usually sourced offshore by the large tobacco companies (Bijman, 2008).

2.9 The Economics of Contract Farming

Contract farming operates in between spot markets and vertical integration, and serves as an economic institution (Anseeuw, 2012). The institutional arrangements associated with contract farming often provide inputs on credit, technical expertise and guaranteed price and market for the product. This type of vertical coordination simultaneously eliminates numerous constraints on farming practices, specifically risks related to production, access to inputs, credit, and information. Thus, contract farming can be regarded as an institutional remedy to the challenges of market failure in the markets for credit, insurance, and information (Grosh, 1994). In Zimbabwe, contracted tobacco production has continued on an upward trend. The 2014 agricultural season produced 165.5 million kg with prices averaging of $3.32/kg. The sixteen merchants licensed by TIMB in 2014 contracted 49 143 producers. In the 2013 cropping season 113 million kg were recorded averaging $3.74/kg (TIMB, 2014).

Contract farming can take three different forms, namely market specification, provision and production management. These differ in the terms of forms of payment and pre-agreed prices,

the type of services provided, the quantity and quality of the produce and input provision (Grosh, 1994).

In the market provision modality the farmers and contractors consent on what is to be produced in terms of produce amount and product quality. The two parties also concur on the time of sale, location and sometimes price (Dasilva, 2005). Resource provision modality terms are similar to those of the market provision modality. Resource provision modality further requires the firm to provide input packages and technical advice to the production process (Dasilva, 2005). The production management of contracted farmers compels them to follow a prescribed production process using precise technological guidance. The choice of any of these contractual forms is dependent on product and agent characteristics and the market circumstances of a given period of time.

Contract farming is one of the many alternative forms of vertical coordination which firms can engage in to obtain raw materials for marketing and further processing. Other institutional arrangements in which the firms can engage include the spot markets, full vertical integration and other different forms of vertical alliances (Minot, 1986). Spot markets are the simplest institutional context for vertical coordination, where transactions are determined by commodity price. The firm does not play a part at all over the course of production and all other aspects of the transaction are not prepared to negotiate. Most agricultural commodities are influenced by the spot market. Another extreme option is full vertical integration, which involves a continuous flow of products and information through different stages of a supply chain and transactions pursue a corporate-based and not a negotiating party's scheme. In this case, the firm has total control over two or more stages of production (Minot, 1986). Unlike these two forms of

coordination contract farming allows both the firm and the growers to participate. The firm does not formally operate the farms but has different levels of control in the production process. Basically it is a way of risk sharing between the firm and producers and distributes activities in the supply chain.

Contract farming requires constant adjustment to suit the nature of the agents involved and the prevailing economic environment. Uncertainty for both parties, resulting from asymmetric information and other transaction costs, may cause poor performance of contracts. An understanding and interaction between two parties can make the contract exchange efficient by building trust (Dasilva, 2005). The contractual exchange can be made more efficient if there is an understanding or interactions which lessen distrust between the two parties.

2.9.1 Contract farming conceptual framework

Figure 2.1 summarises the relationship between the main players that are involved in contract farming, the issues involved if output and income are generated. Contract farming arises due to information asymmetry challenges in agricultural produce markets. These challenges have a tendency to magnify the costs of conducting business while affecting productivity.

The right side of Figure 2.1 shows that tobacco producers have problems in accessing finance, markets and services. Williamson (2003) argued that contracting firms incur high transaction costs because of opportunism and screening of information as they try to contract with farmers. According to Wu (2006:16) ‘economic distortions and contract imperfection’s call for government intervention so as to improve the performance of the markets’. It is generally agreed

that in contract farming smallholder farmers are poor and have weak bargaining power as compared to the rich firms whose main goal is profit-making (Wainaina *et al*, 2012). This is why government intervention is necessary to create a working environment that will reduce the total cost of doing business.

As indicated by the budgetary allocations to the agricultural sector, the government does not have the capacity to effectively support farmers, yet it is worried about reducing poverty and economic growth through agriculture. Moreover, the Zimbabwean land tenure system is ridden with suspicions which increase the risks that firms face when dealing with smallholder farmers. Through TIMB, the GoZ provides an environment for farmers and firms to contract thereby increasing economic activity and productivity at the end of the chain.

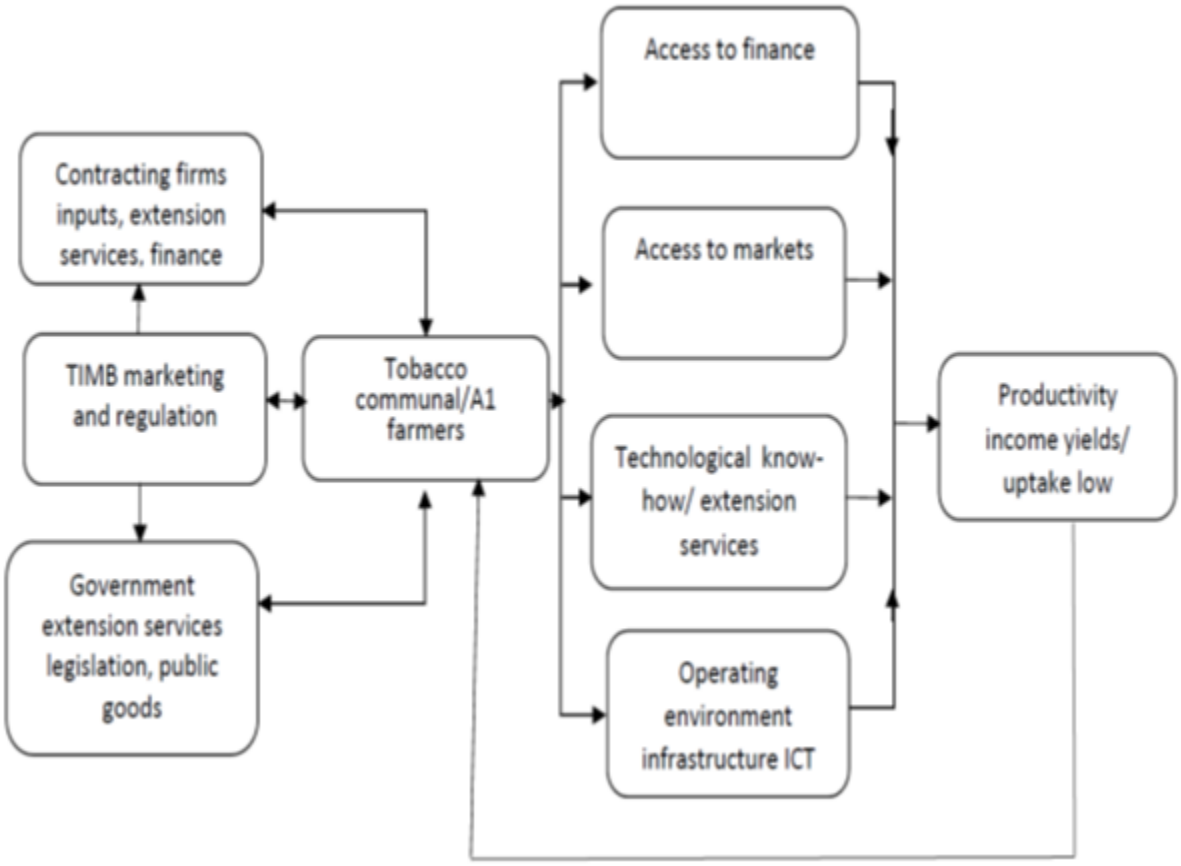

Figure 2.1 Conceptual framework for tobacco contract farming (Adapted and modified from Moyo, 2014:6)

2. 10 Smallholder Tobacco Farming as a Source of Livelihood

Various definitions have been proposed for the term livelihood. Chambers (1987) defined livelihood as the adequacy of stocks and flows of income to meet basic needs. Chambers and Conway (1992) later expanded the definition to describe livelihoods as the capabilities, assets and activities necessary to earn a living. Ellis (2000) is of the view that a livelihood comprises assets, in the form of natural, physical, human, financial and social capital, together with the

activities and the access to these mediated by institutions and social relations that together determine the living of an individual or household.

Nichof and Price (2001) defined livelihood as a system which has inputs, outputs or livelihood purpose, activities, agencies, vulnerability on sustainability of the livelihood, environment and the locus which is the household. It is evident that the term livelihood has been defined in different ways, but the most commonly used definition is that of Chambers and Conway (1992:23), "a livelihood comprises the capabilities, assets and activities required for a means of living: a livelihood is sustainable if it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets and provide sustainable livelihood opportunities for the next generation."

Issues to consider for livelihood include income, social institutions, gender relations and property rights required to meet a basic standard of living. Facilitating and sustenance various income portfolios requires social networks. However, social networks do not substitute access to benefits provided by government that include education, health services, roads and water supplies that as well constitute livelihood (Ellis, 1998).

Also, a livelihood would include capabilities, material and social resources, as well as the activities needed to earn a living. There should be consideration for the role structures, policies and processes that influence the choice of a livelihood strategy by rural people. Hence, a livelihood is regarded as sustainable if it copes with and recovers from stresses and shocks, maintains or enhances its capabilities and assets whilst not undermining its natural resource base (Scoones, 1998). Consequently, the idea of livelihood is about individuals, households and communities earning a living, striving to meet a variety of consumptions and economic

necessities, copying with uncertainties and responding to new opportunities (de Haan and Zoomers, 2005).

A livelihood strategy consists of activities that would generate income for households. Thus, it does not only focus on people's activities that earn them a living but also on resources that empower them with the capabilities to realise a standard of living, the hazards they consider in managing their resources, as well as the institution and policy context that may aid or hinder them in their quest for an enhanced satisfactory standard of living.

2.11 Rural Poverty in Zimbabwe

The Central Statistical Office (1998) propounds that there is a nexus between poverty and colonial past in Zimbabwe. The socio-economic and political conditions before independence offered economic and political opportunities for whites as opposed to the majority blacks. Blacks were settled on marginal land whilst whites owned huge areas of productive and fertile land. Resettlement areas represent efforts by government to attend to land distribution problems by resettling the communal farmers on former commercial farmland. Education and job opportunities were unequal in favour of whites and remuneration for the similar jobs varied with race. These policies established and perpetuated deep inequalities and maintained poverty amongst blacks.

As in most developing countries, rural households in Zimbabwe have higher comparative poverty rates compared to urban households. Farm incomes and production are not sufficient and food shortages are on the increase. Various reasons have been advanced for the deteriorating rural incomes. The government blames sanctions and droughts, whereas the international

community and some citizens blame the FTLRP and government maladministration. Households are depending much on emergency aid and remittances. Zimbabwe is largely a rural country. Approximately 68 % of the population reside in rural areas. Agriculture is the dominant economic activity in rural areas. The contribution of agriculture to GDP is; however, lower than its share of employment. Productivity and incomes in the agricultural sector are thus lower compared to other sectors of the economy. In fact, most poverty research in Zimbabwe has established that agriculture has a low income-generating capacity, hence poverty is much more rampant in rural areas than in urban areas (World Bank, 1996; MPSLSW, 1998; CSO, 1998). The majority of the rural people rely on communal farming which is characterised by low productivity and limited use of purchased inputs and capital. From 1980 to1984, government resettled 35 000 households on roughly two million hectares of land. Before resettlement, most of the land reform beneficiaries were amongst the poorest in the country. In the late 1990s many other households who had missed out on resettlement during the 1980-84 period and were still living in unfertile, poor dry lands were allocated land. However, only a small proportion of the poor people were given land in the 1980-84 resettlement programmes. LSC farms were divided into A1 and A2 farming areas during the FTLRP and some landless people were then resettled on these farms. The FTLRP resettled more than 300,000 families on over 6.0 million hectares of land. It was hoped that allocating fixed quantities of land, and providing agricultural support services to resettlement areas would help fight poverty amongst the communal farmers who previously owned very small plots or no land (Kinsey, 2010).

According to Anseeuw et al (2012) the major thrust of the GoZ's agricultural policy at independence was to attain equity and efficiency by reallocating land to smallholder farmers, expansion of marketing infrastructure and marketing services, and restructuring of research and development and extension services to meet the needs of smallholders. The post-independence agrarian policies culminated in remarkable expansion in agricultural productivity in communal and resettlement areas, and increased the incomes of some of the poorest households in the country. Real agricultural output grew by approximately 4 % per year up to1987, with much of the growth arising from smallholder farms. However, since the late 1980s, growth in agriculture has stagnated, resulting in persistent questions on whether the expansion in the 1980s was a once-off occurrence achieved by transferring technologies and services to previously ignored areas.

2.11.1 Measurement of poverty

The prevalence (or incidence) of poverty is one measure of poverty. The prevalence which is also known as the headcount index represents the overall population (either people or households) whose consumption expenditures fall under the poverty line as a proportion of the total population. For example, the prevalence of poverty in an area is the number of people (or households) below the poverty line divided by the entire population (individuals or households) in the area. The prevalence of poverty is helpful for targeting regions or subgroups and a fundamental principle involves the targeting of groups or regions with the highest poverty prevalence rate (ZIMSTAT, 2013). In this study Marondera district is amongst the poorest rural areas in Zimbabwe. Farmers in Mashonaland East province have engaged in smallholder tobacco farming as a livelihood strategy and the research seeks to identify how it has contributed to

reducing poverty. There are several poverty indices that are used to measure poverty. The poverty gap index is a measure of the depth of poverty. It is based on the aggregate poverty deficit of the poor relative to the poverty line. It is a good measure of the depth of poverty. Another measure is the poverty severity index. It is more of a quantitative measure of how many people are poor, rather than a measure of the extent and magnitude of their deprivation. Thus, it averages the squares of the poverty gaps relative to the poverty line (Ravillion, 1992).

2.11.2 Poverty dominance in rural areas

The majority of households in Zimbabweans are located in rural areas. Seventy-six and 38.2 % of households in rural and urban areas, respectively are considered to be poor. ZIMSTAT (2013) reported that poverty is severe in rural areas where 22.9 % of rural households lack adequate resources to meet minimum food needs as shown in Table 2.8. The government's thrust of fighting rural poverty through agriculture is not misplaced and smallholder tobacco farming is better placed to improve rural livelihoods. From Table 2.8 it can be noted that rural poverty is more prevalent than urban poverty.

Table 2.8: Poverty Indices by Place of Residence

	Prevalence (%)		Poverty indices	
Residence	Poverty	Extreme poverty	Poverty gap index	Poverty severity index
Households				
Rural	76	22.9	36.1	20.6
Urban	38.2	4.0	12.3	5.6
All Zimbabwe	62.6	16.2	27.7	15.2
Population				
Rural	84.3	30.4	42.8	25.4
Urban	46.3	5.6	15.5	7.2
All Zimbabwe	72.3	22.5	34.1	19.6

Source: Adapted and modified from PICES (2011) Poverty refers to the prevalence of households or people in households whose consumption expenditures per capita are below the upper poverty line (the TCPL) Extreme poverty represents a shortfall below the lower poverty line (FPL.) (See Ravillion, 1992 for details).

The Food Poverty Line (FPL) represents the minimum consumption expenditure necessary to ensure that each household member consumes a minimum food basket representing 21000 calories per day. Hence, in poverty analysis one is considered as extremely poor if they fall below the food poverty line, whilst on the other had the Total Consumption Poverty Line (TCPL) refers to the upper line represents the cost of a given standard of living that must be attained if a person is deemed not poor (Zimstat 2015:52). The TCPL includes an allowance for non - food minimum need requirements such as housing, clothing, transportation and health care. Each of these poverty lines varies by region and time of the year.

2.11.3 Poverty levels by province

Mashonaland East Province, where the study area is located, 11.8% of the households can be classified as poor, 70.2% being relatively poor and 17.3% as extremely poor (ZIMSTAT, 2013). Agriculture, particularly smallholder tobacco farming is the main economic activity which can be used to fight poverty.

Table 2.9 Poverty levels by Province

		Household prevalence%			
Province	Percent poor households	Poor	Extremely poor	Poverty gap index	Poverty severity index
Manicaland	19.7	76.6	21.6	20	25.9
Mashonaland Central	12.9	78.7	23.7	21.5	37.9
Mashonaland East	11.8	70.2	18.9	17.7	32
Mashonaland West	13.5	81.3	27.7	23.5	40.1
Matebeleland North	7.1	87	41.9	31.3	49
Matebeleland South	6.6	75.1	22.2	19.8	35.2
Midlands	14.4	77	23.8	221	36.5
Masvingo	14.2	68.9	15.5	16.2	30.3
Total	100	76	22.9	20.6	36.1

Source: Adapted and modified from (PICES 2011 as cited in ZIMSTAT 2013:43). *These indices are computed using the Upper poverty line (TCPL). Prevalence of poverty refers to the percentage of households whose consumption expenditures per capita fall below the upper*

poverty line (the TCPL) Extreme poverty represents a shortfall below the lower poverty line (FPL.)

2.11.4 Prevalence of poor and severely poor people in Zimbabwe

Table 2.8 shows that amongst the rural areas in Zimbabwe, Masvingo has the least incidence of household poverty. Mashonaland East has a relatively higher prevalence of poor people. (ZIMSTAT, 2013). Agriculture is the backbone of rural economies and it has the ability to positively impact on rural livelihoods if sustainably done.

The geographic distribution of poverty is partly explained by the degree of rurality, land quality in rural areas and nearness to major urban centres, though poverty is by far more pronounced in rural areas compared to urban areas (ZIMSTAT, 2013). This calls for stronger efforts to fight rural poverty and smallholder tobacco farming is seen as a gateway to prosperity by many rural farmers.

2.11.5 Rural poverty and agriculture

The 2012 ZIMSTAT study on poverty found out that variations in household poverty prevalence between rural areas are influenced by precipitation patterns and soil types which influence the types of crops grown. There is a correlation between poverty prevalence and arid land in provinces experiencing low productivity. Mashonaland East has good soils and receives good rainfall. However, its percentage of poor households at 75.9 % is relatively high (Table 2.10). The role of smallholder tobacco farming in reducing poverty therefore needs to be investigated since rural communities have embraced it as a buffer against poverty.

Table 2.10: Household Poverty in percentages by Province in rural Zimbabwe

	Prevalence (%) of		Poverty indices	
Province	Poor People	Very poor people	Poverty gap index	Poverty severity index
Manicaland	80	25.1	38.8	22.2
Mashonaland Central	82.7	28.3	41.3	24.1
Mashonaland East	75.9	23.3	36	20.6
Mashonaland West	80.1	29.2	40.3	24
Matebeleland North	89.9	49	53.3	35.2
Matebeleland South	82.5	29.4	40.8	23.9
Midlands	76.7	25	36.8	21.5
Masvingo	73.8	19.2	34	18.8
Bulawayo	43.2	5.5	15	7
Harare	43	4.3	13.2	5.9
All Zimbabwe	72.3	22.5	34.1	19.6

Source: Adapted and modified from (PICES 2011:48)

2.12 Employment Activities in the Rural Areas

In 2013 about 61.6 % of the economically active persons in Zimbabwean rural areas were communal and resettlement farmers. Only 11.5 % of the economically active people in rural areas were paid permanent, temporary and casual workers. This points to a high prevalence of rural poverty (DFID, 2009).

2.13 The Role of Smallholder Farmers in Economic Development

Smallholder farmers play a key role in agricultural production, which contributes to about 30% of gross domestic product in other countries (Kang'ethe & Serima, 2014). This scenario has been experienced in Zimbabwe from the year 2000 when smallholder producers were allocated land. Smallholder farmers have been playing a critical role in the production of livestock, cereals and cash crops since the advent of the fast track land reform scheme in Zimbabwe. Kang'ethe and Serima (2014) indicated the significance of smallholder producers towards food production and their contribution towards exports of cash crops like tobacco and cotton which were once monopolised by commercial holders. From the land reform in 1980, resettled farmers constituted smallholders who have been the principal producers of the country's staple crop, i.e. maize (Deininger *et al*, 2002) which reinforced Zimbabwe's position as the breadbasket of Africa at that time.

ZIMSTAT (2012) observed that smallholders are now a prime source of employment in rural areas, thereby providing support to the non-agricultural economy. This in turn has provided an income redistributive impact on most rural areas which stems from sectorial interactions between the manufacturing and agriculture sector. With the advent of contract farming where there is provision of inputs and working capital to the smallholder farmers, it can be assumed that more jobs and revenue will accrue to these areas. Tobacco producers have been identified as key contributors to overall exports, contributing about 61% of the agricultural export and 30% of the total export figure in 2011 (ZIMSTAT, 2012). Tobacco farming is labour intensive and also a principal employer in the agricultural sector which has given significance to the contribution of smallholder farmers who are the dominant producers of tobacco.

In a study of the land and agrarian reform programme in Masvingo area, Scoones et al (2011) established that resettled farmers were mostly poor smallholders before the reforms started. Scoones et al (2011) further stated that the farmers were intensively investing in both on-farm and off-farm enterprises, thereby making contributions to the socio-economic development within their respective farming areas. An improvement in farm production is imperative towards the bridging of dichotomies that exist between the poor rural communities and their urban counterparts. Cash crop production, which was previously the domain of LSCFs, is now dominated by the resettled farmers. This becomes a positive development for the rural communities, as it has the ability to improve their income status. It is critical to assess the role of smallholder tobacco farming to ameliorate rural poverty in Zimbabwe.

2.14 Gender in Smallholder Farming

FAO (2010) asserts that smallholder farming in Zimbabwe is influenced by gender. More than 60 percent of farmers in rural areas are women (FAO, 1996). As a result, most of the agricultural activities are carried out by women, though decisions on land use and ownership have remained a patriarchal affair. Bird and Prowse (2007) argue that women do much of daily work but they do not have the authority to take key decisions on farming. Consequently, this may detract farm management, especially if the man is absent or does not give priority to the wife's farming activities.

Hoogeveen and Kinsey (2001) reported that female farmers usually do not have land security. This is mainly due to inheritance laws which allow a woman to lose her land when widowed or divorced. Hoogeveen and Kinsey (2001) argue that this form of disfranchisement presents

challenges on both equity and sustainability. There is little or no motivation for rural female farmers to sustainably invest in agricultural management methods of land over which they do not have much security. However, gender relations are not uniform. There is considerable variation even between neighbours and different regions. In developing countries women are among the vulnerable groups when it comes to poverty. A change in welfare of smallholder rural farmers will result in better lives for women in rural areas and eradication of rural poverty since they constitute the majority of rural farmers.

2.15 The Hyperinflationary Period and Smallholder Farming

Dekker (2009) observed that prior to 2009 Zimbabwe experienced a massive political and economic crisis that resulted in double digit negative growth rates, unprecedented sky-rocketing inflation, erosion in the rule of law in addition to a disintegration of markets, particularly rural input, output and labour markets.

The growth rate of Zimbabwe's gross domestic product (GDP) declined sharply from 7 % in 1990 to minus 6 % in 2007 (IMWEO, cited in Dekker, 2008). The decline in growth rate began in 1997/8 and was reported negative shortly after the compulsory acquisition of large scale commercial farms in 2000 and 2001. The negative growth rate reached a peak of minus 10 % in the drought year 2003. In Zimbabwe, the official inflation rate rose from 15 % in 1990 reaching 25 % in 2003, almost 8000 % in August 2007 and 231 million % in July 2008. Kaufmann et al (2008) reported a sharp fall in all governance indicators as from 1996 to 2007, with generally evident decline in the effectiveness of the government, rule of law and corruption control. In 2000, national crop production was affected by tenure insecurity, drought, distorted markets,

weak agricultural support services and severe shortages of seeds, fertilizer and fuel (World Bank, 2007). The area under cultivation shrunk significantly between 1999-2000 and 2007-2008 seasons. The area under maize, soya and tobacco production decreased from 850,000ha to 500,000 ha, 220,000 ha to 60,000 ha and 180,000-60,000ha respectively. Tobacco production declined significantly from 236 million kilograms in 2000 to a mere 73 million kilograms in 2007. The FTRP of 2000 paved way for new opportunities for the smallholder farmers to make a living (Scoones, 2011) but the shrinkage of the national economy severely decreased employment opportunities. Structural unemployment increased to more than 50 % in the early 2000s and approximately 80 to 94 % in 2007/2008. Poverty became widespread, and increased from 25.5% in 1990 to about 63% in 2006 (World Bank, 2008).

The multiple dimensions of the economic slump that Zimbabwe faced in the decade after 2000 had far reaching impacts on the smallholder producers. The effects were in terms of production and supply of inputs which were severely affected by hyperinflation, together with delayed payments and money shortages, made the earnings from agricultural activities worthless, particularly during the 2007 and 2008 period. Therefore, it remains unclear how farmers have thrived and continued to produce. It becomes imperative for one to ask for an answer on how sustainable is the country's smallholder tobacco production? This is one of the questions which this research seeks to answer.

The economic problems prevailing in Zimbabwe have made it difficult for government along with the private sector to supply inputs to farmers. The economic challenges noted above reduced the number of farmers who use modern inputs such as hybrid seeds, fertilizer and pesticides. Moreover, the quantities applied to the crops have decreased over the years. Moyo

(2014) observed that the average fertilizer application rate per hectare planted for selected seasons from 1985/86 to 2009/10 has drastically gone down. The earliest and most basic annual average application rate was 285kg/ha, while the most recent is only 16.5kg/ha and this change took place simultaneously as resettled farmers were particularly expanding their cropped area and also increasing the area under cash crop production (Moyo, 2014).

Studies by Mosley et al (2007) and Bird and Prowse (2007) in Zimbabwe examined the socio-economic situation in smallholder farming communities. Mosley et al (2007) used survey data and reported on smallholders moving in and out of poverty between 2001 and 2005/6, whereas Bird and Prowse (2007) assessed two rural case studies based on life histories to illustrate a process of impoverishment, as well as adverse coping. These studies imply that there are indeed profound changes in the farmer's economic environment particularly that which is related to the performance of the credit, input, output and labour markets. Even though the studies are illustrative and essential for an appreciation of the influence of the economic predicament in rural farming areas, the studies either overlook the long-term perspective to attend to these changes (Mosley et al, 2007). The research covers a phase when negative economic growth rates had already set in or are very limited and probably selective in scope.

2.16 Smallholder Farmers and Droughts in Zimbabwe

Over the past two decades Southern Africa has experienced harsh climate extremes dominated by droughts and floods in successive seasons, leaving farmers vulnerable to climate variability (Matarira et al, 2004; IPCC, 2007). Rainfall seasons have become increasingly unreliable and unpredictable. For Southern Africa, droughts tend to follow a cyclical pattern with alternating

dry and wet spells alternating over an 11-18 year cycle (Matarira et al, 2004). Farmers in Zimbabwe are, however, convinced that the current droughts do not symbolize mere ordinary oscillations owing to this cycle but are an indication of a considerably drier period. Thus, farming should be planned based on the assumption that droughts have become frequent instead of a predictable event. Droughts have exacerbated an already complicated situation for smallholder tobacco producers and have made it difficult for farmers in dry areas to increase their productivity (Kudejira, 2014). In both urban and rural areas food insecurity continues to worsen. Zimbabwe is now a net food importer and millions are now reliant on food aid.

Makaudze (2005) contends that drought is one of the main climatic risks which affect the majority of smallholder farmers in the least developed world. Smallholders in Southern Africa experience the devastation of the different forms of droughts. The severity of the droughts on food insecurity force farmers to rely on food handouts. Makaudze (2005) further asserts that drought is clearly a factor which has maintained the levels of food insecurity and poverty in many parts of the developing world.

Makaudze (2005) also states that the Zimbabwean economy is hugely reliant on agriculture and drought frequently retards economic growth. In Zimbabwe increases or decreases in economic growth after 1980 can be closely related to rainfall patterns that occurred with lagged effects. It can be noted for example, that an adequate rainfall season in 1981/82 was consequently followed with record economic growth rate of approximately 11.4% in 1982/83 whilst a poor rainfall season in 1991/92 led to shrinkage of the growth rate contracting to an unprecedented level of 10.3% in 1992/93.

In the case of smallholder farmers an essential issue is whether farming households have the ability to sustain their livelihoods in a drought situation. Smallholder tobacco producers have thrived through these challenging circumstances. It is necessary to look in to how droughts influence rural farmer's core livelihood source, or how it affects tobacco production and income returns (Whiteside, 1997).

2.17 Migration and Agricultural Production

As of 2002, almost 20 percent of the Zimbabwean population was in the diaspora (World Bank, 2007) and this number has increased dramatically. Migration might have the negative impact of depriving the smallholder tobacco farmers of family labour. However, it can be beneficial since remittances can be used to fund agricultural activities.

2.18 Tobacco Farming and the Environment

In the face of increased environmental and sustainability concerns resulting from improvements in agricultural production, countries face a dilemma of choices in the allocation and use of resources (Chivuraise eta al, 2016). In sustainable development short–run technological benefits and long-run environmental protection are the two choices of concern. These choices require the adoption of appropriate technology that suits specific levels of different global communities. According to Pearce and Brown (1994) there is need to optimize the utilisation of scarce resources in managing natural resources to gain the best services from the environment. Agriculture produces negative externalities that affect the environment. These include deforestation and environmental degradation. The production of tobacco generates environmental impacts that are often overlooked or even ignored. Smallholder producers largely

rely on natural woodlands as the source of energy for curing tobacco. They use natural forests due to the fact that they are cheap to access leading to deforestation worries. Deforestation is undeniably one of the major impacts caused by tobacco production (ITGA, 1995). It is imperative to consider such impacts if the production of tobacco is to be sustainable. The majority of smallholder farmers are diversifying into tobacco production with the view that the crop is profitable. Consequently, there has been increased demand for natural woodland as source of firewood for tobacco curing. Tobacco is cured using various sources of energy, including coal, fossil fuels, electricity and natural woodlands. However, the bulk of the smallholders use natural forests as energy source, leading to deforestation. Forest loss continues at high rates in the country, and is responsible for losses of biodiversity. This imposes limitation on sustainable economic development (Bensel, 2008).

Chivuraise eta al (2016) reported that smallholder farmers mainly use firewood for tobacco curing and the major sources of firewood are the woodlots that are located near their farms. The result is deforestation, which will reduce firewood availability for the rural community. The main challenge for the smallholder producers is therefore about adopting measures or strategies that maximize the utilization of natural resources whilst minimizing the impact of resource degradation. The alternative way of promoting sustainable development is the preservation of forests, habitats and biodiversity to expand the productivity and efficiency of natural resource utilization in the various agricultural production activities (Chivuraise et al 2016). It may be a challenge to assess the amount of wood that is needed for curing tobacco, but Madeley (1993) established that it takes approximately three hectares of trees to cure one hectare of tobacco in

some countries. Therefore, it is of importance to assess how this has affected the livelihoods of smallholder tobacco producers in Marondera district of Mashonaland East Province.

2.19 Theoretical Framework

This thesis is informed by the Sustainable Livelihood Approach (SLA) and Amartya Sen's Entitlement Approach, both of which are explained below

2.19.1 Sustainable livelihood approach

This research is grounded on Sustainable Livelihoods Framework (SLF) which was developed by the Department for International Development (DFID). The SLF has been adopted in this research study because of its simplicity, as well as its robust analytical ability to assess the livelihoods of smallholder tobacco farmers in the communal, old and fast track resettlement areas. DFID (2000) posits that households make a living by using five types of assets, including natural, physical, human, social, and financial forms of capital. In this study, social capital is conceptualized as personal networks and connections, relations of trust and mutual support from social groups and other farmers. Natural capital is conceptualised as the land given to the farmers by the government as well as forest and water resources. Human capital encompasses the education level, knowledge and farming skills acquired from different institutions. Financial capital refers to money and loans which the farmers may acquire in order to improve their operations. Physical capital refers to the fixed assets such as infrastructure, machines, communication tools and technology. The relationship of these assets or forms of capitals is a key factor in promoting sustainable livelihoods. For instance, the resettlement schemes programme has provided natural capital (land) but has not complemented it with other capitals to enhance sustainable livelihoods (Nhundu, 2013). This is in line with the focus of this study

which is mainly grounded on the role of smallholder tobacco farming in improving the livelihoods of the rural communities in Marondera District. In the case of smallholder tobacco producers, the SLF was helpful in examining the role of tobacco as a cash crop in improving the livelihoods of these communities. It helped to examine the important factors which contribute to sustainable tobacco production, and poverty reduction. The framework also provides a linkage between various aspects which lead to efficient and effective smallholder tobacco farming. In trying to bring together a variety of definitions of the term livelihood, Ellis (2000) defines livelihood as embracing the assets (social, financial, human, physical and natural capital), the activities, and the access to those influenced by social relations and institutions that collectively influence the standard of living of households. Several indicators can be used to assess rural livelihoods. These include:

- Income generation and infrastructural development
- Sending children to expensive and prestigious schools and ultimately to universities
- Improved housing structures
- Ownership of farm assets
- Increase in asset ownership
- Creation of employment
- Improved household assets
- household food security (DFID 2000)

Ashley and Carney (1999) are of the view that the SLF is an all-encompassing approach that attempts to provide a way of appreciating the fundamental causes and magnitude of deprivation without reducing the attention onto just a few factors, for instance economic concerns and food security. It also attempts to determine the association between several aspects such as causes and severity of poverty. Ashley and Carney (1999) further state that the concept of 'sustainable livelihoods' is an appeal to monitor and evaluate the complex environment in order to achieve sustainable livelihoods. Thus, sustainable livelihood development can be considered as a way of cognitive reasoning of how development can be achieved.

The notion of 'Sustainable Livelihoods' constitutes the foundation of diverse 'Sustainable Livelihood Approaches' (SLA). Moreover, it has been adopted by various development agencies that include the Department for International Development (DFID) and Care International. The SLF by DFID is amongst the most extensively used livelihood frameworks in development practice (Ellis 2000). Livelihoods are said to be sustainable if they have capacity to overcome shocks and stresses both now and in the future, while at the same time maintaining or improving their asset and capabilities without affecting their resource base (DFID, 2000) However, the framework ideally attempts to simplify reality in order to give a clear analytical model that assists in a systematic way to limit risk and enhance livelihood opportunities (Carney et al, 1999). Livelihoods are influenced by a multiplicity of factors that are inherently constantly changing. Figure 2.2 shows the Sustainable Livelihood approach:

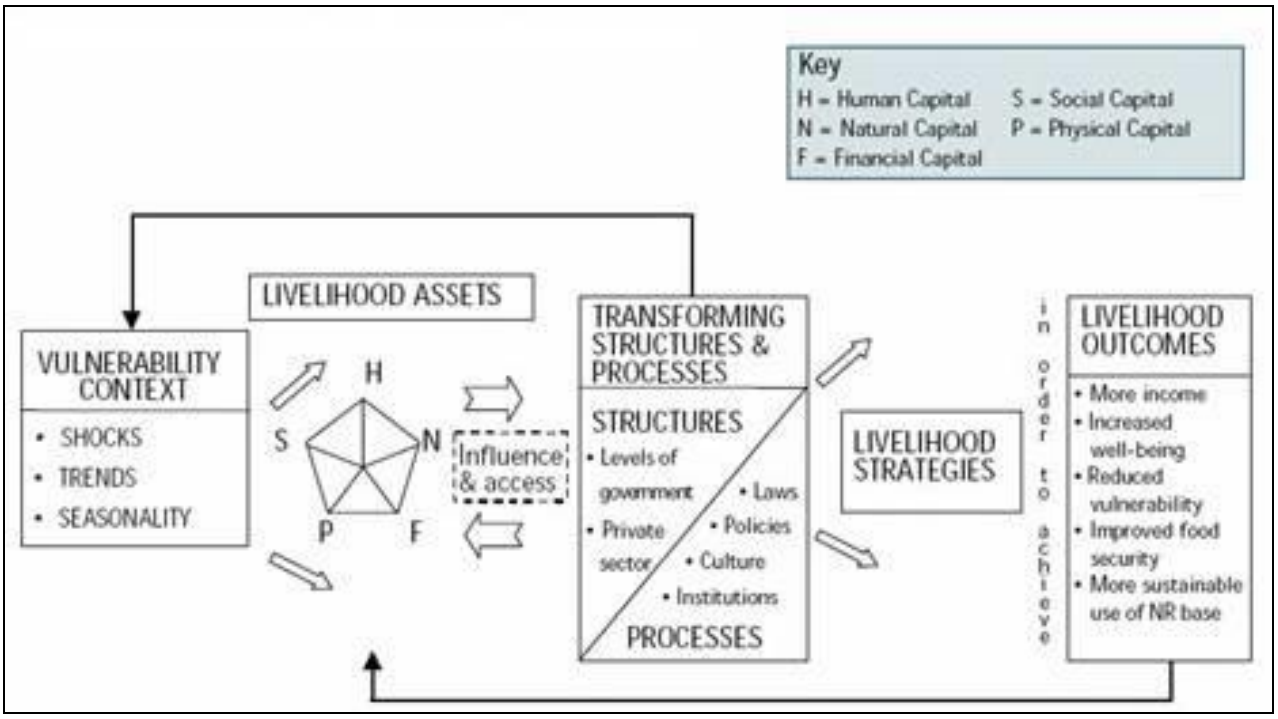

Figure 2.2 The Sustainable Livelihood Framework: adapted from DFID (2000:1).

The SLF is an aggregation of tools which is used to assess how households use available assets in order to maintain a living (Scoones, 2000). From the above depiction, the vulnerability context refers to the seasonal trends and shocks which people do not have capacity to control. These factors are important because they influence how people should adapt in order to maintain and withstand problems that affect their livelihoods.

In order to achieve sustainable development the goal is to ensure that the needed assets are increased. Achieving this is difficult, especially for the rural poor due to the dynamic environment induced by shocks, trends and seasonality, depending on the forms of capital they have access to.

Human Capital

Human capital encompasses the education level, knowledge and farming skills which the farmers acquire from agriculture extension services. For example, in Indonesia, according to Keyser (2002) smallholder tobacco farmers acquire tobacco farming knowledge and information on adverse weather patterns from extension officers. Thus, during the wet spell the tobacco that is produced in swampy areas must be grown under 'cloth crop'. This known as *Tembakau Bawah Naungan* or TBN meaning "tobacco under shelter," growing tobacco under the shade. Ensures that tobacco maintains its leaves, texture and aroma test. Whilst in the dry season there is no need for protective shelters. This type of tobacco is known as *Naoogst* and although it is less expensive to produce, its yield is of lower grade.

Financial Capital

Financial capital, is the savings or income accrued from a variety of livelihood opportunities. In Zimbabwe there have been fluctuations in the macro-economic environment. Notably the 2007 to 2009 period affected the stability of any plans projects and programmes tobacco farming included. In 2009 the dollarization of the economy ensured that farmers earned hard currency after marketing their produce. Generally in all developing countries smallholder farmers have many challenges of land tenure, poor credit facility policies and inefficient producer organisations (Scoones, 2007). These factors reduce farmer's capabilities to borrow money from lending institutions. Tobacco financing and assistance can also be in the form of contract farming. In Brazil, most smallholder farmers are engaged in contract farming. They are able to get inputs on flexible and convenient conditions. In Zimbabwe during the 2013 growing season, about 77,910 hectares of land was put under contract tobacco production compared to the 56,377

hectares in the 2012 season, showing a 38% increase (FAO, 2014). Furthermore, in 2013 tobacco production increased to around 170 million kg, in contrast to the 144.5 million kg for the 2012 growing season. This can be attributed to the increase in contract farming (ZIMDEV, 2014). However, due to limited knowledge on how the contract farming mode operates most communal farmers are sceptical about contract farming.

Physical Capital

Physical capital constitutes infrastructure in the form of communications, energy, shelter, transport and water. These factors greatly affect livelihood strategies. Poor road networks affect accessibility to commodity markets. On the other hand in the absence of irrigation with the advent of climate variability the quality of tobacco is greatly affected (DFID, 2007). Since infrastructure is expensive to provide it is important to examine how smallholder farmers have gained access to it and its impact on production (Keeley, 2001).

Natural Capital

Natural capital encompasses the natural resource stocks from which resources flow for livelihoods construction, e.g. land, water, wildlife, biodiversity and environmental resources. There is a convergence of factors that have contributed to the surge in smallholder tobacco production. For smallholder farming land is the most important natural capital. In Zimbabwe the fast-track land reform programme was an attempt to achieve an egalitarian society by giving land to indigenous black people. In the same vain there has been an attempt to ensure gender equity in the process. This attempt clearly established the women, as responsible for smallholder tobacco production and labour arrangements, and they were keen to take ownership of land, as the

government moved to attain gender parity. However, in Malawi, many smallholder tobacco farmers have less than one hectare and few other assets, thus they lack access to high quality inputs, credit, services and equipment (Tchale, 2009). The relationship between these assets or forms of capital is a key factor in promoting sustainable livelihoods. Some natural resources in newly acquired fast track land reform programme are being overexploited, especially trees that are being cut for curing tobacco (Moyo, 2004). Generally, all the land resettlement scheme programmes in Zimbabwe have provided more natural capital (land) but have not complimented it with other capitals to enhance the sustainability of livelihoods.

Social Capital

In this thesis, social capital is conceptualized as personal networks and connections, relations of trust and mutual support from social groups and other farmers. According to ASFG (2010) members of the African Smallholder Farmers Group (ASFG) have gained prominence by supporting poorer farmers who previously were victims of social exclusion in Tanzania as part of efforts to strengthen the Ujamaa villagisation programme. Palmer (2013) has argued for the inclusion of spiritual capital encapsulating the benefits to society provided by spiritual, moral or psychological practices and beliefs. However, it is difficult to separate spiritual capital from social capital.

Vulnerability Context

The SLF identifies vulnerability as one of the most fundamental issues which households try to manage. It views smallholder farmers as having several livelihood options of which farming is

one (Scoones et al, 2011). The SLF does not view land as the only asset of production. It goes further to analyse how the vulnerability context influences farming. In this case both exogenic and endogenic factors such as droughts and floods influence vulnerability. The SLF examines the synergies and associations of assets in a policy environment, allowing the researcher to assess livelihood changes in any geospatial context (Scoones et al, 2011).

Mediating Processes

One of the key objectives of the sustainable livelihood approach is to ensure a bottom up approach whereby ideas of how development can be achieved come from the poor. This involves transforming the structures such as rules, regulations and institutions on livelihood outcomes and livelihood assets (Potter et al, 2008). The Zimbabwean Environmental Management Agency (EMA) is a statutory body tasked with natural resources management of the country. Amongst its mandate is the responsibility to monitor those who illegally cut down trees even for curing tobacco. The illegal cutting down of trees for any use is a criminal offence which warrants a penalty of up to US$ 300 per tree (EMA, 2012). The Government of Zimbabwe implemented a draft statutory instrument that requires tobacco farmers to have a woodlot from which they would draw firewood to use for curing their crop. The Tobacco Industry and Marketing Board (TIMB) has since started to supply registered growers with eucalyptus seeds under this initiative.

Households that pursue more sustainable strategies are bound to achieve desirable livelihood outcomes. These sustainable strategies have a positive impact on economic development. In this case the most important factor in determining the success of livelihood strategies is having a

conducive mediating process even though opportunities and constraints play an important role as well. For instance, in Tanzania tobacco farming offers smallholder growers higher producer profits compared to maize and cotton. As a result, tobacco production has developed a multiplier effect for farmers to pursue other production opportunities. Many other jobs also depend on forward and backward linkages between tobacco and other parts of the economy, including input supply, transportation services, coal mining, and hospitality during the auction season and other consumer services. In addition to the sustainable livelihoods approach, Amartya Sen's entitlement approach was also adopted in this thesis.

2.19.2 Entitlement Approach

The Entitlement Approach was postulated by Armatya Sen in 1981. He argues that the aim of development is to improve human lives. This can be achieved by increasing the resource base of individuals. It is more of a rights based approach. Thus, development is an attempt to reduce deprivation which can be achieved by increasing literacy, income and employment opportunities (Zimbabwe Human Development Report, 2003).

The original Entitlement Approach was based on famine and food security analysis. It examined people's potential to acquire livelihoods legally, based on all possibilities and entitlements at their disposal. The argument was that households are vulnerable because they fail to utilize their ability to avoid deprivation. Furthermore, it concentrates on those means of commanding food that are legitimized by the legal system in operation in a society. The approach fails to appreciate that livelihood is not just about capabilities of people. Rather the policy environment is

instrumental in affecting people's responses to the way they survive (Ogbaharya, 2006). Figure 2.3 shows the Amartya Sen Entitlement Approach or the capabilities approach.

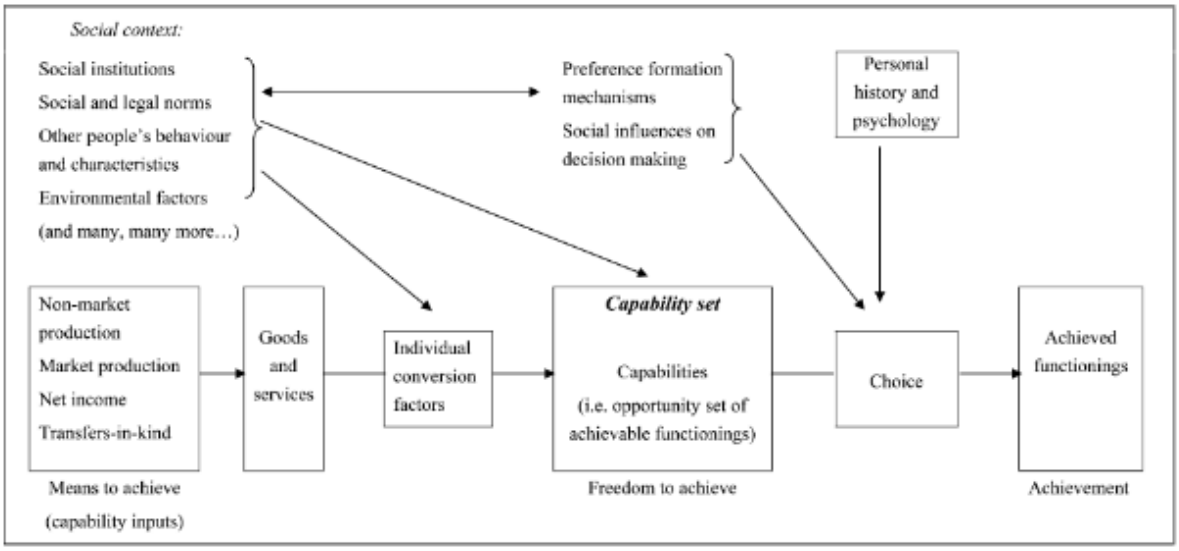

Figure 2.3 Amartya Sen Entitlement Approach

Source: Robeyns (2005: 98)

"Entitlement refers to the various capabilities which are acquired through synergies with actors and institutions. These are influenced by assets available to individuals" (Sen, 1999:23). The appreciation and understanding of entitlements is done in a holistic and systematic manner. Sen (1981) based his model on smallholder farmer's food security during famines. The same arguments are also valid for smallholder tobacco farmers. The entitlement approach helps to evaluate the efficacy of smallholder tobacco farmers in relation to rural transformation. The major components of the approach are entitlement mapping, entitlement set and endowment sets that people have (Murugan, 2003).

Endowment Sets

The endowment set refers to an aggregation of resources which are at an individual's disposal (Osmani, 1995). Since it is a rights based model, all the rights including social, economic and political rights complement the endowment set. In the context of smallholder tobacco farming resources include arable land, knowledge acquired from extension workers and social safety networks. The adoption of these resources, taking into consideration indigenous knowledge systems, laws and regulating institutions, leads to environmental sustainability. Thus, it can be inferred that where there are limited resources, production will also be at minimal levels (Mutami, 2015). Thus, this study adopted the concept of endowment set to analyse the relationship between funding and smallholder tobacco farming.

Entitlement Mapping

Closely linked to endowment sets is entitlement mapping. This relates to the rate and ways in which the endowment set (resources) is converted into goods and services, which can improve people's livelihoods (Kuklys and Robeyns, 2004). Entitlement mapping is linked to three components, namely production, transfer and exchange. For instance, tobacco farming in communal areas has drastically increased in terms of total area under cultivation and even households adopting farming. The macro-economic status of a country can influence productivity. The hyperinflation period of 2007 to 2009 led to a decrease in productivity since there earnings were eroded by the devaluation of the currency (Mutami, 2015).

Entitlement Set

The entitlement set attempts to combine the endowment set and entitlement mapping. It examines all the combinations of goods available to households, looking at how these goods can be used to increase resource acquisition and utilisation (Nayak, 2000). In this regard especially for subsistence communal farming, family size becomes an important source of labour. Households with large families tend to cultivate more cash crops. On the other hand child headed and elderly headed households only grow food crops, for instance cereals (Osmani, 1995). In the old resettlement areas tobacco farming has been on the increase since 1995 owing to contract farming and cumulative accumulation of production resources. It should be emphasised that the concept of entitlement in this thesis emphasises the capabilities of rural people and how these capabilities can be converted to deliverables (Whiteside, 1998).

2.20 Summary

Agriculture is the major livelihood strategy in rural areas of developing countries. Success of smallholder farming can only be determined by improved livelihoods and a large proportion of income from cash crops. Sustainable smallholder tobacco farming in Zimbabwe is determined by the ability of the farmers to improve their lifestyles, to be self-sufficient in meeting food requirements, without causing harm to the environment. The SLF has indicated that the success of smallholder tobacco farmers is based on their positive influence to rural communities. Failure by smallholder tobacco farming to stimulate rural livelihoods will negatively affect rural economies. Thus, this study aims to contribute how smallholder tobacco farmers can be effective and efficient in order to reduce poverty in rural areas. This was done by comparing the contribution of smallholder tobacco farming to the alleviation of rural poverty in communal and

resettlement areas in the post hyper inflationary era. This is achieved by comparing production trends and incomes across the different land use types. Such an approach helps to infer the role played by the land reform programme in improving smallholder tobacco productivity and rural livelihoods. The following chapter presents the research methods which were adopted in this study.

CHAPTER 3 STUDY AREA AND RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the background of the study area, including the characteristics of its population, climate, soils and vegetation. The chapter also provides an overview of the methods that were used to collect and analyse data. As noted in Chapter 1, these areas are located in Marondera District of Mashonaland East Province in Zimbabwe. Also, as indicated in Chapter 1, the objective of the study is to determine the efficacy of smallholder tobacco farming as a tool for socio-economic transformation in rural Zimbabwe. However, this chapter also presents and justifies the research approaches that were adopted in the study. Thematic analysis, correlation analysis and multiple regression analysis were the main methods used in the analysis of data.

3.2 Study Area

The study was carried out in Wards 19, 20, 21 and 22 located in Marondera District of Mashonaland East province of Zimbabwe (Figure 3.3). Marondera District is located about 73 km north-east of Harare. Table 3.1 provides the details of the study area, including the bio-physical conditions of the area. The vegetation found in Wards 19, 20, 21 and 22 is categorized as a *miombo* woodland and the dominant species are *Brachystegia* and *Julbernadia* (Chamunorwa, 2010) (Figure 3.1).

Figure 3.1 Vegetation type in the study areas (a-b) fast track (c) communal (d) old resettlement

Julbernadia globiflora, is found in mixed woodland savannah, frequently co-dominated with *Brachystegia spiciformis* and is easily confused with this species though there are some differences. *Brachystegia boehmii,* also locally known as *Mupfuti*, is a medium sized deciduous tree with a spreading flat topped crown. Wards 19, 20, 21 and 22 are situated in Natural Farming Region IIa (Figure 3.2), Mashonaland East Province, where the study was carried out is indicated by a black rectangle.

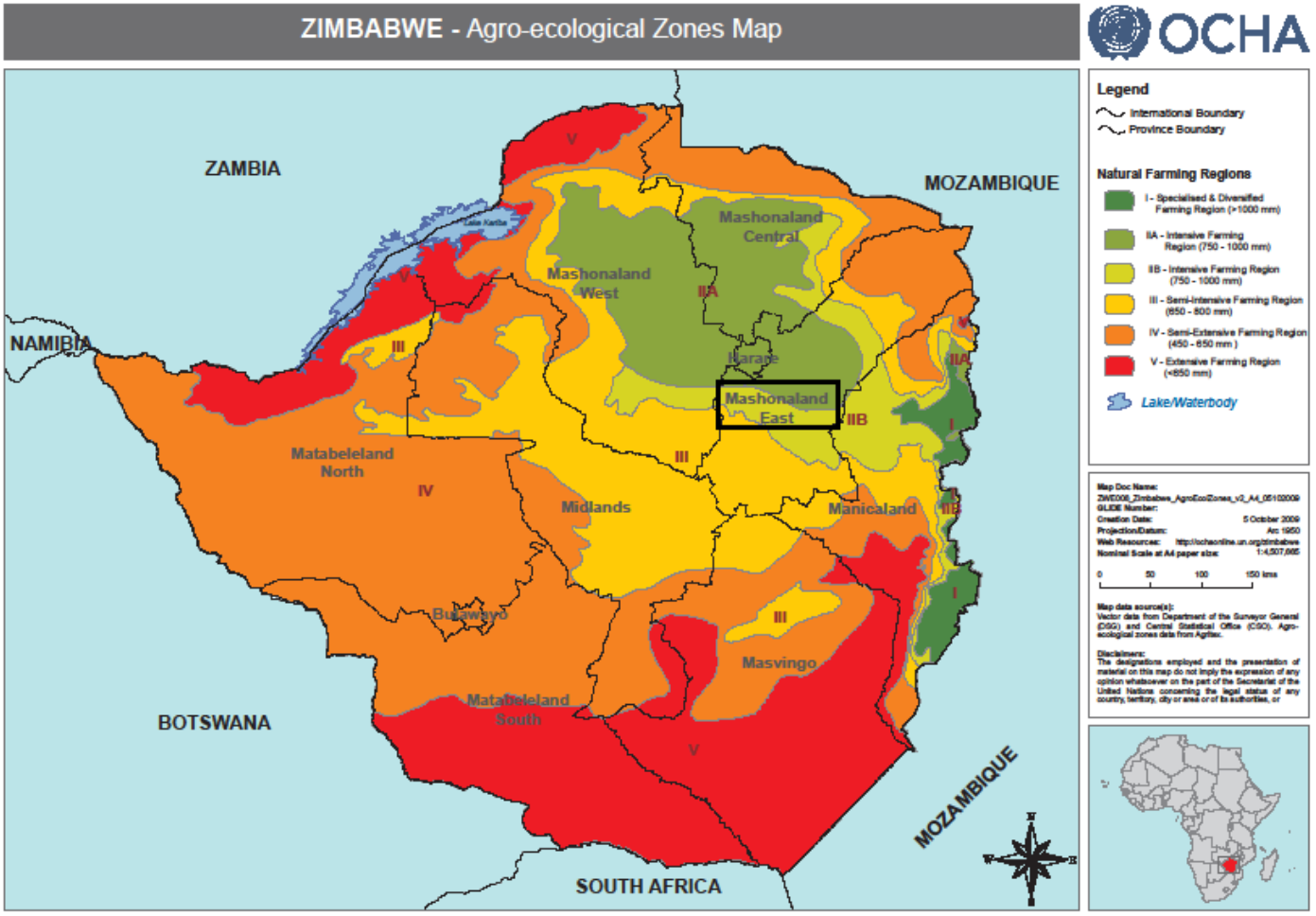

Figure 3.2 Agro - ecological zones in Zimbabwe (http://unoch.org/)

Table 3.1 shows the climatic conditions that prevail in this region, including temperature and rainfall.

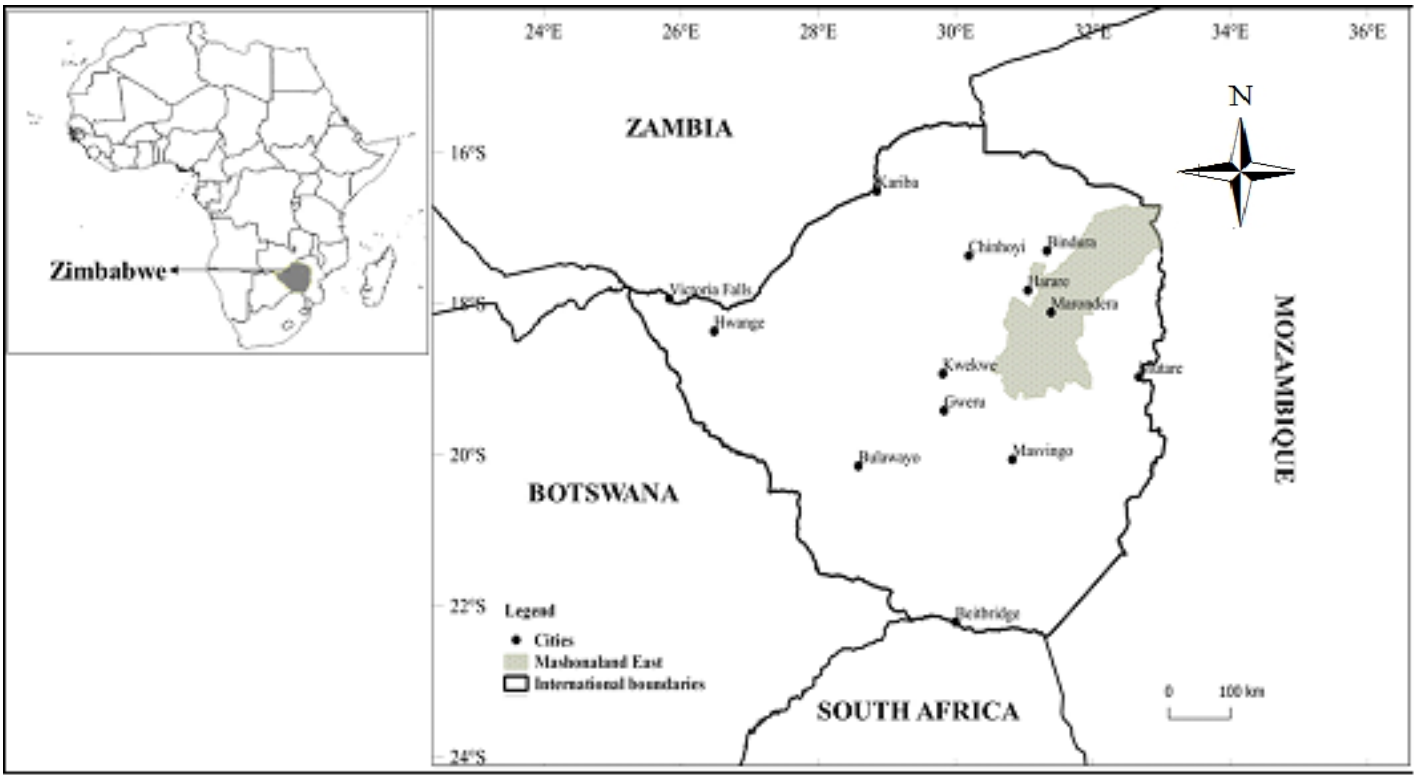

Figure 3.3 Location of the study area

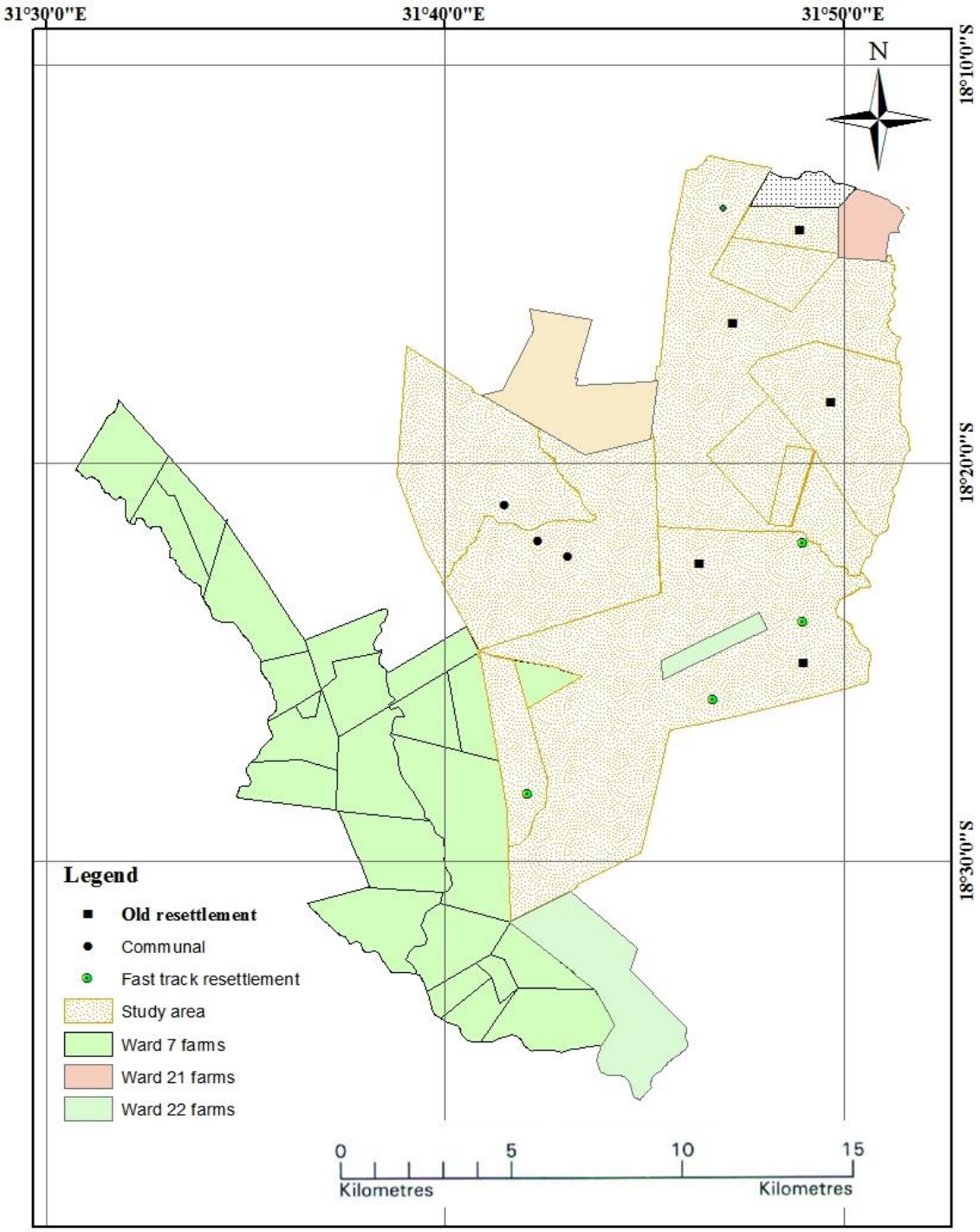

Figure 3.4 Location of the study areas

Table 3.1 Conditions characterising Marondera District

Variable	**Value**
Longitude	31°28'56''E
Latitude	18°10'15''S
Altitude (m)	1400-1688
Rainfall (mm)	600-1200
Rain season	October to April
Mean monthly Temperature (^{0}C) *	11-19
Vegetation type	Dry miombo
Soil classification /type	Sandy loam

*Mean monthly temperatures range from 11^{o}C in June to 19^{o}C in November (Chamunorwa, 2010).

The study area covers four wards (Wards 19, 20, 21 and 22). Wards 19 and 20 mainly constitute newly resettled farmland, encompassing fast track resettled farms, whilst Wards 21 and 22 are partly situated in the old resettlement areas. In the fast track resettlement areas, where Chipesa, Dozmery and Machiki farms are located, tobacco production only started in 2000. The old resettlement areas where tobacco is produced include Mere, Ashenden, Chematanda and Joberine and other farms. However, all the four wards stretch into the surrounding Svosve communal area, a rural area consisting of villages such as Magorimbo, Muzunze and Neshamba where tobacco has been grown for a long time.

3.3 Research Design

A research design is defined as an approach or strategy that can be used systematically in order to fulfil the demands of a research project (Creswell, 2009). Research design usually incorporates strategies which are used to determine the best applicable course to be taken when undertaking research (Terell, 2012). The research design adopted in this study provided the totality of the methods and procedures that were followed to ensure a consistent and systematic collection and analysis of data, as well as the interpretation and presentation of the research findings. The ultimate decision involves the type of research design that should be adopted to fulfil the research and such a decision must be based on the assumptions that the researcher undertakes during the study; and methods used for data collection, analysis, and interpretation (Creswell 2009). Since there was need to assess the efficacy of smallholder tobacco farming towards the achievement of socio-economic transformation, the study made use of a mixed method research design.

The mixed methods approach was adopted due to the fact that all methods (quantitative and qualitative) had limitations, thus this research intended to reduce the bias inherent in individual methods. The methods that were adopted were based either on constructivism or positivism as noted below.

3.3 1 Social constructivism/constructionism paradigm

Since the study was engaged in assessing the efficacy of smallholder tobacco farming as a tool for socio-economic transformation in rural Zimbabwe, it had to be guided by the social constructivism paradigm. Poverty is a multi – dimensional concept which is difficulty to

measure. In order to access whether tobacco farming has reduced poverty and vulnerability, the researcher adopted the social constructivism philosophy whereby knowledge is constructed through interaction. The source and focus of information shifts from the researcher to the participant. The social constructivism (constructionism*)* paradigm is generally used in qualitative research (Mertens, 1998; della Porta and Keating, 2008). Social constructivists make assumptions which they use to understand their surroundings so as to develop meaning based on their experiences (Creswell, 2009). In this study, the researcher adopted this approach because there was considerable reliance on participants' views on the investments, income and production trends, benefits and challenges that are faced by the tobacco farmers in Marondera. In this case the views of the participants about the role of tobacco production in reducing rural poverty and the challenges that the smallholder tobacco farmers face in their environment were identified. Thus, since this research paradigm is mainly qualitative in nature, questions about these phenomena were directed to the smallholder tobacco farmers during focus group discussions (FGDs). In addition, some of the qualitative data related to the challenges and the contribution of smallholder tobacco farming (communal, old resettlement and fast track resettlement) in reducing rural poverty were also collected from the key informants through Key Informant Interviews (KIIs). The KIIs were administered to the officials from the Environmental Management Agency (EMA), Tobacco Industry and Marketing Board (TIMB), and Department of Agricultural and Rural Extension (AGRITEX) officers. In this regard, the researcher used open-ended questions to collect data on the views of informants about tobacco production, the changes it brought to their livelihoods and the challenges that they have faced as smallholder tobacco farmers. The constructivist approach offered the advantage that the farmers and the key informants were asked research questions in their natural settings, hence there was not much

opportunity for complication in the way data was collected. Thus, the researcher derived meanings from the discussions and interviews held with the key informants (Bhattacherjee, 2012). Since the data that were collected through the guidance of the social constructivism approach were largely qualitative in nature, the study employed a thematic analysis following the research questions and the research objectives that had been formulated (see Chapter 1). Excerpts from the interviews were used to show the views and opinions of the participants from the study area. However, the qualitative data that were collected through this approach were complemented by quantitative data derived from positivism, as noted below.

3.3.2 Positivism

In social science research, positivist approaches are based on the assumption that the researcher is detached with the participants in the study and hence observations are made independently (della Port and Keating, 2008). In this case, positivism makes use of observations and reasoning to understand behaviour and phenomena, and explanations proceed through the use of scientific description (Cohen et al, 2007). The assumptions of positivism are more inclined to quantitative rather than qualitative research (Creswell, 2009). Specifically in this study, the positivist paradigm was very important as there was need to determine the variability of tobacco output across the smallholder farmers, and also to determine the factors that affected tobacco output in different farming areas. Thus, the data that were collected in this case were quantitative. The study made use of researcher-administered questionnaires in data collection. A researcher-administered questionnaire was used to collect data on numerical variables such as age, size of arable land, size of arable land under tobacco production, tobacco farming experience, amount invested and tobacco output per farmer. The data were analysed using different statistical

methods, including correlation and multiple regression analyses. SPSS V16 and MS EXCEL 2010 are the types of software that were used in the analysis. The non-numerical data that were collected through the questionnaire method included challenges that the smallholder farmers faced in tobacco production and changes in rural poverty as a result of tobacco production. To complement the data collected through researcher-administered questionnaires, the researcher also utilized the observation techniques.

Each of the different research approaches used in this study, had its own strengths and shortcomings, and as such there was need for complementarity of different methods to enhance the quality of the data that were collected and ultimately the results of the study.

3.4 Target Population and Sampling Strategy

In this research, the target population included 2 020 tobacco growing farmers who were based in wards 19, 20, 21 and 22 of Marondera District. Population is regarded as unit of analysis which possesses traits which are under consideration in the study. (Bhattacherjee, 2012). It was from these 2 020 farmers that a sample of 323 was drawn for the questionnaire survey. Inferences were drawn from this sample about the characteristics of tobacco farmers. The study adopted a two-staged-selection or sampling approach, as recommended by Masvongo et al (2013). Sampling is the process used in the selection of individuals/groups for use in a specific study, and the selected individuals represent the target population which they have been selected from so as to enable the researcher to fulfil the research questions (Creswell, et al 2010).

Table 3.2 Population of the study wards

Ward	**Farming type**	***Population**	****Number of tobacco growers**	**Percentage of tobacco growers**
Ward 19	Communal	1470	257	13
	Fast track		413	20
Ward 20	Communal	2029	153	8
	Fast track		275	14
Ward 21	Communal	2866	110	5
	Old resettlement		390	19
Ward 22	Communal	2177	127	6
	Old resettlement		295	15
TOTAL		8542	2020	100

*Source: ZIMSTAT (2014) is the population per ward **AGRITEX (2015)

Both probability and non-probability sampling methods were employed in the selection. The first stage involved non-probability sampling, where sampling was done purposively. Since the research required a comparative approach the study area had to be purposively selected to ensure that it covered communal, old resettlement and fast track farming areas. The second stage involved probability random sampling, to select farmers from the list of tobacco growers from each category i.e. of farming area communal, old resettlement and fast-track resettlement areas.

Computer generated random number tables were used in the selection (see Appendix 8). The random numbers were generated using MS Excel 2010.

In Marondera District, wards 19, 20, 21 and 22 extend into the Svosve communal area, the old resettlement and the newly established fast track resettlement areas. In this regard, the first stage involved the identification of all smallholder tobacco farmers in each area using the Tobacco Industry and Marketing Board (TIMB) database. The 2 020 tobacco farmers included in the TIMB database comprised 647 communal, 685 old resettlement and 688 fast track farmers. The subsamples that were drawn from these areas were proportional to the number of tobacco farmers in each area, as suggested by Simwaka et al (2013) and Dekker (2009) (see Table 3.3). and involved sample stratification. Cohen et al (2007) note that sample stratification involves the subdivision of the target population into relatively uniform groups, since each of the groups contained subjects which had almost the same characteristics.

Table 3.3 Sample size calculation

Farming categories	Tobacco farmers	Sample size
Communal	647	103
Old resettlement	685	110
Fast track resettlement	688	110
Total	2020	323

The sample size calculator (https://www.surveymonkey.com/mp/sample-size-calculator/) was used to calculate the required sample size. The calculations were based on the assumption that

the population from which the sampled farmers were drawn was normally distributed. The confidence interval for the sample was set at 95% and the margin of error was 5%.

3.5 Description of Data Collection Methods

A cross research design of qualitative and quantitative methods and tools for primary and secondary data collection and analysis was developed. The study used a number of tools which enabled the triangulation and verification of data, which enhanced the data quality. To ensure the collection of primary data, researcher-administered questionnaires, Focus Group Discussions (FGDs), Key Informant Interviews (KIIs) and observation were used.

3.5.1 Researcher-administered questionnaire

Researcher-administered questionnaires were used to gather data from randomly selected smallholder farmers in Marondera District (ward 19, 20, 21 and 22). A questionnaire is a tool which is usable so that the participant can easily understand, interpret and complete it, thereby increasing the accuracy of responses to the topic under investigation (Adams and Cox, 2010; Bird, 2009). Questionnaires involve a large amount of data that can be collected with greater accuracy (Leedy, 1997) and through the researcher-administered questionnaire, non-verbal responses were observed and noted. Questionnaires are an objective research tool that usually produces generalizable results as they are easily used with large sample sizes (Harris and Brown, 2010). The questionnaire that was used contained both open ended and closed questions such that there was maintenance of simplicity, collection of as much information as possible, but also controlling the process of data collection (Phelas et al, 2011). The questions which were included

in the questionnaire related to the level of education of the farmers, tobacco output per hectare, farming experience and amounts invested from 2000 to 2015 (see Appendix 1). The questionnaire also collected information about the type of infrastructure that the farmers owned before and after engaging in tobacco farming. It was from the questionnaires that numerical data such as tobacco output, amount of money invested, number of labourers, total arable land owned by a farmer, and the area of land used for tobacco production by the farmer, were collected. Thus, a total of 323 questionnaires were administered by the researcher to the smallholder farmers during data collection. The questionnaires were completed by the researcher using the responses that were obtained from the farmers. This gave room for the researcher to probe for more answers. This approach also reduced the time required to complete questionnaires, compared to the time it would have taken if the respondents had completed the questionnaires themselves. The average time taken by the respondents to complete the questionnaire was 30 minutes. However, the use of questionnaires has its own short-comings as some respondents were unwilling to admit that they lacked adequate knowledge about specific questions. These shortcomings were overcome by data triangulation that is by comparing data from the questionnaire survey with those from FGDs and observations. The use of the questionnaires, though with its disadvantages, allowed respondents to interact with the researcher.

3.5.2 Key informant interviews (KII)

Interviews were held with key informants. An interview provides interaction between the interviewer and the interviewee, enabling the interviewer to get data from the interviewee (Gay et al 2011). For this study the KII permitted the researcher to collect important data that could not be acquired from observations alone (Silverman, 2004; Wiersma and Jurs, 2009). Purposive

sampling was used in the selection of participants that took part in the interviews. Specifically, 4 AGRITEX officers (1 representing each of the 4 wards), 1 officer from TIMB, 1 officer from EMA and 1 officer from ZIMSTAT were used as key informants in this study, the total number of participants in the KIIs was seven. KIIs were used by the researcher because they allowed face-to-face interaction with the participants. According to Patton (2002) the use of face to face interviews with the purposively selected participants enabled the researcher to acquire respondent's mental transformations. Questions were explained by the interviewer that the respondent did not understand and could ask for further elaboration on unclear answers (Adams and Cox, 2010; Phellas et al, 2011). It was from the established interpersonal nature of the interview context that respondents responded in ways that they deemed socially desirable. KIIs provided the researcher with the ability to explore and probe participants so as to get in-depth responses about changes in rural poverty. Gay et al (2011) indicated that from the use of interviews, one can determine the attitudes, interests, feelings, concerns and values of the respondents. However, interviews in the study had the disadvantage of being time consuming. Despite the benefits of the KIIs, they have shortcoming of taking too much time during the process of data collection. On average it took 2 hours to conduct KIIs booking appointments for the interviews was problematic as participants kept on postponing the interviews. Data collected from the KIIs were used to validate the statistical data collected from questionnaires, while excerpts from the interviews were used to indicate what the key informants said in their own words.

3.5.3 Focus group discussions (FGDs)

Data were also collected through focus group discussions (FGDs). In this case, a total of 4 FGDs were carried out, one in each ward. Each FGD had 8 purposively selected participants, making a

total of 32 participants. The researcher allowed the farmers who did not take part in the questionnaire survey to provide information about the challenges that they face in their operations, as well as the environmental problems that they cause due to tobacco farming (see Appendix 3). FGDs are a type of group interview, although they restrained backwards and forwards interaction between interviewer and group there is the reliance on the interaction of the group members when they discuss after being led by the researcher (Morgan, 1988). From the FGDs, there is production of a group perspective rather than an individual view, the participants' view is what emerges from the FGDs rather than the researcher's interests predominating. Thus, from the interaction of the group data emerged and FGDs yielded answers which could not have been collected from questionnaire or key informant interviews. FGDs were beneficial in terms of time, because they produced large amounts of data over a relatively short period of time. However, FGDs have a tendency to produce less data than interviews when the same number of people are used on a one-on-one basis (Morgan, 1988). FGDs were useful in triangulating data from key informant interviews, researcher-administered questionnaires and observations. It is from the FGDs that the researcher asked the farmers their general perception of tobacco's contribution as a tool for reducing of rural poverty, the challenges that they faced and possible remedies. For the purposes of triangulation, the data from FDGs were also used to complement data from observation, KII and researcher-administered questionnaires. Data analysis followed a thematic approach, following the research questions formulated in Chapter 1.

3.5.4 Observation technique

Another approach that was used to collect data was the observation technique. The distinctive characteristic of the observation technique is that it provided the researcher with the ability to

collect data in its natural occurrence. The researcher can look directly at what is taking place *in situ* rather than relying on second-hand information (Gay et al, 2011). In this study, the researcher used the observation method in order to identify the assets and infrastructure that the farmers have acquired using earnings from tobacco production. Thus, the data collected from observation were used to complement the data collected from questionnaires and FGDs, thus enabling the triangulation process. The use of observation yielded more valid or authentic data than would otherwise be the case with mediated or inferential methods (Cohen et al, 2007).The observation method also enabled the researcher to take a fresh look at everyday behaviour that might otherwise have been taken for granted, or go unnoticed using other techniques (Moyles, 2002). The researcher was enabled to understand the context of tobacco farming and the study area in an open-ended and inductive manner. Data that were unconsciously missed, or participants who were not free to talk in FGDs and questionnaire situations were identified using the observation technique.

3.6 Pilot Study

Before the actual data collection was carried out, the researcher carried out a pilot study in order to reduce ambiguity and lack of clarity in questions. A pilot study is regarded as a miniature version of the real study in preparation for the actual study which involves pre-checking of the research instruments, in this case, the questionnaires, observation checklists and key informant interview guide. The people chosen to participate in the pilot study were excluded from the final sample as their experience of the earlier questionnaire and interviews would have influenced their answers and views. Through the pilot survey, there was also the refinement of the questionnaire and interview guides such that problem questions were modified to ensure that

respondents would not have difficulty in answering them during the survey. In this case 20 farmers outside the selected wards were used to refine the questionnaire and interview guide.

3.7 Ethical Considerations

Based on the definition by Neuman (2000) research ethics are an organized, legitimate and moral way of conducting a research. In this study, the researcher collected data from the smallholder tobacco farmers using FGDs and questionnaires that were administered to the farmers and interviews held with key informants. Consent forms were given to each of the respondents before carrying out KIIs, FGDs and questionnaires which were signed and the respondent kept a copy. The objective of the consent letters was to indicate the purpose of the study and the respondents agreeing to take part in the study. In carrying out any research, there is need to seek permission from the concerned parties. In other words, permission was sought from the farmers and the key informants to carry out a study so as to make the research authentic and possible to conduct (Christians, 2000).

Informed consent

According to Patton (2002) informed consent is the process through which respondents agree to undertake a research study after going through its procedures, risks and benefits. In order to conform to Patton's definition, in this case the respondents were informed of the purpose of carrying out the research and were made aware of any risks associated with the research. The researcher asked the respondents to make independent decisions about participating or withdrawing from the study any time during the study.

Confidentiality

Confidentiality implies that besides the researcher no one will be given access to the data that was collected by the researcher (Patton, 2002). Confidentiality also entailed that the respondents remained anonymous and also that there was no link between the answers and the person in real life.

Anonymity

The respondents in the study were given the opportunity to be anonymous. According to Christians (2000) the researcher has the obligation to keep the respondents' identity and keep their responses private. The researcher maintained that anonymity of respondents who participated in the KIIs, FGDs and those who responded to questionnaires. Anonymity was also increased when there was no link between the responses and a given respondent.

3.8 Data Analysis

The methods that were used to analyse the data that were collected included descriptive statistics, and frequencies. For the qualitatively collected data, analysis was done through the grouping of data into similar themes under the guidance of the research questions. The quantitative data collected from questionnaires, for example data on arable land, area under tobacco cultivation, amount of capital invested in tobacco farming and tobacco yields were analysed using SPSS V16 and MS Excel 2010. Correlation analysis was used to determine the factors which affect tobacco output in all three categories of farming areas. The data collected through the questionnaire surveys were first coded and then recorded in SPSS V16 in order to determine frequencies of variables such as the assets that the farmers owned, including livestock, motorized vehicles and farm machinery.

This study intended to determine the variables that had an effect on tobacco output across the three strata. Multiple linear regression analysis was used to determine the combination of variables that best explained the variability of tobacco output in all categories of farming areas, including the fast track, communal and old resettlement areas. Thus, in this regard, tobacco output was the dependent variable whilst the independent variables were arable area, area under tobacco cultivation, farming experience and amount invested. The coefficient of determination (R^2) and the level of significance (p-value set at 0.05 and 0.01) were used to test for the validity of the regression models. All the analysis were performed in SPSS V16 and MS Excel 2010.

3.9 Summary

This chapter presented different analytical tools that were used in the research study. The study was guided by the social constructivism paradigm and was partly qualitative in nature. However, the positivist approach was also adopted because it allowed the researcher to make more independent observations. The mixed method approach was adopted to validate data collected in the study. In this chapter there was a presentation of background information about the study area, including the characteristics of the population, climate, soils and vegetation of the wards where the study was conducted. KIIs observations, self-administered questionnaires and FGDs were all used to collect data. Frequencies of dominant responses were used to assess the changes in ownership of farming implements, challenges faced by tobacco farmers and problems caused by tobacco farmers. Thematic analysis, correlation analysis and multiple regression analysis were the main methods used in data analysis. The next chapter presents the results of the study.

CHAPTER 4 RESEARCH FINDINGS

4.1 Introduction

This chapter presents the findings of the thesis, emanating from the analysis of the data that was collected using researcher-administered questionnaires, key informant interviews (KIIs), focus group discussions (FGDs) and observations. Data on variations in tobacco output and revenue generated were analysed for three farming areas using Statistical Package for Social Scientists (SPSS, Version 16), to perform correlation and multiple regression analyses in order to identify the significant factors which affected tobacco production in Marondera District (ward 19, 20, 21 and 22). The results were either tabulated or presented graphically, as noted in the following sections.

In order to determine the variables that had an effect on tobacco yields in the farming schemes, there was a need to first determine the variables which were best correlated with tobacco yield. Pearson Product Moment Correlation analysis was used to determine the strength of the correlation at 99% and 95% confidence levels. The variables that were significantly related to tobacco yields included tobacco farming experience, total hectarage (total farm size), arable hectarage (amount of arable land on a farm), tobacco hectarage and amount of money invested in tobacco production (Tables 4.1, 4.2, 4.3 and 4.4). These variables were positively correlated with tobacco yields for all the three farming areas, and were therefore selected for inclusion in multiple regression models.

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4.2 Correlation of Factors Affecting Tobacco Yield

Table 4.1 Correlation matrix for old resettlement farming

Variable	Statistic	Education	Farming experience	Total hectarage	Arable hectarage	tobacco hectarage	Tobacco yield	Amount invested
Education	Pearson Correlation	1	-.022	.040	.036	.064	.022	.058
	Sig. (2-tailed)		.889	.800	.819	.683	.891	.710
Farming experience	Pearson Correlation	-.022	1	.466**	.494**	.522**	.583**	.347*
	Sig. (2-tailed)	.889		.002	.001	.000	.000	.023
Total hectares	Pearson Correlation	.040	.466**	1	.984**	.651**	.809**	.408**
	Sig. (2-tailed)	.800	.002		.000	.000	.000	.007
Arable hectares	Pearson Correlation	.036	.494**	.984**	1	.673**	.827**	.422**
	Sig. (2-tailed)	.819	.001	.000		.000	.000	.005
Area under tobacco	Pearson Correlation	.064	.522**	.651**	.673**	1	.896**	.422**
	Sig. (2-tailed)	.683	.000	.000	.000		.000	.005
Tobacco yield	Pearson Correlation	.022	.583**	.809**	.827**	.896**	1	.460**
	Sig. (2-tailed)	.891	.000	.000	.000	.000		.002
Amount invested	Pearson Correlation	.058	.347*	.408**	.422**	.422**	.460**	1
	Sig. (2-tailed)	.710	.023	.007	.005	.005	.002	

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.2 Correlation matrix for communal areas

Variable	Statistic	Education	Farming experience	Total hectarage	Arable hectarage	tobacco hectarage	Tobacco yield	Amount invested
Education	Pearson Correlation	1	.030	.206	.378*	.172	-.045	.164
	Sig. (2-tailed)		.849	.184	.012	.271	.777	.292
Farming experience	Pearson Correlation	.030	1	.257	.101	.328*	.137	-.034
	Sig. (2-tailed)	.849		.096	.520	.032	.382	.830
Total hectare	Pearson Correlation	.206	.257	1	.648**	.681**	-.145	.115
	Sig. (2-tailed)	.184	.096		.000	.000	.352	.461
Arable hectares	Pearson Correlation	.378*	.101	.648**	1	.623**	-.029	.283
	Sig. (2-tailed)	.012	.520	.000		.000	.852	.066
Area under tobacco	Pearson Correlation	.172	.328*	.681**	.623**	1	.313*	.226
	Sig. (2-tailed)	.271	.032	.000	.000		.041	.145
Tobacco yield	Pearson Correlation	-.045	.137	-.145	-.029	.313*	1	.427**
	Sig. (2-tailed)	.777	.382	.352	.852	.041		.004
Amount invested	Pearson Correlation	.164	-.034	.115	.283	.226	.427**	1
	Sig. (2-tailed)	.292	.830	.461	.066	.145	.004	

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Table 4.3 Correlation matrix for fast track resettlement areas

Variable	Characteristic	Education	farming experience	Total hectarage	Arable hectarage	Tobacco hectarage	Tobacco yield	Amount invested
Education	Pearson Correlation	1	.231	.046	.214	.114	-.097	-.129
	Sig. (2-tailed)		.136	.769	.169	.468	.537	.411
Farming experience	Pearson Correlation	.231	1	-.012	.367*	.532**	.228	.182
	Sig. (2-tailed)	.136		.940	.016	.000	.141	.244
Total hectares	Pearson Correlation	.046	-.012	1	-.014	.051	-.245	-.207
	Sig. (2-tailed)	.769	.940		.930	.744	.114	.184
Arable hectares	Pearson Correlation	.214	.367*	-.014	1	.260	-.020	.133
	Sig. (2-tailed)	.169	.016	.930		.092	.897	.393
Area under tobacco	Pearson Correlation	.114	.532**	.051	.260	1	.361*	.509**
	Sig. (2-tailed)	.468	.000	.744	.092		.017	.000
Tobacco yield	Pearson Correlation	-.097	.228	-.245	-.020	.361*	1	.688**
	Sig. (2-tailed)	.537	.141	.114	.897	.017		.000
Amount invested	Pearson Correlation	-.129	.182	-.207	.133	.509**	.688**	1
	Sig. (2-tailed)	.411	.244	.184	.393	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Table 4.4 Correlation matrix for combined farming areas

Characteristic	Statistic	Education	Farming experience	Total hectarage	Arable hectarage	Tobacco hectarage	Tobacco yield	Amount invested
Education	Pearson Correlation	1	.161	.211*	.190*	.215*	.133	.073
	Sig. (2-tailed)		.076	.019	.035	.017	.142	.425
Farming experience	Pearson Correlation	.161	1	.358**	.377**	.370**	.449**	.147
	Sig. (2-tailed)	.076		.000	.000	.000	.000	.096
Total hectares	Pearson Correlation	.211*	.358**	1	.911**	.594**	.607**	.325**
	Sig. (2-tailed)	.019	.000		.000	.000	.000	.000
Arable hectare	Pearson Correlation	.190*	.377**	.911**	1	.638**	.673**	.339**
	Sig. (2-tailed)	.035	.000	.000		.000	.000	.000
Area under tobacco	Pearson Correlation	.215*	.370**	.594**	.638**	1	.704**	.600**
	Sig. (2-tailed)	.017	.000	.000	.000		.000	.000
Tobacco yield	Pearson Correlation	.133	.449**	.607**	.673**	.704**	1	.435**
	Sig. (2-tailed)	.142	.000	.000	.000	.000		.000
Amount invested	Pearson Correlation	.073	.147	.325**	.339**	.600**	.435**	1
	Sig. (2-tailed)	.425	.096	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

4.3 Factors Affecting Tobacco Yield, Across Farming Sectors in Marondera District

In order to perform multiple regression analysis, only the variables that were significantly correlated with tobacco yields (as shown in Tables 4.1 to Table 4.4) were considered. For all the multiple regression analyses performed in this study, tobacco yields harvested between 2000 and 2015 were the dependent variable, while age, level of education, tobacco farming experience among smallholder tobacco farmers, arable land, tobacco hectarage, and amount of capital invested in tobacco farming were the independent variables. In each analysis, the validity of the multiple regression model was evaluated using the coefficient of determination (R^2) and the level of significance (p-value) of the overall model following Gara et al (2014).

4.3.1 Main factors influencing tobacco farming in the fast track resettlement farming areas

As shown in Table 4.1, the results from the multiple regression analysis indicate that only the amount of capital invested in tobacco farming had a significant positive effect on tobacco output (p=0.000). Though tobacco hectarage has a positive effect on tobacco output, its influence on tobacco output was insignificant as the p-value was greater than 0.005 (p=0.913), as shown in Table 4.5. Between 2000 and 2015, capital investment in tobacco farming increased. However explanatory power of the model was weak as it could only account for 47% (R^2 =0.47, p= 0.005 (See Appendix 4) of the variability of tobacco output. This implies that 53% of the variance in tobacco output is explained by other factors that are not included in the model. Resultantly, the regression model for the fast track farming areas is as follows: Y (Output in KGs) =1105.96+ 0.259 (amount invested).

Table 4.5 Multiple regression summary statistics for the fast track farming area

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1105.956	105.529		10.480	.000
Tobacco hectarage	6.178	56.295	.015	.110	.913
Amount invested	.259	.051	.681	5.107	.000

the dependent variable: Output per ha from 2000 to 2015

4.3.2 Factors influencing tobacco farming in old resettlement farming areas

At 99% confidence level, a number of variables including farming experience and tobacco hectarage were significantly correlated to tobacco output in old resettlement areas. Overall, the generated regression model explained 90% of the variation in tobacco output (R^2 =0.90, p=0.000, See Appendix 5). This implies that only 10% of the variation in tobacco output could not be explained by the model.

Table 4.6 Multiple regression summary statistics for the old resettlement farming area

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	338.539	101.931		3.321	.002
Total hectarage	7.129	23.938	.088	.298	.767
Arable hectrage	42.697	41.477	.313	1.029	.310
Tobacco hectarage	394.590	46.554	.615	8.476	.000
Amount invested	.025	.046	.032	.545	.589

dependent variable: tobacco output per ha from 2000-2015

Table 4.7 indicates that only the amount of land available for tobacco production had an influence on tobacco output. Thus, it can be inferred from the regression model that as

tobacco hectarage increased, the amount of tobacco produced also increased. Consequently, the regression model explaining this relationship is as follows: Y (Output in KGs) =338.54+ 394.59 (tobacco hectarage).

4.3.3 Factors influencing tobacco farming in communal areas

Compared to other multiple regression models for the other farming areas (fast track and old resettlement), the regression model for the communal areas produced the weakest model (R^2 of 0.23 p=0.005, see Appendix 6). This implies that the model could not account for 77% of the variation in tobacco output hectarage. However, from the model it can also be noted that only the amount of capital invested had a significant effect on tobacco output (p=0.012). The regression model for the communal farming area is as follows: Y (Output in KGs) =568.18+ 0.103 (amount invested). The dependent variable is output per ha from 2000 to 2015.

Table 4.7 Multiple regression summary statistics for communal farming area

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	568.180	81.904		6.937	.000
Amount invested	.103	.039	.375	2.637	.012
Tobacco hectarage	129.535	80.816	.228	1.603	.117

4.3.4 Factors influencing tobacco yields in all farming areas

The multiple regression model for the combined data set had an explanatory power of 71% (R^2=0.71 p=0.000, See Appendix 7). The model failed to explain 29% of the variability in tobacco output in all the farming areas using the variables selected. Experience in tobacco farming significantly accounts for tobacco yields, when all farming areas are taken into

consideration (p=0.008) (Table 4.8). Other variables that significantly accounted for tobacco yields include arable hectarage (p=0.004) and tobacco hectarage (p=0.000). Thus, the generated regression model is as follows:

Y (Output in KGs) = 508.898 +91.173 (tobacco farming experience) + 41.845 (arable hectarage) + 169.808 (tobacco hectarage).

Table 4.8 Multiple regression summary statistics for combined farming areas

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	508.898	76.203		6.678	.000
Tobacco farming Experience	91.173	33.559	.170	2.717	.008
Total hectarage	-4.872	7.732	-.086	-.630	.530
Arable hectarage	41.845	14.311	.420	2.924	.004
Tobacco hectarage	169.808	38.897	.386	4.366	.000
Amount invested	.017	.019	.064	.904	.368

The dependent variable: Output per ha from 2000-2015

4.4 Source of Tobacco Funding

Tobacco farming is a capital intensive venture. Thus there was a need to determine the sources of funding for the smallholder farmers in Marondera District. The results of this study revealed two main sources of funding, namely self-financing and contract farming. In self-financing it is the farmer who uses his/her own money to finance farming operations including the procurement of inputs, labour and transportation of inputs and produce. The major companies that were involved in contract farming included Boost Africa, Northern Tobacco Company, Xien Zimbabwe, and Mashonaland Tobacco Company (MTC). These

companies provided inputs such as seed and agro-chemicals and tobacco marketing services to the farmers. Self-financing was the more dominant source of funding (Figure 4.1). In the fast track resettlement sector there was a huge disparity between the two sources of funding. As shown in Figure 4.1, there is a considerable difference between the percentage of self-funded farmers and those funded through contract farming. However, it should be noted that similar differences occur in the other two farming sectors.

Data collected from Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) confirmed that self-funding was the most dominant source of funding across all farming areas and that contract farming was not well established, especially in the fast track resettlement areas. Regarding this issue, an AGRITEX officer for the fast track resettlement area said:

> *The majority of the farmers are usually self-funded because the farmers are still sceptical about contract farming. There are a lot of issues that they do not understand and most of the contractors, maybe due to political reasons, are not interested in dealing with farmers in the fast track resettlement areas.*

Similar views were expressed in FGDs, where one farmer stated:

> *We use our own money to finance tobacco production and here in the fast track resettlement area, the contractors do not want to work with us and we do not fully understand the way they operate.*

Related views came from the FGDs that were held in the old resettlement areas. During one such discussion one farmer remarked:

> *For us in the old resettlement areas, there is reliance on own capital resources to finance tobacco farming and only a few farmers are funded by Boost Africa and Xien, which provide inputs and market tobacco on behalf of the farmers.*

In FGDs that were held in the communal areas one farmer stated:

> *Here in the communal farmers we use our own money, saved from the previous farming seasons to finance tobacco production and only a few farmers are involved in contract farming. We don't see much benefit for the farmers engaged in contract farming as they may have their property attached in the event of poor tobacco harvests.*

There is consensus from the farmers that most of them are self-financed, while only a few engage in contract farming. The least number of contracted farmers is from the fast track farming sector, the main reason for not engaging in contract farming was lack of information about how the contract farming system works.

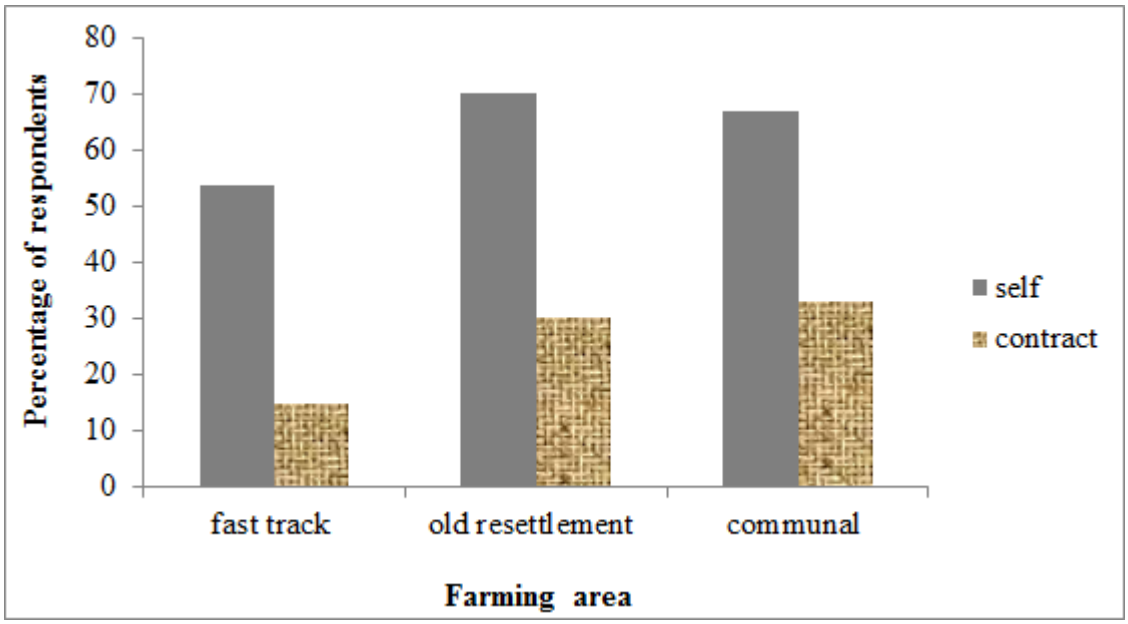

Figure 4.1 Source of funding for tobacco production

4.5 Trends in Financial Investment in Smallholder Tobacco Farming in Marondera District

Simple linear regression was used to determine trends and the amount invested in tobacco farming. The dependent variable was the amount invested and time (in years) was the

independent variable. In this study, it was only in the communal farming areas that the amount of money invested significantly varied through time ($p=0.004$, as shown in Figure 4.2a). As shown by the slope of the equation, it can be noted that there is a gradual increase in the amounts invested. For the fast track and old resettlement areas trends in financial investments were insignificant as the p-values for the linear regression models were greater than 0.05 (see Figures 4.2b and 4.2c). In the resettlement farming areas, there was a notable decline in the amount of capital invested in 2007-2008, 2004-2006, 2007-2008 and 2009-2010 periods. However, there were also periods when there was an increase in the capital invested in tobacco farming, especially in 2011, 2013 and 2015 for the communal farmers, 2002-2003, 2006 and 2012-2013 for the fast track area farmers and 2009-2012, as well as 2014-2015 for farmers in the old resettlement areas. For the fast track farming areas, a marked decline in capital investment was observed in 2010. Regarding the fast track farming area, the lowest amount invested was less than US$500.00 per hectare (recorded in 2000), whilst the maximum amount was in 2015.

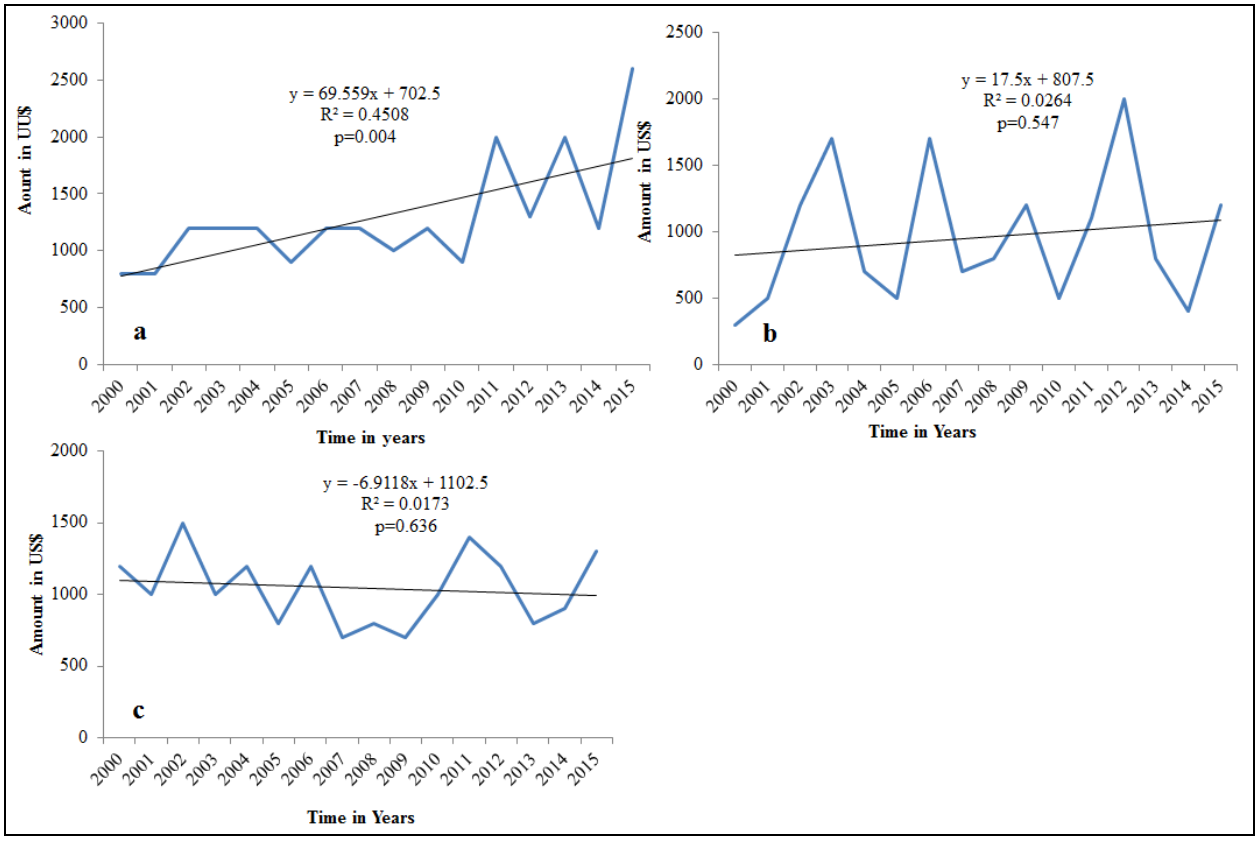

Figure 4.2 Trends in amounts invested in smallholder tobacco production in a) communal, b) fast track and c) old resettlement areas.

A comparison of the data collected from the respondents in Marondera District reveals that farmers in the old resettlement farming areas invested more money than the other two farming areas (Figure 4.3). The average amount invested in the communal farming areas was US$900.00 per hectare per year, whilst farmers from the fast track resettlement areas invested an average of US$1000.00 and those from the old resettlement farming areas had an average amount of up to US$2000.00 per hectare per year.

The FGDs held in the fast track farming areas revealed that tobacco farmers in these areas did not have much money to invest in tobacco production as they had only been allocated land 15 years earlier and as such there was not yet much capital to invest in tobacco production. One farmer had this to say:

There is not much to invest in tobacco production because we were only given land recently and we have no title to the land. As such, we have no access to loans from financial institutions like banks.

Since the old resettlement schemes were established in the 1980s and 1990s, farmers in these areas have been involved in tobacco production for a long time and have developed their own infrastructure, and acquired numerous assets. These farmers can now afford to invest more in tobacco production.

We have been engaged in tobacco production for a very long time and as a result we now have infrastructure such as curing barns, roads and schools (remarked one farmer).

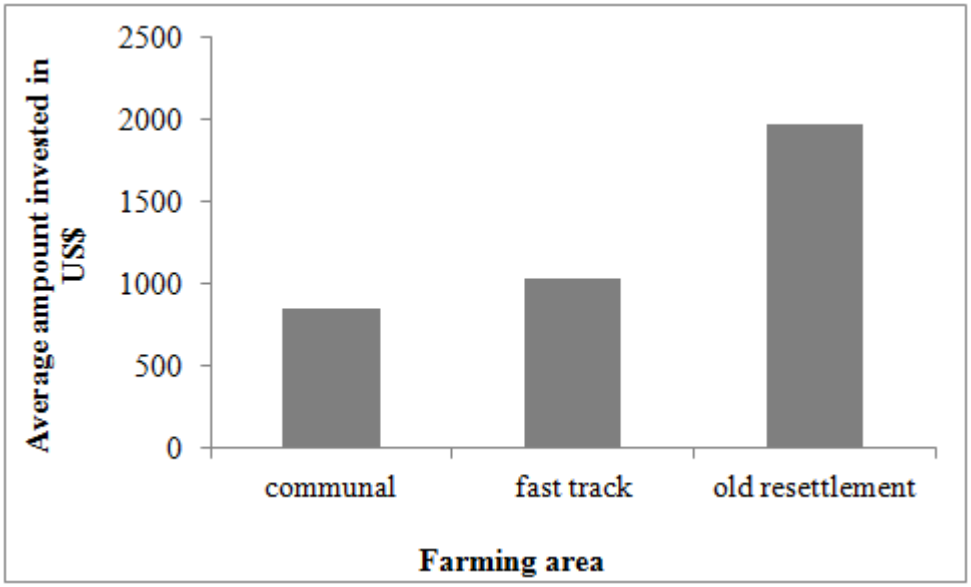

Figure 4.3 Amounts of capital invested in tobacco production

4.6 Trends in Tobacco Output on Smallholder Tobacco Farms in Marondera District

One of the objectives of this study was to determine trends in tobacco output between 2000 and 2015 for each of the three farming areas in Marondera District. Figure 4.4 (a-c) shows the trends in tobacco output for the three farming areas during this 15 year period. The results of

this study indicate that there were no statistically significant trends in tobacco output during this period, as denoted by the p–values.

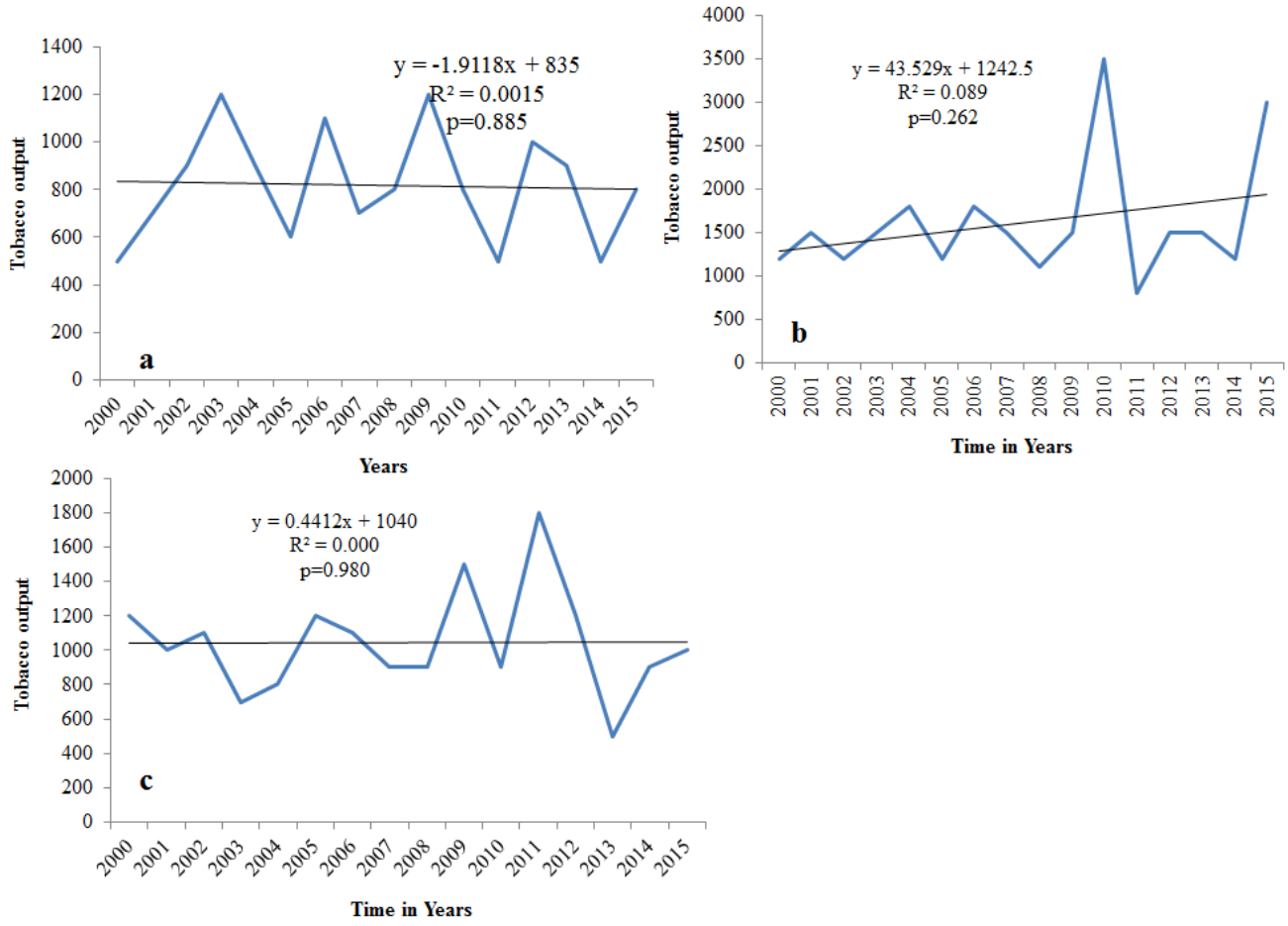

Figure 4.4 Trends in tobacco output in smallholder tobacco production in a) fast track, b) communal and c) old resettlement

4.7 Contribution of Tobacco Farming Towards Acquisition of Agricultural Implements

The change in asset ownership can be used as a measure of rural poverty reduction among the farmers. In this case, as indicated in Table 4.9, farmers in all the farming areas recorded an increase in the total number of agricultural implements acquired. The agricultural implements they have acquired included tractors, planters, sprayers, ridgers and irrigation equipment. From Table 4.9 it can be noted that the fast track farming areas had the highest change in the farming implements such ploughs owned before and after engaging in tobacco production.

The old resettlement areas recorded an increase in the total number of tractors with an increase of 21 tractors. Farmers in the old resettlement areas have been involved in tobacco production since the 1980s. The communal farming areas recorded the least improvement in the ownership of tractors though there were notable increases in the number of ploughs and ridgers they own (Table 4.9). In the communal and old resettlement areas there were no farmers owning water pumps before engaging in tobacco (Table 4.9). Only 4 farmers owned water pumps in the fast track farming areas before starting tobacco farming. The biggest changes were recorded in the old resettlement areas where 28 farmers acquired water pumps after engaging in tobacco production. There was an increase of 18 pumps in the fast track resettlement areas, while only 15 farmers in the communal areas owned water pumps. Unavailability of electricity was a challenge in all farming areas. As a result of lack of access to electricity some farmers bought generators, as an alternative form of energy for running water pumps and for domestic use. However, in all farming areas, none of the farmers owned generators before they started to farm tobacco. As shown in Table 4.9, similar increases were recorded about ownership of other assets in all farming areas. The general observation that can be made is that tobacco production leads to an increase in the ownership of farm machinery and the biggest change in the acquisition of agricultural implements has occurred in the fast track resettlement areas.

Table 4.9 Change in ownership of agricultural implements and motorized vehicles

Implements	**Fast track resettlement areas**		**Communal areas**		**Old resettlement areas**	
	Before#	**After#**	**Before#**	**After#**	**Before#**	**After#**
Tractors	9	35	5	16	14	57
Plough	81	137	84	114	79	116
Ridger	14	33	5	63	14	44
Cultivator	23	23	37	33	44	58
Scotch cart	93	86	100	100	72	121
Motorised vehicles	5	60	33	42	23	121
Water pump	9	51	0	35	0	65
Generator	0	21	0	26	0	30

*The table indicates assets per 100 farmers. # Farming implements acquired by the farmers before and after engaging in smallholder tobacco farming

Local AGRITEX officers indicated that there have been dramatic changes regarding the acquisition of implements during the post 2000 period. However, the most notable changes were recorded among the fast track resettlement farmers, who were allocated land since 2000. For the other two farming areas there have been only modest changes in asset ownership. The District AGRITEX officer for ward 21 stated that:

> *The fast track farming sector was hardly mechanized when it was launched but there has been an increase in mechanization because farmers in this sector now produce tobacco.*

As for famers from the communal areas, asset ownership also increased in the post 2000 phase when the prices of tobacco increased, though they did not record big changes, compared to farmers from the old resettlement farming areas.

Similar information was collected from the FGDs that were held with the farmers. The fast track resettlement farmers clearly attributed the increases in asset ownership to their involvement in tobacco production and the opinions of the farmers who benefited from the fast track land resettlement programme are exemplified by the following statement that was made by one of the farmers:

Most of the machinery and equipment that we now have were bought after we got land and started to produce tobacco and this coincided with the period when the prices of tobacco were increasing and from then on we have managed to buy tractors and motorized vehicles, and a few of us have also managed to buy irrigation equipment such as water pumps.

The same sentiments were echoed by respondents from the FGDs held in the three farming areas that were used in this study. During FGDs in the communal areas one participant stated that:

"In the communal areas there was little contribution of tobacco farming towards vehicle ownership as most of the farmers who owned cars owned them even before engaging into tobacco farming and that is the reason why there is an insignificant change after engaging in tobacco farming.

In the fast track resettlement areas one of the participants in the FGDs stated:

Just like with the ownership of farm implements, here in the fast track resettlement areas the motorized vehicles we have were acquired after we started farming tobacco.

A FGD participant from the old resettlement areas stated that:

> *For those of us based in the old resettlement areas, there is an increase in car ownership as a sign of increased income because we now have some disposable income.*

4.7 1 Ownership of livestock

Unlike the ownership of farming implements and motorized vehicles, for which notable changes were recorded in all farming sectors after the farmers had taken up tobacco farming, there were significant differences in terms of livestock ownership across the three farming areas (Table 4.7). This was particularly the case with respect to ownership of donkeys, cattle and small livestock like goats. No farmers owned donkeys in the fast track and old resettlement areas (Table 4.10). However, there was an increase in the total number of donkeys in communal areas, though there was no increase in the total number of farmers owning donkeys. All farmers in the communal areas owned goats and there were changes in the total number of goats owned by the farmers. Goat ownership increased in all the farming areas, though the most notable changes took place in the fast track farming areas. Cattle are a source of draught power and a source of income for most smallholder farmers. Though cattle ownership increased in all the three farming areas, the highest increase occurred in the fast track resettlement areas (Table 4.10).

Table 4.10 Change in livestock ownership in Marondera District

Livestock	Fast track		Communal		Old resettlement	
	Before[#]	After[#]	Before[#]	After[#]	Before[#]	After[#]
Goats	363	442	523	586	344	372
Cattle	442	635	486	534	700	790
Donkeys	0	0	20	40	0	0

[#] Livestock acquired by the farmers before and after engaging in smallholder tobacco farming

Before tobacco production, the fast track resettlement farmers had fewer livestock compared to the other two areas and the old resettlement areas had the least. In the case of the communal areas and old resettled farmers, there was little change in terms of livestock ownership. These changes may not be attributable to tobacco farming, because they might have resulted from differences in individual investment priorities. Communal and old resettlement farmers owned livestock prior to tobacco farming and therefore the change in cattle ownership cannot be attributed to engaging in tobacco production. This was clearly notable in the FGDs in the communal areas, where one participant stated:

> *For us in the communal areas, there is not much difference in terms of livestock ownership, because we owned livestock before engaging in tobacco production and therefore not much can be attributed to it.*

4.7.2 Infrastructure development across farming areas

The results of this study indicate that despite the changes in livestock, machinery and motorized vehicle ownership that have been noted above, these changes do not directly translate into adequate infrastructure ownership by the farmers. Accordingly, this section provides a comparative analysis of the infrastructure that was observed in the three farming

sectors, as shown on the photographs (Figures 4.5 a-d, Figure 6 a-d and Figures 7 a-d). The old resettlement farming areas had the best infrastructure, compared to the other farming areas (Figure 4.5 a-d). Notable infrastructure includes tarred roads which made transportation of both inputs and outputs possible all year round. However, gravel roads dominate the fast track resettlement and communal farming areas, making transportation of goods, services and people in these areas more difficult, especially in the wet season when the roads become impassable (Figure 4.6a-d and Figure 4.7a-d).

Figure 4.5 Infrastructure found in old resettlement areas. Sprinkler irrigation (a), tarred road (b), electrified shops (c) and curing barn (d) found in the old resettlement farming area [(a, b, d) Dorzmery, (c) Mere]

Other forms of infrastructure include irrigation facilities, schools, electricity grid systems and general dealer shops. The availability of irrigation facilities provides better opportunities for improving productivity in the old resettlement areas, compared to the other farming areas. Old resettlement areas have electrified service centres. They also have barns for curing tobacco. The barns found in these areas are bigger and more spacious compared to those in the communal farming areas (Figure 4.5 a-d). In the old resettlement areas most of the barns were built by the white commercial farmers who previously owned the farms. Housing was well established within the old resettlement areas. In the communal and fast track resettlement areas the houses are small and of poorer quality (Figure 4.6 a-d and Figure 4.7 a-d). The fast track resettlement areas still have pole and dagga houses, despite the high levels of income and assets that the farmers own. The main reason for poor housing development in the fast track resettlement area is that most farmers have no lease agreements, hence they lack security of ownership of the farms. Thus, the farmers do not think it is wise to invest on land from which they might be evicted at any time. Health and academic services are better established within the communal areas (Figure 4.7 b), yet they are highly dispersed or virtually non-existent in the fast track resettlement farming areas.

Figure 4.6 Infrastructure found in fast track farming areas. Building and road infrastructure (a-b), woodlot (c) and housing (d) [(a-b) Chipesa, (c-d) Machiki]

.

Figure 4.7 Infrastructure found in Svosve communal areas. Educational and health facilities (a-b), shopping services (c) and curing barns and houses (d)

An AGRITEX officer responsible for providing extension services in the fast track resettlement area gave some insights into the differences in availability of infrastructure between the three farming areas. The difference can be attributed to the fact that the fast track resettlement areas were relatively recently established. Government has not done much to address the issue of infrastructural development in these areas. Much of the infrastructure found there was acquired from the displaced large scale commercial farmers. The communal areas were established long back and the government provided educational and health services in these areas, especially through its first two five-year development plans that were implemented in the 1980s. Below are the views of the AGRITEX officer of ward 19:

> *The fast track farming areas were recently established and there is not much to be expected from them and the houses are small and of poor quality. The roads are*

made of gravel. In areas where there are better houses these are likely to have been inherited from the former large scale commercial farmers who were displaced.

For the communal and old resettlement areas, the government, private players and non-governmental organisations chipped in with resources to provide health and educational services for the benefit of communities living in these areas.

Figure 4.8 Tobacco crop a) fast track b) communal c) old resettlement

The quality of tobacco varies across farming areas, Figure 4.8 shows that in the old resettlement areas the quality of tobacco is high. The area has irrigation facilities and even the farms are highly mechanised.

4.8 Problems Caused by the Smallholder Tobacco Farmers in Marondera District.

Like most other agricultural enterprises, smallholder tobacco farming is associated with a number of environmental problems. Officials from the Environmental Management Agency (EMA) who are based in Marondera District indicated that the major problem that results from by tobacco farming is deforestation whereby trees are cut without replacement. This problem was most pronounced in the fast track farming areas, especially where the farmers cannot afford coal for tobacco curing and where the farmers have to rely on trees for firewood due to lack of alternative sources of energy. Trees in the savannah woodlands play a pivotal role in terms of food security, self-medication and provision of non-timber forest products such as mushrooms, and fruit from trees such as *Uapaca kirkiana* (mushuku/muzhanje), *Parinari curatellifolia* (muhacha/muchakata) and *Strychnos spinosa* (mutamba). The destruction of these tree species implies that the people no longer have other sources of income off the farm. Ecosystem goods and services such as control of soil erosion through the binding effect of roots, regulation of micro-climates and support of cultural functions such as rain making ceremonies are affected negatively by cutting for tobacco curing. One EMA officer stated:

> *The major environmental problems are caused by tobacco farming in all the areas affected by deforestation, especially in the resettlement areas where the farmers cannot afford coal for curing tobacco and have no other sources of energy for domestic use. There are other problems like erosion, biodiversity loss, siltation and*

pollution, all of which are a result of deforestation and widespread use of agro-chemicals.

During FGDs farmers made similar responses. One farmer stated:

We do not have alternative sources of energy for curing of tobacco and we have no option but to use locally available trees and in the end we have the problem of deforestation. Coal is expensive for most of us here, as we do not have much of the required capital.

However, it should be noted that in Marondera District these problems are universal and are therefore not unique to farming areas. From Figure 4.11 it can be observed that 50% of the respondents indicated that smallholder tobacco farming has resulted in deforestation. This problem is mainly caused by the farmers who rely on indigenous woodlands for energy for tobacco curing and domestic use. In this case there is a challenge, especially where the farmers have no access to coal or other forms of energy and have to resort to cutting down trees. Related to the problem of deforestation is water erosion which was cited by 20% of the respondents. Widespread soil erosion contributes to the siltation of rivers, for example the Macheke River. The Macheke River is the major source of water for livestock, as well as for off-farm activities such as fishing and gardening. Farmers in the fast track resettlement areas use water from the river for irrigation purposes. For instance, farmers in Machiki Area use water from Macheke River, whilst those from the Chipesa fast track resettlement area rely on water from Wenimbi Dam for irrigation purposes. For some of the respondents (7%), tobacco farming leads to food insecurity, especially in the event of crop failure. Since tobacco is the major cash crop, many farmers have abandoned food crops like maize (10%), sorghum (40%), groundnuts (29%) and roundnuts (5%).

Various forms of environmental pollution have been reported by smallholder farmers, including air pollution (during tobacco curing, spraying of insecticides and burning of residue) and land pollution. The problem of environmental pollution was cited by 10% of the respondents. Through burning of the tobacco residues and curing of tobacco, smoke is released into the atmosphere, thereby polluting the air. Land pollution results from the use of agrochemicals, which include insecticides, herbicides, fungicides and fumigants and the growth regulators that are applied to the tobacco plants at different stages of growth. In the end the agrochemicals enter into the soil and in the process cause contamination of soil and groundwater.

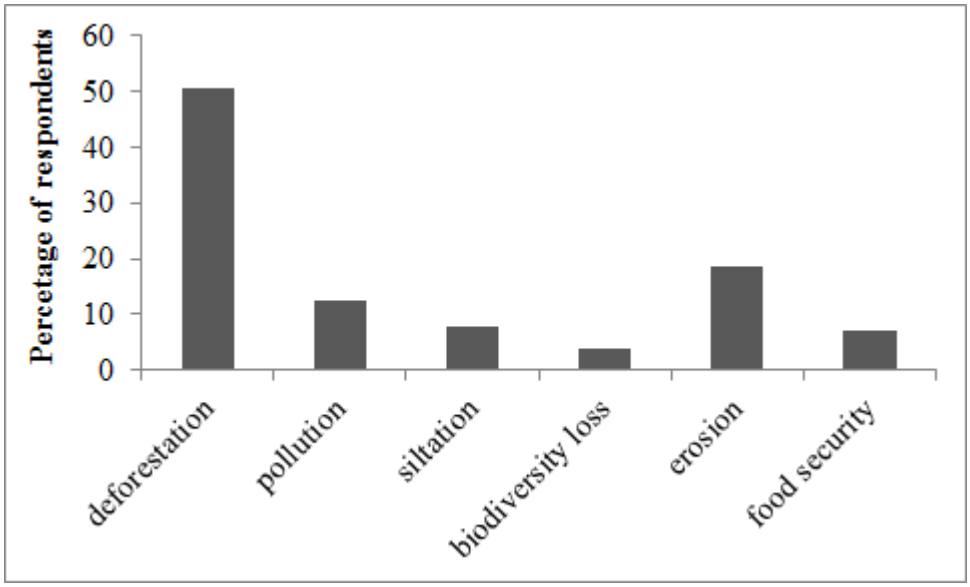

Figure 4.9 Environmental challenges faced by the smallholder tobacco farmers in Marondera District.

4.9 Challenges Faced by the Smallholder Tobacco Farmers in Marondera District

The previous section examined the environmental and socio-economic problems that are caused by smallholder tobacco farmers in Marondera District. As noted above, some of the problems like deforestation have ripple effects that undermine livelihoods. There is therefore

a need to assess the challenges that tobacco farmers in the district are facing in their attempt to maximize tobacco production. These challenges are discussed below.

4.9.1 Lack of access to energy

The most common challenge affecting the communal tobacco farmers is the unavailability of energy for curing tobacco. All respondents (100%) alluded to this problem as noted in Table 4.11. Unavailability of energy undermines the strategies that are needed to make smallholder tobacco production sustainable, since most farmers are self-funded.

4.9.2 Marketing of produce

The marketing of produce is another challenge. The auction floors are centralized in Harare. The high transport costs incurred by farmers during the transportation of tobacco to the auction floors reduce profitability. An added problem is that middlemen under-price the crop in order to make profits for themselves.

4.9.3 Lack of curing infrastructure

In the communal areas there was a general lack of tobacco infrastructure like curing barns. Since the majority of the farmers are self-funded there is dependence on poor infrastructure which means that the quality of the tobacco they produce is often poor. As a result the tobacco fetches low prices, translating into low income and reduced capacity to fund production in succeeding farming seasons.

4.9.4 Other problems

Lack of manpower for extension services and climate related problems were cited by communal farmers as serious problems. A sizeable number of respondents (35% and 37%, respectively), regarded these conditions as challenges. Unreliable climatic conditions were

viewed as a challenge by most farmers who cannot afford irrigation equipment, although rainfall variability is generally not considered as a serious problem in Mashonaland East. Another problem that undermines agriculture is that communal farmers do not have title to the land they farm. This means that they cannot access loans from the lending institutions due to lack of collateral security.

4.9.5 Farmers' perceptions of challenges affecting them

Information collected from FGDs confirmed the challenges that were identified by the smallholder farmers during the questionnaire survey (Table 4.11). The communal farmers in Magorimbo and Chematanda villages indicated the following:

> *The major challenge that we face is lack of energy for tobacco curing. This reduces the quality of tobacco that we produce. The quality of tobacco is also affected by the poor curing infrastructure that we depend on. Farm size is the other challenge that limits the area under tobacco production and in the communal areas we do not have access to affordable loans and other services that need collateral security.*

Table 4.11 Challenges faced by smallholder tobacco farmers in Marondera District

	Communal	**Old resettlement**	**Fast track**
Challenges	**Percentage of respondents**		
Farm size	70	*	*
Landholding	77	47	*
Funding	93	65	95
Marketing	72	58	86
Extension (resources)	35	23	47
Energy	100	63	91
Curing infrastructure	86	12	70
Climate	37	23	30
Labour	*	70	47
Infrastructure	*	*	91

***** Respondents did not indicate as a challenge

The challenges that were cited by the farmers in the communal farming areas were almost similar to those that farmers in the fast track resettlement farming areas experience. Some problems were perceived as common to all the three farming areas, including lack of land tenure, funding, marketing, extension services, energy and adverse climatic conditions, as well as unfavourable land tenure which makes it difficult for farmers to get financial support from lending institutions. The current land tenure system which is based on 99 year lease agreements does not provide collateral security against which farmers can borrow money from these institutions. Banks do not accept the lease agreements as security for farming loans and this forces the majority of the farmers to become self-funded. The changing climatic conditions have an effect on tobacco production, since the farmers have not invested much in irrigation facilities. Farmers are facing the challenge of inadequate extension services. The extension workers who are based in the area are serving a large area and hence they are not able to provide adequate services to the farmers on time. However, the most

dominant challenge facing the old resettlement farming areas is shortage of labour, which affects 70% of the respondents participating in smallholder tobacco production (Table 4.7). This is considered as a common problem among the farmers in this area because the farming units are bigger than those in the communal farming areas and there is need for a larger labour force to work on the farms.

Since the fast track smallholder farming area was established 16 years ago, it has been facing a multiplicity of problems. Most problems result from the fact that the farming model that was adopted was based on government's assumption that the farmers would acquire their own resources to finance their farming activities. Contrary to this assumption most farmers who were allocated land in the fast track farming areas do not have sufficient resources to practice commercial farming.

4.10 Strategies for Sustainability of Smallholder Tobacco Production

Tobacco farmers identified some strategies that could improve tobacco production and make it more sustainable in the long term. Table 4.12 presents some of the strategies that tobacco farmers in Marondera District mentioned in multiple responses to an open ended question about this matter (See Question E2 in Appendix 1). Since deforestation was cited as a problem, it is not surprising that 75% of the respondents indicated that afforestation is a measure that could make tobacco production more sustainable. Afforestation could provide energy for tobacco curing in future. However, about 60% of the respondents indicated that government should provide electricity on their farms in order to reduce pressure on forests and woodlands, since electricity can be used as a substitute for firewood. EMA officers stated that smallholder tobacco farmers need to take part in afforestation activities using exotic trees such as gum trees:

To make the production of tobacco in these areas sustainable, there is need for farmers to engage in afforestation programmes in order to create plantations for fast growing exotic tree species like gum trees and reduce pressure on the remaining woodlands (said one officer)

Some farmers indicated that there is need for them to engage in afforestation activities to ensure that there are more trees available for curing tobacco and to meet domestic needs. The added advantage of using electricity is that it is a clean source of energy, and is therefore less hazardous to human health.

Table 4.12 Strategies for sustainability of smallholder tobacco production

Strategy for sustainability	**Frequency of respondents**	**Percentage of respondents**
Afforestation	291	90
Electricity	234	72
Affordable loans	171	53
Training and extension	132	41
Irrigation	80	25
Mechanisation	76	24
Resettlement	48	15

A few respondents (25%) cited the need for the provision of irrigation services, in order to address the problem of unpredictable climatic conditions. However, it should be noted that the study area is located in Region II of Zimbabwe, a relatively high rainfall area which is usually not susceptible to drought. About 53% of the farmers suggested that the provision of affordable loans by banks would increase tobacco production. Also, since there were some farmers who were recently resettled (51%), there is need to provide training and extension

services in order to equip these farmers with the knowledge and skills needed to make tobacco farming sustainable.

Although there was provision of land under the old and fast track resettlement programmes in, it should be noted that the land reform programme did not fully address resettlement issues facing the farmers. About 19% of the respondents in the communal areas indicated that there is need for more resettlement because the land they owned was not enough to make tobacco farming a sustainable business. About 24% of the respondents indicated that there is need to increase mechanization in order to improve tobacco yields.

4.11 Overall Contribution of Smallholder Tobacco Farming to Poverty Reduction

The question that needs to be addressed is whether smallholder tobacco farming has helped to fight poverty, that is, whether tobacco growing households have been made better off by this practice. To draw inferences about the contribution of smallholder tobacco farming to poverty reduction this study used poverty indicators like individuals' income, land ownership, infrastructural development, and changes in asset ownership. Insecurity in land ownership and access to capital were also adopted as indicators of poverty in this study.

Farmers in all the farming areas recorded an increase in the total number of agricultural implements acquired through tobacco production. There was an increase in the number of farmers who were able to buy implements which they could not afford before taking up tobacco farming. In the fast track resettlement and communal areas the farmers indicated there was an increase in car ownership as a result of increased income. None of the farmers in the three farming areas owned water pumps and generators before engaging in smallholder tobacco farming but there were changes after engaging in tobacco farming. Some farmers have also managed to shift to alternative sources of energy and increased use of irrigation

water in cases of delayed rains. The increases in cattle ownership implies that there has been reduced food insecurity for the farmers, since the farmers can now sell the acquired livestock to raise income to purchase food, in the event of poor harvests.

Land ownership is a form of empowerment that is essential in fighting poverty. In Mashonaland East Province land redistribution addressed the land ownership inequalities that existed in the province. Equity in the distribution of resources is a suitable indicator for poverty reduction. The farmers can use their land to improve their income status through various agricultural activities. In this study it was established that the farmers across the three farming areas managed to acquire assets and livestock, all of which are a form of capital. The influence of arable land size can also be linked to variations in the amounts of capital invested in smallholder tobacco farming over past fifteen years.

However, in Marondera District the smallholder farmers lack economic security which entails freedom from economic fluctuations. Tobacco prices in Zimbabwe fluctuate in response to global market changes. From this study it can be noted that over the past fifteen year period (2000-2015) tobacco prices have fluctuated. The role of tobacco in fighting poverty has also been compromised by the lack of security of land tenure. Despite the fact that farmers now have better sources of income, they have not developed modern infrastructure because of insecurity. In the fast track resettlement areas in particular, the farmers attributed the pole and dagga houses to unsuitable lease agreements which do not ensure security of ownership of the farms. The contribution of tobacco farming to poverty reduction can also be judged by considering the environmental and climatic conditions that affect the farmers. In Mashonaland East rainfall is not much of a challenge. However, deforestation which in turn promotes soil erosion, is a major challenge to the smallholder producers and threatens the sustainability of smallholder tobacco farming.

Consequently, from results above it can be concluded that smallholder tobacco farming has the potential to fight poverty, at least in Marondera District. The farmers have been empowered through land ownership. In this case there are compounding factors other than engaging in tobacco production which include the economic, legal and political framework which affect the farmers in the fast track resettlement areas. In the end, when considering these factors it may look as if tobacco production has not led to poverty reduction. Thus, with proper funding, access to markets, granting of title deeds, provision of alternative sources of energy and infrastructure, smallholder tobacco farming has great potential in reducing rural poverty. However, lack of tenure, fluctuating tobacco prices, marketing challenges, poor infrastructure and environmental problems militate against the capacity of smallholder tobacco farming in lessening rural poverty.

4.12 Summary

From the results that have been presented in this chapter it can be noted that there are a number of factors that explain the variability of tobacco yields across Marondera District. Generally, in this province, the trends show that there were no significant changes in the capital invested and tobacco output during the post 2000 phase. After engaging in tobacco farming there has been an increase in the number of assets acquired by farmers from all farming areas. However, livestock ownership did not change significantly over the same period. Infrastructural development was more pronounced in the old resettlement areas, compared to the communal and fast track resettlement areas, which are mainly characterized by gravel roads, poor housing and poor shopping facilities. Deforestation and its associated problems such as erosion, pollution and siltation are the major environmental problems that have emerged in areas where tobacco farming is prevalent. Unavailability of electricity is the

cause of these problems. The planting of fast growing tree species can partly solve this problem. The next chapter provides the discussion of the research findings.

CHAPTER 5 DISCUSSION OF RESULTS

5.1 Introduction

This chapter provides a discussion on the research findings presented in Chapter 4 along with the literature that was initially presented in Chapter 2. From the results that were presented in Chapter 4 it can be noted that there are a number of factors that influence the variability of tobacco yields across the three categories of farming areas. In Marondera District (ward 19, 20, 21 and 22), there were no significant trends in changes to the amount invested in tobacco production during the post 2000 phase. Following their engagement in tobacco production, farmers from all farming areas have managed to acquire new sets of assets, while some noticeable infrastructural development has taken place in some areas. Infrastructure development was more pronounced in the old resettlement areas, as compared to the communal and fast track resettlement areas. The farmers indicated that deforestation, erosion, pollution and siltation are the major problems resulting from tobacco farming, while the solutions that they suggested include afforestation, extension services and funding. Electricity supply was identified as one of the major solutions to woodland degradation.

5.2 Factors Affecting Tobacco Yields Across Farming Sectors in Marondera District.

In this study, there were a few independent variables that affected tobacco yield across the farming areas. The amount of capital invested (in the fast track resettlement and communal areas) and amount of land subjected to tobacco cultivation (in old resettlement areas) were the most significant variables. When the data were pooled together tobacco farming experience, amount of arable area and total area under tobacco cultivation emerged as the main variables which affected tobacco output the most. The findings in this study appear to contradict to findings by Mutandwa et al (2008) who indicated that training in agriculture and a farmer's level of education enabled them to be in a position to process information from

different sources, thus increasing both allocative and technical efficiency among farmers. The availability of good extension services such as training affects farm outcomes and thus trained smallholder farmers have a better capacity to produce better quality crops and yields compared to untrained smallholder farmers (Mutandwa et al, 2008). In this study there were no significant correlations between level of education acquired and tobacco yields in any of the three farming areas included.

There was variability in the models' explanatory power (R^2) based on the factors that affected tobacco output. The results of this study indicated that the weakest models were for communal and fast track areas, with R^2 values of 0.23 and 0.47, respectively. The highest explanatory power was for the old resettlement (R^2=0.90) and when data were pooled together the multiple regression model could explain 71% of the variation in tobacco output. The R^2 values for old resettlement and combined data were almost the same compared to findings by Mutandwa et al (2008) in a study that was conducted in Guruve. Mutandwa et al (2008) tested the effects of variables such as age, gender, land size, level of education of the farmers on tobacco returns. In Guruve, the explanatory power of the model was R^2 =0.75 and age was the only significant independent variable although the effect was negative and the rest of the variables were statistically insignificant. The multiple regression results generated by the current research study show that the farmer's age has a significant negative effect on the variability in tobacco output.

Insignificant results on level of education were also found in a study by Gadzirayi et al (2008), who used regression analysis and found insignificant effect of the farmers' level of education on the productivity of tobacco farmers. The same study showed that accessing finance was a dominant factor affecting farmer productivity. Although education is known to

improve human capital, on-farm training, frequent field visits and provision of extension services have the potential to cover up for the lack of educational qualifications (Anim, 2010). Such a situation could be the reason why the level of education seemed to be statistically insignificant.

Based on the combined model for the factors affecting tobacco output, the significant positive variables were tobacco farming experience, arable hectarage and area under tobacco cultivation. Thus, the impression is that as the farming experience of the farmer increases then the tobacco output per hectare also increases. This implies that an experienced farmer would have more knowledge on how best to produce the crop and farmers with less experience will record lower tobacco outputs. Multiple regression analysis also revealed that the area under cultivation significantly affected tobacco yields, indicating that an increase in the land allocated to tobacco cultivation would imply an increase in total tobacco output. Thus, an increase in arable area would mean that the area allocated for tobacco cultivation would also increase, thereby increasing total tobacco output.

5.3 Trends in Financial Investment in Smallholder Tobacco Farmers

This research study shows that the only significant trend in change of capital invested in tobacco farming was in the communal areas. There were dips along the time series whereby there was a decline in tobacco output, for example in the old resettlement areas prior to the dollarisation era of 2006-2008. A similar decline was recorded in 2009, before production rose during the 2010/11 farming season (TIMB, 2012). The increases in tobacco output were attributed to a better rain season which was coupled with the involvement of farmers in contract farming arrangements (Banya, 2011). In Zimbabwe, a key initial consequence of the effects of the land redistribution was a reduction in tobacco deliveries to markets. The recovery of the tobacco industry is attributed to increasing investment through contract

farming. Most of the capital that has been invested in contract farming emanated from Chinese companies that are providing critical inputs which enable the farmers to repay the loans after their tobacco is marketed. Traditional sources of funding such as local banks have provided limited support to contract farmers. One of the Chinese companies, Tian Ze Tobacco, accounted for 12% of the tobacco marketed in 2011. Tian Ze has been providing farmers with inputs and capital equipment and it has also employed field officers to monitor contracted farmers at all stages of the tobacco production process up to the marketing stage. According to TIMB (2011), Tian Ze provided the best price, which was 13% more than the prices offered by the other contracting firms. Contract farming is related to the provision of agricultural inputs, extension services thereby coming in as an alternative to poor capital markets in agriculture (Banya, 2011). A growth of tobacco production among smallholder farmers is dependent on the rate of adoption of sustainable farming practices and intensive input use. Recently, in Zimbabwe, contract farming has been vibrant due to reduced government financial support to farmers (Munongo, 2012). It has been seen as a significant measure for reviving the agricultural sector in Zimbabwe, especially in high value crops such as cotton, paprika and tobacco, where returns are high. The emergence of contract farming in a Zimbabwean context is regarded as beneficial to the farmers, although viewed by some as not giving any advantage to farmers (Mugwagwa, 2005). Contract, however can ensure tobacco markets to farmers which is a critical factor in tobacco farming and in some cases there are reduced transportation costs borne by the contractor who collects the products from the farmers. In this research, it can be demonstrated that contract farming provides a ready market for the farmers. However, the prices offered are often very low, leading to side marketing. There are some cases where the availability of contract farming becomes a problem in itself through breaching of contracts due to side marketing, poor financing, poor quality tobacco and poor pricing by the contractors. Despite these bottlenecks, contract

farming has expanded, particularly in countries that have liberalized their markets and closed marketing boards (Chakravarty et al, 2012).

5.4 Environmental Problems Caused by the Smallholder Tobacco Farmers

From the results presented in Chapter 4, the most dominant problem caused by the smallholder farmers in Marondera District is deforestation (Figure 4.8). A study by the UNDP (1997) indicated that vast amounts of land in Zimbabwe have lost fertility due to tobacco farming. Deforestation is regarded as one of the biggest environmental problems in Zimbabwe, where about 70 000 to 100 00 ha of woodland has been lost at a rate of 1.5% per year (Chivaurise et al 2016). Similar findings were made by Masvongo et al (2013) in Mount Darwin in Mashonaland Central Province in Zimbabwe, where all farmers were reported to be using firewood for curing their tobacco, and where only 30% of the farmers reported that they used firewood in combination with coal. The results of this study identified deforestation as the major environmental problem caused by smallholder tobacco production. Deforestation leads to other related problems such as erosion, siltation of water bodies, biodiversity loss and pollution. Siltation has the potential to reduce the capacity of the Macheke River to supply water to the basin population. Macheke River is the major source of water for livestock use, gardening and off-farm activities such as fishing. Siltation will reduce the water holding capacity of dams, thereby reducing the livelihood base for the farmers. Farmers in the fast track resettlement areas use irrigation for agricultural purposes. For example, farmers in Machiki and Chipesa resettlement areas practice irrigation. Trees in the savannah woodlands play a pivotal role in terms of food security, self-medication and provision of non-timber forest products (Lowore, 2006) such as mushrooms and fruits, as noted in Chapter 4. The destruction of some tree species implies that local communities will have limited sources of income off the farm. These findings echo results from Sacchetto (2012) who noted that

tobacco farming leads to deforestation and degradation of soils. In most developing countries the growing of tobacco in woodlands and dry forests which are highly populated leads to high losses in biodiversity (Sacchetto, 2012). Tobacco production is a footprint for climate change although the land under tobacco production is less than 1% accounting for 2-4% of global deforestation. In a way, tobacco production is 10 times more destructive in causing deforestation than all the other factors which cause deforestation combined (Sacchetto, 2012).

However, research results from other tobacco producing countries such as India and Brazil do not reflect any antagonistic relationship between tobacco production and environmental change. For instance, research in Brazil showed that the major drivers of deforestation in Brazil are land clearance for cattle ranching and logging, followed by cultivation of soya beans, rather than tobacco farming (Moutinho and Schwartzman, 2005). Tobacco is also not recorded as a major cause of deforestation in India, according to NGO reports which analyse the major causes of deforestation in the country (Chakravarty et al, 2012). There is no mention of tobacco farming among the major causes of deforestation. Similarly, in India, the contribution of tobacco production towards deforestation is limited since most of the tobacco that is produced in the country is either sun-cured or air-cured and does not require firewood for curing. In India, flue-cured tobacco accounts for only 35% of the tobacco produced in the country. According to Chakravarty et al (2012), 37% of the flue-cured tobacco produced used wood for curing while the rest was cured by agricultural waste. The Indian Tobacco Board encourages tobacco growers to use coal or other materials like briquettes for curing of tobacco. Thus, tobacco growing in India, which represents 11.5% of tobacco growing in the world, seems to have no impact on deforestation. In both India and Brazil tobacco farmers rely on other forms of energy, such as agricultural waste and solar energy for tobacco curing, thus reducing pressure on woodland and forests.

This study identified some of the environmental problems which stem from deforestation and these include soil erosion, environmental pollution and biodiversity loss. The same problems were identified by Lightwood et al (2000) who indicated that the environmental damage caused by smallholder tobacco production included soil degradation, deforestation, and water pollution. In Tanzania, tobacco is the most important driving force behind land use changes (Abdallah et al, 2007). In Zimbabwe these problems emanate from the fact that, unlike in India and Brazil, smallholder tobacco farmers rely mainly on natural forests as a source of firewood for tobacco curing because it is cheap to access. This problem partly emanates from the fact that just like in most parts of Sub-Saharan Africa, in Zimbabwe wood is regarded as a free good (Chivuraise et al, 2016). Due to financial constraints, smallholder farmers in the greater part of Sub-Saharan Africa depend on firewood for tobacco curing, thus causing environmental degradation. Deforestation may persist in the future if no measures are put in place to reduce dependence on natural forests. The results of this study show that smallholder tobacco production results in soil erosion and vegetation loss due to land clearance, fuel wood curing, river and stream pollution resulting from pesticides and fertilizers, which are used extensively. All of the above problems have the potential to cause ecological disruptions and undermine the natural capital on which most poor rural communities rely for livelihood.

5.5 Contribution of Smallholder Tobacco Production Towards the Reduction of Rural Poverty

Overall, the results of this study indicated that tobacco production in all the farming areas has led to a reduction in rural poverty, as reflected by changes in asset ownership, including farming implements, motorized vehicles and livestock. This change can be attributed to farmers engaging in tobacco farming. Tobacco farming can be regarded as a livelihood for smallholder farmers as they can afford to build decent houses or, acquire farm machinery like ridgers, tractors, scotch carts, planters and cultivators. Improvements in livelihoods can be

measured using the livelihood assets such as the human, social, natural, physical and financial forms of capital that smallholder tobacco farmers now own. However, Hu and Lee (2015), indicated that most African nations have the perception that tobacco exports are a crucial source of revenue through which there is reduction in rural poverty. The growing of tobacco is based on economic considerations rather than environmental grounds. In Africa, smallholder tobacco farming is seen as a source of revenue, and as a practice that improves employment and household income, especially through the cash income which the farmers generate. Thus smallholder tobacco farming is seen as a tool that reduces household poverty. Tobacco is grown in sandy loam soils and consequently, tobacco production utilises fertile land that would otherwise be underused. Hue and Lee (2015) argue that tobacco farming generates export earnings and promotes local economic development. Consequently both the tobacco industry and governments view tobacco growing as a tool for relieving poverty and for promoting self-sufficiency in rural areas.

The findings of this study also confirm studies carried out in Masvingo Province by Scoones, et al (2011), who indicated that farmers in new resettled areas were mostly poor prior to land reform but were now earning higher incomes. In the same study, Scoones et al (2011) found that resettled farmers were predominantly poor before the land reform programme. Farmers were actively engaged in both on- farm and off farm activities which led to regional development. However, in this study the same cannot be said of the fast track resettlement farmers who inherited some of the infrastructure from the displaced large scale commercial farmers. The change in ownership of assets across all farming communities as identified in this study is similar to that which was reported by Deininger et al (2002) in a study in Zimbabwe which indicated that resettled smallholder farmers who accessed extension and

credit have higher incomes and increased assets, compared to the communal farmers. Deininger et al (2002) findings supported the view that if 'constraints' are removed, smallholder famers can produce cash crops under better access to the market and technical support systems and in the end there can be reduction in rural poverty. Thus, it can be argued that the accumulation of assets is generally one way of reducing poverty, since the assets can be used to enhance agricultural productivity. A farmer can choose to engage in tobacco production which leads to acquisition of household and farming assets, which in turn enhance new livelihood sources (Dorward *et al*, 2001). Old resettlement areas such as Mere, Joberine and Ashendeen (Figure 4.5) and communal areas such as Neshamba, Svosve, Muzunze and Magorimbo (Figure 4.7) have well developed infrastructure, when compared to the fast track resettled areas (Figure 4.6). These differences were also noted by Dorward *et al*. (2001) who reported that for the fast track resettlement areas the assets are still at subsistence levels, due to the slow progress in and adoption of capital-intensive farming methods by small-scale farmers. This can be attributed to the challenge of funding and attitude towards contract farming arrangements (Chivaurise et al, 2016). Chivaurise et al (2016) noted that in the Mazowe District of Zimbabwe, contract farming is geared mainly towards giving of capital and inputs, yet there are poor levels of capitalization for some smallholder farmers who rely on traditional equipment in their farming operations.

However, one can argue that although many tobacco farmers have improved their livelihoods this has been done at the expense of the land, since considerably vast amounts of land have be degraded through the environmental changes associated with tobacco farming. In addition, some respondents, as noted in Chapter 4, indicated that tobacco production has led to food insecurity in their communities, especially in the fast track resettlement areas such as Machiki, Cave and Chipesa, where most farmers have shifted from maize production. These

findings indicate that there is loss of land that was previously used for food production, and in the event of tobacco failure, farmers will have less income to buy food, a situation that leads to household food insecurity and the worsening of poverty. Hu and Lee (2015) indicated that tobacco production in developing nations has been rising making arable land less available for food crops. The end result is an increase in the levels of malnutrition and food insecurity within the tobacco farming areas. Recent research in Bangladesh indicated that there is illegal logging in state forests for tobacco curing has become a major concern in Bangladesh (Akhter et al, 2008). The once fertile region of Kushtia was a food surplus region but today tobacco farming has led to the reduction in the production of crops such as vegetables, pulses, sugar cane and jute crops. A similar pattern of changes has developed in the Chittagong Hill Tracts in southern Bangladesh, where tobacco is replacing the traditional rice and vegetable growing economies (Akhter et al, 2008). In areas where fuel wood is already scarce, tobacco farmers use fodder, rice straw and fruit trees to cure tobacco. These practices may then affect food production resources (cooking fuel and food for milk cows) and overall, undermine food security.

According to Lecours et al (2012), in Kenya food crops are being threatened by increases in tobacco cultivation thus affecting traditional crops like cassava, millet and sweet potatoes. Scarcity of land also led to a reduction in livestock production. While little evidence is available on worldwide food crop displacement by tobacco growing, a continued expansion of tobacco farming is foreseen in some of the main tobacco producing countries, mainly due to the political economy of low cost production. In this context, the overall health and socioeconomic impacts of tobacco production should be considered by governments in their assessment of tobacco production's contribution to national economies (Lecours etal, 2012).

In recent years, several countries in Sub-Saharan Africa have emphasized the importance of increasing employment in rural areas as a way of reducing rural poverty and food insecurity (Matshe, 2009), as well as reducing rural-urban migration. Consequently, many countries still regard agricultural self-employment in rural areas as the key element of rural development. Agricultural growth that fosters improvements in productivity on small farms has proven to be highly effective in reducing poverty and hunger and in raising rural living standards, as demonstrated in large parts of Asia during the Green Revolution (Rosegrant & Hazell, 2000). However Zikhali (2009) has shown that in Zimbabwe the most vulnerable rural people are the ones reliant on agriculture, especially those who farm less than 0.5 hectares of land, and are most strongly locked into subsistence within agriculture, and are failing to generate cash from non-farm activities. As such the farmers with poor access to land have little livelihood assets. Moyo (2006) stated that the land reform programmes in Zimbabwe and Namibia showed that land is the most important factor affecting food security as there is no meaningful production if the farmers have poor access to land. Better access to land is known to diversify off-farm activities in rural areas and the farmers would rely on forest and woodland products which would include medicine, fuelwood, fruits and game meat, either for consumption or for sale (Shackleton & Shackleton, 1999). Owning land through the land reform programme should play a pivotal role in alleviating poverty and enhancing food security. However, it should be noted that access to land on its own by smallholder farmers does not imply that the farmers are food secure.

5.6 Strategies for Promoting the Sustainability of Smallholder Tobacco Production

In this study the dominant strategy for making tobacco production sustainable involves the adoption of afforestation as a solution to the problem of deforestation. The other strategies that were mentioned by most respondents include the provision of affordable loans,

electricity, training and better extension services. Afforestation could protect the environment and the natural resources that are being overexploited, and simultaneously promote the generation of foreign currency through sustained tobacco exports (Chivuraise et al, 2016). Hu and Lee (2015) have observed that governments in developing countries address deforestation through the provision of tree seedlings to farmers. However, the reforested areas are always smaller than the areas which are deforested and therefore the impact of tree growing programmes is insignificant. Despite the reforestation programmes by the tobacco institutions, deforestation is still a problem in tobacco farming areas. More so, reforestation uses fast-growing non-native trees like eucalyptus and cypress, which have a high water demand thus reducing available water for domestic and food crop use.

In Zimbabwe, the rising number of smallholder farmers venturing into tobacco production after the land reform programme has worsened environmental degradation in the country. Therefore, there is a need for joint ventures between stakeholders in making tobacco farming sustainable. For example, the Forestry Commission of Zimbabwe launched the Tobacco Wood Energy Programme which encourages planting of fast growing species such as eucalyptus for use in curing of tobacco (Musoni et al, 2013). It takes an average of five years from planting to harvest a mature eucalyptus tree in the subtropical climate and over 15 years to harvest an indigenous tree (Du Toit *et al,* 1998). In Tanzania, the Tanzanian Tobacco Board (TTB) implemented the afforestation strategy in tobacco farming zones growing areas in the 1990s. However, by 1997, only 10 460.85 ha of forest had been planted which was far less than what was cleared annually (Mangora, 2012) and the tree planting strategy seems to be only working on paper. The reforestation strategy has failed to reduce deforestation, and the trees grown are fewer than those that are being cut.

Switching to other forms of energy such as electricity has been suggested in this study. However, the use of alternative energy sources for tobacco curing is already common in many developed countries and in some developing countries (Hu and Lee, 2016). For example in some countries, there is growing use of agricultural waste. China made an energy use transition from wood to coal based curing technologies around. Locally available fuels such as natural gas, saw dust, coal and candle nut shells or liquid petroleum, as well as coffee or rice paddy husks, can all be used as alternative sources of energy for curing tobacco. Solely relying on wood as a source of fuel for tobacco curing, as is the case in most developing countries and in Zimbabwe in particular, will undoubtedly aggravate deforestation. Thus, this diversification in sources of energy for tobacco curing leads to economic diversification and sustainable tobacco production.

5.7 Challenges Faced by the Smallholder Tobacco Farmers

As indicated in Chapter 4, the challenges faced by the smallholder tobacco farmers vary from one farming area to the other. However, there were some common problems that affect farmers in all areas. The results of this study indicate the following challenges: lack of energy, funding, tobacco curing infrastructure, land holding, marketing of tobacco and lack of security of tenure within the communal areas such as Neshamba, Svosve, Magorimbo and Gore. The dominant challenges in the fast track resettlement areas such as Machiki, Cave and Chipesa include lack of funding, markets, energy, infrastructure such as roads and tobacco curing barns. Similarly, the old resettlement areas such as Mere, Joberine, Ashenden and Chamatanda had more or less the same problems. The findings of this research study are similar to those found in a study by Moyo (2014) who indicated that the newly resettled farmers had similar problems to those in the old resettlement areas, namely lack of security, tobacco curing infrastructure and tenure of landholding. The most common problems were

related to lack of land title deeds and poor training and extension services, as well as inadequate financial assistance. Similarly, Kapuya et al (2010) and Moyo et al (2009) observed that the smallholder tobacco farmers in the communal and fast track farmers are relying on deteriorating infrastructure such as roads and telecommunication networks. Yet sound infrastructure is needed for the marketing and movement of labour and produce, as well as for enhancing the overall agricultural production capacity. Provision of better infrastructure will reduce costs of production (Kapuya et al, 2010; Moyo et al, 2009).

A small number of respondents indicated that the extension services they were receiving were inadequate for sustainable tobacco farming. Lack of adequate extension services implies that smallholder farmers in Marondera District lack information on the best practices to maximize tobacco productivity or environmental protection.

Funding was one of the most dominant challenges for all the smallholder farmers in Marondera District and lack of access to funding is closely linked to the other challenge of lack of title deeds, especially in the fast track resettlement areas where 99 year leases were granted to farmers. The lease agreements cannot be used as collateral security by the new tobacco farmers who intend to access capital from the financing institutions that have traditionally financed the tobacco production in the country. In a study that was conducted in Zimbabwe, Kapuya et al (2010) observed that less access to working capital and challenges in getting agricultural financing due to the lack of collateral security had a negative effect on tobacco farming operations The challenge of lack of funding is further exacerbated by the introduction of contract farming which was described by Kirstin and Sartorius (2002) as unsustainable, because it reduces food production and food security. Due to the above noted

constraints, tobacco farmers in Marondera District were not able to increase their productivity or surplus with which they can improve their cash income. The lack of requisite information on how to effectively and profitably market their produce contributes to the farmers poor (Munongo, 2012).

Results from FGDs held in the communal areas such as Mwera, Neshambe and Magorimbo (see Chapter 4) indicated that the farmers who engaged in contract farming had their property attached in the face of poor tobacco output. Thus, in this case the farmers lost their assets. In a way this worsens level of poverty among the farmers. This is why tobacco farmers in the old resettlement areas such as Mere and Joberine, as well as those based in fast track resettlement areas like Machiki and Cave were reluctant to take up contract farming. Regarding contract farming in Zimbabwe, Kang'ethe and Serima (2014) indicated that instead of contract farming cushioning farming households, it has actually worsened the plight of these households. In this context, contract farming is rather an exploitative business whereby the produce from smallholder farmers is sold through contractors. The smallholder farmers are impoverished since the generated revenue is under the control of the contractors and the remaining income is not enough to reinvest or promote the well-being of the tobacco farmers (Kang'ethe and Serima, 2014). Thus the farmers remain dependent on the contractors. This view is contrary to the views of pro-contract proponents showing that in developing countries tobacco production faces credit challenges and provision of inputs, training and extension services and markets for produce, and the marketing of tobacco through contract farming provide potential for increased income and reduction of rural poverty (Minot, 2011). Tobacco production is capital intensive, requiring specialised inputs and technology use for a quality crop which can fetch high prices on the auction floors and foreign currency from subsequent exports. It was believed that contract farming sponsored by

tobacco merchants would provide small-scale farmers with the necessary inputs and capital leading to improved productivity, foreign currency earnings and household income.

The tenurial system in Zimbabwe introduces uncertainties which scare away firms dealing with fast track resettlement farmers. The government, through the TIMB, tries to create enabling conditions for the farmers and contracting firms in order to increase productivity and economic returns (TIMB, 2012). The farmers from the communal and fast track resettlement areas indicated that the marketing of tobacco was a major challenge, yet for farmers in the old resettled areas the marketing of tobacco was not identified as a major challenge. Since old resettled farmers have been into tobacco farming for a longer time, they have managed to purchase motorised vehicles which make marketing easier. Contract farming addresses challenges associated with produce marketing, especially those that affect smallholder farmers. Sadly, smallholder tobacco farmers do not have any huge influence on the market, and hence they are exploited by contractors and get low prices for their crop. Sukume and Guveya (2009) indicated that the main challenge in tobacco farming was in marketing the crop, a challenge that has been worsened by the increase in the number of farmers engaging into tobacco farming. There were over 40 000 new farmers who took up tobacco farming since 2011 (ZIMstast, 2014), hence there is need to decentralize tobacco marketing to reduce congestion at the tobacco auction floors in Harare. Moreover the transport cost to one central market will reduce the net income realised by farmers. In the end the farmers are fleeced of the cash by the middlemen, who transport the crop on behalf of the growers.

5.8 The Relevance of Sustainable Livelihood Framework and Entitlement Approach to Smallholder Tobacco Farming

There were two analytical approaches which informed this research study, namely the Sustainable Livelihood Framework (SLF) and the Entitlement Approach (also called Capability Approach). Based on the multiple regression of the pooled data, this study found that the area under tobacco cultivation, as well as arable land and tobacco farming experience, were the variables that affected tobacco yields the most. In line with the SLF these variables can be categorized as different forms of livelihood capitals. However, as noted below, there were other components of the SLF which were not significant in affecting tobacco production and these included financial, physical and social capital.

5.8.1 Sustainable livelihood framework

This study is based on a comparative approach, which allowed the researcher to determine the dynamism of livelihoods in a given geographical and historical context. The consideration of the framework was crucial in understanding the different ways in which households respond to their environment under different stimuli and conditions. The SLF also indicates the role of institutions (rules, arrangements and regulations) and organisations which influence livelihood activities and outcomes. The institutions in this study were companies offering contract farming services such as Boost Africa, Northern Tobacco Company, Xien Zimbabwe, and Mashonaland Tobacco Company (MTC). Some of the institutions offered extension services such as AGRITEX and EMA offered natural resource conservation and management. In Zimbabwe, the Tobacco Marketing Board (TIMB) plays a major role in policy formulation and administration and acts as the regulator in the tobacco industry.

Livelihood Capitals

The findings of this study show that financial investment, arable hectarage and tobacco farming knowledge play a significant role in smallholder tobacco farming. These factors can be categorized into five forms of livelihood capitals, in line with the SLF, as illustrated in Table 5.1. The SLF presents these forms of capital within the 'vulnerability framework', thus accepting the reality that the availability of assets is regulated by seasonality, trends and shocks (Carney, 1999). The interaction of these capitals in a mediating environment is based on the capabilities and vulnerabilities of the farmers, thereby influencing the productivity of these farmers.

Table 5.1 Relevance of livelihood capitals to smallholder tobacco production

Forms of capital	**Relevance**
Human	Farming methodologies
Financial	Financial investments
Physical	Communication, transportation, marketing
Natural	Source of energy for curing, water source for irrigation, land
Social	.Social connectedness

Human Capital

Human capital encompasses the level of education, as well as the knowledge and skills acquired by farmers, all of which can influence household livelihood strategies. For example, in Indonesia, according to Keyser (2002) smallholder tobacco farmers are given the knowledge on weather patterns. However, as shown in the results of this research study, tobacco output was influenced by the farming experience of the farmers. Other forms of

human capital relevant to tobacco farming were the extension services that were offered by AGRITEX officers and farmer field schools that were provided by contract companies.

Financial Capital

The results of this study show that the majority of the farmers were self-funded (see Figure 4.5). This is in contrast to Brazil, where many smallholder farmers were engaged in contract farming. The fluctuations in amounts of capital invested in smallholder tobacco farming, was influenced by the socio-economic environment in Zimbabwe. The use of a multi-currency system in 2009 implied that farmers could earn foreign currency from their produce and there were limited losses caused by foreign currency conversions, unlike in the pre - dollarization era. However, smallholder farmers are constrained by lack of land tenure security, poorly-designed input supply programmes which push production costs up, and a lack of effective producer organisations which can represent the different needs of smallholder farmers.

Physical Capital

Physical capital includes infrastructure such as tarred roads which make transportation of both inputs and outputs possible all year round. However, gravel roads dominate the fast track resettlement and communal farming areas, making transportation of goods, services and people in these areas difficult, especially in the wet season. In the communal areas, there is a general lack of tobacco infrastructure like suitable curing barns, as most of the farmers are self-funded, hence there is dependence on poor infrastructure which means that the quality of the tobacco they produce is also often poor. For environmental sustainability to be achieved, government through the Tobacco Research Board is currently evaluating the potential of using direct solar powered fans in driving ambient air into fire chambers, this approach is environmentally friendly (TIMB, 2015).

Natural Capital

Natural capital includes land, water, wildlife, biodiversity and environmental resources. As shown in Chapter 3, Marondera District is in Natural Farming Region II, which receives an average annual rainfall of between 700-1000 mm as stated in Table 3.1. Hence, the region has an adequate water supply, which is a requirement for sustainability in smallholder tobacco farming. Arable land is one of the most important forms of natural capital, the availability of which led to an increase in the number of smallholder farmers growing tobacco. The land redistribution programme can be regarded as an empowerment tool for the once marginalized rural communities. There has been an increased number of women involved in smallholder tobacco production because of the government's move to achieve gender parity. Limited access to land can impede tobacco production. For example, in Malawi, many smallholder tobacco farmers have limited access to land for farming, owning less than a hectare each (Kachule, 2012).

The interaction of these assets or capitals is a key factor in promoting sustainable livelihoods. For instance, the fast track land redistribution exercise which was adopted in Zimbabwe provided more land to its beneficiaries but did not provide other capitals to ensure sustainable livelihoods (Scoones, 2007). The development of a sustainable and efficient agricultural policy will help to transform the land reform into an agrarian reform. This is in line with the scope of this study, which examines the contribution of smallholder tobacco farming in alleviating rural poverty. The establishment of woodlots from which fuelwood can be harvested is a way of boosting renewable forms of natural capital.

Social Capital

In this study, social capital is conceptualized as personal networks and connections, relations of trust and mutual support from social groups and other farmers. Social capital constitutes the stock of trust, mutual understanding, shared values and socially held knowledge that facilitates the social coordination of an economic activity (Potter et al, 2008). In the fast track land reform programme there were a lot of bureaucratic processes which negatively affected farming. The success of smallholder tobacco farming is influenced by mutual trust amongst all major stakeholders and this is a prerequisite for sustainability. Social capital is the supremacy of all capitals (Ellis, 2009). Hence, it is easy to attain all the other forms of capital if you are socially connected. Several researchers have shown that there is a strong positive correlation between social capital and production outcomes (Grootaert, 2001; Szrete, 2000; Narayan et al, 2000; and Mubangizi, 2003). As for smallholder tobacco farming mutual synergies can take place in transportation arrangements during marketing.

5.8.2 Entitlement approach

This study also adopted the Entitlement Approach which is a rights-based development approach in order to assess how socio-economic transformation of rural communities is achieved through tobacco farming. Although Sen (1981) employed the Capability Approach or Entitlement Approach to assess how rural communities cope during famines, the scope of this study extends this concept to the rights of smallholder farmers in Zimbabwe. The rural populace have environmental, economic and social rights and governments have the duty to make sure that the rural people enjoy these rights through the creation of a conducive development policy. Hence this study examined the entitlement failure as failure to achieve developmental rights sets. This entails the need by the state to develop policies which will

protect and encourage smallholder tobacco farmers to commercialize. As much as the rural people have rights to resource utilization such water, there is conflict with natural resource protection by the Environmental Management Agency (EMA), whose mandate is to ensure environmental sustainability. A conflict exists between the agency and farmers. Since through deforestation the major energy for tobacco curing, fuel wood is slowly getting depleted. More environmental friendly sources of energy such as solar can be adopted in order to attain environmental sustainability. In order for the country to benefit economically from tobacco farming the TIMB comes in as the regulator. There is bound to be conflict in the interaction of these various institutions, thereby affecting productivity.

The Capability Approach can augment the SLF in advancing the understanding of how environmental sustainability can be attained. Although it is entirely a rights based approach, it brings some sense of ownership to community ownership (Mukwada 2012). The concept of rights enables and motivates people to utilize their entitlements optimally (Ogbaharya 2006). Thus, this approach contributes to the better understanding of the balance between the survival of people and the maintenance of the biophysical environment. However, in practice the environment is dynamic. Access and utilization of natural resources is influenced by political, socio-economic and biophysical processes. This is why, in this research study, trend analyses of tobacco output exhibited fluctuations that were regulated by these processes.

The SLF has a close link with current thinking on people-centred policies and issues, whereas the Entitlement Approach can be incorporated into livelihoods approaches. This is because the two approaches have similar features. The importance of the SLF is that it encompasses the lessons drawn from other approaches which join analysis and practice. The relevance of the SLF lies ultimately in how it is implemented and in its objective of promoting the understanding of rural communities and transforming the livelihoods of the rural poor.

5.9 Summary

This chapter provides a discussion of the research findings of the study in relation to existing literature. From the results that were presented in Chapter 4 it is clear that the level of investment, income and production trends vary considerably among smallholder tobacco farmers in Marondera district. The trends were characterized by fluctuations which were linked to the macro-economic environment. For tobacco to be an effective tool in reducing rural poverty there is need for a stable economic environment in Zimbabwe. Loss of biodiversity and widespread erosion affect households' livelihoods. Notably, tobacco farming has undermined the production of traditional food crops, many of which have been abandoned. Hence, tobacco farming is a threat to food security since it is undermining food production. Moreover, fighting rural poverty must not only be limited to tobacco farming but must also consider the state and well-being of the biophysical environment. However, despite these limitations, the assessment of the contribution of smallholder tobacco farming (communal, old resettlement and fast track resettlement) reveals that tobacco farming has an enormous potential in reducing rural poverty. The application of the Sustainable Livelihood Framework and Entitlement Approach in this study has shown that livelihood capitals and an enabling environment have contributed to reduction in poverty. The next chapter focuses on the conclusions, lessons learnt, policy implications and the recommendations of the study, as well as areas that require further research regarding the contribution of tobacco farming to poverty reduction.

CHAPTER 6 SUMMARY, CONCLUSIONS, AND POLICY RECOMMENDATIONS

6.1 Introduction

Tobacco production remains vital to the Zimbabwean economy, where tobacco is ranked among the country's top export crops. This thesis focuses on smallholder tobacco farming in the communal and resettled farming areas of Marondera district in Mashonaland East Province. In Zimbabwe, there has been a notable increase in smallholder tobacco farming since 2000, following the implementation of the fast track land reform programme. Based on two analytical frameworks, namely the Sustainable Livelihood Approach and the Entitlement Approach, this thesis has demonstrated that there is a close relationship between smallholder tobacco farming and rural livelihoods. The results of the thesis have shown that in Marondera district, just like in most developing countries where smallholder farming has been embraced, tobacco farming can be used as a tool to fight rural poverty. However, as illustrated in the results presented in the preceding chapter, the focus of this thesis has been on the economics of tobacco farming and its implications for rural development. Chapter 6 presents the conclusions and recommendations of the thesis, particularly on the key factors that influence tobacco output in the study area, including capital investment, availability of arable land, tobacco hectarage and farming experience, all of which are discussed below.

6.2 Summary of Study

The aim of the thesis was to assess the efficacy of smallholder tobacco farming as a tool for socio-economic transformation in rural Zimbabwe. The study sought to:

- Determine investment income and production trends among smallholder tobacco farmers in Marondera district.

- Examine how the environmental problems caused by smallholder tobacco farming affect rural livelihoods.
- Assess the challenges faced by the smallholder tobacco farmers in Marondera district.
- Assess the contribution of smallholder tobacco farming (communal, old resettlement and Fast track resettlement) in reducing rural poverty.
- Recommend policies and strategies that could make tobacco farming a sustainable venture.

This thesis was prompted by the need to establish the extent to which smallholder tobacco farming contributes to poverty reduction. In light of the increase in smallholder tobacco farming and the high producer prices that farmers enjoy, compared with other crops grown in Zimbabwe, it was necessary to assess the role of tobacco farming in reducing the vulnerability of smallholder farmers to rural poverty. As noted in Chapter 2, existing literature does not shed much light on the role that tobacco farming has played in changing rural livelihoods and how that role varies between earlier resettlement areas that were set up between the 1980s and early 1990s, the recently established fast track resettlement areas that were established after 2000, and the communal areas. The contribution of this study partly lies in the analysis of this role.

The study was carried out in the Marondera District of Mashonaland East Province as indicated in Chapter 3. A mixed method research design was adopted. The methods that were used include observations, key informant interviews and focus group discussions, as well as a questionnaire survey. The thematic analysis was done qualitatively to validate the findings. The results from the qualitative and quantitative data were used side by side to reinforce each other and excerpts from key informant interviews and focus group discussions supported

statistical results collected from researcher-administered questionnaires. The quantitative analysis of the collected data was done in SPSS V16.0 and MS Excel 2010, to perform correlation and regression analyses.

Chapter 4 presents the results of the thesis, which focus on investment, income and tobacco production trends. Tobacco farming experience, amount of arable land available and tobacco hectarage, were the variables which were shown to affect tobacco outputs the most. There was variability in tobacco production across the three farming areas, namely the old resettlement areas, fast track farming areas and communal areas. There were disparities in infrastructural development between these farming areas and this could partly be attributed to individual priorities of the farmers and the level of planning by individual farmers. Other disparities emanated from different historical planning developments. For example, old resettlement areas were carefully planned, such that all basic infrastructure such as roads, schools and health facilities were introduced before or soon after resettlement. The results also reveal that the contribution of smallholder tobacco farming to rural poverty reduction and livelihood sustainability is determined by farming experience, amount of land used for tobacco cultivation and amount of arable land available to a farmer.

Correlation analysis was used to determine the variables which were related to tobacco output in the three farming areas. The variables which were significantly correlated with tobacco output were used in multiple regression analysis. The weakest regression model was the one for the communal areas whilst the strongest model was that for the old resettlement areas. There were fluctuations in the amounts of capital invested in tobacco farming across the farming areas. The different sources of tobacco funding and the prevailing economic conditions affected investment into tobacco farming. The discussion of the research results was presented in Chapter 5. Tobacco is a capital intensive venture which requires a large

capital outlay. Yet, the majority of the farmers in all the farming areas are self-funded, with only a few farmers funded through contract farming. The rate and magnitude of adoption of contract farming varies across the farming areas and farmers in the communal and fast track resettlement areas were highly sceptical about contract farming. Among the funders of contract farming, Mashonaland Tobacco Company has the longest history of financing smallholder tobacco in Zimbabwe. Old resettlement farmers have better tobacco farming experience and have always been well planned thereby possessing more human and technical expertise in tobacco production than the other two farming areas.

Traditional sources of funding such as local banks have provided limited support since the 99 year leases held by the resettled farmers do not provide enough guarantee of security of tenure. The macroeconomic environment that prevailed in Zimbabwe caused a notable decline in capital investment across all farming areas especially prior to the dollarization of the economy in 2009. Notable as well is that in 2013 after the harmonised elections there was a sharp decrease in investment in the country and this shows that politics greatly influences the macro-economic environment in the country. This has affected the funding of smallholder tobacco farmers, as well as the market prices of agricultural commodities, including tobacco. The results of this study indicate that deforestation, erosion and pollution are the major problems resulting from tobacco farming. Solutions to these problems include afforestation, and provision of extension services and adequate funding for tree planting. These problems are a threat to the sustainability of smallholder tobacco farming as a tool for rural poverty reduction. Deforestation destroys their only free source of energy and off-farm livelihoods. The fall in tobacco prices could lead to farmers abandoning tobacco farming.

Chapter 5 provides the discussion of the findings of the research study. It also illustrates the relationship of the Entitlements Approach and Sustainable Livelihood Framework in

assessing the efficacy of smallholder tobacco farming in reducing rural poverty. The section below provides details about some lessons learnt in this study and presents policy recommendations in line with the five objectives of the study.

6.3 Conclusions

The level of investment, income and production trends vary considerably among smallholder tobacco farmers in Marondera district. From the analysis of the results it can be concluded that there are no significant trends in terms of investments and production by smallholder tobacco farmers in Marondera district. The trends were characterized by fluctuations which were linked to the macro-economic environment. For instance, factors such as the hyperinflation period caused a decline in tobacco prices, whereas the post-dollarization era led to an increase in tobacco production and investments by the farmers. The macro-economic environment in Zimbabwe impacted on investments in tobacco production. There were fluctuations in tobacco production over the 15 year period under study suggesting that if tobacco is to be used as an effective tool in fighting rural poverty, there is need for a stable economic environment in Zimbabwe.

The examination of the environmental problems caused by smallholder tobacco farming indicates that sustainability is not just about supporting livelihoods, but also about maintaining the state of the biophysical environment which supports those livelihoods. Loss of biodiversity and widespread erosion resulting from deforestation have serious consequences on rural livelihoods because they affect food and energy security in rural communities. Tobacco farming has undermined the production of traditional food crops, many of which have been abandoned, thus threating food security by undermining food production. Moreover, fighting rural poverty must not only be limited to tobacco farming but

must also consider the state and well-being of the biophysical environment, including the natural capital from which resources are drawn by rural communities.

From the assessment of the challenges faced by the smallholder tobacco farmers in Marondera district, it can be concluded that farmers are challenged by limited funding since most of them are self-funded. Poor marketing of tobacco affected the pricing of their produce, hence there was limited contribution to poverty reduction. Unavailability of energy undermines the strategies that are needed to make smallholder tobacco production sustainable, since lack of funding among the farmers leads to poor infrastructural development.

However, despite these limitations, the assessment of the contribution of smallholder tobacco farming (communal, old resettlement and fast track resettlement) reveals that tobacco farming has an enormous potential to reduce rural poverty. There was a general increase in household income across the three farming areas after engaging in tobacco farming. Overall, the results show that in all farming areas tobacco farming has led to poverty reduction. This is reflected by an increase in asset ownership across all farming areas. However, it can also be concluded that although many tobacco farmers have improved their livelihoods through tobacco farming, this has partly happened at the expense of the state of the natural environment. The application of the Sustainable Livelihood Framework in this study has shown that livelihood capitals have contributed to the productivity of smallholder tobacco farmers which led to the reduction in poverty and vulnerability of the farmers. Similarly, the Entitlement Approach has shown opportunities for smallholder tobacco farming growth, based on sustainable utilization of available land, tree and water resources for socio economic transformation.

6.4 Policy Recommendations

A number of policy recommendations can be drawn regarding smallholder tobacco production and its contribution to rural poverty reduction. These include the following:

- The Zimbabwe government needs to increase research and extension services by expanding and capacitating AGRITEX. This will enable AGRITEX to adequately deploy better services to tobacco farming areas. This could improve both the quantity of tobacco produced as well as the incomes of small scale tobacco growers.

- Although government has gazetted the tobacco marketing policy which stipulates that every province should have a tobacco marketing centre, there is need to ensure the implementation of this policy. Of the seventeen auction floors in Zimbabwe only two are located outside of Harare. One is located in Karoi, Mashonaland West Province, whilst the other is located in Mvurwi in Mashonaland Central Province. Thus, it is recommended that there should be greater decentralisation of marketing facilities since most farmers lack adequate financial resources to transport their produce to district market floors. The decentralisation should also extend to other tobacco growing provinces such as the remote parts of Mashonaland East Province.
- This study identified deforestation and related problems such as erosion, siltation of water bodies, biodiversity loss and pollution as the major environmental problems arising from smallholder tobacco production. The study recommends an increased rate of afforestation and provision of tree seedlings to farmers by the Forestry Commission, EMA and NGOs such as Environment Africa could help tobacco farmers reduce environmental degradation through environmental education and awareness campaigns. Since fast growing tress require time to produce sufficient wood to make a difference in energy production the researcher also recommends the

development of a hybrid energy source which can be used in tobacco barns, involving the use of solar energy and coal, whereby solar energy is the main source of energy. The coal can be used during the night and under cloudy conditions. This will not only save wood fuel use but it will also reduce deforestation.

- Financing of tobacco production is a major challenge identified in this study. There is need for the development of an agriculture and rural credit policy which will improve access to funding to the smallholder farmers in order to boost smallholder tobacco production. Livestock and other household assets can be used as surety.
- The study revealed that the fast track resettlement farmers were given 99 year leases which are not accepted as collateral security by financial institutions. It is recommended that the government provide title deeds to farmers so that they get access to loans from financial institutions. There is need to insure the loans such that if farmers fail to repay the loans due to natural hazards such as drought or excessive rainfall, or outbreak of diseases the banks will recover their money.

6.5 Areas for Further Study

The results of this thesis are based on a comparative analysis of the contribution of smallholder tobacco farming to poverty reduction in the communal, old resettlement and fast track resettlement areas. There are still outstanding research issues regarding the efficacy of smallholder tobacco farming in rural development in Zimbabwe.

- The effect of marketing on smallholder tobacco farming was not fully explored in this study. In 2009 there were only three tobacco auction floors but they have since increased to seventeen. Through its policy proposals, government has suggested that the marketing of tobacco should be decentralised to provinces. The effect of this policy measure on productivity warrants further research. Future studies have to

assess in greater detail whether this decentralization leads to higher productivity and the sustainability of smallholder tobacco farming.

- Since this study could not give conclusive results about the contribution of contract farming to poverty reduction and previous research has shown that there are diametrically opposed views about the subject, more research needs to be undertaken to determine the circumstances under which contract farming can contribute to poverty reduction.
- Lastly, with the challenges that farmers come across in curing their produce, especially given that curing infrastructure affects the quality of the leaf, hence influencing pricing, curing techniques used in smallholder tobacco farming need to be fully examined. Future studies need to be done to assess the efficacy of curing techniques on the quality of tobacco.

The comparative analysis undertaken in this study has shown that there is a slow progress towards rural poverty reduction in rural communities by adopting tobacco farming in Marondera District across all the farming categories. Tobacco farming can be used as a tool for reducing rural poverty if there is adequate funding for the smallholder farmers especially in the fast track resettlement areas. Appropriate policies need to reflect on the most suitable ways of supporting tobacco farming activities in rural areas in Zimbabwe. The government and private partners should channel more financial resources to farmers to enable them to have better access to inputs, credit facilities (especially for those not under contract farming) and infrastructure, as well as to acquire better knowledge of tobacco farming. Future research on smallholder tobacco farming could be based on a bigger study covering all provinces of Zimbabwe where tobacco farming is undertaken, including Mashonaland Central and

Mashonaland West provinces. Such a study could be important in the formulation of a national policy framework on the sustainability of smallholder tobacco farming in the country.

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APPENDICES

Appendix 1

My name is Leonard Chitongo doing PhD with the Free State University (FSU). I am carrying out a research entitled: **THE EFFICACY OF SMALLHOLDER TOBACCO FARMERS ON RURAL DEVELOPMENT IN ZIMBABWE**. Data that will be collected during this period will solely be used for research and academic purposes and thus confidentiality is going to be observed. Please complete the questionnaire below as comprehensively as possible.

Date of Interview ……..
Type of farmer ……..

Tick in the appropriate box

a) DEMOGRAPHIC BACKGROUND

Household head

1a.Are you the head of the household, (HOH)

1.Yes □ 2.No □

1b.Relationship to the HOH

1.Wife □ 2.Husband □ 3.Daughter □ 4.Son □ 99.other specify……..

3.Age

1.Less than 20 □ 2.21-30 □ 3.31-40 □ 4. 41-50 □ 5.51-60 □

4.Gender

1. Male □ 2. Female □

5. Marital status

1.Single □ 2.married □ 3.divorced □ 4.widowed…..□

6.Level of education

1.Form 2 □ 2.O' level □ 3.A' level 99. Others specify……..

7.Level of agricultural training

1.master farmer certificate □ 2.Diploma □ 3.degree and above □ 99.other specify

8. Tobacco farming experience

1.0-5 □ 2)5-10 □ 3)10-15 □ 4)15+ □

b. Structure and functions of smallholder tobacco farmers.

1. How much land (total) do you own (in hectares)? ……..
2. How much arable land do you use for farming (in hectares)?.....

3. Ownership of assets before and after engaging into tobacco farming (number/quantity)

Asset	Before	After
Tractor		
Plough		
Ridger		
Cultivator		
Scotch cart		
Vehicle		
Sheep		
Goats		
Donkey		
Cattle		
Others specify		

4. How many hectare s/ acres did you grow tobacco? ……..
5.Output per hectare from 2000 to present
6.Is this the first time to grow tobacco? ……..
1.Yes □ 2.No □

C .Contribution of Smallholder tobacco farming in reducing rural poverty

1.What are the reasons for venturing into tobacco production?
……

2.Do you hire labour during tobacco production?
1.Yes □ 2.No □
If yes, at what rate? ……

3.What are the main operations the labourers are hired for?
1. Seedbed preparation 2 planting 3weeding 4 curing 5 harvesting
5.grading others specify…….

4. What are the source regions of the labour force?
1.Within the communal areas 2 within wards 3.within Marondera 4.outside Marondera

5.Number of permanent employees…….
1. 4 2.6 3.7 4. 8 5. 10 6. 15 20+

6. State the number of seasonal or hired labourers and their purposes

Period/season	Number of employees	Operation they are hired for

7 Are the fluctuations in the demand for labour?
1. Yes 2 No
Provide the reasons for question 7 above……..

8. For permanent workers what is the monthly wage?.....

9. What is the selling price of your tobacco per kilogramme over time
……...

10. What has been your best yield in tobacco production (bales/ hectare)? ……..
11. What has been the worst yield (bales/ hectare)? …….
12. What was the reason for such a drop in your yield? …….
……
……

13a. What is the source of funding into tobacco
1.Self 2 contract farming 3.NGO 4. Remittances 99 others specify……

13b) Basing on your answer on question 13a, how much is invested into tobacco farming per season……

14a. If answer to question 13 is contract farming, what is the company you are contracted to…….

14b) What are the benefits for engaging into contract farming?

……
……

……
……

14c. What are your perceptions towards contract farming?

……
……
……
……

15a. Do you have access to loan/credit facilities

1.Yes □ 2.No □

15b. If answer to the above is NO give reasons

……

16 Are there changes in the following due to engagement into tobacco farming? (tick all that apply)

Variable	tick	Comment
Lifestyle		
Housing		
Education for kids		
Health status		
Food security		
Infrastructure		

Challenges affecting tobacco production

challenges in tobacco production communal		
challenges	frequency	Percentage
farm size		
landholding		
Funding		
Marketing		
extension (resources)		
Energy		
curing infrastructure		

climate		

d. Sustainability in reducing rural poverty

1 What are the challenges in achieving reducing sustainable reduction in rural poverty?

……
……
……
……
……
……

e. Strategies for sustainable tobacco farming

1.What are the effects of tobacco production to the environment

……
……
……
……
……
……

2. What strategies can be implemented to make tobacco production sustainable?

1……
..

2……
..

3……
…

4……
..

5……
..

6……

Thank you for your time

Appendix 2 Key informant interviews in Marondera District

1. How much land (total) is owned (in acres / hectares)?
2. How much arable land is used for farming (in acres / hectares)?
3. Is there change in ownership of assets before and after engaging into tobacco farming (number/quantity)?
4. How many hectare s/ acres are under tobacco production?
5. What is the average output per hectare over time from 2000 to present?
6. What are the reasons for venturing into tobacco production?
7. What is the source of funding, labour for the tobacco venture?
8. What is the pricing trend over time per kg of tobacco?
9. What are the shortcomings of the policy towards smallholder farmers?
10. What are the likely improvements on the policy towards contribution to smallholder farming?
11. What are the effects of tobacco production to the environment
12. What strategies can be implemented to make tobacco production sustainable?
13. What are the challenges in achieving reducing sustainable reduction in rural poverty?

Appendix 3 Focus Group Discussion with the smallholder farmers in Marondera District

1. How much land (total) is owned (in acres / hectares)?
2. How much arable land is used for farming (in acres / hectares)?
3. Is there change in ownership of assets before and after engaging into tobacco farming (number/quantity)?
4. How many hectare s/ acres are under tobacco production?
5. What is the average output per hectare over time from 2000 to present?
6. What are the reasons for venturing into tobacco production?
7. What is the source of funding, labour for the tobacco venture?
8. What is the pricing trend over time per kg of tobacco?
9. What are the shortcomings of the policy towards smallholder farmers?
10. What are the likely improvements on the policy towards contribution to smallholder farming?
11. What are the effects of tobacco production to the environment
12. What strategies can be implemented to make tobacco production sustainable?
13. What are the challenges in achieving reducing sustainable reduction in rural poverty?

Appendix 4 Model summary for fast track farming area

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.684[a]	.468	.335	314.20556

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2775917.579	2	346989.697	3.515	.005[a]
	Residual	3159204.373	41	98725.137		
	Total	5935121.951	43			

Appendix 5 Model summary for old resettlement farming area

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.949[a]	.901	.887	264.77658

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.351E7	2	4701582.985	67.063	.000[a]
	Residual	2593945.538	41	70106.636		
	Total	2.610E7	43			

Appendix 6 Model summary for communal farming area

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.481[a]	.232	.193	194.04901

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	453799.254	2	226899.627	6.026	.005[a]
	Residual	1506200.746	41	37655.019		
	Total	1960000.000	42			

Appendix 7 Model summary for combined data

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.841[a]	.707	.695	347.06885

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.572E7	5	7144103.754	59.308	.000[a]
	Residual	1.482E7	124	120456.789		
	Total	5.054E7	128			

Appendix 8 Example of random numbers generated using the RANDBETWEEN() function in Excel

farmer number	**random number**
1	21
2	29
3	2
4	12
5	4
6	27
7	9
8	13
9	9
10	1
11	5
12	21

Appendix 9 Demographic characteristics of respondents

Farming categories	Variable	Category	Frequency of respondents	Percentage of respondents
Communal	Gender	Male	80	78
		Female	23	22
	Age	Less than 20	4	4
		21-30	16	16
		31-40	45	44
		41-50	23	22
		51-60	15	15
	Marital status	Single	6	6
		Married	7	7
		Divorced	51	50
		Widowed	39	38
	Level of education	Form 2	37	36
		Form 4	66	64
Old resettlement	Gender	Male	85	77
		Female	25	23
	Age	Less than 20	4	4

.		21-30	16	15
		31-40	39	36
		41-50	45	41
		51-60	6	6
	Marital status	Single	14	15
		Married	4	4
		Divorced	57	52
		Widowed	33	30
	Level of education	Form 2	21	19
		Form 4	73	66
		Form 6	16	15
Fast track resettlement	Gender	Male	78	71
		Female	32	29
	Age	21-30	22	20
		31-40	36	33
		41-50	13	12
		51-60	39	36

	Marital status	Single	9	8
		Married	24	22
		Divorced	56	51
		Widowed	21	19
	Level of education	Form 2	35	32
		Form 4	60	55
		Form 6	15	14

Appendix 10 Consent form for KIIs, FGDs and Questionnaires

Phd thesis for Leonard Chitongo University of the Free State, Geography department.

Topic: The efficacy of smallholder tobacco farmers on Rural Development in Zimbabwe.

Introduction

This consent may contain words that you do not understand. Feel free to ask any words or information that you do not clearly understand.

You are being asked to participate in a Phd research study by Leonard Chitongo who is studying at the University of The Free State in South Africa. This research is being conducted in Marondera district ward 19-22. The aim of the study is to assess the contribution of small holder tobacco farming to poverty alleviation. The information gathered will be used purely for research purposes only. When you are invited to participate in research, you have the right to be informed about the study procedures so that you can decide whether you want to consent to participation. This form may contain words that you do not know. Please ask the researcher to explain any words or information that you do not understand.

You have the right to know what you will be asked to do so that you can decide whether or not to be in the study. Your participation is voluntary. You may refuse to be in the study and nothing will happen. If you do not want to continue to be in the study, you may stop at any time.

Why is this research being done?

The purpose of this research is purely academic in partial fulfilment for Phd studies in the Geography department at University of The Free State.

How many people will be in this research?

About 323 small holder tobacco farmers will take part in this study within ward 19 to 22.

What am being asked to do?

You are be asked to respond to questions which will be asked by an interviewer on small holder tobacco farming.

How long will I be in this study?

This study will take approximately 1 hour to be completed. You can stop participating at any time without penalty.

What are the benefits of being in the study?

Your participation will benefit the government, TIMB, contract farming firms and all tobacco farmers in Marondera district. Since the recommendations that will be generated will help to make tobacco farming more effective and efficient.

What are the costs of being in the study?

There is no cost to you.

What other options are there?

You also have the option of not participating in this study, and will not be penalized for your decision.

Confidentiality

Information produced by this study will be stored in the researchers file and identified by a code number only. The code key connecting your name to specific information about you will be kept in a separate, secure location. Information contained in your records may not be given to anyone unaffiliated with the study in a form that could identify you without your written consent, except as required by law.

In addition, if photographs, audiotapes or videotapes were taken during the study that could identify you, then you must give special written permission for their use. In that case, you will be given the opportunity to view or listen, as applicable, to the photographs, audiotapes or videotapes before you give your permission for their use if you so request.

Will I be compensated by participating in the study?

You will receive no payment for taking part in this study.

What are my rights as a participant?

Participation in this study is voluntary. You will also be informed of any new information discovered during the course of this study that might influence your health, welfare, or willingness to be in this study.

Who do you contact if I have questions, concerns, or complaints?

Please contact me on vachitongo@gmail.com or 00263782275522 if you have questions about the research.

Signatures

I have read this consent form and my questions have been answered. My signature below means that I am willing to participate in this research. I know that I can withdraw myself from the study at any time without any problems.

_____ _____

_____

Subject Date

_____ _____

_____

Additional Signature (if required) (identify relationship to subject)* Date

**The presence and signature of an impartial witness is required during the entire informed consent discussion if the subject or subject's legally authorized representative is unable to read.*