

Faculty of Natural Resources and Agricultural Sciences

Can Farmers Diversify from Growing Tobacco in Zimbabwe?

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Department of Urban and Rural Development

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Abstract

Firm action has been taken by international organisations such as the FAO and the World Bank to curb the growth and consumption of tobacco. Subsequently, one of the world's poorest countries, Zimbabwe, is also one of the largest producers of tobacco. This thesis examines how Zimbabwean farmers are diversifying from tobacco. The paper employs qualitative methods to clarify the notion of livelihood diversification amongst farmers. The fieldwork was carried out during the peak of the tobacco selling season in the north and north eastern regions of Zimbabwe and semi-structured interviews, observations and transect walks were carried out with tobacco farmers and a variety of professionals from the tobacco industry.

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"And, when you want something, the entire universe conspires in helping you to achieve it."

- Paulo Coelho, The Alchemist

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Abbreviations

USAID United States Agency for International Development

FCTC Framework Convention on Tobacco Control

BATco British American Tobacco

NTRM Non Tobacco Related Material

WHO World Health Organisation

IMF International Monetary Fund

MTC Mashonaland Tobacco Company

TIMB Tobacco Industry and Marketing Board

ZTA Zimbabwe Tobacco Association

EMA Environmental Management Agency

ZESA Zimbabwe Electricity Supply Authority

TRB Tobacco Research Board

MDG Millennium Development Goal

GNI Gross National Income

CDC Centres for Disease Control and Prevention

1 Introduction

Nearly 80% of the more than one billion smokers worldwide live in low and middle income¹ countries, where the burden of tobacco-related illness and death is heaviest (WHO, 2012). While smoking has been declining in high-income countries it has been steadily increasing in middle income and low income countries. This is largely as a result of increased aggressive regulations in western countries such as higher taxation on tobacco products; the prohibition of smoking in public areas and restrictions on advertising and promotion activities (Jah & Chaloupka, 1999, p46). Equally important there has been increased access to information and warnings about the health effects of tobacco such as the graphic health warnings obligatory on all cigarette packages in Australia (RTE News, 2012).

The production of tobacco has been termed by policy makers as an epidemic and the crop as a killer plant (Panchamuki, 2000, p1). Undeniably, tobacco is a controversial plant but it is also known to some as the golden leaf and to others as green gold (Sunco Tobacco, 2010; Orr 2000, p348). International effort has been taken, led by the World Health Organisation to try curbing the growth and production of tobacco. However, this is not a simple task that can be done in a short amount of time as many different factors must be addressed such as the numerous livelihoods and economies that depend on the crop. Tobacco trading has proved to be a lucrative business that will be challenging to stop. According to the Centres for Disease Control and Prevention (2012) from 1998 to 2010 the USA alone collected \$243.8 billion in total revenues from the tobacco industry settlement payments and excise taxes. Moreover, in 2012 revenues from global tobacco sales are estimated to be approximately \$500 billion and multinational tobacco companies such as British American Tobacco and Philip Morris are accused of targeting emerging economies, for instance Nigeria and Turkey, as they identify profitable markets (Bowers, 2012).

Tobacco is undoubtedly a high risk crop when largely dependent on for income. This is due to the hazardous effects that it poses to those who participate in its production and those who consume it. For example, children and adults alike working with tobacco are at risk of

¹ The World Bank (2012) divides economies according to 2011 Gross National Income per capita. A low-income country is defined as having an annual GNI per capita equivalent to \$1,025 or less. Lower middle income, \$1,026 - \$4,035; upper middle income, \$4,036 - \$12,475; and high income, \$12,476 or more. Most high income economies have an industrial economy. GNI is the value (in U.S dollars) of a country's final output of goods and services in a year.

attaining 'green tobacco sicknesses' due to the nicotine absorbed into their skin and may suffer symptoms such as vomiting and dizziness (McBride et al, 1998). Children born to smoking mothers are also at risk as they have lower birth weights and are more likely to die from sudden infant death syndrome (Jah & Chaloupka, 1999, p1). The cultivation of tobacco is also invariably associated with the depletion of forests as burning wood is needed for curing the tobacco, which results in air pollution in the surrounding tobacco fields (Panchamukhi, 2000, p6). The tragedy of tobacco is that as well as causing harm it is also a livelihood means for millions of people all over the world. The majority of those involved in its production, can be found in rural communities in the poorest developing countries such as Malawi, Zimbabwe, Bangladesh and the Philippines (Warner, 2002, pg20).

1.1 Global Tobacco Production

TOBACCO LEAF	ACTUAL	PROJECTED
PRODUCTION '000 tonnes	2000	2010
World	6 137,7	7160,0
China	2 298,8	2 972,5
India	595,4	685,4
Brazil	520.7	584,7
USA	408.2	526.8
EU(15)	314.5	300.9
Zimbabwe	204.9	232.8
Turkey	193.9	268.8
Indonesia	166.6	119.6
USSR (former area)	116.8	70.6
Malawi	108.0	137,9

Table 1: Projections of Tobacco Production (Source: FAO 2004)

According to a World Bank study approximately 33milion people worldwide farm tobacco either full or part-time and another 10 million workers provide materials and services for the tobacco industry (Warner, 2002, p20). In table 1 we see the top ten tobacco producing countries in the world and it is clear from the data that the majority of the producers are developing countries (FAO 2004). Efforts are being made to get tobacco growers to diversify to other crops and participate in other income generating activities that are more sustainable for both the environment and their well-being. Although production has decreased in developed countries such as America it has been a challenge to get growers in developing countries to diversify away from growing this 'killer crop'. This is not a unique situation as similar instances can be viewed with other crops grown predominantly in developing

countries such as khat grown in countries such as Ethiopia and Yemen; opium poppy in Myanmar, Laos and Afghanistan; and coca, cultivated in Peru, Columbia and Bolivia. Issues that should be taken into consideration are the vulnerability of rural small scale farmers who have fewer assets and thus fewer options to fall back on unless adequate and efficient ways are found to assist them.

This study examines the dominance of tobacco production in Zimbabwe, one of the countries where policy-makers are actively trying to assist farmers to diversify to other crops. The evidence so far shows little uptake and the key question is why are farmers so reluctant in diversifying away from tobacco. Zimbabwe is a country grappling with many ills including political disharmony, high prevalence of HIV and AIDS, high malnutrition rates and a weakened civil society. This thesis explores concepts of livelihood diversification and investigates systematically how flue-cured tobacco farmers in Zimbabwe are diversifying away from growing tobacco. The study employs qualitative methods to clarify the notion of livelihood diversification among tobacco farmers.

To begin with, a summary about the principle facts of the tobacco plant, its cultivation and its influences on public health is presented. A comparison between tobacco and other alkaloids that have also caused controversy follows. To portray the importance of tobacco in the country a history of tobacco growing in Zimbabwe is presented. An outline of the research aim and the questions to be addressed in the paper is made before presenting the guiding concepts that were used for the study. The methodology section elaborates on the study design, the study area and the country background. An overview is given of the validity of the findings and the field work results are presented. In the discussion section, the results are compared to several other studies.

1.2 The Tobacco Plant

Like potato, tomato, egg plant and pepper *Nicotiana Tobaccum* commonly known as tobacco, belong to the family Solanaceae and is included in the genus Nicotiana with almost seventy different species (Tobaks&Tandstick, museum 2012). Tobacco is thought to have originated from the Peruvian Andes and to have spread through South America (ibid). Before tobacco became a commercial crop, the native Americans used tobacco for traditional ceremonies, rituals and for medicinal purposes (Harvest, 2001, p5). The British colony of Virginia is

where the first commercial tobacco crop was grown in 1612 and became the colony's largest export with slave labour used to grow and harvest the crop (ibid). Tobacco can also be found in gardens as the flowering tobacco plant resembles petunias and is known for its pleasing fragrance which attracts humming birds (Better homes and Gardens, 2012).

Tobacco grown in different countries or different regions in a country varies in type and quality. It is not a homogeneous product and it is tolerant to extreme weather conditions (FAO, 2003). Tobacco is grown on poor sandy soils and requires a four or five year rotation with maize grown immediately after tobacco to utilize residual fertilizer. Maize also makes up the staple food of an average Zimbabwean household and is important as food is expensive (ZTA, 2002,p5). Furthermore, tobacco will grow in almost any climate but does best in topical and semi-tropical climates (Shelfer, 1904,p131).

Tobacco contains nicotine, a substance that is recognized to be addictive by international medical organizations (World Bank, 1999, p21). Tobacco dependence is listed in the International Classification of Diseases(ibid). Nicotine fulfills the key criteria for addiction or dependence, including compulsive use, despite the desire and repeated attempts to quit; psychoactive effects produced by the action of the substance on the brain; and behavior motivated by the "reinforcing" effects of the psychoactive substance (ibid).

Nicotine is classified as an alkaloid along with caffeine, the analgesic morphine, cocaine derived from coca and cathinone found in khat. Some common uses of alkaloids are for medicinal purposes, such as anestetics and in agriculture as insecticides. They have also been used as phycoactive drugs which affect the process of the mind, body and central nervous system (Medical Dictionary, 2012). This section first expands on facts about the tobacco plant and follows with a brief comparison about the similarities found regarding the challenges of khat, cocaine and tobacco.

1.2.1 Tobacco Cultivation

Tobacco is normally sown during the months of July and August and take up to 7 months to mature (Panchamukhi, 2000, p5). Tobacco is found to be costlier and more labour intensive than other crops as it needs deeper ploughing, sterilization of the seedbeds to get rid of insects and weeds and a significant amount of firtilizer(Panchamukhi, 2000, p6). Furthermore, seeds are first sown on beds and then transplanted into fields individually after a period of four months when they have reached a height of no less than 25cm (Harvest,

2001, p5). Tobacco leaves do not mature at the same time and a technique called priming is used where only a few leaves are removed from the plant at a time starting from the bottom (ibid).

1.2.2 Tobacco Processing

Once harvesting is done, then a drying process is initiated which is called curing. Flue curing, bulking, and air curing are the varieties of curing methods. Tobacco, also known as Virginia tobacco, is tobacco of a type cured under artificial atmospheric conditions by a process of regulating the heat and ventilation without allowing smoke or fumes from the fuel to come in contact with the leaves (TIMB,1999). A barn is used for curing tobacco leaves. Curing of tobacco with the help of wood fuel encourages farmers to cut down trees (Panchamuki, 2000, p6). Curing the tobacco allows it to obtain the characteristic taste, aroma and colour of tobacco, and to preserve the leaf for storage, packing, transport and further processing (Aberdian et al, 1998,p232). The use of child labour in the tobacco fields is common practice in many tobacco-producing countries causing children to miss out on education (CMIE 2009).

1.2.3 Tobacco Consumption

Tobacco was commonly chewed and smoked in pipes but manufactured cigerettes and hand rolled ciggerettes now account for up to 85% of all tobacco consumed in the world (Jah & Chaloupka 1999, p13). Approximately 1.1 billion people smoke in the world with a variety of tobacco products consumed in the form of snuff, cigars, chewing tobacco and hookahs. Smoking has been declining in high-income countries while it has been increasing in middle-income and low-income countries. Patterns of consumption are changing with more women and teenagers smoking in high-income countries (ibid). This is partly due to marketing strategies changing to target women and adolecents who are more susceptible to images of success, sophistication and popularity advertising suggests could be achieved through consumption of cigarettes (Nichter & Cartwright, 1991, p242).

There are a few countries that have taken extreme measures towards tobacco production and consumption such as Bhutan which has the worlds strictest anti-tobacco laws. The small Himalayan kingdom that lives the principles of Gross National Happiness is the only country in the world to completely ban the sale and production of tobacco and tobacco products with smoking banned in all public spaces (Parameswaran, 2012). Approximaley only 1 percent of the population smokes according to the ministry of health (Weiner, 2005).

1.2.4 Tobacco and Public Health

Diseases associated with smoking include cancers of the lung and other organs, heart disease and other circulatory diseases. The poor are also more likely to smoke than the rich. Babies born to smoking mothers have lower birth weights, face greater risks of respiratory disease, and are more likely to die of sudden infant death syndrome than babies born to non-smokers (ibid). Smoking affects the health of non-smokers. Adult non-smokers face small but increased risks of fatal and disabling disease from exposure to others' smoke (Jah & Chaloupka,1999, p2). According to data presented by Lancet, tobacco is ranked the 3rd most addictive and 14th most harmful of the 20 commonly-used drugs (Nutt et al, 2007, p1050). WHO (2012) has estimated that one person dies every six seconds due to tobacco, which accounts for one in ten adult deaths. Smoking beyond the age of 30 is thought to reduce life expectancy by an average of up to 10 years (Nutt et al, 2007, p1052). The health effects caused by tobacco consumption also reverse efforts that have been made by governments to improve health care. According to the CDC, during 1995-1999 the USA spent \$157 billion in annual health related economic losses and in 1998, smoking related personal health care medical costs were \$75.5 billion (CDC, 2002).

WHO Farm Bureau declared that the future of tobacco should be looked upon as one of the worlds principal sources of protein for human consumption and livestock feed because before it matures the tobacco plant contains the most superior protein (Panchamuki, 2000, p42). According to Prof.Ginzel, the functional characteristics of tobacco as protein surpasses those of even animal proteins such as egg and milk and possesses optimal amino acid composition which lowers cholesterol (ibid).

The WHO Framework Convention on Tobacco Control is the world's first global health treaty (Shah, 2008). It opened for signature in 2003 and became law in 2004. It has 168 signatories. The WHO summarised the policy approach as:

- 1. Monitor tobacco use and prevention policies
- 2. Protect people from tobacco smoke
- 3. Offer help to quit tobacco use
- 4. Provide warnings about the dangers of tobacco
- 5. Enforce bans on tobacco advertising, promotion and sponsorship
- 6. Raise taxes on tobacco

2 Tobacco and other Alkaloids

This section contains a breif comparison of other alkaloids grown as cash crops. According to Berckerleg, (2006, p219) specific drugs that are illicit or are considered dangerous change over time, hence coffee, opium, cannabis, and cocaine have all shifted to or from being considered harmful substances to mild recreational drugs. The shift to classifying drugs such as coffee as mild recreational drugs has enabled governments to control their marketing. As a result farmers, particularly small holders, have an inclination towards growing crops such as khat and tobacco, which have stable prices (Klein et al, 2009,p511). In Zimbabwe, however, unlike Ethiopia and Kenya the government does not control the coffee industry and farmers are free to market their crop directly in US dollars (Keyser, 2002,p37). Nevertheless, prices are based on the New York Futures Market which is currently experiencing an oversupply, thus lowering coffee prices (ibid). Whereas with tobacco and khat, producers struggle to meet the regional and international demand of their crop (Klein et al 2009,p511,Keyser 2002,piii).

2.1 Khat

Currently, the stimulant plant khat (Catha edulis), also known as qat, arouses passionate debate in health and development circles and is the subject of diverse and contradictory policy initiatives (Berckerleg, 2006, p219). Khat has been known to the Western world for over 200 years after samples of the plant were collected in Yemen by the Swedish botanist Pehr Forsskal and classed as C. edulis (Beckerleg, 2006, p219, p220). Khat is widely consumed, either legally or illegally, in Ethiopia, Yemen, Somalia, Somaliland, Djibouti, Kenya, Tanzania and increasingly Uganda, as well as worldwide by migrants from those countries (ibid).

During the last decade khat has had an extraordinary economic boom and developed to being the backbone of the regional economy in Arab and East African countries and now it contributes to the livelihood of millions of people (Odenwald et al, 2009, p615). Khat has been problematic as its use patterns develop rapidly, exemplified by the growing group of binge users, and becomes more prevalent among vulnerable groups such as children, people with mental disorders or pregnant women (ibid). Excessive use may lead to the development of severe somatic and mental disorders (Warfa et al, 2007; Al-Habori, 2005 in Odenwald et al, 2009, p616). The farming of khat has evolved from being rudimentary and today khat is produced with irrigation farming, fertilizers and pesticides. Fresh khat leaves are more

accessible to the public at a much faster rate using newly built roads and air-transport (Odenwald et al, 2009, p616).

2.2 Coca

Coca contains alkaloids such as cocaine which is addictive and can lead to depression, fatal overdose and physiological harm. Unlike tobacco and khat, which have undergone intervention from international organisations such as the UN, the USA has had more of an influence on the growth of coca in Bolivia. The history of the attempt at diversification away from coca in Bolivia is a long and brutal one for its mostly peasant farmers and is tightly linked to political affairs. The US has funded the repression of coca production in Bolivia through its drug policy. Through the creation of a left wing political movement - Movimiento al Socialismo (Movement Towards Socialisim)- in the 1990s coca producers in the tropical Chapare east of Cochabamba propelled Evo Morales, head of the confederation of coca producers, to become Bolivia's first indigenous president in 2006 (Farthing & Khol, 2010, p198).

Before Morales, almost all efforts for diversification away from coca focused on the supply side with use of police and military force targeting the most poor and vulnerable such as small scale farmers (Farthing & Khol, 2010, p200). Coca production rapidly increased in Bolivia particularly in Chapare and Yungas due to the efforts of indigenous peasants in rural areas to try cope with the heavy toll the structural adjustment policies had in the 1980s (Farthing & Khol, 2010,p199). Attempts at alternative development projects failed such as the USAID programmes which cost US\$270 million between 1983 to 2003. These projects sought to replace coca and switch focus on export oriented production of fruits and vegetables (Farthing & Khol, 2010,p202). However, USAID was not trusted by many coca farmers as they had a history of unfulfilled promises and distabiliasation of local economies (ibid).

In contrast to the US strategy of law enforcement and eradication, the EU undertook some development programmes from 1998 that were more participatory and envolved local governments in an endevour towards participatory development (Farthing & Khol, 2010,p204). Morales' government also introduced a participatory programme called "rationalisation" or "social control" that formed the cornerstone of its "coca yes, cocaine no" policy (Farthing & Khol, 2010,p205). The amount of coca permitted

to be grown has been raised and through local governments and social control farmers are closely monitored. If excess amounts of coca are found on land they are destroyed and a farmer can risk losing their rights to grow coca and their cato (the amount of land a registered farmer can use for coca production) (Farthing & Khol, 2010,p206). The registration of coca farmers and the regulation of coca quantities is done in an attempt to control coca being smuggled and used for cocaine production. Although figures are not reliable, Morales' government is estimated to have achieved a reduction in coca production of 14,932 acres in 2009 (Farthing & Khol, 2010,p207).

2.3 Comparison with Tobacco

International action has been taken to try to stop the growth of khat, however, like tobacco millions of individuals depend on the crop to sustain their livelihoods. To the producers in Ethiopia, khat is preferable to coffee and annual food crops because of the reasonable and stable market prices at sale and because of the robustness of the plant against climatic extremes (Feyisa and Aune, 2003 in Odenwald et al, 2009, p617). Khat is viewed as a traditional crop both to grow and consume much like tobacco.

When compared to tobacco, although coca is problematic in drug trafficking, it also has medicinal and nutritional benefits which allow the Bolivian government to advocate for its growth as a medicinal and nutritional crop. Focusing on diversification, the key to the control of coca production was through participatory means that included the farmers and communities in governance and enforcement. Odenwald and his counterparts (2009, p618) suggest comparing the use of khat to that of alcohol in Europe and the USA, despite the lack of a ban, alcohol consumption is regulated by social and legal norms. This has already been implemented in the case of nicotine. However, they add that one option for bridging differences is to hold consensus-forming conferences that involve all stakeholders: producers of khat, scientists, governments and NGOs (ibid).

3 History of Tobacco in Zimbabwe

In Zimbabwe, the country my study is centred, Oriental tobacco was first grown in 1885. When a visiting English agent examined a farmer's leaf he remarked that Zimbabwe had found something as valuable as gold and diamonds, enough to make a country itself (Tobacco

& Commercial Agriculture Yearbook 1995, p11 in Maravanyika,1997, p163). In 2010 a total area of 67,054ha was used for the cultivation of flue-cured tobacco in Zimbabwe bringing in more than thirty-four billion dollars into the economy (MTC, 2011).

Zimbabwe is the largest exporter of tobacco in Africa and a major exporter of flue-cured tobacco in the world coming fourth after China, USA and Brazil. Flue-cured tobacco is tobacco dried in barns under different temperature. "Virginia leaf" tobacco was first grown in Southern Rhodesia, present day Zimbabwe, before 1900 (Rubert 1998, p3). It was first successfully grown and flue-cured by the European settler E.H. South on his farm in eastern Salisbury (eastern Harare) who had obtained a variety of seeds from South Boston, Virginia (ibid). South's success gave the government officials and European settlers the hope that tobacco represented the type of export crop that could sustain white agricultural policy (ibid). Tobacco was the first North American plantation crop and in 1907 when England had founded its first permanent colony in Virginia, USA, and hoped to exploit the land for its riches and sell those riches back in England (Gleason, 2007, p16). Labour needed to grow and harvest the tobacco came from indentures slaves from Europe, slaves from the Caribbean and Africa (ibid). In Rhodesia, European settlers grasped the potential that the fertile land and cheap labour had to support Europe's needs and to make quick riches. European settlement was encouraged and settler agriculture geared to creating a "greater economic selfsufficiency, cutting the import bill, and raising the value of the land" (Rubert, 1998, p1).

By 1918, commercial agriculture was already largely committed to the growing of flue-cured tobacco (Rubert, 1998, p2). The prospects of the tobacco industry in Zimbabwe had by this time been identified by a British tobacco company, which had been invited to set up the infrastructure needed for the curing and grading of the tobacco. In 1906 the agricultural department announced "the future for the Rhodesian tobacco industry may now be regarded as assured" (Rubert, 1998, p4). More than a century down the line the tobacco industry in the country is still viewed as giving good returns. By 1930 different organisations established to regulate the tobacco industry were being formed such as the Tobacco Control Board, which all growers were required to register with (Rubert, 1998, p8). Rubert adds that this was later replaced by the Tobacco Marketing Board (now known as the Tobacco Industry and Marketing Board) in 1936 whose functions included mandating compulsory sales of all tobacco at Marketing Board operated auction floors, establishing quotas for each registered grower and establishing new overseas markets (Rubert, 1998,p9). The growers also formed a

cooperative insurance scheme, called Tobacco Hail Insurance, which was setup in 1938 to provide risk assurance cover (Woelk et al, 2000, p182). Today one can find these institutions still in place and modified to fit the present circumstances.

3.1 Tobacco Production in Zimbabwe

As presented in Table 1, according to the FAO (2004) Zimbabwe is the seventh largest producer of tobacco in the world and the largest producer in Africa. There are three types of tobacco grown in the country Burley tobacco, Oriental tobacco and Flue-cured tobacco which far surpasses the other two by production accounting for about 97% of the production (Keyser, 2002, p12). This is due to the favourable growing conditions in the northern and eastern parts of Zimbabwe which receive favourable rainfall conditions that are required for Virginia type Tobacco (ibid). Tobacco is one of the most important sectors in the country's exports. In the early 2000s it made up more than 80% of agricultural exports and it normally accounts for more than 50% of them. It also accounts for 35% of the country's total exports (Diao et al, 2002, p26). Previously tobacco also accounted for up to 10% of the GDP (FAO 2003). Today Zimbabwe's tobacco industry can be described as 'of first world standard' in what is still a developing country (Woelk et al, 2000, p180). Zimbabwe's main functions are to grow, cure, pack the tobacco after separating stems and unwanted materials and finally to distribute the tobacco. All tobacco is sold at auction floors in Harare.

3.2 Land Redistribution and the Effect on Tobacco Production

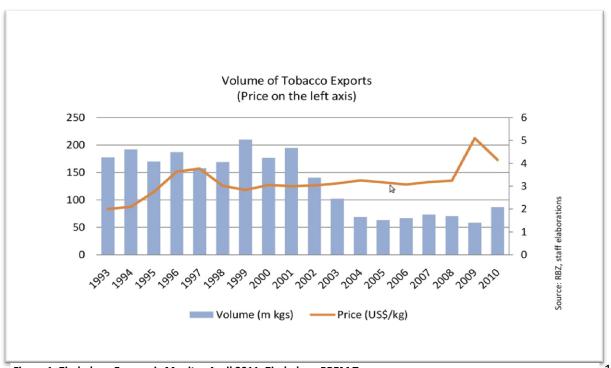


Figure 1: Zimbabwe Economic Monitor April 2011, Zimbabwe PREM Team

One important factor that has negatively affected the production of tobacco in Zimbabwe as well as its economy is the land redistribution program. It led to the majority of commercial farmers having their land taken away and handed over to primarily individuals without the knowledge, capital or the will to farm. A major problem the agricultural sector now faces is arable land being underutilised or abandoned as owners live in the city or growers fail to maximize production on their land. However, the land redistribution has not been a total failure as commonly perceived. In a study conducted in Maszingo province two-thirds of the land is believed to have been distributed to ordinary low income people and the remaining one-third to civil servants, members of security services, and prior workers on white owned farms (Scoones, 2010). Scoones (2010) also notes in his research that since 2000, land reform has resulted in the transfer of around 8 million hectares of land across 4,500 farms to over 160,000 households, representing 20 per cent of Zimbabwe's total land area. While production of tobacco, maize and wheat has decreased beans, cotton and small grains have either increased or remained steady.

3.3 Credit for Agricultural Enterprises

The fall of the economy which has been largely blamed on the economic sanctions imposed by the EU, USA and Australia added a bitter taste to the already sour lives of Zimbabweans. The country now uses a number of foreign currencies mainly the US dollar, the South African rand and the Botswana pula. This process is referred to as dollarization (Madera, 2011). As a result of dollarization the growth of many crops seized to yield a profit and many farmers found that tobacco was the most profitable crop to grow. This was also due to the fact that the price of tobacco was not controlled by the government and unlike other crops during the use of the Zimbabwean dollar tobacco growers were not paid in Zimbabwean dollars according to the bank rate. Alternatively, they were paid in foreign currency. The bank rate then did not show a true reflection of the value of the Zimbabwean dollar which was also experiencing the second highest rate of hyperinflation after Hungary in 1946 (Berger, 2008). As a result, if a farmer was paid in Zimbabwean dollars they would be running at a massive loss. The banks had to go over hurdles to resume functioning and it was not uncommon to hear a bank had run out of money. This was a problem for the farmers as they had to rely on other means to save, invest and borrow money. The banks also took high interest rates and needed collateral if one wanted a loan which many farmers did not have. The farmers had thus begun to turn to contract farming which will be explained in more detail in the analysis.

4 Problem Statement

In 1995 several multilateral aid agencies, development banks, non-governmental organizations (NGOs) and United Nations (UN) authorities portrayed tobacco as "a major threat to sustainable and equitable development. They concluded "in the developing world, tobacco poses a major challenge, not just to health, but also to social and economic development and to environmental sustainability" (Bailey et al., 1995, p. 1109 in Geist et al, 2009, p1066). In an attempt to curb the consumption of tobacco, the production of tobacco has been targeted by international organisations such as the World Health Organisation. As discussed in previous sections, Zimbabwe is dependent on tobacco for its economy as it brings in the much needed stable foreign revenues and as the majority of tobacco farmers are vulnerable rural populations. With the estimated demand of tobacco predicted to decrease, as it has already done in the Western world, and with the hazardous effects caused by tobacco the study aims to answer the main question:

What factors have kept flue-cured tobacco farmers in Zimbabwe from diversifying away from tobacco and why?

4.1 Research Objective

The purpose of this study is to get an understanding of why tobacco farmers grow tobacco and why they do not diversify away from growing it altogether. The research is focused on flue-cured tobacco growers in Zimbabwe. The objective is to understand what factors encourage them to grow tobacco by analysing their surroundings and the stakeholders they interact with in various segments of the tobacco industry. Moreover, the aim of this research is to gain an understanding of how international organisations and governments can better assist in the diversification away from the growth of cash crops used as recreational drugs without risking the livelihoods of those dependent on them. Furthermore this study intends to examine the livelihood strategies of the rural poor who are tobacco growers.

5 Guiding Concepts and Theories

5.1 Diversification

As the diversification of farmers is one of the key points in the study, this section outlines the concepts that will be incorporated from various diversification theories and that will form a framework for the study. According to Ellis (2000, p15) rural livelihood diversification is defined as the process by which rural households construct an increasingly diverse portfolio of activities and assets in order to survive and improve their standard of living. To guarantee the maximum effects of the improvement to the household's standard of living it is necessary to diversify as a household rather than as individuals. Ellis (2000, p232) notes that the individual taking on multiple occupations can typically only do so in low skill, part-time occupations that are insecure and low paid. In order to diversify it is necessary that one has the assets that may come in the form of natural, human, social, physical and financial capital. Without some or any of these a household may find it impossible to diversify. The diversification of a rural household can contribute in uplifting it from poverty. Its strengths are that it secures the household by giving it greater resilience to shocks and changes in seasonality. Given the opportunity to diversify once opens the doors to more opportunities. As we shall see in the study, some of the skilled commercial tobacco farmers as well as the newer less skilled rural farmers who grow tobacco have been able to use their profits to invest in various other income generating activities.

The reasons that individuals and households pursue diversification as a livelihood strategy are often divided into two overarching considerations, which are **necessity** or **choice** (Ellis, 2000, p55). Necessity refers to involuntary and distress reasons for diversifying and choice by contrast refers to voluntary and proactive reasons for diversifying (ibid). According to international communities it may be viewed as a necessity for farmers to diversify away from growing tobacco particularly in developing countries and in the study I will investigate whether the farmers are in the same view. Diversification for distress reasons is however viewed to be a bad thing as it results in household members undertaking casual and low productivity activities with poor prospects (Ellis, 2000, p56). It may also lead to households adopting a more vulnerable livelihood system than they possessed previously (Davies and Hossain, 1997 in ibid). Further on in the study distress reasons will be illustrated by how some farmers diversified to growing paprika and roses during the height of the economic

instability in Zimbabwe in the mid-2000s although they did not earn much in profits from it.

According to Esrado (2006, p3) households may choose to diversify their income portfolio for a number of reasons, such as self-insurance against risk in the context of missing insurance and credit markets and an inability to specialize due to incomplete input markets. Many researchers consider risk to be the fundamental motivation for livelihood diversification (e.g. Bryceson, 1996) (Ellis, 2000, p60). The higher the perceived risk attaching to a particular source of income, the more likely it is that the individual or household will seek to compensate this by having in place contingency income sources or fall back positions of social support in the event of failure (ibid). Most farmers in the study feel that tobacco is a low risk crop particularly as a contracted tobacco grower as they are guaranteed to have their tobacco bought. However there are some unforeseen risks such as hail, of which those farmers that can afford to insure their tobacco against hail, do so. Distress reasons that some farmers feel would force them to stop growing tobacco are reasons such as electricity shortages and inability to pay back loans which will be explained further on in the coming chapters.

Elis (2000,p5) states that most rural families have truly multiple income sources and that studies show that between 30 and 50 per cent of rural household income in sub-Saharan Africa is derived from non-farm sources (Reardon, 1997 in Ellis, 2002, p5).

In a rural development context diversification and diversity imply multiple income sources that are non-farming activities as a primary means for rural survival (Ellis, 2000, p14). It has also been found that while in urban areas diversification is driven more by survival than wealth accumulation motives, in rural areas diversification serves as a means of both wealth accumulation as well as shock protection (Ersado, 2006, p13). Netting (1993 in Ellis, 2000, p25) interprets income diversification as one amongst several factors enabling intensive small-farm agriculture to persist and prosper, it does this by increasing the flexibility of the farm family to adapt to difficult circumstances whether originating in markets or from natural causes.

According to Foster (1975, p149) numerous developing countries depend on one or two exported agricultural commodities for a major portion of their foreign exchange earnings. Zimbabwe is a good example of this as export of tobacco brings in about **24% of its foreign**

income. This dependence and success of the crop has encouraged the continued and increased growth of tobacco. However it may be questioned whether the increase in yield and area allocated to tobacco implies that the rural poor are replacing the growth of food crops for the growth of tobacco and if they are becoming less diversified in their livelihood strategies by placing greater importance to tobacco. According to Foster (1975, p152) on some small farms, response to new commercial opportunities may be prevented because existing resources are fully employed. The ability and disposition of farmers to respond to new opportunities should not, however, be underestimated as most farmers have the resource capacity to respond to opportunities which are sufficiently attractive in their terms (ibid). Foster also adds that the government has almost always been involved, usually as the dominant agent, in creating the new environment which motivated farmers to change (ibid). Missing markets can also discourage diversification. For example, missing credit markets can impede diversification into activities or assets characterized by substantial barriers to entry (Barrett et al, 2001, p10). Smallholders typically cannot afford to purchase a truck and enter the long-haul transport niche of the food marketing channel, no matter how profitable it might be (Barrett, 1997).

5.1.1 Diversification from Agrarian Livelihoods – A Comparison

Deborah Bryceson (1996, p99) defines deagrarianization as the process of economic activity reorientation, occupational adjustment and special realignment of human settlement away from agrarian patterns. In the Andes region in Latin America various types of livelihood strategies are emerging in order to make a transition to more sustainable alternatives (Bebbington, 1999, p15). According to Bebbington (1999, p9) Andean livelihoods and peasant economy was encompassed by the extraction of surplus value from rural areas that constrained peasants access to resources, primarily land. The peasants provided cheap food to the urban areas as well as cheap labour as they were forced to migrate periodically to earn an adequate income (Bebbington, 1999, p10).

A shift in thinking started in Chile in the early 80s where the government only gave limited support to medium sized capitalist family farms (Bebbington, 1999, p12). Investing in peasants was seen as unprofitable due to the fact that they were considered non-viable peasants because of the land and water assets they controlled (Ibid). Alternatively the non-viable peasants were supported through social investment programs that would facilitate their transition out of agriculture and into the urban economy (ibid). The ideas of viable and non-

viable rural productive investments has since spread across Latin America with the notion that rural productive investments should be targeted to areas where there is potential for enhanced productivity (Bebbington, 1999, p13).

Rigg (2006, p181) discuses studies from a number of Asian countries such as Japan, South Korea and Taiwan who have succeeded in transforming their rural landscapes in the last 30 to 40 years. In these countries access to land is no longer a necessity to reduce poverty and farming is just one of the many activities carried out in the countryside (ibid). In parts of the South East Asian Region the contribution of farming to household income has declined from 90% to 36% while the share of non-farm income rose from 13% to 64% (Rigg, 2006, p183). The general angle to deagrarianization is that farming becomes a preserve of the older population; with this being more prominent in East Asia (Rigg, 2006, p185). In South Korea for instance, by 1990, 55% of the labour force in agriculture was over the age of 50 while in 1970 it was only 20% (ibid).

As far as African countries are concerned, most African countries achieved independence in the 1960s and Sub–Saharan Africa was characterized by a lack of market integration between urban and rural areas (Bryceson, 1996, p102). Peasant producers, much like the situation experienced in Latin America, supplied raw materials and cheap labour to the urban areas but received nothing back from the urban areas to contribute to the capitalization and specialization of the rural agricultural enterprises (Bryceson, 1996, p103). This in turn led to the intensification of labour primarily from women (ibid).

The implementation of the Structural Adjustment Programs in the 80s forced governments to cut back on government expenditures and caused tentative climatic conditions inclining farmers to seek out ways to minimize their risk through crop diversification, trading and market-orientated production (ibid). Bryceson (1996,p101) presents statistical deagrarianization indices from African countries where it can be seen that the percentage of the labour force in the agricultural sector in most African countries has decreased between 1965 and 1989 while the labour force in the service sector has subsequently increased during the same time period. In Zimbabwe the agricultural labour force decreased from 32.1% of the population in 1965 to 26.3% between 1986 and 1989 while in Nigeria it decreased from 21.8% to 13.5% (ibid).

Bryceson (1996, p106) notes that sub-Saharan Africa is becoming less agrarian in nature with deagrarianization proceeding on the basis of individual activity diversification. She goes on to state that African peasantries are embarking on a dual strategy experimenting with non-agricultural income diversification while retaining security from subsistence farming as a fall-back (Bryceson, 2002,p11). Subsistence farming provides some degree of food security and affirms community-held agrarian values (Bryceson, 2002, p15).

5.1.2 Multiple Livelihood Strategies

Alternatives to growing tobacco have been explored in Zimbabwe and some tobacco growers have moved into horticulture with 60-80% of the farmers in export horticulture being members of the Zimbabwe Tobacco Association (Woelk et al, 2001, pg 189). According to Panchamukhi (2000,pg38) world demand for horticultural products in expected to increase and if adequate price support is ensured, adequate transportation facilities provided, adequate assistance is given to meet the new capital costs for preservation of the horticultural products amongst other preconditions then Zimbabwean farmers may be persuaded to diversify from tobacco in a phased manner. According to the Zimbabwe Tobacco Association (Maravanyika n.d. p164) in 1993 tobacco farmers were said to produce some 35 % of the country's maize, 30 % of the beef, 30 % of total wheat output and 20 % of the soya beans. In Tanzania in a single rainy season, tobacco is cultivated together with maize, groundnuts, wheat and cassava, beans, rice and potato, which except for potato are grown on more than 1ha, on average and nearly all farmers practice crop rotation (Geist et al, 2009, p1073). Gladwin et al (2001, p114.115) state that because poorer households in Malawi have to supplement their income with off-farm agricultural labour sales and remittances from relatives this leaves no income to invest in farm productivity. On the other hand houses with higher income invest in multiple economic activities and enjoy high crop productivity (ibid).

5.1.3 Gender and Diversification away from Tobacco

Tobacco production not only requires more working capital than other crops due to inputs such as barns for curing that are needed, but it is also a labour intensive crop (Takane, 2005, p108). The high demand for labour often forces farmers to employ hired labour to work alongside the family labour (ibid). In a study carried out in two villages in Malawi in 2004 (Kachamba and Belo) results showed that the labour- intensive nature of tobacco production may be the reason why most female-headed households did not cultivate tobacco as they have fewer labourers available than male headed households (ibid). The sexual abuse of girls in

exchange for money, food or as a punishment for being late is also not uncommon (Mumba, 2011).

In most parts of Africa women consider farming for food as part of what makes them women and gives them gender identity (Gladwin et al, 2001, p 197). To be food secure rural women must have multiple livelihood strategies for example in Africa they are petty traders, farmers and food processors as none of the strategies are capable of sustaining them on their own (Gladwin et al, 2001, p 181). In a study conducted in Masvingo, Zimbabwe, surveys suggest that women predominated among low-paid casual agricultural work and that female headed households were more likely than male headed households to engage as wage labourers (Adams, 1991p164). Adams (1991p167, 168) states that there is a long documented history of women's employment in commercial agriculture in Zimbabwe with many of them residing on farm compounds. Although women are considered food producers in Africa the biggest problems they face include lack of access to land, security, lack of capital and credit and technological training (Gladwin et al, 2001, p179).

Doss (2002,p 1987) states that men are viewed as being responsible for growing cash crops while women are viewed responsible for growing crops for home consumption. She goes on to justify that if crops were categorized as men's crops and women's crops it would be beneficial for policy makers and development economists (ibid). They would be able to distinguish the effects of agricultural policies on men and women by examining the effects of policy on different crops (ibid). In Ghana however, although men are involved in growing the major cash crops, women are involved in the production and sale of all the major crops (Doss 2002, p1999). Distinguishing between men's crops and women's crops for the use of agricultural policies would therefore not be applicable in Ghana (Doss 2002, p1998).

Ferrell (2011, p137) argues that replacing tobacco is difficult for economic and material reasons but also because raising tobacco is commensurate with a locally valued way of doing masculinity. In Kentucky, USA, most tobacco farmers are male and tobacco farming is locally considered a male activity (Ferrell, 2011, p138). Their reasons for growing tobacco were more likely to do with habit and tradition rather than predictions about the future of the crop (Ferrell, 2011, p 139). Studies by Burton (ibid) suggest that farmers may resist change due to an anticipated loss of identity or social/cultural rewards traditionally conferred through existing commercial agricultural behaviour. Furthermore Prowse (2009, p582, 583) proposes

that black Malawian tobacco culture is very macho and alcohol dominated and that it is very unusual to find women working in the tobacco industry other than in a secretarial capacity. He goes on to describe the action of 'cooling off' done by male smallholder farmers after they collect their tobacco income from the bank. During 'cooling off' the tobacco farmers buy consumer goods such as radios, watches and branded clothing as well as buying expensive beer like Carlsberg instead of the cheaper traditionally brewed beer (Prowse, 2009, p586). These actions allow the smallholders to engage in activities they are usually excluded from and portray what they understand to be success (Prowse, 2009, p589). Meanwhile women are left behind at home with no access to the tobacco income although they would have contributed to the laborious work needed to grow and prepare the tobacco for sale.

6 Methodology

6.1 Study Design

Secondary data collected from past studies carried out on Tobacco, and literature and academic papers that were sourced from Wits University before going out into the field guided in creating interview questions that I would use for semi-structured interviews. These interview questions were modified during the course of the fieldwork as I attained a better understanding of the circumstances. A cross-sectional study was then carried out over a period of five weeks from the end of January and throughout the month of February 2011. Several methods were used during the research to check the results and ensure reliability of the information collected. In terms of data collection the field work took place in different locations illustrated in figure 2 below.

Observations were dealt with in a qualitative manner through taking down notes of observations, mapping during transect walks and writing down responses during and after interviews. Upon arrival at the farms a brief introduction was made by the merchants to the farmer regarding who I was. Observations were first carried out as the merchants and the farmers pursued their business. Following this, time was set aside for transect walks around the farm with me and the farmer or the farm manager where I could simultaneously engage in semi-structured interviews. At times merchants would be present during the transect walks but they did not interfere in the discussions at this time. Lastly, after the fieldwork, I used secondary data in the form of records and publications from the Tobacco Industry and Marketing Board, Zimbabwe Tobacco Association, Mashonaland Tobacco Company and

local newspapers to check my findings.

6.2 Study Area

6.2.1 Study Sites

Figure 2 below is a map illustrating the 11 study sights where the fieldwork took place. Tobacco is predominantly grown in the north, north eastern and central Zimbabwe as they receive higher rainfall and also have the high relative humidity needed for curing (FAO, 2003). The furthest farms are an average of 200km away from the capital city, Harare, where all the tobacco is also sold at auction floors. Although the main roads are well developed roads branching out to most farms are dust roads which can cause problems with transportation during the rainy seasons. There is also limited public transportation reaching the farming areas. This increases the importance of the merchants and extension workers as middle men as they either live amongst the farmers or have vehicles suitable for the harsh driving conditions. Zimbabwe is part of Southern African Development Community (SADC) and is strategically located between Mozambique and South Africa that both have major ports in Africa.



Figure 2: Map showing study sites

6.2.2 Country Background

Zimbabwe is a land locked country in southern Africa boarded by Mozambique, Zambia, Botswana and South Africa. As portrayed through its flag the most important aspects in Zimbabwe are the black Africans, the minerals, agriculture, the land and the bloodshed during independence. These four aspects have shaped the history and the present situation of the country and have brought about its most prosperous years as well as its lowest times. Dating back from pre-colonial times the economy of Zimbabwe consisted of agriculture and mining with the people growing a variety of crops ranging from millet, sorghum, to paw-paws, pineapples, beans, tobacco, ground-nuts, keeping livestock, fishing and small scale mining of gold and copper (Butcher, 1985, p76). Zimbabwe is an agrarian-based economy largely because approximately 70 % of the total population reside in rural areas or on large-scale commercial farms (Maravanyika, 1997, p165).

Table 2: Facts about Zimbabwe

Flag	
Capital	Harare
Population	12.6million
Urban Population	38% (2011) (World Bank)
Area	390,759 sq. km
Major Languages	English (Official) Shona, IsiNdebele
Major Religions	Christianity, Indigenous beliefs
Life Expectancy	Men: 50 years, Women: 50 years (UN)
Main Exports	Tobacco, cotton, agricultural products, gold, minerals
GNI per Capita	Estimated to be low income: \$995 or less (World Bank, 2009)
HDI	0.14 (low)

Source UNDP 2011

Tourism also brings in a significant amount of foreign currency with tourists visiting game parks, the Victoria Falls and Great Zimbabwe however this sector has been negatively affected due to the political instability and poaching.

In view of the economic and social crisis in recent years, the prospects for achieving most of the Millennium Development Goals (MDGs) remain weak (African Development Bank 2010). Nevertheless this has not always been the case. If one traces back the history of the Zimbabwe dollar which is currently obsolete they will find that when it was first introduced in 1980 it was at a rate of 1:1 with the British pound and more powerful than the US\$ (wiki,

2012). Undoubtedly between the 80s and 90s Zimbabwe enjoyed its most prosperous years where the country boasted high levels of education and the highest literacy rates in Africa for both men and women. The African Development Bank (2010) also states that the poverty rate increased from 42% in 1995 to 63% in 2003 and is currently estimated to be over 70%. Some estimates of unemployment put it at 80% and an estimated 1.2 million people, close to 10% of the population, live with HIV/AIDS (African Development Bank 2010). Growth in 2010 however has been recorded to be 9% mostly driven by the recovery of the agricultural (35%) and mining sectors (59%) (Zimbabwe PREM Team, 2011). Tobacco remains well below (40%) of the previous peak achieved in 1999 (Fig 1) (Zimbabwe PREM Team, 2011). The country has some of the world's largest platinum reserves and the discovery of diamonds in 2006 has also brought some hope for income generating opportunities.

7 Data Collection

Secondary data collection

Prior to the field work two weeks were spent reviewing published materials by the University of Witwatersrand which covered matters surrounding tobacco growing, the history of land and agriculture, issues dealing with diversification and planning for rural development, in Zimbabwe. This was done in order to gain knowledge of the processes, the environment the study would take place in and to create an initial questioner designed for the farmers and the key informants.

Key informant interviews

The field work consisted of informants in order to get a clearer idea of the processes involved in the tobacco industry and the different stakeholders who deal with the farmers. The purpose of key informant interviews is to get a wide range of information and deeper understanding from experts in the community of study and use their broad knowledge and understanding to provide insight to the nature of problems and give recommendations for solutions (UCLA Centre for research and policy, pg1). The diversity in key informants was important in obtaining a diversity of information and therefore unbiased information (ibid). A series of indepth interviews were conducted using open ended questions to elicit a depth of information from the key informants (Guion et al, n.d). A checklist guided the interviews.

Semi- structured interviews

Following administration of the key informant interviews the designed questioner for the farmers was modified to be more relevant to the study using the information gathered from the key informants. According to Cohen and Crabtree (2006) the interviewer develops and uses an 'interview guide', a list of questions and topics that need to be covered during the conversation usually in a particular order. Semi-structured interviews are useful when one will not get more than one chance to interview an individual and they are usually presided by observation, informal and unstructured interviewing in order to get a keen understanding of the topic necessary for developing necessary semi-structured interview questions (ibid). Using the questioners semi-structured interviews were conducted with twenty flue-cured tobacco growers.

Observations and transect walks

Throughout the fieldwork observation took place and field notes and pictures were taken during farm visits, at the auction floors and specifically at the group meeting at Bingaguru between small holder farmers and merchants. Transect walks were made with key informants and farmers on a number of farms. Transect walks are systematic walks with key informants through the area of interest, observing, asking, listening, looking and identifying zones (Kumara, n.d.). Used in connection with semi-structured interviews this tool can be particularly helpful in understanding intersection between the physical environmental human activities (ibid).

Secondary data

To increase my understanding of the field work done and to get information that could not be gained through interviews and observations document analysis was done of records from TIMB, the merchant companies and newspaper articles published during the time of the field work. When studying a culture, social setting or phenomenon, collecting and analysing the texts and artefacts produced and used by members can foster understanding (Cohen & Crabtree, 2006). Special attention was paid to the producer of the document and who it was aimed at.

Management and review of data

Notes were taken during interviews, observations and document analyses. After each interview or observation the notes were reviewed and revised to organise and record a precise account of the events observed, interviews made and impressions received. Reflection can, in the context of empirical research, be defined as the interpretation of interpretation and the launching of critical self-exploration of ones own interpretations of empirical material (including its construction) (Alvesson & Skoldberg, 2000, p6). Hence apart from selecting data that I felt was appropriate I also needed to reflect on my selections to avoid being bias. Hammersley states that we can work with what we currently take to be knowledge, while recognising that it may be erroneous; and engaging in systematic enquiry where doubt seems justified. In doing this we can still make the reasonable assumption that we are able to describe the phenomena as they are, and not merely how we perceive them or how we would like them to be (Hammersley 1992, in Hammersley & Atkinson 1995, p16).

7.1 Validity of Findings

Triangulation was used through the use of different methods in order to ensure reliability of the results. The group discussion enabled me to observe a larger group of small scale farmers in rural Zimbabwe. I got the opportunity to see how they lived and listen to their concerns as well as see the interaction between the merchants and farmers. Furthermore my study was conducted during the tobacco growing season and just as the beginning of the tobacco selling season. This gave me a first-hand experience of how the crop was doing and better insight to the different processes the farmers go through until they sell their tobacco at the auction floors. I incorporated reflexive methodology in to my studies for a number of reasons. Firstly I went into the field with prior ideologies about what I would find. I constructed interview questions and guidelines beforehand and found that I had to constantly redesign them during the field work process and make them suitable for the situation. We need to reflect on what seems or can be shown to be problematic, while leaving open the possibility that what currently is not problematic may in the future become so (Hammersley & Atkinson, 1995, p16). During my analysis I also had to review and reflect on the information I gathered, select it according to what was appropriate to add to the study and what I perceived as ethically correct to add.

8 Results

8.1 Classification of farmers

I interchange between the term grower and farmer to refer to those who grow tobacco. To clarify this in the tobacco industry's and TIMB literature the term grower is used whereas in the Zimbabwean media the term farmer is often used. Growers are mainly classified as A1, A2, communal, commercial and small commercial farmers. According to the government 300,000 were resettled under the A1 and A2 resettlement scheme (The Metro, 2011). In addition on average A1 farmers were allocated an average of 10-15ha of which 3-5 ha was arable land and were given small holder plots while A2 farmers were allocated 15ha and above and were expected to engage in commercial farming (ibid).

Communal farmers farm under a communal land tenure system on 3-5ha of land, using oxdrawn implements and are semi-commercialised (FAO, 2006). While small commercial farmers use tractor drawn implements on 10-40ha of arable land and produce the bulk of their products for the market (ibid). According to TIMB (2011) the split of the registered tobacco growers is as follows, with small scale non-commercial sector making up 79% of the total growers.

Table 3: classification of growers

TIMB Classification	A1 (ha)	Communal (ha)	A2 (ha)	Large-scale Commercial (ha)	Small Commercial (ha)
	3-5	3-5	15 and above	varied	10-40
	41.00%	38.00%	7.00%	3.00%	11.00%
Classification	Small sc	ale	Large Scale		
Used in	1-15		Above 15		
Study					

For the purpose of my studies I reclassified the growers in to two groups, small scale farmers and large scale farmers. I classified all farmers with 1- 15ha of land as small scale and those with 15ha and above as large scale. The reclassification I use is illustrated in the table 3.

8.1.1 Characteristics of participants

During the fieldwork 20 different flue-cured tobacco farmers were interviewed. Most farmers were interviewed during farm visits except for 3 who were interviewed at the Tobacco Sales Floors (auction floors). The growers were from various tobacco growing regions and towns.

Of them, 6 were small scale growers, 1 was a previous tobacco grower who had his land taken away during the land redistribution and 13 were large scale commercial farmers. Furthermore of the 20 farmers interviewed 5 of them were women. I also had the opportunity to interview two representatives from TIMB, one representative from ZTA and one extension worker from MTC who I will refer to as a local adviser. The characteristics of the participants can be seen in table 4. The following Key informants were interviewed for the purpose of the research:

- A representative from a *merchant company* that buys tobacco directly from the farmers, or at the auction floors. This was my main key-informant who was interviewed several times. I also documented information from conversations with the informant. This particular key informant also acted as a gate-keeper in that they opened up a path to meet with a variety of farmers in different regions of Zimbabwe. Interviews with the key informant were open ended and they guided in, together with the initial questioner created, designing a more relevant and ethical questioner.
- The *Local advisor* who sees over the small holder farmers in the Bingaguru region acted as a key informant as he worked with farmers on a daily basis as an agronomist and friend.
- Tobacco Industry and Marketing Board (TIMB) representative interviewed at the auction floors
- Zimbabwe Tobacco Association (ZTA) representative interviewed at ZTA

Table 4: Characteristics of participants²

CATEGORY	MALE (n)	FEMALE (n)	SMALL SCALE FARMERS (n)	TOTAL
Farmer	15	5	6	20
TIMB	1	1		2
ZTA	1			1
Gate Keepers	3			3
Group Discussion	41	7	40	48

As I spent the most part of the study travelling with merchants from MTC I managed to attain a fuller picture of their role in the tobacco industry and their relationship with the growers.

My gatekeepers whom I also interviewed and observed regularly were from MTC one of the

² Participants come from areas shown in figure 2. These are Harare, Mazoe, Macheke, Centinery, Gurune, Marondera, Headlands, Hurungwe and Bingaguru.

12 operating tobacco merchant companies in Zimbabwe. Gatekeepers are actors with control over key sources and avenues of opportunity (Hammersley & Atkinson 1995, p34). With them I got the chance to take part in a focus group meeting they had with more than 40 small-scale growers in Bingaguru. Tobacco and agriculture is a sensitive subject particularly in the studied areas. My gate keepers also provided a safety net for me as there was increased political tension due to elections that were meant to be held in June 2011.

As I was travelling with my gatekeepers during their working hours and as I could only access the farmers by such means I had to share the visit time with the merchants and agronomists. This was an advantage in the sense that I could observe the interaction between the grower and the merchant or agronomist but at times it may have also evoked limitations in the response of the grower. Furthermore my association with the merchants may have also had an effect on the responses they gave as they would perhaps try answer in a favourable manner although many growers seemed to take the opportunity to air-out their views as I was predominantly viewed as a curious student.

Results presented are a culmination of responses from interviews, observations and secondary data. Not all responses from interviews are included in the study and a majority of those included are translated from Shona to English.

8.1.2 State of Tobacco Production in Zimbabwe in 2011

The number of flue cured tobacco growers in Zimbabwe has been increasing from 1973 but in the last 10 years the increase has been even more drastic.

Table 6: Progress of tobacco growth.

Year	Number of Growers	Tobacco Produced kg
1973	1 519	67000000
1993	2999	218000000
2000	8537	237000000
2009	29000	58000000
2010	51685	123000000

Source TIMB table 13, 2009

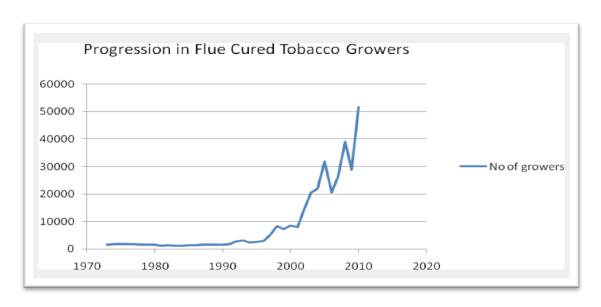


Figure 3: Progress of FCT industry. Source TIMB, 2009. Table 13

From the information given in the table and graph above one can note that although there has been an inconsistency in the production of tobacco due to economic and political factors the number of tobacco growers has increased by 50,166 growers from 1973 to 2010. Large hectares of land have been subdivided and distributed to a greater number of people. The first farm I conducted my research had been divided in to two 200ha farms, while some had been split to make up to thirteen farms. Others I met were small-scale farmers who bought land during the willing buyer, willing seller period of the land redistribution (1979-2000), they mostly grow tobacco on an average of 3ha of land. Surprisingly with the large amounts of tobacco produced in the country less than 2% of it stays in Zimbabwe and is processed there with large amounts of it being smuggled to neighbouring countries like South Africa.



Picture 1: Cigarette advertisements along a main road

The advertisement of tobacco products is not prohibited in the country. One cannot miss the large billboards along the main roads of Harare advertising cigarettes and tobacco companies such as British American Tobacco. In Zimbabwe a pack of cigarettes can be purchased for about 40c for local brands such as Pacific and Kingsgate and approximately US\$2³ for the more expensive brands like Dunhill, while in Sweden they can cost approximately US\$7.

8.2 Tobacco Growers

8.2.1 Gender and Labour

The age range of the respondents ranged from 20 to 80 years of age. Tobacco growers are predominantly male particularly among the large-scale farmers however women often work alongside their husbands. This is particularly true with the small scale farmers as labour is needed from the whole family to cut down on costs and as tobacco is a labour intensive crop. Women who engage in tobacco growing possess as much knowledge and ability as men do.

One woman who grows with her husband stated that she thinks she would be able to do the same work by herself. Another woman, a widow, who runs the farm alone, stated that the biggest problem she faces being a women running a farm alone is theft from farm workers and people residing on the farm. She has otherwise succeeded in diversifying to grow beans and peas and exporting them to South Africa ever since she started farming alone.



Picture 2: Women can be seen to the left grading

Most large-scale tobacco growers

prefer women to work for them as they think they are good at grading and desuckering the tobacco. The percentage of men working on the farms is usually equal to or slightly more than that of the women employed.

³ Currency at the time of study was US\$1 = 6.47 SEK (Swedish Kroner)

Women can often be seen in the workshops grading the tobacco with infants on their backs. I did not however witness any children under-age working although some small scale farmers did say that they had help from their older children during the school holidays.

Grower: "Women keep jobs; they are good at grading and suckering. Men are difficult to work with".

Many large-scale growers complained about workers not showing up for work due to political meetings they have to attend and men not showing up due to hangovers. The most common reason however is due to $Maricho^4$. During the season when the farmers are grading and reaping settlers pay labourers \$5 a day for two weeks to work for them. This encourages the full time workers to call in sick and go work for the settlers affecting the growers as the tobacco must be handled meticulously at this time. The growers try their best to encourage their workers to work hard and efficiently and most provide food, education, accommodation and bonuses for their workers. Permanent workers can earn between US\$55 to US\$110/month working on the farms regardless of whether they are male or female, while government school teachers in Zimbabwean cities at the time of the study were paid US\$150.

Grower: "The workers are earning a lot of money but they do not want to work, for 2 weeks, settlers pay double their wage".

Aside from those who work on farms and those employed by companies, associations and boards dealing with tobacco many more people find ways to earn money through tobacco. From those who sweep the floors at the auction floors to the informal markets that are open outside them during the tobacco sales where a variety of products can be purchased.

8.2.2 To Grow or not to Grow Tobacco

Many growers, particularly large-scale, have been growing tobacco for years, some for up to 30 years and more. A number have been raised on farms that grow tobacco and also consider it to be a traditional crop to grow. Growers talk about it being a hobby and express their love for watching the crop grow. Other reasons are attributed to the climate and the dry sandy soils

⁴ **Maricho:** Temporary seasonal work farm workers get from nearby farms causing them to call in sick at their permanent work place as they get a better hourly salary.

in which not too many crops can survive in. There is also a pride in being a tobacco grower and producing flavour tobacco which only Brazil and USA grow as well. Whether small or large scale most farmers try to be innovative with their farming methods and the types of barns they have. A lot of money has been invested in the barns, ranging from the *tshongololo*, the *modro*, the *underground tunnel* and simpler barns⁵ with no special names. The growers feel important in the society as they know that tobacco brings in foreign revenue to the country. If not through the figures at least through the amount of people organised to assist them.

Grower: "This is a commercial crop and it is not up to my standard this year. So many outside factors but what they do not realise is that it is hurting Zimbabwe".

Grower: "There are more evils in the world than tobacco. We have to grow it because of infertile soils. Maize used to be grown after tobacco, everything depends on tobacco".

Maize can be grown on the back bone of tobacco by using up the nutrients from the residue. Tobacco is therefore usually grown in rotation with other crops. All farmers grow other crops with the small scale farmers mainly growing sorghum, maize and ground nuts and others growing cotton too. Some large scale farmers have pigs (which are considerably profitable but do not surpass tobacco), maize (sometimes grown to feed the pigs and to distribute to workers), beans, peas, wheat and cattle.

The amount of land dedicated to tobacco appears to be increasing. When farmers do well in one season they decide to increase the amount they will grow in the next. One successful grower is renting a total of 20ha of land from his neighbours and nearby farmers and in return he grows tobacco for them as they do not have the inputs needed to grow the crop.

The biggest reason for growing tobacco however is the amount of profit the growers are making and the payment system. With other crops such as maize and cotton the payment is low and one has to wait for long periods of time before receiving their money. During the time when the Zimbabwe dollar was in use this was a problem as the payment a farmer received would have devalued if he or she waited too long to get or use the money. With

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⁵ A barn used for curing tobacco leaves, with or without the addition of heat, by hanging them from a series of horizontal poles within the barn; occasionally called a tobacco house. Three common types of tobacco barns are designated by the curing process employed: *air-cured*, *fire-cured*, and *flue-cured*(*McGraw-Hill Dictionary 2003*).

tobacco however farmers were paid in foreign currency so it was more secure. One grower describes the period he grew flowers as a social service for the government as he did not make a profit from it. Another grower also grows seed maize that he receives from Pannar Seed who he is also contracted with. He stated that he receives US\$650/t and that one can grow 5t/ha. Whereas with tobacco one can yield more than 1t/ha and get an average of US\$2/kg which converts to US\$2000/t.

Most small scale growers are planning to increase the land they dedicate to tobacco as they are pleased with their earnings.

Grower: "The money we get from it is enough to survive the whole year and we will also invest in fertilizer, chemicals and other inputs".

The most **common factors that could discourage** the farmers from growing tobacco is the problem with the electricity although this only affects the large scale growers as they use irrigation and advanced barns. An electricity shortage due to the inability of the ZESA to keep up with the demand of electricity in the country has resulted in *load shedding*⁶. More money is being spent by the growers to buy diesel so that they can run their generators. Having too many loans and getting low prices from the buyers could also make them consider quitting. One large scale farmer showed how much of his tobacco had been destroyed by hail but fortunately he had tobacco hail insurance. None of the other farmers interviewed mentioned hail as a problem possibly due to their locations that do not experience hail. More ethical issues such as tobacco's effects on health and the environment does not move farmers much and most do not have any idea about the shifting patterns in consumption nor the international attempts to stop it.

Grower 1: "We think about the consequences but how are we to survive. As long as they are growing in other countries we will still grow".

Grower 2: "We see what chemicals they put in. It's clearly written that smoking is dangerous and hazardous to health and it is the individual's choice to choose to smoke. I produce 3 million boxes of cigarettes. I don't make people smoke".

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⁶ Load-shedding - cutting off the electric current on certain lines when the demand becomes greater than the supply (Webster 1913).

8.2.3 Growing Practices

Growers use wood, coal or diesel at times as fuel to cure their crop. Small scale farmers mainly use wood. All growers know that it is illegal to cut down trees however it still takes place. This is due to the different attitudes some growers have. The statement below was said by a non-contacted (3-5ha) grower.

Grower: "There are lots of trees; they will not finish with us small farmers".

However I found that with the contracted growers, due to the knowledge they attain from their local adviser, some enjoy growing trees and those who cut them down do it as a last resort as the wood that is meant to be delivered to them is late or wet due to the rain. The statements below were said during the Bingaguru meeting with small scale farmers.

Grower 1: "The firewood from the company came late October, November. Cars sink in the roads. Cars cannot bring firewood. I won't let my crop rot because firewood was late, I will make a plan."

Grower 2: "We want coal instead of wood, cutting trees also wastes time and it is illegal." Some small-scale farmers have planted up to 2000 eucalyptus tereticornis, commonly known as gum trees, and are proud of it. Another large-scale commercial farmer has made a boundary around his farm with Australian Nut trees and Natal Mahogany trees stating that they grew fast and that it is good to plant trees. This particular farmer who has been farming all his life; also uses wooden cubes rather than logs for curing and knows their precise measurements in order to be fuel efficient.

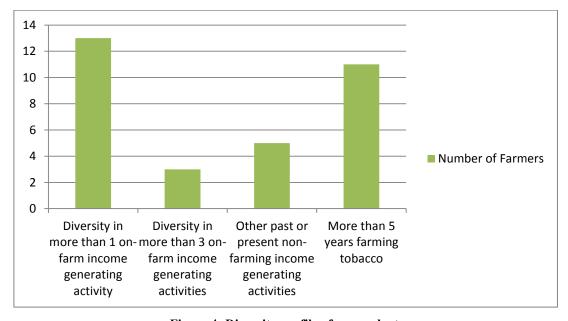


Figure 4: Diversity profile of respondents

8.3 Regulation and Support Systems

There are a number of regulatory and supporting institutions that have been formed to assist and watch over in the tobacco industry. Of those I observed were the merchant companies, tobacco associations, the tobacco auction floors, the government -both directly and also indirectly through subsidiaries and parastatals-, neighbours, extension workers or agronomists, TIMB, TRB and tobacco buyers.

The Tobacco Industry and Marketing Board (TIMB) have a mission statement that states:

"In support of our vision we will timely mobilise and distribute requisite resources, develop and operate efficient orderly marketing and information systems which satisfy the expectations of all stakeholders".

TIMB is a parastatal and regulatory board. They get their income from a levy system and work together with the Tobacco Research Board. Farmers have to pay a fee of \$10 yearly with a \$10 fine for late payment. It also collects a registration fee from all stakeholders in the tobacco industry, farmers, merchants, processors, producers who come from abroad. They collect statistics of the amount of tobacco produced and estimated amounts and distribute it to stakeholders. TIMB also plays a referee position during the sale of tobacco. A TIMB arbitrator should always be present where tobacco is being sold, they try to ensure that sales are fair and that everybody is content after each transaction. They also do random checks of tobacco examining the bale and chemicals used. They write the rules about everything to do with tobacco in Zimbabwe. The services offered by TIMB (ZTA, 2010, p41) include:

- Arbitration and sales supervision at auction floors in order to maintain orderly marketing.
- Classification of tobacco from which statistical information is derived and reports published.
- Collating and distributing information on production, consumption, manufacture and export tobacco.
- Conducting crop assessment surveys to determine crop yield potential and quality composition of the crop in advance of the selling season.
- Licensing of tobacco buyers, auction floors and commercial graders.
- Monitoring the control of pests to ensure exportation of tobacco free from pesticide residues.

The representative I spoke to from TIMB explained that TIMB offices are being opened up in every province, Mvuri, Marondera, Rusape, Chinoyi where there are agronomists and a technical officer and growers can register. Growers don't have to spend so much time and money coming to the city to register now. In the past agronomists could be trained on attachment then start working but now they require all agronomists to have a degree in

agriculture. Those who were hired without one are granted time off work to attend courses with assistance from the board. He also explained to me while taking a tour of the bustling auction floors that TIMB can perform random checks for chemicals in tobacco. All tobacco from that source may be destroyed if prohibited chemicals are found. They can also check the tobacco for non-tobacco related materials. When I asked about his view of a farmer's choice to grow tobacco the representative replied:

"From observation tobacco pays the most in Zimbabwe. Maybe paprika had almost the same drive. There is an assurance that tobacco will be bought. After your tobacco is sold you get your money unlike other crops where you may have to wait for a long period of time to get paid."

The government has been active through the Environmental Management Agency and Forestry Commission who have made sure people know it is illegal to cut down trees. They encourage people to grow trees and one needs a licence if they want to cut down a tree. They also have the right to fine those caught cutting trees illegally.

Prior to my field work I was in the belief that the **Zimbabwe Tobacco Association (ZTA)** was compulsory for all farmers to be a part of however that is not the case. Some growers similar to my mistake thought that the ZTA was compulsory to be a part of. However the ZTA has 5000 members. When asked what the function of ZTA was the representative from the association stated: "to lobby and advocate for the use and growth of tobacco".

The ZTA advocates for tobacco by writing articles, signing the WHO Framework Convention on Tobacco Control (WHO FCTC), and attending meetings and conferences. The ZTA also distributes information to growers through pamphlets and magazines. The magazines contain vital information the growers need to know and that may be of interest such as flue-cured season statistics, hints on growing trees and registration deadlines.

The ZTA is convinced and determined that the tobacco industry will not be fizzled out in the country due to the support that the government gives the industry as well as the amount of people who are dependent on the crop and who have invested in it. Like some farmers he believes that there are not too many other options due to the hot climate and the sandy soils. Tradition is also another reason given for not changing the crop. When I asked him how he feels about tobacco's negative effects he said:

"People are dying of worse things like HIV and Aids in Zimbabwe, so we can't be worried

about tobacco. Tobacco is a choice, that is one thing we say in the industry. People choose to smoke and there are warnings. One thing we can do is regulate the chemicals we use and control them and make sure that the correct ones are used but we will not stop growing tobacco. We promote it." He also went on to say "If we diversify to something else how do we know that it will bring in a good amount of income? And by the time they find out it will be too late and people will die of hunger."

I interviewed a local adviser employed by MTC in Bingaguru near the town Rusape who works with **extension services**. His function is to assist the small scale farmers in the growing of tobacco. He works together with another agronomist and they have a total of 300 farmers in 2010 and 219 in 2011 to watch over.

He is also a farmer and has 2ha that he uses for demonstration to the small scale farmers he is in charge of. He teaches them how to use the fertilizer and chemicals, how to de-sucker the tobacco and other processes until it is ready for sale. Additionally he teaches them and encourages them to plant trees which is a prerequisite if they are to be allowed to grow tobacco. The farmers are given one bag of free seed to plant trees with every purchase of one bag of tobacco seed. The growers in the area have camaraderie with the agronomist. One grower expressing his appreciation for him:

Grower: "The extension officers from the government do not do much, they come around sometimes, anaah local adviser is the one who is always here, he comes by a lot to make sure we are doing things well."

The local adviser has a stronger bond to the farmers than the buyers do as he lives among them and has more frequent contact with them. He understands why they cut down trees illegally which appeared to be more prevalent amongst the small scale growers. He also knows how they spend their money stating that some have managed to buy minibuses, cars and homes while others can use a bulk of their money at a night club called Octopus in the capital city after getting paid. He enjoys his job and has been side contracted by the FAO to promote zero tillage planting of maize. They give growers free seed maize to grow. His only problem is that he wishes the company could buy him a motorbike as he has to travel long distances to see the farmers by bicycle or on foot.

There is a sense of responsibility towards **neighbours and friends**. They help each other when they have a shortage of barns and experienced growers teach small scale growers and

new growers about how to grow tobacco. The large-scale farmers keep a watchful eye over the smaller growers. This is also done as security so that the grower may have people to help him/her if they run into political trouble or to avoid having their land taken away due to their neighbours being spiteful or jealous.

Lastly we have the **auction floors** that are responsible for handling the growers' tobacco once they pay a fee and auctioning it. There were two auction floors operating during the season in 2011. They provide starters, ticket auctioneers, checkers and classifiers. They line tobacco up in order of its grade and make sure that the grower gets their money once their tobacco has been sold. They also deliver the tobacco to the producer's or merchant's warehouse. One factor that some growers are not aware of or are indifferent to is that the auction floors also has advisers available to advise the farmers if they should sell their tobacco or wait for a better price than the one they have been given on that day. There is a view that smaller farmers prefer to go to one auction floor where they feel like they belong more while larger commercial farmers have a preference for a different auction floor.

8.4 Tobacco Buyers

Merchants can be considered as middlemen whose main function is to buy tobacco from the growers and sell it to tobacco producers such as BAT, Swedish Match, Philip Morris and JTI. Due to the land redistribution there was a decrease in the quality and quantity of tobacco produced. In recent years although the quantity has increased the quality that is being produced is not up to the buyer's standards. The merchant companies thus see it fit to diversify from their key function and have begun to contract growers to ensure that they have a reliable supply of tobacco and are able to regulate its quality simultaneously.

MTC/Alliance One Vision:

Alliance One⁷ is not just a buyer of tobacco. Our aim is to assist in the introduction of improved farming methods (good agricultural practices) and help them make better returns that help them improve their living conditions and create wealth within their communities (Alliance One, 2008).

Some producing companies such as BAT and JTI also began to contract growers in a process called vertical integration where production companies themselves become involved in the

⁷ Mashonaland Tobacco Company was de-consolidated from Alliance One due to instability in Zimbabwe but they are still are technically part of Alliance One which is an international company.

local growing of tobacco. Other producing companies however prefer to still get a third party to buy their tobacco so as to keep their hands clean.

Merchant:

"With contact growing you can be more accountable and trace where tobacco is from. Philip Morris was sued for plastic in cigarettes. There is a high risk to get tobacco from where you do not know. On contract you give them the right chemicals and make sure the tobacco is right."

There are 12 main merchant companies operating in Zimbabwe and with so many merchants present it is a competitive arena to get the best growers on contract and buy the best tobacco at the best prices at the auction floors. The presence of Tian Ze, a subsidiary of China Tobacco Company, one of the biggest tobacco processing firms in the world has also helped to escalate the competition as they have a bigger budget than most companies to spend on contract growers and to purchase tobacco.

The type or grade of tobacco a merchant company buys is depended on which producing company or countries they sell their tobacco to. At the moment China alone buys 40% of the tobacco produced in Zimbabwe, Europe imports another 40% and 20% is taken up by Africa and other buying countries around the world (Yan 2011). What the countries want is therefore what the growers are encouraged to grow although the type of tobacco is also depended on other uncontrollable factors such as climate, weather and soil. The grower can however control the chemicals he uses, his care for the tobacco while it is in the field and his precision during the curing process. In the graph below we can see how China far surpasses other countries in importing Zimbabwean tobacco, keeping in mind that it is also the largest producer and consumer of tobacco.

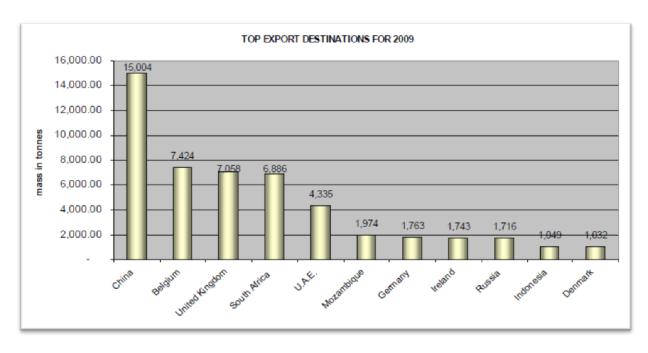


Figure 5: Zimbabwe's top export destinations. Source TIMB 2010, p11

In a small scale farmer's meeting in Bingaguru eight merchants from MTC went to go visit small scale farmers. Representatives from the buyers, grading, agronomists, operations and quality control section were present. The 8 MTC representatives came with samples of different grades of tobacco to show the growers and explain to them what would lead to them getting a good price for their tobacco. Issues such as the handling of tobacco were discussed, for instance non tobacco related materials (wood, rubber, plastic etc.) found in bales of tobacco could result due to their negligence. They were told they could cause cancer and affect someone overseas when they are smoking the cigarette.



Picture 3: Small-scale farmers meeting with merchants in Bingaguru

The buyers also explain to them that they should not use children under the age of 16 or pay them. Although they say this to them because they are required to, they know that many of the small scale growers will still need to use their children as they have to pass on their knowledge down and as it is cheaper than hiring labour. They also encourage them to grow trees and not to cut down trees. They highlight the fine is from the EMA which could reach up to US\$300 per tree.

According to TIMB (2009, pg6) a total mass of 58,570,652kgs of tobacco was sold with 42,648,837 coming from contracted growers. Non contract growers enjoy the benefits of not having to pay back loans to merchants as they usually use their own funds, this is usually only possible at a small scale. They have to go sell their tobacco at the auction floors and have to find an auction floor to register with where they pay a registration fee. There is no guarantee their tobacco will be bought. Some would like to be on contract but do not fulfil the requirements or have not yet been spotted by merchants or companies that have vertically integrated. Others have been on contract before but have been expelled due to failure to pay their loans.

Merchants use the price matrix that is dependent on the prices achieved at the auction floors to buy tobacco from their contracted growers. They cannot buy tobacco from the contracted growers at a price lower than that type of tobacco was sold for at the auction floors. Merchant buyers generally try to give their contracted growers good prices for their tobacco however they still need to make a profit and sell it to producers.

They have extension workers and regional and district managers working alongside with the growers teaching them good agricultural practices and securing their crop. Furthermore when it is off season the period between the end of the tobacco buying season and the start of a new buying season the merchant buyers, graders, head agronomists and other representatives from different sections of the company go out and visit their farmers to see how their crop is doing and to give them advice on what is in store for the season. The visits build and strengthen the relationship between the buyer and the grower. At times the buyers also organise lunches for their top growers where the growers come into the city and have lunch with top executives in the company. From my observations although there is a mutual bond and shared feeling of camaraderie between the merchants and most farmers, large scale farmers are treated more or less like business partners and equals due to their knowledge and the amount of business they

provide through their quality tobacco. With small scale farmers on the other hand, I observed that there is an element of undertaking social responsibility from the merchant's side due to the amount of assistance and knowledge the merchants must provide them with. This results in the visibility and feeling of a class divide between merchants and the small scale farmers in which the merchant is more superior.

For the buyer the visits seemed to be motivated more to ensure that the tobacco is being grown in the right conditions and that the growers are using the money they receive to improve their crop. During the visits you can tell the buyer knows a lot about the grower, his family and his history both personal and with regards to tobacco. The buyer gives the grower's tips on what type of tobacco will sell this year and how other growers are doing and how many hectares they have grown. The buyer has an interest in the type of facilities the farmer has such as the type of barns they have. There are many diverse forms of barns on the farms and the buyer is impressed. Most growers have a positive attitude towards contract growing and the merchants.

Grower 1: "Independent is difficult because of banks. We enjoy relationships with MTC they are small and personal. We are worried about the average price we are getting though".

Grower 2: "MTC listens to my problems and chip in here and there. They understand me and I understand them. Low prices would discourage me from continuing and we can't service our loans. I carried on with them because they supported me".

Grower 3: "People like contract because they learn about how to get the best crop, how to plant trees. You see good results. I had left but decided to come back because my crop was good and I learnt a lot. The buyers come to tell us what they want".



Picture 4: Farmer showing a buyer his newly built barn and the tobacco in it

9 Discussions

A handful of studies have been conducted on topics ranging from tobacco reduction, options for diversification and the profitability of tobacco. Most research was done between 1997 and 2004 and they consider Zimbabwe's agricultural sector as being dominated by large scale commercial farms. My study has been done at a time when the land is chiefly owned and run by small-holder farmers and small-scale commercial growers after the fast tracking of the land reform was implemented. Hence a number of prior predictions and estimates made have proved to be insignificant and no longer applicable. These predictions include those that assumed that by 2010 the tobacco industry in Zimbabwe would be doomed, yet we see that this is the year that it actually revitalised as new markets opened up in countries such as China, Belgium and the United Kingdom and as farmers became more competent (TIMB, 2009).

Previous studies have also been predominantly dominated by quantitative studies that aim to predict and convey the effects of a weakening demand of tobacco on tobacco reliant economies and the effects on labour, health and consumption. An example from the FAO (2003, pg1) suggests that export prices for tobacco might drop by between 5 and 40 % in China, Malawi, Turkey and Zimbabwe. These studies were conducted using arbitrary scenarios without a set period, (ibid). Another example is a paper by Keyser (2002) "The Costs and Profitability of Tobacco Compared to other Crops in Zimbabwe". It compares the profitability and sustainability of growing tobacco compared to five traditional crops - ground nuts, soya, beans, maize, wheat and cotton- and finds that tobacco is a viable crop to grow in Zimbabwe and that the farmers still have a good deal amount of time to find other options to diversify to.

Having said this, it is clear from the results that although the WHO and developed countries feel that it is a necessity for farmers to diversify from growing tobacco the majority of the farmers were not in this view. Involuntary and distress reasons that have caused or would cause the farmers to diversify are having an excess amount of loans that they cannot pay back, receiving low prices for their tobacco from the merchants and in the case of large scale farmers the constant electricity outages and expense of diesel. Factors such as the negative effects tobacco has on health and the environment as well as possible decrease in the consumption of tobacco were not considered as risks and reasons to diversify away from tobacco or even issues that farmers seemed to dwell much on. Contrary, the negative effects tobacco has on health were strongly considered as a choice as consumers are aware of the dangers of the product they consume.

The growers also feel important in the Zimbabwean society and have pride in the tobacco they grow. This could be because of how much they know they contribute to the economy and the complex and numerous institutions and systems that have been built around the tobacco industry. Moreover being a tobacco farmer could be what they view as their identity. Some of the farmers had been farming for more than 50years, if they stopped being tobacco farmers what would they be? Therefore resistance to diversifying from tobacco could be due to fear of loss of identity (Ferrell, 2011, p 139). In Kentucky, USA Ferrell (2011, p 137) notes how growing tobacco is a locally valued way of doing masculinity as well as a habit and tradition.

9.1 Options for Livelihood Diversification

Work in the field has also looked in detail at options for diversification for tobacco farmers and how tobacco control can be implemented through strategies such as higher tobacco taxation, restrictions on advertising and banning smoking in public areas. A number of researchers have suggested alternative crops for tobacco growers in Zimbabwe to diversify to and one popular recommendation has been horticulture, mainly cut roses, fruits and vegetables such as paprika (Panchamukhi, 2000, p37). Conversely in the results one farmer talks about the time he grew roses stating that it was unprofitable and that he felt it was more a service to the government. The representative from the Tobacco Industry and Marketing Board also felt that although paprika almost had the same drive as tobacco no other crop was comparable in terms of profit and security. However Zimbabwe's tobacco farmers still produce 82% of Zimbabwe's horticulture one of the faster growing export earners in Zimbabwe (ZTA, 2000). Horticulture is said to result in high profits and like tobacco is labour intensive. Keyser (2002, p14) states that more than 80% of all rose exports, for example, are grown on large scale tobacco farms and were first introduced using tobacco income. Traditional crops such as soy beans, cotton, ground nuts, maize and wheat are cheaper to produce than tobacco but result in a net loss for large-scale farmers while they provide income to smallholder farmers and serve as part of their food security strategies (Keyser, 2002, pxi). Results showed that almost all farmers interviewed grew at least one other crop or were involved in another on farm income generating activity such as animal husbandry. In harmony with Keyser's (2002,pxi) study small scale farmers tended to grow traditional crops such as maize, sorghum and groundnuts to ensure food security while large scale farmers tended to grow cash crops such as potatoes and peas as well as breeding pigs.

In my results we can see that farmers go through phases where they grow various crops that are profitable for some time and then lose their appeal after a while. Paprika and roses have all had their time and at the moment potatoes and pigs are having their phase too. Some constant traditional crops such as maize and ground nuts are always grown and this is usually done alongside tobacco which has been the most persistent crop. This may be because of the endurance of the tobacco industry. It's well developed institutional system and its ability to evolve. An example of its' evolving nature is the shift by merchant companies and tobacco processing companies to work closer with farmers and provide credit, education and by becoming more socially responsible. TIMB has also made some changes by becoming more accessible to the rural farmers through establishing a greater network of offices.

One common factor some of the alkaloids have is their endurance to different soils and extreme weather conditions, tobacco, opium poppy and khat can all be grown in a variety of soils and do not need much water. A number of small scale farmers stated that they could survive off the money they received from 1ha of tobacco for a whole year. Additionally they could use their income from tobacco to sustain their other livelihood strategies such as business ventures and to grow additional crops. This is not possible with many of the other crops as they have lower and unreliable prices. Moreover the residue from tobacco in the soils can also be used to grow crops such as maize which is a popular practice with all farmers (ZTA, 2002,p5).

As the local advisor stated some small scale farmers had gone on to buy minibuses that could be used to gain an income through transporting people and goods. Although others had also gone on to buy houses and cars from their tobacco profits the local advisor had witnessed some small scale farmers splurging their money recklessly in the capital cities' night clubs. This could be identified as an adverse characteristic of small scale tobacco farmers as Prowse (2009, p 582, 583) also describes the popular process of 'cooling off' amongst small scale Malawian tobacco farmers. After receiving their tobacco income he describes how they use most of their money in the city on expensive alcohol and goods such as radios and branded clothing. This consequently leaves the women who would have contributed to the laborious work needed to grow the tobacco without a share of the income. All the more so those who labour on tobacco farms were accused by large scale farmers as being unreliable and coming to work late hung-over.

9.2 Risks and Vulnerability

It is clear in the study that there are not many women tobacco farmers although the number of women who labour on tobacco farms is usually roughly equal to that of men. Whilst it is generally agreed that women prefer to farm for food whilst engaging in other income generating activities such as wage labour on farms, this does not bring in much income when compared to cash crops such as tobacco that are predominantly grown by men(Adams, 1991,p164). Subsequently this leaves women more vulnerable as they do not receive tobacco income from the men who would have spent a substantial amount in the city 'cooling off'. Further, although women are considered to be reliable and good labourers the main problems they face is access to land, credit and training (Gladwin et al, 2001, p179). One female corresponded, a small scale grower, explained how she had left contract growing but returned

as she valued the knowledge she gained from the merchants. Another spoke of how she believed she could do as good of a job as she did with her husband if she farmed alone. It might be said that if women had more access to land, training and credit for tobacco farming, greater developments could be made to rural livelihoods as they would be more reliable with the tobacco profits and not splurge them on alcohol and unnecessary consumer goods.

I perceive there to be a tight network and system in the tobacco industry which provides support and motivation for the grower to want to grow tobacco and to continue growing tobacco. Besides the difficulties the grower may experience such as with electricity and the work load involved in growing tobacco various stakeholders pitch in to make the experience of growing tobacco more than business but a blend of experiences such as business, hobby and camaraderie.

Although tobacco consumption is predicted to decrease and has already begun to do so in a number of developed countries new trends and patterns in consumption are arising. Consumption is increasing in developing countries, in India and China, the two largest consumers of tobacco and the two most populous countries in the world demand is expected to increase (FAO, 2004). This is a positive prediction for the Zimbabwean market as China is currently its biggest buyer of tobacco. Latin America, particularly Brazil, and the Near East will also have an increased demand for tobacco (ibid). The United Arab Emirates was another top buyer of Zimbabwean tobacco.

Moreover women all around the world are beginning to smoke more than men and people are starting to smoke at an earlier age with China experiencing a significant increase of smokers between the age of 15 and 19 years (Jah & Chaloupka, 1999, p17). To further illustrate this point a survey done by the Swedish National Institute of Public Health (2006) states that 50 young people start to smoke each day in Sweden. In one year it was 17 500, 7 000 boys and 10,500 girls. The largest proportion of daily smokers are aged between 45-64 and within this 17% of the men and 21% of the women smoke. Snuff is also responsible for over half of the consumption of tobacco in Sweden. In Zimbabwe approximately 20% of the men smoke cigarettes while across Africa an estimated 70-85% of the smokers are men (Biriwasha, 2012). Smoking by women is not so common and is widely viewed as a taboo however it is slowly increasing among young women who see it as a fashion statement (ibid).

There is also an ever improving system to determine how much tobacco will be needed hence

how much should be produced. Together with the growing popularity of contract growing and companies vertically integrating the growers can feel more secure that their tobacco will not only be bought but for a price that brings back their inputs (MTC, 2011). In Zimbabwe the price of tobacco is relatively viewed as stable due to tight government control over how much tobacco is grown and ensuring fairness at the auction flours and also practices such as using the price matrix –which controls the minimum price a farmer can be paid for their tobacco (TIMB, 2009). In other tobacco growing countries such as Malawi, where tobacco accounts for 90% of its GDP, they have had problems with multinational companies setting the prices and while the cost of producing is going up the prices the farmers are paid are reducing (Up in smoke, 2008).

Derek Yach (ibid) a representative from WHO stated that in 1983 the FAO agreed to provide technical to support agricultural ministries to help them diversify and that in more than 20 years no one government had approached the FAO to use that resolution. On the other hand both Malawi and Zimbabwe are in the belief that they have not yet found something economically viable to diversify to. From the results it can be seen that the Farmers are closely monitored by merchants, tobacco manufactures and government subsidiaries to make sure that their crop is up to standard and that good practices are followed including planting trees. We therefore find that due to the fear that exits of the negative effects tobacco has on the environment, more effort is made to ensure that tobacco farmers learn more environmentally friendly practices.

In response to the WHO noting that there will be assistance for farmers to diversify and 'transition assistance'. The ZTA (2000) responded by saying that "such indication for support is couched vague with non-specific terms. The ZTA would like the WHO to come up with a detailed Diversification Fund to support its suggestion for a switch to alternative crops. The Diversification Fund must guarantee tobacco growers against future losses". Statements such as these and research made by tobacco associations have been viewed by the international organisations as the tobacco industry resisting the FCTC and a better life for all. They have also been accused of seeking out markets in low and middle income countries as the markets in the developed world shrink. Nevertheless because tobacco is still able to provide good financial returns even after a large drop in yield and price it is likely to remain an attractive crop for all categories of farmers in Zimbabwe under progressively difficult market conditions (Keyser, 2002, p5). Zimbabwe, as are other tobacco growing nations, is organised

institutionally and structures exist for tobacco unlike other crops. Assuming that these complex structures where built around other crops successfully perhaps this would give farmers an incentive to diversify away from tobacco.

Despite the efforts being made by the west to curb the growth of tobacco a large part of the success of tobacco in Zimbabwe can be attributed to the World Bank and IMF. In 1991 Zimbabwe like many other countries implemented the Economic structural adjustment program (ESAP) which was prescribed by the IMF and the World Bank. The ESAP failed dismally as it called for governments to stop subsidies to farmers and to healthcare and to liberalise their markets. An effect of this was increased poverty in Africa, Middle East, and in transition economies in Europe and Central Asia (Hermele, 2005, p2). Esrado (2006, p2) points out that the poor were the ones most affected due to fiscal austerity and openness to the global market forces, particularly in countries such as Zimbabwe whose social and market institutions are weak to begin with. The controversy of the ESAP is that they strengthened the importance of tobacco production in Zimbabwe as they were a viable source of foreign currency. This is strongly comparable to the situation in Bolivia in the 80s when indigenous peasant farmers were driven to grow more coca in attempt to cope with the negative effects of structural adjustment (Farthing & Khol, 2010,p199).

Although shocks cannot be predicted and as they vary within every household, on a larger scale, the strong involvement of the government, merchants and manufacturers in the farmer's activities may lower the possibility of risk making them less vulnerable. Parallel to this it also acts to encourage the farmer to keep growing tobacco.

9.3 Rural Change and Tobacco

Maravanyika (1997, p163) states that tobacco weed is commercially viable for Zimbabwe, as a hectare of tobacco in the country is 22 times more profitable than cotton, 57 times more profitable than maize and 59 times more profitable than soya beans. With more than 64% of the population residing in rural areas and surviving from agricultural activities the growth of tobacco is bound to be a popular livelihood means as well as working on large commercial tobacco farms. With permanent farm workers earning between US\$55 to US\$110/month and temporary seasonal workers earning up to \$5/day the money they earn from tobacco can take a rural family a long way. Additional to the income they receive workers get lunch at work, maize at the end of each month (sometimes meat if the farmer has pigs or cattle) and in some cases accommodation, education for their children,

assistance with medical costs and a piece of land to grow their own vegetables and crops. For a poor rural household this support goes a long way as the government does not have the means to assist with such necessities.

Zimbabwe is ravaged by more critical and urgent issues such as food security, HIV/AIDS and road traffic accidents. The African Development Bank (2010, p4) declared that in 2009 40% of the population benefited from food aid and that in 2010 a number of rural poor might need assistance. The tobacco industry advocates for tobacco production as farmers assist in developing rural areas by building schools and providing decent housing for workers. Some successful large scale farmers have also gone on to build roads leading up to their farms and small scale farmers have begun to venture out to off farm activities such as buying minibuses to provide informal public transport. The majority of the farmers stated that one reason they stayed on contract was due to the knowledge they received from the extension workers and knowledge is a key to successful farming. With most rural residents having a low level of education they feel that they are gaining tangible skills from being tobacco farmers. Although many small scale farmers admitted to cutting down trees they were aware of the fact that it was illegal and a number were proud of the large number of trees they had planted with numbers reaching up to 2000trees/person at times.

Due to its need for rotation with other crops, particularly maize, a tobacco farmer always has an array of crops he grows. All small scale farmers I interviewed who would be considered as rural poor therefore had a food source and income generating activity Furthermore the growth of tobacco has enabled diversification into other activities that are non-agricultural for instance those who have been able to buy minibuses have now diversified into providing transportation to the secluded communities they live in. It can therefore be argued that growing tobacco increases the portfolio of activities and assets a grower has and may lead to deagrarianization and therefore a higher income which in turn results in higher crop productivity (Gladwin et al, 2001, p 114.115). This would give them greater reliance to shocks and changes in seasonality. Due to the land redistribution the majority of the tobacco growers are small scale farmers which increases the importance of tobacco as it facilitates in improving the conditions of the rural poor who make up the majority of the population.

10 Conclusions

Indeed the first reason for growing tobacco is that it results in more profit than other crops and it is a reliable source of income. In addition to these factors there are some that researchers have failed to illuminate on that have allowed tobacco to be enduring in Zimbabwe. For the growers in the study the idea of growing tobacco did not automatically lead to the thought of its harmful products and the dangers associated with growing the crop. Tobacco for them is a traditional crop, a crop that some have been growing for over 30 years, a crop they grow as a hobby and enjoy watching grow. Growers experience a great camaraderie within the industry and importantly an advanced working system that allows the industry to run as smoothly as possible. Furthermore being a tobacco grower could be an identity they firstly see themselves as and strongly connect to. The identity farmers have as tobacco growers and the way this identity might define their masculinity, if they are male, could account for why they would not diversify away from tobacco. For male labourers and small scale farmers tobacco income gives them the opportunity to occasionally experience life 'extravagantly' through buying expensive beer and going to night clubs. Regardless of whether they are small scale or large scale tobacco farmers, they all feel important in society and this could be the most important and irreplaceable reason of why they did not think of moving away from growing tobacco.

Western set discourse around tobacco value chain is lacking agency in Zimbabwe. The tobacco industry is growing and there is an increase in the number of growers. Intensive efforts are being made to make sure that good practices are carried through, such as the correct use of chemicals, growing trees and monitoring child labour. However meagre actions have been taken by the government in Zimbabwe such as responsible advertising, a voluntary health warning printed on cigarette packets and a voluntary agreement introduced to cover marketing and promotion in 1995 (Woelk et al, 2001, p186). Contrary to a number of studies that suggest that growing tobacco kept farmers away from growing food crops, the case in Zimbabwe unlike Malawi, is that the growth of tobacco actually encourages farmers to grow food crops such as maize which is also a staple food for the country. This could be due to the fact that there is more land available for Zimbabweans to cultivate as it has a lower population density. Land availability is therefore an important determining factor for whether farmers can have diversified livelihoods.

From the study it is evident that small scale farmers and large scale farmers contribute to the development of rural areas in different ways and likewise they have different capabilities of diversifying their livelihoods. Rural dwellers can rely on seasonal jobs from tobacco which pay more than permanent employment and the social welfare system that the large scale tobacco farmers provide such as accommodation and education. Besides providing a considerable amount of employment Large scale tobacco farmers usually lead diversified livelihoods by growing other cash crops such as peas and potatoes and also pursue animal husbandry. Small scale farmers have less land to enable them to grow other cash crops but they do grow a variety of traditional food crops such as sorghum and groundnuts alongside tobacco. Some have also attempted to branch off into small businesses such as providing informal transportation. There has been development in rural areas such as the construction of roads, which is usually done by large scale farmers, and the migration of urban residents to rural areas to pursue farming and also due to the decentralisation of organisations such as TIMB which will consequently encourage further development.

The query that this thesis aimed to tackle is why tobacco farmers are not diversifying from growing tobacco. With all the efforts being made internationally and the money being spent to curb the growth of tobacco, why is this not having an effect on Zimbabwean farmers and is there a better approach that the international community can take to control the growth of crops that contain harmful alkaloids. From the example of Khat Odenwald and his counterparts (2009, p618) suggested getting all khat stakeholders together for a consensus conforming conference in hope that this would lead to a written consensus acknowledging the cultural and economic importance of khat as well as the harm it causes. This would then be used to make national and international policies that all parties agreed to (ibid). In the case of coca in Bolivia farmers and the local communities were involved in monitoring and registering the growth of coca.

It is in my view that past studies have lacked emphasis on how greater involvement of tobacco farmers in decision making could lead to more positive results at least in ensuring that less harm is caused to the environment and people who work with tobacco. The Zimbabwean farmers were eager to gain knowledge and most were unaware of the full impacts that the tobacco they grow have on health and the environment and let alone the actions being taken to curb the growth of tobacco. They had a great amount of respect and appreciation for those who took time to come and visit them and teach them such as the

merchants and the extension workers. Furthermore they quickly adapted to growing trees and learning their importance.

However with global tobacco revenues reaching approximately \$500 billion and with growing markets across the globe the likelihood of diversification from tobacco may be very slim (Bowers, 2012). Moreover the challenge is not only about finding an alternative crop to tobacco which produces comparable profits but also about competing with culture, tradition and the tobacco institutions that have had their foundation in Zimbabwe since the 1930s (Rubert, 1998, p8). The tobacco industry in Zimbabwe provides employment for more than 150 000 people and creates employment for non-tobacco activities, for instance the flea markets that open next to the auction floors during the tobacco buying season (Maravanyika, 1997, 168). Finding a substitute as extensive as tobacco and establishing it could take time but as studies indicate, Zimbabwe still has time to diversify away from tobacco.

According to Singh (1990, xix in Ellis 2000, p22) the growth of a non-farm economy depends on the vitality of the farm economy, without agricultural growth in the rural areas, redressing poverty is an impossible task. Taking a lead from the Andes region with regards to viable and non-viable rural productive investments, it may well be beneficial to invest in women tobacco growers as they could have a higher potential for enhanced productivity (Bebbington, 1999, p13). This study illustrates that women have less access to land to grow tobacco but that those women who do participate in tobacco production are competitively successful and are more likely than men to invest their tobacco income towards the enhancement of their livelihood strategies. Furthermore this thesis discusses how women are more likely to grow food crops rather than cash crops. There is a strong prospect that if women in Zimbabwe were empowered as tobacco growers with knowledge, credit and access to land, rural growth could be faster and more successful as they are more reliable with their income and are more likely to engage in multiplex livelihoods (Gladwin et al, 2001, p 181). Moreover this could lead to less land being dedicated to tobacco not only because of leading multiplex livelihoods but also because tobacco does not represent women's' sexuality.

The growth of rural economies in the developing world is often assumed, should begin with farming activities and then diversify to other non-farm income generating activities as seen with the transformation made in a number of Asian countries such as Japan. While other aspects of rural welfare such as education, health services and water supplies were also

accorded some weight in government and donor plans and projects, there is no doubt that small-farm output growth was writ large as the dominant strategy for improving rural welfare (Ellis, 2000, p26).

The growth of tobacco is facilitating the rise out of poverty and the diversification of small scale and small holder farmers who obtained land during the land redistribution. Frantz Fanon (1963, p43), states in Wretched of the Earth "For a colonized people the most essential value, because the most concrete, is first and foremost the land: the land which will bring them bread and, above all, dignity." Unfortunately the patterns of tobacco are changing and it could be that the bread and the dignity brought to the country are only for a brief moment. With the diverse activities the growers take part in from breading pigs to growing ground nuts I do however believe that when the time comes tobacco farmers will be ready to diversify without going hungry.

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Appendix

YEAR	GROWERS	AREA (HA)	MASS SOLD (KG)	GROSS VALUE (ZW \$)	AVERAGE PRICE		YIELD
					(ZWC/KG)	(USC/KG)	(KG/HA)
2010	51 685	67 054	123,503,681			279.22	1 842
2009	29 018	62 737	58 570 652			297.86	934
2008	35,094	61 622	48,775,178			321.26	792
2007	26 412	54 551	73.039,015			232.00	1 339
2006 [*]	20,565	58,808	55,466,689	19,527,108,198	0.35	199.66	943
2005	31,761	57,511	73,376,990	1,666,410,523	22.71	161.04	1300
2004	21,882	44,025	68,901,129	593,537,303	861.43	199.70	1565
2003	20,513	49,571	81,806,414	147,508,194	180.31	225.39	1673
2002	14,353	74,295	165,835,001	59,576,224	35.93	226.66	2,213
2001	7,937	76,017	202,535,209	35,371,686	17.46	174.64*	2,664
2000	8,537	84,857	236,946,295	19,266,709	8.13	168.94	2,792
1999	7,194	84,762	192,145,383	12,726,314	6.62	174.11	2,267
1998	8,334	91,905	215,913,864	7,501,393	3.47	172.46	2,349
1997	5,101	90,630	171,542,696	4,976,043	2.90	233.24	1,893
1996	2,921	81,231	201,550,527	5,848,818	2.90	294.24	2,481
1995	2,525	74,550	198,751,924	3,584,710	1.80	212.13	2,666
1994	2,338	67,416	169,218,196	2,335,875	1.38	172.56	2,510
1993	2,999	82,900	218,370,345	1,752,685	0.80	123.77	2,634
1992	2,604	80,070	201,161,921	1,630,161	0.81	162.05	2,512
1991	1,746	66,927	170,149,851	1,969,134	1.16		2,542
1990	1,493	59,425	133,866,041	868,180	0.65		2,253
1989	1,448	57,660	129,960,308	558,459	0.43		2,254
1988	1,486	59,178	119,912,584	471,837	0.39		2,026
1987	1,519	63,536	127,996,176	278,938	0.22		2,015
1986	1,426	57,349	114,304,117	358,206	0.31		1,993
1985	1,296	52,464	105,555,569	283,394	0.27		2,012
1984	1,186	50,486	119,636,157	247,119	0.21		2,370
1983	1,155	46,622	94,295,739	177,798	0.12		2,023
1982	1,257	46,427	89,387,652	149,563	0.17		1,925
1981	1,145	38,099	67,356,019	123,774	0.18		1,768
1980	1,547	64,310	122,571,366	97,437	0.08		1,906
1979	1,556	59,631	111,686,415	92,023	0.08		1,873
1978	1,612	54,939	82,968,508	81,994	0.10		1,510
1977	1,638	56,993	83,373,667	61,085	0.07		1,463
1976	1,696	66,290	110,533,041	76,046	0.07		1,667
1975	1,731	65,834	83,919,914	57,736	0.07		1,275
1974	1,642	56,562	71,600,741	56,056	0.08		1,266
1973	1,519	45,201	67,979,630	37,130	0.05	1	1,504