LIBERALIZATION OF COFFEE MARKET AND ITS IMPLICATION ON POVERTY REDUCTION TO SMALLHOLDER COFFEE FARMARS IN MBOZI DISTRICT IN MBEYA

BY

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A DISSERTATION SUBMITTED IN PARTIAL FULLFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF ARTS IN RURAL DEVELOPMENT OF SOKOINE UNIVERSITY OF AGRICULTURE.

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ABSTRACT

This study dealt with the liberalized coffee market and its implication on smallholder coffee producers' poverty reduction. Specifically the study aimed at assessing the structure of the current coffee market, assessing the extent of availability of agricultural inputs to coffee producers, examining the availability of credit facilities to coffee farmers, determining smallholder coffee productivity per unit area and determination of profitability of the coffee production to smallholder farmers. The study adopted a cross-sectional research design technique whereby 180 respondents (smallholder coffee producers) were interviewed using a pre-structured questionnaire. In addition, a Focused Group Discussion (FGD) was also used to collect primary data and to verify responses from the structured interviewers. In analysing data, SPSS 12.0 was used for descriptive and other statistical analysis. Descriptive statistics determined included; means, frequencies, standard deviation, percentages and other summary statistics. In addition to the above regression analysis and gross margin analysis were done to determine the profitability of small holders coffee production in a liberalized market. Results from the regression analysis showed that extension services, availability of credit, and availability of agricultural inputs had a positive and significant ($P<0.05$) influence on profit obtained from coffee sales. However, for some reasons number of buyers, form of coffee sold and cost of production showed a negative influence on profit from coffee sales. Generally, the study revealed that liberalization of coffee market in Mbozi district has been important in reducing poverty among smallholder coffee producers.

DECLARATION

I, PIUS ALPHONCE MWASHIKUMBULU, do hereby declare to the Senate of Sokoine University of Agriculture that this dissertation is my own original work and that it has neither been submitted nor being concurrently submitted for degree award in any other institution.

14th Nov. 2011

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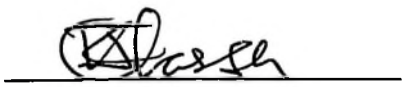
The above declaration is confirmed



14th Nov 2011

Dr. Urassa, J. K. — Date

(Supervisor)

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DEDICATION

To my beloved parents Eva Nkwale and Mpekwa Barurayivaha Mwashikumbulu who laid a strong foundation of my education, my wife Agness Lowokelo and my children; Lucky, Anord and Prosper for their moral support during my studies.

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AMCOS	Agricultural Market Cooperative Societies
APEC	Asia-Pacific Economic Cooperation
CCCO	City Coffee Curing Company
DALDO	District Agriculture and Livestock Development Officer
ESRF	Economic and Social Research Foundation
FAO	Food and Agriculture Organization
FGDs	Focused Group Discussions
GMA	Gross Margin Analysis
GDP	Gross Domestic Product
IMF	International Monetary Fund
IPM	Integrated Pest Management
MARDI	Malasian Agricultural Research and Development Institute
MCCO	Mbozi Coffee Curing Company
MDC	Mbozi District Council
MDG	Millennium Development Goals
MKUKUTA	*Mkakati wa Kukuza Uchumi na Kuondoa Umasikini Tanzania*
NGO	Non Governmental Organization
NSGPR	National Strategy for Growth and Poverty Reduction
SACCAS	Savings and Credit Associations
SACCOS	Savings and Credit Cooperative Societies
SAPs	Structural Adjustment Programms
SCP	Structure, Conduct and Performance

SPSS	Statistical Package for Social Sciences
SSA	Sub- Saharan Africa
TaCRI	Tanzania Coffee Research Institute
TDV	Tanzania Development Vision
TPRST	Tanzania Poverty Reduction Strategy Paper
UN	United Nations
URT	United Republic of Tanzania
US	United States
USAID	United States Agency for International Development
WAEO	Ward Agricultural Extension Officer
WB	World Bank

CHAPTER ONE

INTRODUCTION

1.1 Background Information

Tanzania's agricultural sector has an important role in the nation's economic development and this could probably continue for some time (URT, 2006). In addition, the sector posses a great potential to accelerate the country's objective of reducing poverty. Furthermore, Tanzania's overall economic performance has for a long time been driven by the sector's performance (URT, 2006) as cited by Sokoni (2007) and (Amani, 2005). And despite the sector's slightly decline in terms of its contribution to growth, it still contributes about 45% of GDP and 54% of national foreign exchange (Rweyemamu, 2003 and Shayo, 2006). The agricultural sector is important for Tanzania's efforts towards poverty reduction and ensuring food security. Again, the sector contributes to industrial production, as industries in the country are heavily dependent on imported materials, inputs, and spare parts payable in foreign currency largely generated by this sector (Magimbi, 1995). Therefore like in most developing countries, agriculture is a crucial sector for sustainable development.

Despite the importance of the agricultural sector to Tanzania's socio-economic development the performance of the sector was not satisfactory in the late 1970s to early 1980s. This led to the government's decision to liberalize the sector in 1986 (Urassa, 2010). The government started with the food crops the maize market particular before liberalizing the cash crops markets for example coffee in 1994. Prior to 1990, all coffee marketing was handled by the state coffee board and the cooperative unions. In 1980s, the market liberalization started whereby the state interventions on agricultural marketing were removed and enabled private traders to purchase agricultural products including

coffee directly from growers and process it in their own factories (Jun, 1990). The main objective of the policy was to realise improved production and marketing of the agricultural products and hence income of the producers who are mainly smallholders accounting over 80% of the nation's population (Rweyemamu, 2003 and Shayo, 2006). Smallholder farming dominates agricultural production, and a large proportion is for subsistence. Since poverty is predominantly a rural phenomenon, and agriculture is a major economic activity for rural population, it follows that success in poverty Reduction depends critically on performance of the agriculture sector (Amani, 2005). On the other hand, contribution of large scale and commercial farming in Tanzania accounts for a very small part of total output of the agricultural sector (Sokoni, 2007). Thus smallholder farmers are the key contributors towards national economic development (Shephered and Rarolfi, 1998).

The smallholder production has been experiencing market liberalization since in early 1980s (Rweyemamu, 2003). The basic assumption has been that agricultural market liberalization will be achieved through micro-economic stability for reduction of internal budget deficits and reduced inflation (FAO, 2005; Rweyemamu, 2003). Liberalization of agricultural markets in Tanzania involved removal of subsides; price controls and restrictions on private traders' involvement in cash crop marketing. The reforms were expected to promote price competition, improve market efficiency and promote efficiency in input distribution. The main objective of the reforms was to achieve substantial increases in producer price in real terms and rationalizing and streamlining of the agricultural marketing system (Msambichaka and Naho, 1995).

According to Maliyamkono and Bagachwa (1990) and Bagachwa *et al.* (1992), the specific objective of market liberalization was to allow greater play for market forces that

is demand and supply. This was to be achieved through removal of state control on the price of goods and services in the market (Seif, 1995), and allowing greater private traders participation in agricultural products and input markets. According to Bagachwa *et al.* (1992), other major policy changes with direct bearing on agriculture, which have taken place in the country included;

- The removal of price subsidies on export crops, staple foods and agricultural inputs with the purpose of promoting efficiency in resource allocation and distribution
- The liberalization of the co-operative marketing system at farm level through removing restrictions which hindered private traders from purchasing crops directly from villages and farmers to promote price competition
- Liberalization of the banking and financial system, which has resulted in contracted credit services for agriculture and the rural sector.

Coffee is an important commodity in the global economy as it is the second most valuable traded commodity in the world after oil (FAO, 2005). In 2000/2001 season, coffee had a traded value of approximately US$5.6 billion, which was down from over US$12 billion just a few years previously. Between 20 and 25 million families (mostly smallholder farmers) in more than 50 developing nations and on over 5 million farms produce and sell coffee. It forms the major share of total exports by value for a number of developing countries, especially in Africa (FAO, 2005). Coffee was one of the crops involved in market reform which used to be one of the most important sources of income in Tanzania. Coffee accounted for 14.1 % of exports in 2009 from which Arabica coffee comprised 70 percent of total exports (Diaby and Kamau, 2011).

Despite the coffee market liberalization, coffee production in Mbozi District has been experiencing various weaknesses, including low productivity (URT, 2006) as a result of

smallholder who are investing less in the coffee industry in terms of inputs, general coffee husbandry, and exercising pre-harvest selling of the product. Furthermore, according to the District authorities, poverty among smallholder coffee producers is still a big problem. Hence, the need for understanding the linkage between the process of coffee market liberalization, smallholder coffee production and poverty reduction in Mbozi District. The study aimed at studying the liberalization of smallholder coffee market and its implication on poverty reduction in Mbozi District, Tanzania.

1.2 Problem Statement

Coffee is a major cash crop grown by more than 70% households and occupies about one third of all cultivated land in the coffee zone (MDC, 2007). In 1986 the Tanzanian government adopted the Structural Adjustment Programmes which resulted in liberalization of the coffee market in 1993 (Mhando and Itani, 2008). The liberalization resulted into abandoning input subsidies to farmers and allowing private coffee buyers to purchase and sell coffee in addition to the cooperative unions only.

The major aim of liberalizing the coffee market was to increase income from coffee through increase in producer price and reducing various constraints on coffee marketing. Although coffee prices have been on an upward trend for several years in the global market, none of the local producer has benefited with that increase so far (Baffes, 2003; FAO, 2005). However, after a few years after liberalization of the coffee market it has been learnt that a lot of constrains are facing local coffee producers in Tanzania with regard to local and international coffee market set-up (FAO, 2005). Currently, coffee producers in Mbozi district are said to get coffee incomes that do not surpass the cost of production leading to less attention to coffee farming (MDC, 2007).

Coffee production in Mbozi District is encountered many problems among which are; pre-harvest and Pre-processed selling of coffee and low investment in the coffee sector. A number of questions can be raised at this point that, is this falling of coffee farm output caused by market liberalization or it is just due to other factors such as inflation or environmental destruction and declining soil fertility. Moreover, it cannot be clearly stated about what is the gross margin obtained from smallholder coffee production. Hence, this study aims at examining liberalization action of the coffee market and its implication on smallholder farmers' poverty reduction in Mbozi district.

1.3 Justification for the Study

A coffee producer includes a broad range of operators from smallholder subsistence crop producers who comprises more than 90 % of the farming population (URT, 2006). Large numbers of smallholder producers in Mbozi District depend on coffee as a major source of income. Despite efforts for improving the coffee market through liberalization, there has been no attempt to examine the implications of agricultural market liberalization on smallholder coffee producers in Mbozi District. Therefore, the current study aimed at determining implications of liberalization of the coffee market to Mbozi smallholder coffee producers' productivity and reduction of their poverty.

This study is also in line with the Millennium Development Goal number I which attempts to eradicate extreme poverty and hunger. The goal is expected to be realised through target I which aims at halving the proportion of people whose income is less than a dollar a day between 1990 and 2015 (UN, 2008). Again, the study is aligned with Tanzania Development Vision 2025 which targets to achieve high quality livelihood. Furthermore, the study is in line with National Strategy for Growth and Reduction of Poverty (NSGRP) under first cluster which attempts to reduce income poverty. Findings from the study could

be useful to policy makers, researchers, extension workers and coffee producers in Mbozi District in their endeavour to raise coffee productivity, coffee marketing and eventually poverty reduction of the smallholder coffee producers.

1.4 Objectives of the Study

1.4.1 Overall objective

The general objective of the study was to determine implications of liberalization of the coffee market on reduction of income poverty of smallholder producers in Mbozi District.

1.4.2 Specific objectives

i. To assess the structure of the current coffee market in the study area
ii. To assess the extent of availability of credit and agricultural inputs to coffee producers.
iii. To determine smallholder coffee productivity per unit area
iv. To determine profitability of coffee production by Mbozi smallholder farmers
v. To determine the implication of liberalization of the coffee market on Mbozi smallholders coffee producers' poverty.

1.4.3 Research hypothesis

This study was guided by the following hypothesis:-

Liberalization of the coffee market has not contributed to Mbozi smallholders coffee producers' poverty reduction.

1.5 The Conceptual Framework

This study assumes that improved extension services makes farmers more aware and familiar with production issues of the given crop since it impart farmers an art of

professionalism and expertise to a specific crop. However, this goes in line with improved farmers' access to credit as well as availability of agricultural inputs so as to improve coffee quality and productivity, and therefore increases price of the crop per unit of sale, which in turn increases coffee producers' income hence enabling reduction of income poverty. In addition, increased levels of income could ensure food security of the concerned households. Furthermore, increased income could also lead households to own good quality houses, increase their possession of assets, increased standard of education and improved access to health services.

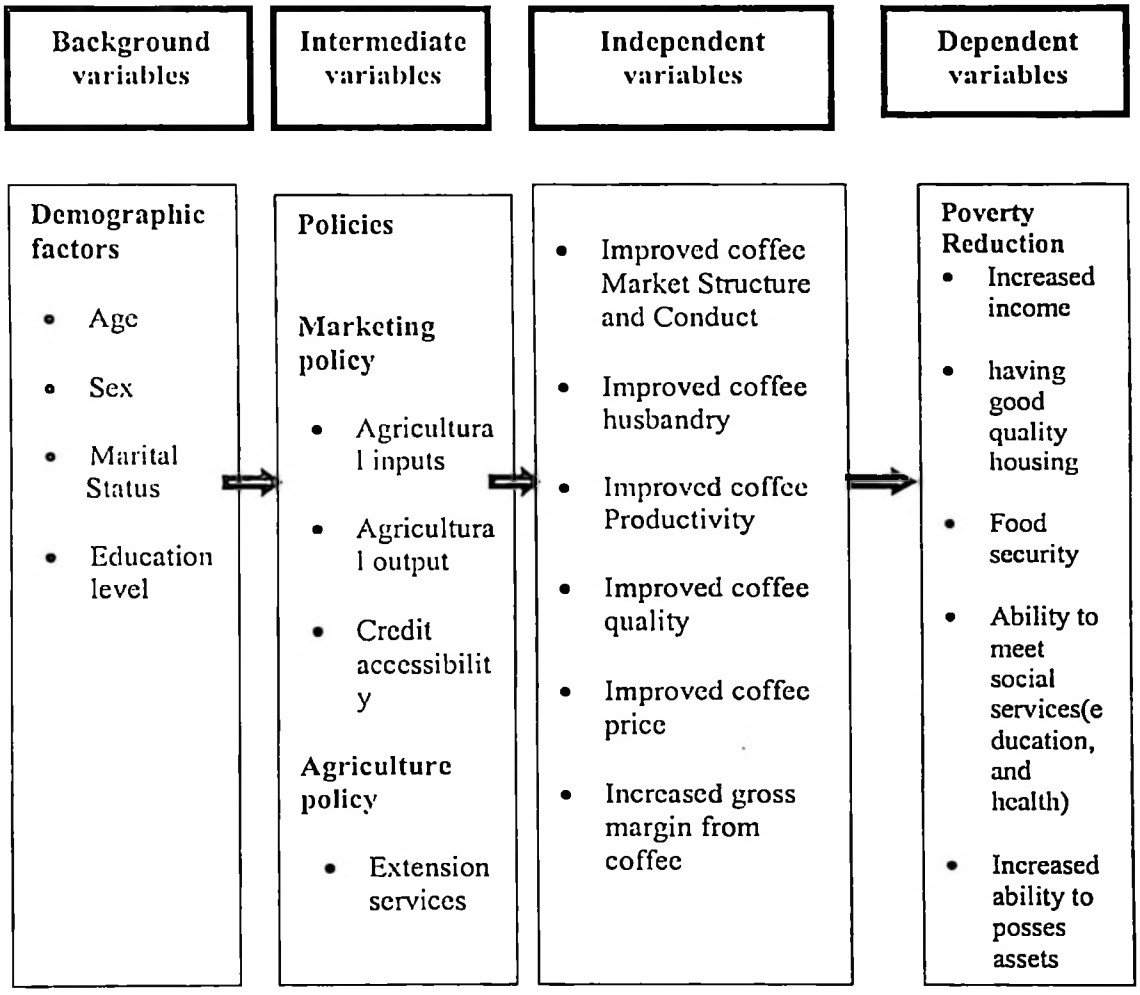

Figure 1: Conceptual framework

CHAPTER TWO

LITERATURE REVIEW

2.1 An Overview of the Structural Adjustment Reforms

Structural Adjustment) Programmes (SAPs) is a Series of economic policies designed to reduce the role of government in an economy replacing government control with market incentives (Jun, 1990). The goal of a structural adjustment program to developing nations was to try to make their economies more productive. Also SAPS aimed at helping the borrowing nations pay off their debts and have a growing economy that will sustain them into the future. Tanzania embarked on SAPs in 1986 (Agrawal *et al.*, 1993; World Bank, 1993).

Before adopting the SAPs in the mid 1980s, Tanzania had been following an interventionist approach to development since the 1967[1]. During this era, Price, as well as the rate of exchange and the interest rates were regulated by the government. Also government was directly involved in the provision of services like marketing and sometimes engaged in production (FAO, 2005). By the late 1970s many, the Tanzanian economy became highly distorted as an outcome of the government's involvement in controlling a number of economic activities. The negative outcome of these distortions was brought about by the inefficiencies resulting from poorly managed state and cooperative sector, frequent changes to marketing systems and inability to adjust adequately to external effects (FAO, 2005).

[1] Tanzania adopted the policy of '*Ujamma na kujitegemea*' (Socialism and Self Reliance) in 1967 whereby most of the means of production were nationalized and the state started to control the economy with a more hands on approach.

Consequently at the beginning of the 1980s, the international Monetary Fund (IMF) and the World Bank (WB) together with bilateral donors started a wide spread lending programme known as Structural Adjustment Loans (SAL). This programme, together with policy reform focused at achieving both the development of micro-economic stability and the correction of what were experienced as structural imbalances (FAO, 2005).

After their independence during 1960s many African countries adopted a development strategy in which agricultural marketing was carried out by parastatals and in most case, cooperatives (World Bank, 1994). Marketing boards were created to overcome market disruption and price instability. Farmers were guaranteed outlet for their crops and given the opportunity to participate in the cash economy. Under this system, the following problems emerged;

- Heavy government taxation which led farmers to be paid little from their produce that provide little incentive to increase production.
- Marketing boards and cooperatives took advantage of government cost-plus price fixing to inflate their costs and disguise their inefficiency.
- Inputs were not available to farmers on time; product of poor quality particularly agro-chemicals which were sometimes imported by the boards.
- Poor stock control, theft from parastatals' premises, and corruption at all levels increased costs and reduced export returns.

Regardless of the above weaknesses of administered marketing and exchange rate systems that begun to be recognised in developing countries in 1980s, producers' share of export prices, coffee processing capacity, marketing efficiency, and investment in new plantings did increase. Nonetheless, decisions by many governments' to liberalize were mostly taken under pressure of events and the IMF/WB, liberalization was under discussion in

many countries during the 1980s. However, according to FAO (2005) significant steps towards reform were only taken in the early 1980s.

Structural adjustment stressed the advantages of relying on markets rather than on government intervention. It aimed at creating positive environment for private investment and risk taking could be the most beneficial than direct government involvement in markets (FAO, 2005). Jun (1990), points out those agricultural reforms included the removal of price controls, deregulation of agricultural marketing, closure of state-owned enterprises that monopolized agricultural trade, and changes in the foreign exchange market to provide greater incentives for exports. The expectation was that improving price incentives for farmers and reducing government intervention in the agricultural sector would be enough to generate a supply response and allow well-functioning markets to emerge quickly. Agricultural market reforms called for a look at the agricultural policies of the 1960s and 1970s and the problems that resulted poor performance of agricultural marketing.

Nature of the reform

Mylène *et al.* (2000) and Mhando & Itani (2008) argue that the agricultural reforms introduced by the World Bank and IMF were designed to reduce or eliminate the bias against agriculture and open the sector to market forces. The reforms were based on two beliefs: that reducing or eliminating state control over marketing would promote private-sector activity and that fostering competitive markets would lead to increased agricultural production. To these ends the reforms included four types of measures:

- liberalizing input and output prices by eliminating subsidies on agricultural inputs such as fertilizer and credit, by bringing domestic crop prices in line with world

prices, and by ending the practice of imposing a single price for all regions and seasons,

- reducing overvalued exchange rates by partially liberalizing the market for foreign exchange,
- encouraging private-sector activity by removing regulatory controls in input and output markets, lifting restrictions on the internal movement of food crops, and relaxing delivery quotas, licensing arrangements, and similar regulations, and
- Restructuring public enterprises and restricting marketing boards to activities such as providing market information and maintaining security stocks.

Concept of agricultural market liberalization

For many years, Tanzania's agricultural policies were based on government control of trade and production. Insufficient state funds to back up centralized and interventionist policies caused a decline in agricultural output (URT, 2006). The sector has been substantially liberalized and market forces have been allowed to prevail. The government has withdrawn from direct involvement in production, processing and marketing and has retained only its role in setting policies (URT, 2006). Gradually, all crops were liberalized and the role of parastatal crop authorities reduced, although the process was patchy and incomplete. From 1991, fertilizer subsidies were phased out and markets were opened to private traders. Both input and output market liberalization have resulted in market failures, compounded by 'state failure' in taxation and regulatory practices at national and local levels (Amani, 1992).

Liberalization of the coffee sector in 1994 meant the government stopped fixing prices and allowed private coffee buyers to compete with cooperative unions for coffee bought directly from farmers. It also meant the government stopped supplying farm inputs on

credit basis and allowed the private sector to trade. The coffee policy led to prompt payments to farmers though the output of the coffee fall. What's more, liberalization was meant to increase farmers' incomes. However, due to production going down, the high prices did not translate into higher income earnings. By far the greatest challenge for the industry is increasing yields per hectare, particularly among smallholders (URT, 2006).

Major socio-economic changes began in Tanzania in 1981. The government adopted several adjustment measures to redress the economic crisis. In 1986, Structural Adjustment Programmes (SAPs) were introduced under the supervision of the International Monetary Fund (IMF) and World Bank. The programs emphasized the centrality of market forces and limited the state's role in the management of the economy and the provision of free social services. A main objective was to allow market forces to determine prices, rather than the government (Cooksey, 2002b). In the agricultural sector, domestic markets were opened to the private sector and some subsidies for agricultural inputs were abolished. Liberalization of the domestic coffee market began in 1993 and entailed the opening of the coffee market to private buyers who were allowed to compete with farmer cooperatives (Ponte, 2002). Consequently, the liberalization markets replaced the previous coffee trade monopolized by cooperative unions.

2.2 Coffee Market Liberalization

Tanzania gets about $115 to the country's ex- port earnings from coffee. About 95 percent of coffee is produced by some 400 000 smallholders on plots ranging between 1-2 hectares (Baffes, 2003). About two-thirds of the average total production of coffee is Arabica, and the rest is Robusta (Baffes, 2003). These two varieties of coffee differ in terms of yield per hectare, taste, blending and subjectivity to pests. Robusta coffee is more robust than

Arabica while Arabica coffee has highest coffee blend, subject to attack from various pests and winder range of taste as compared to Robusta (Baffes, 2003).

Under market liberalization, high coffee prices lead to private buyers buying more in comparison to the unions. The vice versa is true when prices are low. Some new societies ('development groups') take their members' coffee direct to the Moshi coffee auction, thereby cutting out the middleman (Baffes, 2003). Cooksey, (2002a) argues that after market liberalization, both Cooperative Unions lost market share to private traders. Liberalization has spawned a number of new arrangements, some potentially advantageous to producers, some favouring the traders. The reduction in input supply has meant, for example, that "applications of agrochemicals are very limited and even farmers who continue with agrochemical use find the impact minimized by the failure of their neighbors to do the same" (FAO, 2005).

2.3 An overview of the Coffee Marketing System in Tanzania

Before market liberalization in Tanzania, coffee marketing was under the control of cooperative societies/unions and marketing boards. Formally coffee did not change hands until it was sold to private exporters at the auction (Ponte, 2001). Farmers through their cooperatives owned the coffee up to the export point and bared the price fluctuation risks. However, the payment system allowed a smoothing out of price variations within the market year. Farmers were paid the same price irrespective of when their coffee was delivered to the cooperatives and when it was sold (Ponte, 2001).

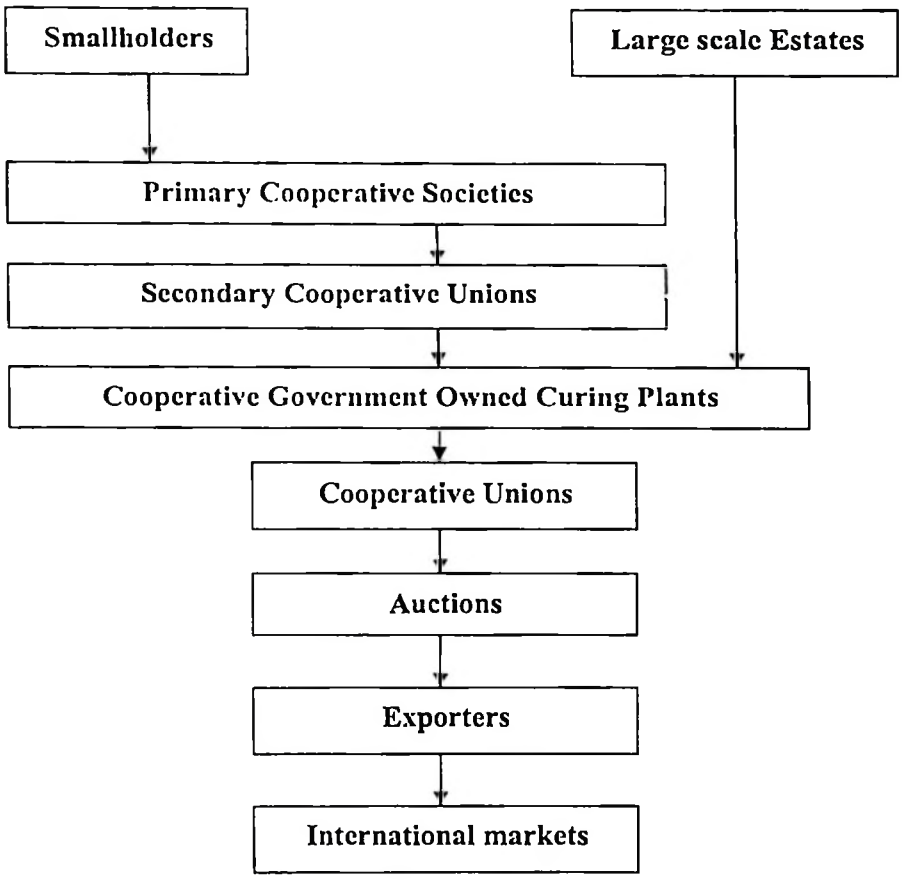

Figure 2: Tanzania pre-liberalized coffee marketing structure.
Source: Adopted from Ponte (2001)

Farmers received payment in relation to the quality of coffee they delivered. The handling of payment systems were fairly laborious and slowed down the flow of coffee from farmer to importer. Overhead costs associated with these procedures were high, meaning that farmers received a lower proportion of the export price than they would have in a more efficient system (quality considerations being equal). Payments to farmers were often late and resources were siphoned out of the system at various levels. However, price stabilization was ensured within one season. The system provided quality incentives to cooperative societies and to small extent farmers (Ponte, 2001). Proceeds from the various auctions of coffee were paid into a pool account. Records were kept by the coffee marketing board on how much revenue was received from each auction for each coffee

class. Payments to cooperatives were directly proportional to the proceeds for that class for the year, the pool system cushioned farmers from price fluctuations as the price paid was averaged over the whole year (Ponte, 2001).

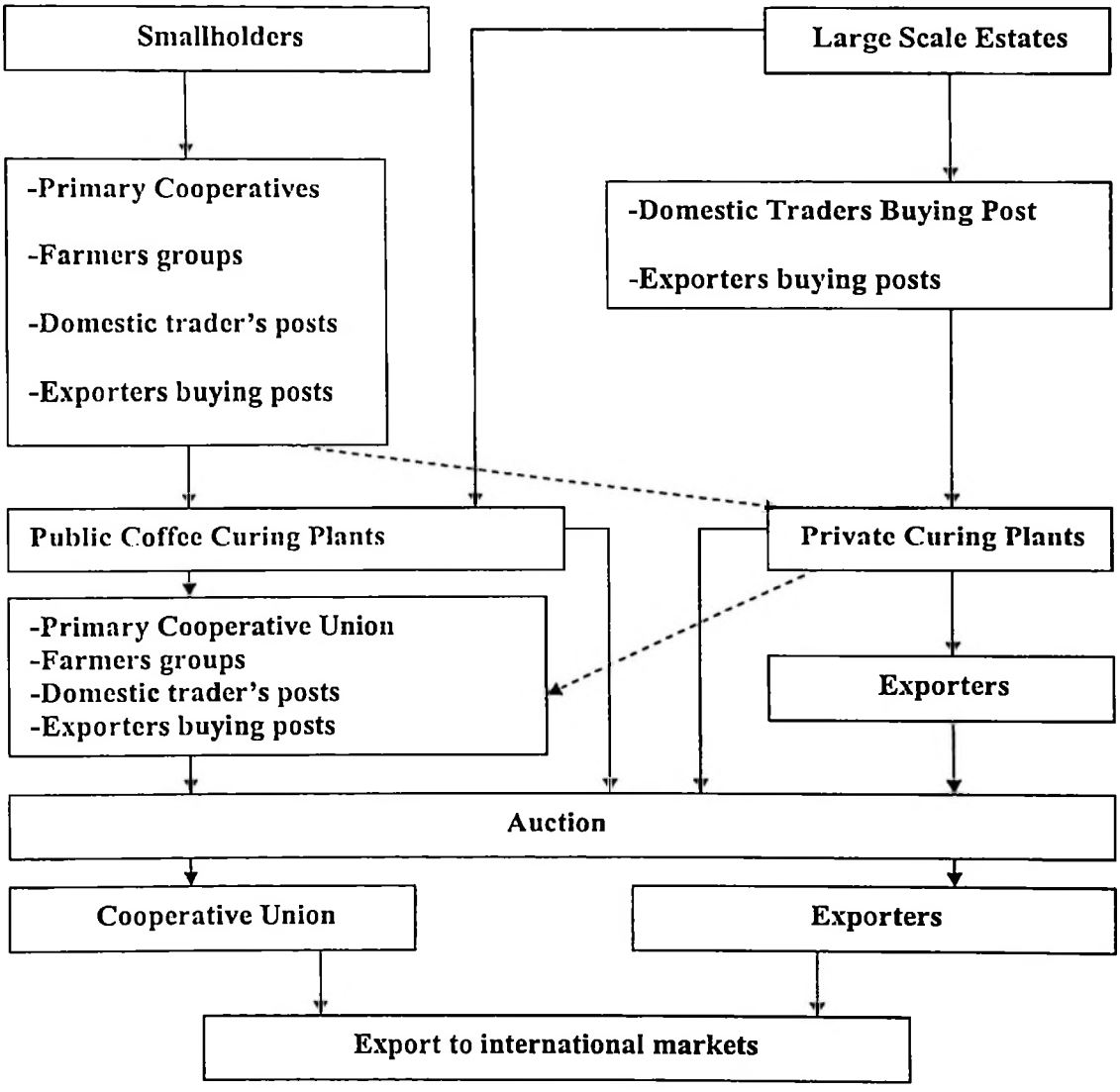

Figure 3: Current coffee marketing structure in Tanzania

Source: Adapted from Ponte (2001)

Under this structure, the quality control is still maintained, but this is true in practice only at the export level. Quality control at the primary level has broken down and buyers purchase coffee from farmers that is often too wet (especially at the beginning of season), and at one price irrespective of quality. The Cooperative has to compete with private buyers on the basis of their first payment to farmers; therefore the multi-payment system that assured an incentive has disappeared even though new privately owned processing plants have reduced quality loses at the curing level, the overall result has been a deterioration of the export quality of coffee (Ponte, 2001).

According to Shuffer (1983), the analytical model of assessing the markets of coffee is on the assumption of a two ways causal and feedback relationship between the three major components which are; structure, conduct and performance. He further pointed out that, the model explains the relationships between functionally similar firms and their market behaviour as a group. Scarborough and Kydd (1992) pointed out that under a given set of conditions the model assumes that, the performance of particular industries depends on the conduct of the sellers and buyers this in turn is strongly influenced by structure of the relevant market. Bain (1968) on the other hand argues that the structure of a market entails the organizational characteristics of a market that appears to exercise a strategic influence on the nature of the competition and pricing within the market.

The most important measure of market structure includes degree of seller's and buyer's concentration, the degree of product differentiation and Barriers to entry. Market conduct refers to a firm behaviour in adoption to the markets in which they buy or sale. These include things like pricing and selling policies and tactics over and tacit inter-farm cooperation or rivalry and research and development activities (Reed, 1987). Market performance is the end result of the farm objectives. The traditional yardstick for

measuring efficiency focuses on production and resource allocation efficiency. The SCP model has been widely criticised mainly because it lacks substantial influences concerning behavioural and performance characteristics, and the type of indicators used to asses performance. Besides these shortcomings, Marion and Miller (1983) agree that the model provides the only well developed framework for examining behaviour of imperfectly competitive markets.

2.4 Agricultural Input Supply

Market liberalization in Tanzania and in sub-Saharan Africa at large have closed down many government monopolies that once financed the production and controlled the purchase, processing and export of agricultural commodities (FAO, 2005). Under previous arrangements, fertilizers, pesticides and seeds were supplied to farmers, usually free of charge, by state agencies or "official" cooperatives. The farmers paid for the inputs after harvest, through deductions made from the price paid for the crop. Parallel with the liberalization of cash-crop marketing, the marketing of all types of agricultural inputs was also liberalized and the private sector became an active participant in input procurement and sale. In Tanzania, Coffee yields are down because few traders are offering inputs on credit because of difficulties in obtaining repayment (FAO, 2005). Tanzania have one of the world's lowest rates of use of improved agricultural inputs in the world, the result is low yields and poor development (FAO, 2005).

Prior to the policy reforms, credit for inputs was integrated into coffee sales. The system, in a sense, functioned well because the unions (or the Coffee Board, in the period when the unions were dissolved), through their primary societies, were monophony buyers, eliminating the prospect of grower default. However, as noted earlier, most unions had to

be bailed out, so viewed from a marginal cost pricing point of view; the input finance system was not sustainable despite its apparent high recovery rate (Baffes, 2003).

The reforms broke the link between inputs and coffee sales and, because of high default rates; credit for input use was available to only a few creditworthy (often large) farmers. The rest either received credit at very high interest rates or received no credit at all, consequently, input use declined. Only a quarter of coffee growers used purchased inputs after 1994. According Baffes (2003) it was learnt that, coffee market reform attributed the low input use to the absence of credit. Moreover, FAO (2005) and Baffes (2003) reported that labour inputs were inadequate for both Arabica and Robusta and that control of pests and disease was poor, these findings applied primarily to small farmers, however, and much less to estates.

2.5 Credit Accessibility

Before market liberalization, cooperatives were responsible for provision of credit to farmers (Ponte, 2002). Lack of access to credit and capital is one of the biggest hurdles for entrepreneurs in Tanzania, including coffee farmers looking to expand their production or create a higher quality product. Credit-related problems were listed as the number one constraint perceived by micro, small and medium crop producers in Tanzania (Mhando, 2005). The present banking system is structured to service large companies and more established businesses with longer term loans. This structure is not in the position to benefit smallholder farmers. The development of micro-finance products specifically for smallholder coffee growers would address the cash-flow problems associated with this annual crop (Ponte, 2001; Rweyemamu, 2003).

2.6 Coffee Production and Productivity

Tanzania produces three types of internationally-traded coffee: mild Arabica, hard Arabica and Robusta. Mild Arabica is the most important in terms of volume and value, followed by Robusta and smaller amounts of hard Arabica. Most (95 %) of Tanzanian's coffee is produced by smallholders, although estate production is set to increase in the near future (Ponte, 2001). Almost all smallholder coffee is processed at the primary level by farmers by hand-pulpers for mild Arabica, and by simply drying the coffee in the case of hard Arabica and Robusta (Ponte, 2001). The problem with Tanzania's coffee is not the price compared to Latin America or even Columbia but, low productivity. Other contributing factors for poor production include; lack of central pulperies and high labour input needed for coffee processing (Ponte, 2001).

2.7 Coffee Pests' Infestation

Coffee in Tanzania is an important cash and export crop for small-scale farmers. The crop suffers heavy yield losses due to damage caused by a wide range of indigenous pests (insects, diseases, nematodes and weeds). Currently, recommended pest control measures include; a combination of cultural, resistant/tolerant cultivars and the use of broad spectrum chemical pesticides. Chemical pesticides are far more popular at the farm level than any of the other recommended pest control measures. Integrated pest management (IPM) offers the best prospects for solving the above problems. However, lack of national IPM policies, poor extension systems, inefficient research-extension-farmer linkage and the lack of a holistic approach will delay the development and implementation of appropriate, acceptable and sustainable IPM practices (Nyambo *et al.*, 2004).

2.8 Poverty Reduction and Poverty Trap in Tanzania

2.8.1 Definition of poverty

Poverty is multidimensional but specific to a location and a social group. However the common features in the experience of poverty is that poor people's lives are characterized by powerlessness and voiceless which constrain their choice and define the relationship and influence they are able to make with institutions in their environment (Mwelukilwa, 2001).

Poverty is defined in economic, psychological, and even philosophical terms. Most measures of poverty are based on some variant of capacity for material consumption. For international organizations such as the World Bank, poverty lines of purchasing power of less than the equivalent of $1 and $2 per day are used as standard. Increasingly, these measures are supplemented with multidimensional indices such as the United Nations Development Program (UNDP) Human Development Index (HDI) and Human Poverty Index (HPI) that provide more extensive information on different facets of poverty (Mwelukilwa, 2001). In this case therefore, poverty is hunger, lack of shelter, being sick and not able to see a doctor, not having access to school and not knowing how to read and write. Poverty is also defined with regards to lack of employment, fear for the future, powerless and lack of representation and freedom. In this case, poverty can be regarded as having many faces which changes from place to place and described in many ways (Mwelukilwa, 2001).

2.8.2 The Status of poverty in Tanzania

According to the World Bank (1994), rural poverty has fallen in many African countries. In Tanzania, for example, a comparison of pre- and post reform household surveys suggests that rural incomes rose and poverty declined between the late 1970s and the early

1990s (World Bank, 1994). Similarly, a comparison of two household surveys in Uganda shows that the incidence of poverty fell from 56 % in 1992 to 46 % in 1996 (World Bank, 1995). Using an index that combines information on the ownership of household assets and housing characteristics, another study showed that rural poverty declined in Ghana, Kenya, Madagascar, Mali, Tanzania and Uganda (World Bank, 1995).

According to URT (2009), the rate of economic growth per annum rose over the last decade from 4.1% to 7.4% in 2008. Though the growth was increased and became high as compared to the fastest growing economies in sub-Saharan Africa, Tanzania's growth in 2009 was expected to fall to 5% as a result of global economic crisis. This implies that Tanzania's growth is unstable and unable to support basic needs of majority of Tanzanians. About 33.6% of Tanzanians are living below the basic need poverty line while about 16.6% are suffering from food poverty. Poverty rate remain high in rural areas: 37.6% of rural households live below the basic needs poverty line (URT, 2009).

2.9 Coffee Production in Mbozi District

Coffee was introduced to Tanzania early in the 20th century by European missionaries as an estate crop, but eventually became a smallholder crop. The area planted to coffee expanded significantly during the 1970s and the 1980s when prices were favorable. Most of the expansion took place in the southern Arabica zone (Mbozi); promoted by two European Union (EU) supported projects (World Bank, 1994) as cited by Baffes (2003). The same missionaries introduced coffee (Arabica variety) into Mbozi District through European Coffee planters since 1920s though they were strongly opposed its production by Africans (Baffes, 2003). By 1934 some 100 Africans produced 5 tons of Coffee. In 1927, the growth of native coffee industry became self – sustaining and 557 managed to produce about 51 tons of coffee in 1940. Today an average of 11 000 tons is produced by

some 98,000 coffee farmers. During this time, the area under coffee production was 28 610 Ha (Baffes, 2003).

During the onset of coffee cultivation in Mbozi, seedlings were raised on seedbeds with loose cover of grass to provide shade. Improvements have been made where seedlings are now raised in polythene tubes. Seedlings are transplanted to the farms between November and January. Coffee trees flower during the early rains, and farms are periodically hosed for weed control during the growing season by all farmers. Coffee berries begin to ripen to may while heavy picking begins in June and July extending to August. Coffee is selectively picked as it ripens to cherry red colour; there are two basic treatments for the berries. Some producers have hand or motorized powered coffee pullers which they and their neighbours use to press the bean from the pulp. The pulp is discarded and the beans may be graded by using running water in a channel to separate them by weight. The bean is then washed to remove the mucilage before drying. Coffee in this form is known as parchment coffee since the bean is still covered with a thin husk and underlying silver skin which will be removed at a curing factory. Alternatively, the coffee is allowed to dry with the pulp still intact and latter processed resulting in '*Mbuni*[2]', a Coffee of considerably lower quality.

Most Coffee farms are less than 4 acres in size and are managed by households without outside help (Baffes, 2003). During the picking season, households may exchange labour or pickers may be hired. Coffee production in Mbozi rose coffee production of both parchment and '*Mbuni*' from 6000 tons in 1995/96 to 12 500 tons in 2000/2001 falling slightly to 10 500 tons in 2002/03. The decline is not alarming since coffee is biennial

[2] Immature coffee fruit due to diseases or drought

bearer and exceptionally good yields are often followed by a mediocre harvest (Baffes, 2003).

There has been a very heavy investment in Mbozi for coffee production (MDC, 2007). Yet; there are difficulties in further expansion of the crop. Coffee is vulnerable to pests and diseases which are mainly controlled by improved coffee husbandry particularly through the use of chemicals. Coffee is also vulnerable to years of low rainfall, for which mulching is the only generally applicable response (SUA, 2005). While the estates have begun to rely heavily on irrigation, the small holder will not be able to follow as they cannot afford the equipment, and more importantly, the water resources are simply not sufficient. Finally, the Mbozi coffee grower is vulnerable to the world coffee market due to coffee market fluctuation and relatively lower quality of coffee produced.

CHAPTER THREE

METHODOLOGY

3.1 Description of the Study Area

The study was conducted in Mbozi district which is located in the south western part of Mbeya Region. The district lies between latitudes 8^0 and 9^0 12' south of the Equator and Longitudes 32^0 7' 30'' and 33^0 2' 0'' East of the Greenwich Meridian. Mbozi shares borders with Mbeya District to the East, Ileje District to the South, Zambia and Rukwa Region to the West and Chunya District to the North. The district has an altitude of between 900 – 2750 meters above the sea level. On average it receives rainfall between 1350 mm and 1550 mm per annum and temperature ranges between 20^0C to 28^0C (MDC, 2007).

Agriculture is Mbozi's main economic activity whereby 88% of her inhabitants depend on it. Crop production and livestock production account for over 80% of the district earnings. Mbozi has a total of 119 308 households in 178 villages with an average household size of 5 members; 75 482 households (*i.e.* about 63.3%) are engaged in coffee production (MDC, 2007). Mbozi district is divided into two main zones; the high plateau and the rift valley (Low Land Zones).

The high plateau

This is located in the Eastern part of the district, mainly comprising the three divisions of Igamba, Vwawa and Iyula, these occupying 36% of the district area. It also covers a small portion of Ndalambo Division. Its altitude ranges between 1400 – 2750 meters above the sea level. And its topography is characterized by several hills with rivers and valuable valley for irrigation in between. Due to the above characteristic, major crops grown in this

zone are coffee, maize and beans, banana and to a small extent paddy, Irish (round) and sweet potatoes.

The low land (Rift valley zone)

This is found in the western part of Mbozi District and covers major parts of Ndalambo, Msangano and Kamsamba divisions which are 64% of the district area. This zone is relatively hot with temperature ranging between 25 ^{0}C – 28^{0} C, and has a relatively flat clay loam type of soil with silt soil predominating over a larger area. Potential rivers also cut across some parts of the zone areas, major crops grown in this area are paddy, sorghum, finger millet, cassava, sweet potatoes, simsim and sunflower (MDC, 2007).

Before market liberalization, coffee production in Mbeya was high in Mbozi District followed by Rungwe District. However, after the liberalization, it is only in Mbozi where coffee is still being produced in substantial amounts. Therefore, the area was selected because coffee is still the major cash crop for many households.

3.2 Research Design

The study adopted a cross-sectional research design. This design was more appropriate for the study because all households surveyed are in the same environment in terms of economic activities, climate, culture, agricultural market, and infrastructures. A cross-sectional design is economical and time saving as recommended by Bernard (1994) and Kothari (2004). In addition the design enables collection of data with a greater degree of accuracy while providing quick results (Bailey, 1998; Bernard, 1994).

3.3 Sampling

Purposive sampling method was used in selecting the three divisions producing coffee in Mbozi. This was followed by random selection of three wards in the selected division and two villages in each ward. In each selected village, 30 respondents were selected randomly. The total sample size was 180, both male and female heads of households[3]. The list of smallholder coffee producers was obtained from village offices. The choice of this sample size was guided by the limitation of time and the need to ensure adequate data for meaningful analysis.

3.4 Data Collection

Primary data was collected using interview schedules, where by the researcher asked questions in a face to face contact with respondents using pre-structured questionnaire. The questionnaire was formulated in English and later translated in to Kiswahili; the interview was conducted in Kiswahili. Also qualitative data was collected from focus group discussions (FGDs) using a checklist (Appendix 3).

3.5 Data processing and analysis

Primary data collected was analyzed using Statistical Package for Social Science (SPSS version 12). Descriptive statistics such as percentages; means and median of various quantitative variables were computed. The detailed analysis is as shown in section 3.5.1 to 3.5.1 below.

[3] A household is defined as a unit which consist one or more person related or unrelated, who live together in one part or of more than one housing/dwelling and have common catering arrangements (World Bank, 1995).

3.5.1 Gross margin analysis (GMA)

Gross margins were calculated to check income gained by farmers from coffee sales. This method used to determine profit for different enterprises (Sichunga, 1993; Mutabazi, 2007).

The model used for the above is as shown below;

$\Pi_i n = XiPi - Uij$ ..... *(i)*

Where:

Π = *Gross Margin for the* i^{th} *enterprise*

n = *Number of enterprise*

Xi = *output in Kilogram per enterprise i*

Pi = *Price of the product per Kilogram*

Uij = *Input variable cost per unit of* i^{th} *enterprise*

3.5.2 Market structure, conduct and performance model (SCP-model)

The study also used the Market Structure, Conduct and Performance model (SCP-model) in order to determine the competitive conditions in the coffee market. According to Ahmad and Shamsudin (2008), this approach enables an examination of how the market structure is related to market conduct and performance of the given product. Therefore, the current study focused on determining how the numbers of sellers and buyers, coffee production and price strategies were related to the smallholders' coffee production efficiency.

3.5.3 Causal analysis

A multiple linear regression model was used to determine the relationship between profit and liberalization of the coffee market. Normally, this type of regression has two parts; one is the dependent variable and the second comprises several independent variables

(Mutabazi, 2007). For the current study case the dependent variable was income poverty and independent variables were; amount of money spent on agricultural input, amount of credit obtained, amount of coffee produced, farmers' experience, extension services, and price of coffee per kg. The model used is as shown below;

$Yi = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \ldots\ldots\ldots + \beta_{10} X_{10} + \varepsilon$ ..... *(ii)*

Where:

Yi=Dependant variable which is profit gain from coffee sales.

α= *Intercept of the computed values*

$\beta_1 - \beta_{10}$ = *Coefficient of parameters to be estimated.*

X= Independent variables (X_1= Number of buyers; X_2= Number of stockists; X_3 = Barriers faced coffee producers; X_4= Form of coffee sold; X_5 = price of coffee sold (/kg); X_6 =Costs of coffee agricultural inputs; X_7 = Amount of coffee produced; X_8 = Farmers experience, X_9= Access to agricultural extension services; X_{10} = Amount of credit received)

ε= *Standard error.*

In running the regression, the assumption was that independent variables were not correlated to each other. However, at times independent variables may correlate to each other and hence affect the performance of the model. Therefore, before applying multiple regression analysis, *multicollinearity* was tested and the above was taken care off.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Overview

This chapter present results and discussion of the study on liberalization of the coffee market and its implication in reducing income poverty in Mbozi district. Section 4.2 discusses the demographic and socio-economic characteristics of respondents; section 4.3 discusses structure of coffee market in Mbozi district; section 4.4 discusses access and availability of credit; section 4.5 discusses availability of agricultural inputs for coffee; section 4.6 discusses willingness to pay for the agricultural inputs for coffee; section 4.7 discusses productivity of coffee crop in study area; section 4.8 discusses the correlation between coffee farm size and productivity; section 4.9 discusses profitability from coffee sales; section 4.10 discusses relationship between liberalized coffee market in the study area and profit gained from coffee sales; section 4.11 discusses allocation of income from coffee sales; section 4.12 discusses food security status in the study area; and section 4.13 discusses households' assets possession.

4.2 Demographic and Socio-economic Characteristics of Respondents

Demographic characteristics examined in this study includes; sex, age, marital status and number of years spent by respondents in school. This current study considers a household to be composed by people who eat and sleep in the same house as also defined by USAID-Tanzania (2003) and Makatjane (2000). The study mainly supports information from household heads on their household socio-economic status, for those where male heads were away or not living in the household their wives/spouses were considered as the heads.

4.2.1 Sex of respondents

Gender distribution of different smallholder coffee farmers was studied, the results in Table 1 observed that 87.2% of respondent were male while only 12.8% of them were female. This shows that women participation and recognition of their contribution in economic activities including coffee production in Mbozi district is still underreported. The underreporting of women's contribution to agricultural production in Mbozi may be due to lack of knowledge by the community on the importance of women in the agricultural sector as mentioned by Gordon (2000) that, over 70% of farm work in Africa is performed by woman. Again, according to World Bank (1995) and Ellis *et al.* (2007), whereas both men and women play substantial roles in Tanzania's economy, women are more active in agriculture than men, specifically in the processing of agricultural products. Furthermore, Ellis *et al.* (2007) argues that in Tanzania, number of households headed by women ranges from 15% to 35%.

4.2.2 Age of respondents

Table 1 below shows a fairly distribution of age among the people interviewed, where about 50% of them comprise respondents of younger age (i.e. age group 21-45 years) while the rest 50% involved elderly respondents (i.e. age group 46-above 50 years). This implies that the ratio of elders and younger is 1:1 which can probably lead to negative consequences to agricultural production. Age affects socio-economic status in various aspects; according to Woodsong (1994) younger farmers can benefit more by adopting more profitable crop rotation as the young are always ready to take risks as compared to the elderly.

4.2.3 Marital status of respondents

Results in Table 1 show that 75.6% of respondent were married, referring to Tanzanian culture a person who is committed to marriage has an additional responsibility of raising a stable family, a stable family can concentrate in farming given fairly distribution of size and composition of the family members, since size and composition is proved to be an important factor in crop productivity (Phelinas, 1994). Also results show that the remaining categories i.e. single, divorces, widows, widower, separated and those who are living without marriage all together contribute about 24.4% and neither they can have a fairly size and composition compared to married respondents.

4.2.4 Number of years spent in school

Results in Table 1 indicate that 80% of respondents had managed to complete primary school level education and therefore had 7 years of formal schooling. This 7 years formal education is fairly enough to be used as a means of liberation from ignorance (Ellis *et al.*, 2007). Again, education can ease diversification of livelihood strategies and hence enable acquisition of income for re-investment in agriculture. Once more, formal education helps an individual to get out of ignorance and finally realise human development (URT, 2003). Lastly, formal education can enable development of a human skills and knowledge that empowers the community to participate in economic development (URT, 2003). However, in the study area there were a few about 2% who had failed to attain five or more years of formal schooling and about 16% of respondents who never attended formal schooling.

Table 1: Social-economic characteristics of respondents (n=180)

Variable		Frequency	Percent
Sex	Male	157	87.2
	Female	23	12.8
Age	21-25	2	1.1
	26-30	7	3.9
	31-35	15	8.3
	36-40	49	27.2
	41-45	26	14.4
	46-50	34	18.9
	Above 50 years	47	26.1
Marital status	Married	136	75.6
	Single	7	3.9
	Divorced	1	0.6
	Widower	34	18.9
	Separated	1	0.6
	Living together	1	0.6
Number of years spent in school	No formal schooling	30	16.7
	1-4 years	3	1.7
	5-7 years	144	80
	Above 7 years	3	1.7

4.3 Coffee Market Structure

The structure of the coffee market was examined to determine whether different attributes like number of buyers/sellers encountered some barriers in the coffee marketing process. The berries that were being considered included; place of sales; motivation to sell to a given buyer; form of coffee sold; as well as determinants of coffee price.

Results in Table 2 show that about two thirds (i.e. 68.5%) of the surveyed farmers were selling their coffee to one buyer, and the number of respondents kept decreasing as 13, 22, 16 and 4 for those who sold to more than one buyer i.e. 2,3,4 and 5 buyers respectively. Generally, most farmers sold their coffee to one buyer whom they thought could benefit them most. However a few (*i.e.* 31.5%) sold to more than one buyer in anticipation of getting better price. In addition, results show that about 66% respondents declared that there were no serious barriers during selling of their coffee, however about a third (33.4%) of the respondents failed to put it clear as to whether there were barriers or not. None of the less one respondent said there were barriers. This respondent probably the restriction by the District authority against pre-harvest selling of coffee as barrier since it exploits the coffee producers. The freeness from barrier to farmers in the area of study implies that coffee farmers are trading more freely with minimum costs which are very important in determining the level of profit.

Results in Table 2 also show that there are 3 major buyers of coffee in Mbozi district, i.e. Farmers group which is the major buyer of most of surveyed respondent, about 59% of farmers sold to these groups; 30.4% farmers sold to Agricultural Market Cooperative Societies; and 0.6% sold to Cooperative Union, however results revealed that 10% of respondents sold to unknown buyers with no specific reason. Having many buyers is an important feature in perfect market, where producers can choose where to sell basing on the factors that will lead them to maximizing profit, the same applied to surveyed coffee producers in Mbozi district, results also shows the motivation behind surveyed farmers to sell to a certain buyer; good price given by the buyers was the leading factor, where by 41.7% of surveyed farmers were attracted by this factor; input on credit was the second as accounted for by 20% of farmers; cash payment mode made by buyers was the third by

accounted 19.4% of farmers; membership status was the last as reported by 18.9% of farmers.

Observation as shown in Table 2 indicates farmers had only 2 major forms by which they sold their coffee. According to the above, 77.3% of respondents sold their coffee in parchment form; while the remaining 22.7% of respondents sold their coffee in cherry form. Coffee in cherry form is the one which is just picked from farm without further processing. Coffee in parchment is the one which is dry but not cleaned. Basing on the quality and standard of coffee, both cherry and parchment forms are not advised by extension officers and business officials since they are not dried enough and not clean to meet international standard in the auction for them to get high price (Baffes, 2003).

Findings in Table 2 also show that 93.9% of surveyed farmers agreed that coffee price was determined by the market itself (*i.e.* forces of demand and supply in the market). This observation is in line with the features of a perfect market where by the market the one which determines the price and this is advantageous to farmers (Baffes, 2003). However, a few respondents (*i.e.* 3.3%) said price is based on the cost of production, and 2.8% respondents said buyers are the ones who set the price.

Table 2: Respondents coffee marketing (n=180)

Number of buyers to where you sell coffee	Frequency	Percent
1	124	68.5
2	13	7.2
3	22	12.2
4	16	8.8
5	4	2.2
Status of barriers in selling coffee		
There were barriers	1	0.6
There was completely no barrier	118	66
Didn't comment	61	33.4
Place where coffee was sold		
Farmers group	106	59
Agricultural Market Cooperative Society (AMCOS)	55	30.4
Cooperative Union	1	0.6
Unknown buyer	18	10
Motivation to sell		
Good price	75	41.7
Membership	34	18.9
Input on credit	36	20
Payment in cash	35	19.4
Form of coffee sold		
Cherry	41	22.7
Parchment	139	77.3
Guidance in setting price		
Market itself	169	93.9
Farmer based on cost of production	6	3.3
Buyer	5	2.8
Total	**180**	**100**

4.4 Access and Availability of Credit

Results in Table 3 show that among the surveyed coffee smallholder farmers only 1.2% had accessed and received credit during the 2007/2008 agricultural season, also it is observed that both requested credit from the same source (*i.e.* individual source). This observation proves that in Mbozi District there is a lack sufficient credit facility (formal and semi-formal) such as SACCOS, SACAS, and Community Banks, and if any they seem have a lot of limitations that discriminate smallholder farmers access to credit. Generally, most of formal and semi-formal financial institutions are characterized by centralized operation, demand for collateral and a lot of bureaucratic procedures when issuing credits (Ponte, 2002). Therefore, demand for collateral and bureaucratic procedures, implies that formalising land owned by smallholder farmers to be used as collateral is needed, as this is the only asset owned by the majority of farmers. Second possible factor hindered smallholder coffee farmers to secure credit is due to have small coffee firms.

Results from the study seem to suggest that revenue from smaller coffee enterprise cannot accommodate paying back the credit, re-investing to the coffee industry and supporting the household requirements. Another reason is probably that a lack of knowledge by smallholder farmers on how to manage credit and timely paying back of the credit could be an impediment their effort to improve their standard of living. To ensure availability of loans to farmers in the study area, the district authority should ensure that there is no bureaucracy in processing credit, educating farmers on how to manage credit and sensitizing smallholder farmers on the importance of having large coffee enterprises.

Table 3: Access and availability of credit (n=180)

	Frequency	Percent
No. of those who requested credit	2	1.2
No. of those who received credit	2	1.2
Source of credit		
individual	2	100
Purpose of the credit		
Buy agricultural inputs	2	100
Loan recovery		
100%	2	100
Form of credit		
cash	2	100

4.5 Availability of Agricultural Inputs for Coffee Production

Observations from the study (Table 4) show that 71.7% of respondents had access to more than one stockist; only 28% of them were having access to one stockist and none had any access to a stockist at all. Also results show that about 96.7% of respondents bought their inputs from private sellers while only 0.3% bought from cooperative Union. In addition, results confirm that 90% of respondents had a choice to buy or not to buy from a given stockist depending on the factors that were in favour of minimizing costs of production; 55.7% made their choice based on distance (*i.e.* the near the better), while 27.8% were sensitive to price and the rest 16.7% were attracted by supplies on credit.

Table 4: Availability of coffee agricultural inputs (n=180)

Number of stockists from whom agricultural inputs could be bought	Freq	Percent
1	51	28.3
2	82	45.6
3	47	26.1
Type of stockists		
Private sellers	174	97
Cooperative Union	6	3
Alternative choice of where to buy agricultural inputs		
Available	162	90
Not available	18	10
Reason to use a given types of stockists		
Lower price	50	27.8
Sold on credit	30	16.7
A nearby shop	100	55.7

4.6 Willingness to Pay for Agricultural Inputs

The study examined willingness to pay for agricultural inputs for surveyed households to see how much households invested in coffee production and the returns. Inputs examined included; industrial fertilizer, herbicides, insecticides and fungicides. Results in Table 5 show that requirement for industrial fertilizers stood at 886 bags whereas only 514 bags were purchased, herbicide requirement was 1152 litres but only 347 litres were purchased. It was further established that insecticides requirement was 2 097 litres but only 374 litres were purchased, and the requirement for fungicides requirement was 6 588 litres though only 817 litres was purchased. Therefore, based on the above observation it is clear that, most of the surveyed households were not investing much in buying agricultural inputs for coffee production. In general, the observations show most of the required inputs were

procured in amounts less than those required for high coffee productivity. This may perhaps be due to farmers not considering coffee production as business entity.

Table 5: Willingness to pay for agricultural inputs (n=180)

Type of input	Highest	Lowest	Sum	Mean	Std. Dev.
Industrial fertilizer required (bags)	8	1	886	4.92	2.081
Industrial fertilizer purchased (bags)	8	1	514	2.86	1.675
Herbicides required (ltrs)	99	1	1152	6.40	21.369
Herbicide purchased (ltrs)	2	1	347	1.93	0.260
Insecticides required (ltrs)	99	1	2097	11.65	30.099
Insecticide purchased (ltrs)	5	1	374	2.08	0.977
Fungicides required (ltrs)	99	2	6588	36.60	46.481
Fungicides purchased (ltrs)	7	2	817	4.54	0.880

4.7 Coffee Productivity

Results in Table 6 show that 54.4% of the total coffee production is from half of respondents who cultivated 2 hectares of land for each and produced in the ratio of 1000, 2000 and 3000 kilograms for 3, 94 and 1 farmers respectively. Also results shows that the least percentage in productivity (*i.e.* 3.3%) is from farmers who cultivated less than a hectare, where they managed to produce 2000 kilograms each and none has managed to produce 3,000 kilograms, furthermore farmers who cultivated largest area (*i.e.* 3 hectares) contribute about 21% of the total coffee production in agricultural season of 2007/2008. The productivity of the crop in Mbozi district for the given agricultural season (2007/2008) is portraying the potentiality of high yield coffee production in this area, since mean percentage of total production (*i.e.* 21.93%) is laid within the highly produced category; however the highest production category involved 63.2% of total coffee producers.

Table 6: Households coffee productivity (n=180)

Farm size (Ha.)	Coffee produced (Kg/Ha.)						percent on total production
	1000		2000		3000		
	Freq	%	Freq	%	Freq	%	
< 1	0	0	6	100	0	0	3.3
1	9	60	6	40	0	0	8.3
2	3	3.1	94	95.9	1	1	54.4
3	36	92.3	3	7.7	0	0	21.7

4.8 Correlations between the Area of Coffee Cultivated and Productivity

According to the results from Table 7, it was observed that there was a positive correlation between coffee farm size and productivity has been found (r = 0.01). This is to say that, the relationship between coffee farm size and productivity was significantly direct. Furthermore, the findings may be justified by the fact that large sized farms are more economical and conducive for better efficiency. Moreover, the findings reflect that Smallholder coffee farms are managed well regardless of increased area as observed by Shenggen and Connie (2003). Better management probably brought about by effective use of labour, use of new variety of coffee produced by Tanzania Coffee Research Institute (TaCRI) based in Mbozi district. Again, the positive relationship between coffee farm size and productivity possibly brought about by the use of both organic and industrial agriculture inputs.

Table 7: Correlations between area under coffee production and productivity (n=108)

		Ha. of coffee cultivated 2007/2008	Yield in (Kg/Ha.)
Ha of coffee cultivated 2007/2008	Pearson Correlation	1	- 0.193(**)
	Sig. (2-tailed)	-	0.009
Yield in (Kg/Ha).	Pearson Correlation	-0.193(**)	1
	Sig. (2-tailed)	0.009	-

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

4.9 Profitability of Surveyed Households Coffee Production

The gross profit tells an investor the percentage of revenue/sales left after subtracting the cost of production. An enterprise that boasts a higher gross profit margin is regarded as more efficient (Doehring, 2001). Observations from the study as shown in Table 8 suggest that all surveyed households were getting some profit from their coffee production. It was also observed that 62.1% of all respondents got gross profit margins in the range of 3.0-3.4% of their production costs. The lowest gross profit margin was 0.6-1.2% obtained by 26.7% of the respondents. Moreover, 2 respondents managed to get a gross profit margin ranging between 3.6-4.2%. Generally, the observations suggest the coffee industry in Mbozi District is profitable and with increased efforts by both the farmers and other stakeholders the sector could be an important vehicle for reduction of smallholder income poverty.

Table 8: Profitability of households coffee production (n=180)

Gross margin as % of production costs	Frequency	Percent
0.6- 1.2	48	26.7
1.4-1.8	5	2.8
2.0-2.4	0	0.0
2.6-2.9	13	7.2
3.0-3.4	112	62.1
3.6- 3.8	1	0.6
4.0-4.2	1	0.6

4.10 Implication of Coffee Market Liberalization on Poverty Reduction

The study assumed that increased level of profit (income from coffee sales above production costs) enables households to reduce poverty, since high profit increases household purchasing power and therefore enabling them to ensure food security, build good quality houses[4], manage to pay for their children's education, as well as managing costs of health services. The relationship between liberalization of the coffee market and profit from coffee is summarized in Table 8. Linear regression model was used to determine the relationship between attributes of coffee market (*i.e.* coffee market structure, conduct and performance) and the profit margins gained by farmers from selling coffee in 2007/2008 agricultural season.

Based on the observations from the study as shown in Table 8 above, the null hypothesis that; "coffee market liberalization has no implication to profit gained by smallholder from coffee sales" is rejected and alternative hypothesis that; "coffee market liberalization has an implication to profit gained by smallholder coffee sales" was accepted since F-value (*i.e.* 281735.5) and was very significant ($P<0.01$), however the coefficient of

[4] Good quality house is that which is made from burnt bricks, roofed with corrugated iron and having a cemented floor.

determination (adjusted R^2) was 0.996 implying that 99.6% of variation in the profit from coffee sales was explained by attribute of coffee market (*i.e.* structure, conduct and performance of coffee market) hence valid model.

Results in Table 9 also show that there is a decrease of 0.037, 0.314 and 0.002 in the profit for every unit increase in number of buyers, form of coffee sold and cost of production, respectively. This is in line with the theory of demand and supply and its influence on price, that is an increase in number of coffee buyers with limited number of coffee producers in the study area enabled buyers to control the market price. As a result small-scale farmers benefit less due to the high cost of production they incur. In addition, the forms of coffee sold in the market made buyers to offer low price to the coffee producers therefore, reducing their profit margins.

The study further observed that there is an increase of 0.141, 0.703, 0.638, 0.083, 0.032 and 0.006 units in profit for every increase unit in number of stockists, price of coffee sold, amount of coffee produced, farmers' experience, access to agricultural extension services and amount of credit received, respectively. This is quite in line with production theories, in Mbozi district farmers' experience matters a lot in cooperation with agricultural sector professionals, experienced farmers know the importance of extension officers and they also know where to access extension services which led them to get profit from coffee in association with the access to credit facilities that help to pay for production costs as a result increases coffee sales presumably increased profit margins.

Table 9: Results from linear regression model over profitability of coffee (n=180)

Attributes of coffee market (i.e. structure, conduct & performance)	Coefficients	Std error	t-test	Sig
(Constant) intercept	-3737232	64103.647	-58.300	0.001
Number of coffee buyers	-0.037	263.214	-33.145	0.000
Number of stockists	0.141	229.098	39.497	0.000
Barriers faced coffee producers	0.000	13837.448	0.053	0.958
Form of coffee sold	-0.314	22178.939	-61.239	0.000
Price of coffee sold	0.703	7.724	257.275	0.000
Cost of agricultural inputs	-0.002	0.029	-1.372	0.172
Amount of coffee produced	0.638	21.231	112.460	0.000
Farmers' experience	0.083	12.127	56.266	0.000
Access to agricultural extension services	0.032	23514.111	15.892	0.000
Amount of credit received	0.006	0.037	6.407	0.000

Dependent variable profitability of coffee Adjusted $R^2 = 0.996$; F- Value = 281735.5*; n=180;
*Significance at 0.001

4.11 Contribution of Coffee Farming to Household's Income

Study results (Table 10) show that, coffee income seemed to contribute a higher share of the surveyed households' income relative to other sources. According to Table 10 income from coffee sales contribute 42.8% of total income of the households, followed by sale of labour (34.4%), sale of other crops (7.8%), remittances (6.7%), brewing local beer (6.1%) and other small activities contribute 2.2%.

This infers that coffee is the most important crop for income generation for smallholder coffee farmers as also learnt by Daviron and Ponte (2002). Sale of labour became the second source of income. This is possibly due to the fact that, the surveyed smallholder coffee farmers were producing some other crops like maize and beans. The farm operation for these like weeding, fertilizer and pesticide application for coffee, maize and beans are

normally done simultaneously as a result households with few member who can work in the farm are compelled to hire labour. As the supply of labour becomes lower, demand for of it becomes high and hence main source of income. Generally, it can be said from the primary data collected that surveyed households seem to have higher levels of on farm diversification, as they are getting their incomes from crops other than coffee and some of their total income from livestock. Furthermore, diversification out of the coffee sector can be probably an essential component to a long-term solution to oversupply. By reducing production, diversification out of coffee production can ensure higher producer prices and allow farmers to earn a higher income as a result of lower supply.

Table 10: Households sources of income and their contribution to total income

(n=180)

Source of income	Percentage of contribution to household total income									
	41-50		51-60		61-70		71-80		Total	
	n	%	n	%	n	%	n	%	n	%
Sales of coffee	0	0	8	4.4	64	35.6	5	2.8	77	42.8
Sales of other crops	0	0	9	5	5	2.8	0	0	14	7.8
Sales of labour	34	18.9	18	10	7	3.9	3	1.7	62	34.4
Brewing local beer	11	6.1	0	0	0	0	0	0	11	6.1
Remittances	0	0	0	0	12	6.7	0	0	12	6.7
Other	4	2.2	0	0	0	0	0	0	4	2.2

4.12 Use of Income from Coffee Produced

Study results (Table 11) show that 77.3% of the household surveyed used the money from selling coffee to pay for school fees of their children, 69.5% used for building houses, 67.8% used for buying assets, 62.8% used to pay for health services while 0.6% used the money for buying food. It is clearly seen that coffee has done a lot (60-70%) to cover different living costs with regard to school fees, buying assets and health services in normal life of different households. These results imply that the revenue from coffee used

for re-investing in coffee industry is insignificant. Revenue from coffee is not significantly spent on buying food as probably due to high production of maize and beans which serves as food crops. Again, the results imply that coffee farms are probably not receiving enough agricultural inputs, efficient postharvest operation of coffee like processing for realising high production and quality respectively. Moreover, livestock might probably supplement the costs of food in case of food shortages.

Table 11: Use of income from coffee produced (n=180)

Use of income	Frequency	Percent
Buying food	1	0.6
Buying assets	122	67.8
Building house	125	69.5
Paying school fees	139	77.3
Paying health services	113	62.8

4.13 Food Security Status in the Study Area

The major food crops produced by smallholder coffee farmers in Mbozi are mainly Maize and beans. From the study, it was observed that 91.1% of respondents produce maize and beans; and rest 8.9% produce maize only. It was also learnt that 65.5% of respondents were satisfied with the food requirement for the 2007/2008 agricultural season, while 12.2% were unsatisfied and the rest 22.2% did not comment anything. Based on the information above, it implies that, majority of coffee producers are also producing maize and beans as their food crops. This 12.2% of households with food shortage probably as noted above, they are affected by spending more time in selling their labour during high labour demand and in turn produce insufficient food and hence food shortages in their households. However, the food shortages perhaps not a serious issue as they can get food from within their vicinities as supported by the MDC (2007), there were food shortages in the highland zone where surveyed households belong.

4.14 Household's Assets Possession

It is reported that; assets provide people opportunities and options in the face of impoverishing forces (URT, 2003). However, possession of assets symbolizes peace and prestige; also it is a sign that the owner is a well-off at least by standards of his/her community (Rutasitara, 2002). In Mbozi district, three forms of asset possession were used to describe the status of small-scale coffee producers *i.e.* House and housing status, farm equipments and livestock were used as criteria. This criterion was chosen as a criteria for measuring well-off of the coffee producers in a participatory way during the focus group discussions.

Results in Table 12 show that out of 180 surveyed households, about 176 (97.8%) own one good quality house, 111 (61.7%) own more than one good quality house, whereas the maximum number of house owned was 4 houses which owned by 9 households (5%) of respondents. Apart from the ownership; 43.9% own houses with mud floor, whereas 61.1% own houses with cement floor. Furthermore, over 38.9% have houses with un-burnt bricks while 1.7% built with burnt bricks. It was also observed that 90% used iron sheets for roofing while the rest 10% used thatched grass. With regard to farming equipments, results from Table 12 show that most of the households (*i.e.* 69% <) managed to posses commonly used equipments i.e. hand hoe, '*panga*' (machete), axe, racks, and sprayers, however hand pulpers seems to have a hardship for them to possess, since 40.5% managed to have this type of equipment. Basing on the facts obtained it shows most of the equipments that small-scale coffee producers of coffee in Mbozi District use, they reflect size of the coffee farm and quality of coffee produced.

Table 12: Households assets possession (n=180)

Characteristic		Frequency	Percent
House possession	No house	4	2.2
	1	65	36.1
	2	65	36.1
	3	37	20.6
	4	9	5.0
House status	**Floor**		
	Mud	70	38.9
	Wood	0	0
	Cement	110	61.1
	Tiles	0	0
	Wall		
	Un-burnt bricks	3	1.7
	Burnt bricks	177	89.3
	Roof		
	Thatched grass	18	10
	Iron sheets	162	90
Farm equipments			
	Hand-hoe	176	97.7
	Panga	144	80
	Axe	165	91.7
	Racks	125	69.4
	Hand pulpers	73	40.5
	Sprayer	146	81.1
Livestock			
	Cattle	141	78.3
	Goats	130	72.2
	Sheep	17	9.4
	Pigs	158	87.8
	chicken	161	89.4

Livestock is another asset that small-scale coffee producers in Mbozi district used to keep. Results show that chicken were kept by 89.4% of total livestock kept, while pigs, cattle, goats, and sheep were kept by 87.8%, 78.3%, 72.2% and 9.4% respectively. This also implies that, majority of the respondents were keeping cattle, goats, pigs and chicken while few (9.4%) were keeping sheep. Livestock ownership is one of the important factors that supplement the household in terms of income during the failure of other incomes from other agricultural sources. Farmers tend to diversify their sources of income by keeping livestock, and engaging in non-agricultural activities. This enabled them to earn income throughout the year, and thus obtain the money necessary to purchase agricultural inputs at the proper times of the season (.Mhando and Itani, 2008).

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

The study on the liberalization of coffee market was found to have positive relationship with poverty reduction to smallholder coffee producers in Mbozi District as further elaborated below.

5.1.1 Structure of the coffee market

It can be concluded from the study that the current structure of coffee market in Mbozi district is in line with the most of the perfect market features; it has many buyers (*i.e.* 1-5) therefore giving producers an advantage and bargaining power for good prices. Most producers sell their coffee to; farmers' groups, Agricultural Market Cooperative Societies (AMCOS) and few to existing cooperative unions. I can also be concluded that despite the above smallholder coffee producer in the study are did experience some barriers when selling their coffee. However, it was learnt that there is only one type of cost structure where by all costs is bared directly by producers with a lack of availability or accesses to known (formal or semi-formal) credit assistance.

5.1.2 Conduct of the coffee market

Based on study results it can be concluded that smallholder coffee producers in Mbozi district set pricing strategies by having specific buyers to whom they sell their produce. This is normally done under specific motivations and minimum interference from any force; though price of coffee is set by the market forces (*i.e.* forces of demand and supply in the market). However, this strategy is on the side of selling and not on the producing side.

5.1.3 Performance of the coffee market

Generally, it can be concluded that smallholder coffee producers in Mbozi district made profit from their coffee production enterprise. Nonetheless, productivity levels were relatively higher for farmers owning 2 hectares as compared to those with 1 or 3; therefore these may benefit more in terms of the liberalized coffee market. However, it was revealed that there was inadequate use of technology since most of the tools and equipments used for farming was local and poor, also there is production of poor quality of coffee in Mbozi district, that cause producers to face relative small prices in the local market compared to prices in international markets.

5.1.4 Reduction of poverty

Market liberalization and coffee income have a huge relationship; it is inline with assumption that good market liberalization can increase income from coffee sales in Mbozi district. It can be concluded from the study results that good coffee market structure, conduct and performance lead to improve income obtained from coffee sales as a results improve living standard of the entire community. It can further be concluded that coffee greatly contributes to household income in the study area, followed by selling of labour force, remittances, production of other crops (mainly food crops) and other small activities, respectively; therefore improvement of quality and production of coffee in this area ensures improvement of standard of living. However, the use of income from coffee sales cross-cut along the whole households' needs and wants in Mbozi district *i.e.* buying food, buying assets, building house, paying school fees and paying health services, though findings show that food crop production status in Mbozi district is not very bad, most of the farmers are capable of having important equipment for agricultural purpose, more over large number of community members managed to build a house although half of them were not built by concrete materials (*i.e.* burnt or cement blocks) but at least no one is

homeless. Most of households in the study area possessed livestock, apart from being used as source of income, but also can be used as security during different shocks (*i.e.* illness, purchasing food). All this shows how much Mbozi residents need this crop for their survival.

5.2 Recommendations

There is a need for improvement of production strategies, basing on the selling settings that are already in place in Mbozi districts, what needed now is to form a kind of organization or association that will arrange and pool together farmers efforts focusing on production, this have to be in both quality (standards) as well as quantity (productivity) strategies. Forming farmers' groups for years it has been not an easy task, thus the task should be of more participatory and should involve different partners *i.e.* government departments, NGOs, private companies as well as farmers themselves; all together should come in a collusion so as to make the process easy and efficient. This will come to adjust cost structures instead the current situation where farmers himself bare the whole costs, the farmers will come to enjoy the benefits of horizontal integration.

As it was being said above, small-scale coffee producers need to improve their quality, this can be through organization or association of producers that they can be able to process coffee (even a bit and left the additional processing to big companies) for the intention of increasing quality and finally price of their product, and maximizing the profit that they were always loose through selling to middlemen.

Investment on coffee production is another thing that small-scale coffee producers in Mbozi district have to consider, the investment should concentrate on land itself, buying modern equipments and sufficient agricultural inputs (*i.e.* enough and improved inputs).

Profit demonstrated in the findings isn't from maximum investment; farmers have to give a certain percent from coffee income to reinvest to have a full utilization of small land they have to maximize output and hence income.

Lastly, farmers should be encouraged to form farmers' group to increase their bargaining power both in marketing of both agricultural inputs and outputs. Eventually this will ensure better prices for both inputs and outputs. At the same time this will help farmer's access important services such as credit, markets, and extension services and hence lead to an increase in overall output from coffee industry for income poverty reduction.

5.3 Areas for Further Study

Based on the scope of the study, some important areas were not fully analyzed. For the purpose of fully understanding of weaknesses in coffee industry with regard to coffee marketing under liberalized market, the following are suggested as areas for further study:

- To determine factors hindering smallholder farmers to re-invest coffee revenues in coffee industry
- To evaluate the factors smallholder coffee producers to sale pre-processed coffee(red cherry)

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APPENDICES

Appendix 1: Interview Schedule

LIBERALIZATION OF SMALLHOLDER COFFEE MARKET AND ITSIMPLICATIONS IN POVERTY REDUCTION IN MBOZI DISTRICT, MBEYA

SECTION A: GENERAL IDENTIFICATION VARIABLE

1. Date of interview.....
2. Name of interviewer.....
3. Name of respondent.....
4. Questionnaire's number.....
5. Village.....
6. Ward.....
7. Division.....

SECTION B: GENERAL RESPONDENTS INFORMATION

8. Respondent's age (years).....
9. Respondent's sex.....
10. Respondent's age group.....
11. Respondent's education.....

Use the following Codes to answer question 8-11

Sex	Education		Marital status	
1= Male 2= Female	1= None 2= Std 4 3= Std 8 4= Adult education	5= Primary school 6= Secondary school 7= Collage 8= University	1= Married 2= Single 3= divorced	4=Widower 5= Separated 6= Living together

SECTION C: LAND INFORMATIONS

12. What is the total land area owned by the household (in acres)? .....
13. How many of acres were cultivated last season (2007/2008) ? .....
14. How many acres were under fallow last season (2007/2008)? .....
15. Is this land enough for your production target? (Tick the appropriate answer)

1= Yes ( ) 2=No ( )

16. If no; how much more do you want? ..... (Acres)
17. Out of the acres cultivated last season how many acres were under

    (i) Maize.....(Acre)

    (ii)Beans..... (Acre)

    (iii)Paprika..... (Acre)

    (iv)Others..... (Acre)

SECTION D: TO DETERMINE THE COFFEE MARKET STRUCTURE, CONDUCT AND PERFORMANCE

18. How many coffee buyers came to coffee in your coffee in your area last season (2007/2008)? ....

19. Who were they?

    (i).....

    (ii).....

    (iii).....

    (iv).....

    (v).....

20. Where did you sell your coffee last season? (Tick the appropriate (answer)

    1= Auction-Moshi ( )

    2= Private coffee buyer ( )

    3= others specify.....

21. If auction, through what organization? (Choose the appropriate)

1= Farmers group ( )

2= Agricultural Marketing Cooperative Society [AMCOS] ( )

3= Cooperative Union ( )

4= on my own ( )

5= others (Specify) .....

22. What makes you sell your coffee to the one mentioned above?.....

.....

.....

23. Did you have a choice where to sale your coffee last season (2007/2008)?

1. Yes ( ) 2. No ( )

24. If yes how

.....

25. If no why.....

26. In which form was your coffee sold? (Choose the appropriate answer)

1= Cherry ( )

2= Parchment ( )

3= Clean coffee ( )

4= Others (Specify) .....

27. What unit measure did you use in selling your coffee? (Choose the appropriate answer)

1= weighing scale [Kg] ( )

2= other (Specify)..... Which is equals to.....Kg of cherry/parchment/clean coffee.

28. At what price did you sale(Tshs/ Kg) your coffee last season (2007/08)?

1= Cherry	Tsh//Kg	2= Parchment	Tsh/Kg	3= Clean coffee	Tsh/Kg

29. How long did it take between selling your coffee and receiving your payments?
..... (Days)

30. How many stockists did you buy agricultural inputs from last season (2007/2008)?
.....

31. Who were they?
    (i).....
    (ii).....
    (iii).....
    (iv).....
    (v).....

32. Did you have a choice of where to buy your agricultural inputs last season (2007/2008)? (Tick the appropriate answer).
    1. Yes ( )
    2. No ( )

33. If yes how .....

34. If no why.....

35. Where did you buy? (Tick the appropriate answer)
    1= Private seller ( )
    2= Farmers group ( )
    3= Cooperative Union ( )
    4= others (Specify).....

36. What made you buy from the one mentioned above? (Choose the appropriate)
    1= lower price ( )
    2= was sold on credit and pay after coffee harvest ( )
    3= A nearby shop ( )
    4= Others (Specify).....

37. Did you experience any competitions among buyers of your coffee last season (2007/2008)?

1=Yes ( )

2= No ( )

38. Which competition (Tick the appropriate answer)

1= in buying coffee ( )

2= in buying coffee and selling agricultural inputs ( )

3= others (Specify) .....

39. What were the effects of the competition you mentioned above on selling of coffee? (Choose the appropriate)

1= free to sell to any buyer ( )

2= restricted to sell to one buyer ( )

3= others (Specify).....

40. What were the effects of the competition you mentioned above on payments from your coffee sales (Choose the appropriate)?

1. Time between selling of coffee and payments for it reduced ( )
2. Time between selling of coffee and payments for it increased. ( )
3. Time between selling of coffee and payments for it remained constant ( )
4. Others (Specify).....

41. What were the effects of the competition you have mentioned above on prices from your coffee sales (Choose the appropriate)?

1= increased price of coffee per Kg ( )

2= decrease price of coffee per Kg ( )

3= constant prices per Kg ( )

4= others (Specify).....

42. How can you describe yourself on the adoption of liberalized market of inputs output (coffee)?(Tick against the appropriate answer)

1= completely adopted ( )

2= partly adopted ( )

3=Not adopted ( )

SECTION E: TO ASSES THE ACCESSIBILITY OF AGRICULTURAL INPUT TO SMALLHOLDER FARMERS

43. Where did you buy agricultural inputs last season? (Tick the appropriate answer(s)

1= private Stockiest ( )

2= AMCOS ( )

3= Cooperative. Union ( )

4= local market (*Mnada*) ( )

44. What is the distance from your home to where agricultural inputs are obtained?

..... (Km)

45. Did you manage to buy all the required agricultural inputs for your farms last season (2007/2008)?

1= Yes ( )

2= No ( )

46. If yes; what was the allocation of agricultural inputs last season?

Others(specify)						
TYPES OF INPUS	AMOUNT(KGS) IN EACH CROP					
	Units	Coffee	Maize	Beans	Others	Price/Kg/Lts
Industrial fertilizers (name)	Kg					
1.						
2.						
3.						
Others (Specify)						
Organic fertilizers (name)	Kg					
1.						
2.						
3.						
Others (Specify)						
Herbicides(name)	Lts					
1.						
2.						
3.						
Others (Specify)						
Insecticides	Lts					
1.						
2.						
3.						
Others (Specify)						
Fungicide	Lts					
1.						
2.						
3.						

47. If no; what were the reasons for not buying the inputs?

.....

SECTION F; FARMERS' ACCESSIBILITY TO CREDIT

48. Did you ever receive any credit last season?

1= Yes ( )

2=No ( )

49. If yes; how much did you borrow..... (Tshs) and what amount of money was supposed to be paid..... (Tshs).

50. How long did it take to receive the loan?

1=day ( )

2=months ( )

3=year ( )

4= others (Specify).....

51. What was the source, time required to repay the loan and credit arrangement,

Source(Institution)	Time to repay the credit	Form of credit	Credit arrangement

Key:

Source (institution)	Form of credit	Credit arrangement
1=SACCOS 2=SACAS 3=BANKS 4=INDIVIDUAL	1= Cash 2= In kind (Specify) 3= Both	1=Formal 2=Informal 3=Both

52. If no; what do you think were the reasons?

.....

SECTION G: COFFEE PRODUCTIVITY

53. What was the area under coffee, number of tree and quantity produced in last season?

(i) Total area under coffee.....(Acres)

(ii) Number of coffee trees.....

(iii) Amount produced (kg/tonne)/acre.....

54. What were the reasons that led to harvest the quantity mentioned above?

.....

.....

55. Among the following, what do you think is the main obstacle in coffee production? (Tick the appropriate answer(s)

(i) Pest and diseases ( ) (ii) Drought ( )

(iii)Poor soil fertility ( ) (iv) Lack of capital to purchase inputs ( )

(v)Poor extension services ( ) (vi) High price of inputs ( )

(vii)Low price of coffee ( ) (viii) Old age of trees ( )

(ix) Private buyers ( ) (x) others (Specify).....

SECTION H: COFFEE QUALITY

56. What grades and amount in Kg of coffee sold last season?

(i).....grade.....Kg

(ii).....grade.....Kg

(iii).....grade.....Kg

(iv).....grade.....Kg

57. What was the reason for the grade of coffee obtained?.....

.....

.....

58. Among the following, what do you think is the major factor leading to poor quality of your coffee? (Tick the appropriate answer(s)

(i) Pest and diseases ( ) (ii) Drought ( ) (iii) Poor soil fertility ( )

(iv)Lack of capital to purchase inputs ( ) (v) Poor extension services ( )

(vi) High price of inputs ( ) (vii) Low price of coffee ( )

(viii) Old age of trees ( ) (ix) private buyers ( ) (ix) poor processing equipment

(x) Others (Specify) .....

SECTION I: COMPARISON BETWEEN COFFEE PRICES BEFORE AND AFTER MARKET LIBERALIZATION

59. What was the area of land used for coffee production in the time before market liberalization? (1980s)..... (Acre)

60. What was the area of land used for coffee production last season? (2007/2008)
..... (Acres)

61. What are the reasons for the increase/decrease/? (Tick the appropriate answer)
1= High price of inputs ( ) 2= High price of coffee ( ) 3= Low price of coffee ( )
3= Others (Specify).....

62. What was the price of one kilogram of clean coffee in Tshs before liberalization of coffee market (1908s)?.....Tshs

63. What was the price of one kilogram of clean coffee in Tshs last season (2007/2008)?.....Tshs

SECTION J: DETEMINATION OF GROSS MARGIN

56. What costs incurred in the following activities as far as coffee production is concerned last season?

CROP	SOURCES OF LABOUR				COST OF THE WORK
	MALE	FEMALE	HIRED LABOR	TOTAL MANDAYS	
Land preparation					
Planting					
Pesticide/fungicide					
Pruning					
Fertilizer application					
Weeding					
Harvesting					
Processing					
TOTAL(TSHS)					

SECTION K: EXTENSION SERVICES

57. Do you have an agricultural extension officer in your Village?

1=Yes ( ) 2= No ( )

58.How many times did the agricultural extension officer visit you last season?

..... (Days)

59. What kind of service were you given?

1= Livestock production services ( ) 2= Crops production Services ( )

3=production Services ( ) 3= Marketing issues ( )

4=Others (Specify).....

SECTION L: COFFE PESTS INFESTATION

60. How many times did you apply insecticides to your coffee farm last season?

.....

61. How many times did you apply fungicides in your coffee farm last season?

.....

62. What determined the above (i.e. question 61 and 62above)?.....

.....

63. What types of pests were you responding/preventing?

(i)..... (ii).....

(iii)..... (iv).....

SECTION M: FOOD CROP PRODUCTION

64. What food crops did you grow last season (2007/2008)?

TYPES OF CROP	HOW MUCH DID YOU HARVEST(KG)?
1.	
2.	
3.	
4.	
TOTAL(KGS)	

65. How many days per week did you spend in food crop farms last season (2007/2008)?

.....

SECTION N: FARMERS EXPERIENCE IN COFFEE PRODUCTION

66. For how long have you engaged in coffee production? (Years).....

67. How can you rank the trend of coffee quality you have been producing before the 1980s (Tick the appropriate answer)

1= Increasing ( ) 2= Decreasing ( ) 3=Constant ( )

What was the trend of coffee quality you have been producing after the 1990s (Tick the appropriate answer)

1= Increasing ( ) 2= Decreasing ( ) 3=Constant ( )

68. How can you rank the trend of coffee productivity before the 1980s? (Tick the appropriate answer)

1= Increasing ( ) 2= Decreasing ( ) 3=Constant ( )

69. How can you rank the trend of coffee productivity after the 1990s (Tick the appropriate answer)

1= Increasing ( ) 2= Decreasing ( ) 3=Constant ( )

SECTION O: CROP MANAGEMENT

70. How many days per week did you spend on coffee farm last season (2007/2008)?

.....

.....

71. What specific activities were you doing in those days in your coffee farm?

.....

.....

SECTION P: USE OF INCOME FROM COFFEE SLAES

73. What is the distribution of expenditure of money from your coffee sales last season?

(i) Buying food .....%

(ii) Building house.....%

(iii) Buying assets.....%

(iv)Paying for school fees.....%

(v) Paying for Health services.....%

(vi)Others (Specify).....%

(vii)Total 100%

SECTION K; HOUSEHOLD ECONOMIC STATUS

74. Indicate number of assets owned by the household before and after coffee market liberalization

S/N	TYPES OF SSETS	BEFORE	AFTER
1	Hand hoe		
2	Panga		
3	Axe		
4	Rack		
5	Hand pulpers		
6	Bicycle		
7	Radio		
8	Wheelbarrow		
9	Push cart		
10	Ox-cart		
11	Hand sprayer		
12	Cattle		
13	Goats		
14	Sheep		
15	Pigs		
16	Chicken		
17	Ducks		
28	Others (Specify)		

75. Is this your house? 1= Yes ( ) 2= No ( )

76. The floor of this house is made of;

1= Mud ( ) 2 =Wood ( ) 3= Tiles ( ) 4= Cement ( )

77. The walls of this house are made of;

1= Stone, cement, burnt bricks ( ) 2= Mud blocks ( ) 3= Mud with trees ( )

4= Thatched grass ( ) 5= Others (Specify).....

78. Which source of energy is used for cooking food?

1= Electricity 2= Firewood 3= Cow dung 4= Kerosene 5= Kerosene and charcoal ( )

6= Others (Specify)

79. What each of the following sources contributes in percentage to your houshold's income?

Sale of coffee ..... %

Sale of Crops other than coffee..... .%

Petty trade..... %

Sale of labour..... %

Brewing local beer.....%

Remittance from relatives.....%

Rent of properties .....%

Wages of father.....%

Wages of mother.....%

Sale of food from "*mgahawa* ".....%

Others (Specify).....%

Total **100%**

80. Is your income enough for your household's daily expenditure?

1= Yes ( ) 2= No ( )

81. Where do you get cash for agricultural production?(Tick the appropriate answer)

1= Own servings ( ) 2= Credit ( ) 3= given by donor/project ( )

4= Others (Specify) .....

82. How do you describe your experience of your household with regard to access to food?

1= Very good ( ) 2= Good ( ) 3= Fair ( ) 4= Bad ( ) 5= Very bad ( )

83. How many times per day do you take meal? .....

84. Do you produce enough food to feed the household for the whole year?

1= Yes ( ) 2= No ( )

86. If no, what makes you unable to produce enough food to feed the household for the whole year? (Tick the appropriate answer)

1= low soil fertility ( ) 2= Floods ( ) 3= Poor technologies in production ( )

4= Shortage of labour ( ) 5= Low product prices ( ) 6= Poor markets ( )

7= Drought problems ( ) 8= Seasonal hunger ( ) 9 =Conflict ( )

10= Wild animals ( ) 11= Soil erosion problems ( )

12= Shortage of land for livestock grazing ( )

87. During the period of food deficit, which of the following ways did your household used to get food?

Method used	**Yes**	**No**
Food purchase on credit		
Buying food		
Food offer		
Begging from friends		
Begging from closest relatives		
Begging from neighbors		
Selling coffee in advance		
Borrowing money from friends		
Borrowing money from closest relatives		
Borrowing money from neighbours		
Exchanging livestock with food from other villages		
Sending children to relatives who have sufficient food		
Receiving food assistance from government or any organisation		
Others (specify)		

Thank you very much for your cooperation

Appendix 2: Translated (Kiswahili version) of the interview schedule

SOKO HURIA LA KAHAWA NA MATOKEO YAKE KWA WAKULIMA WADOGO WA ZAO LA KAHAWA KATIKA KUPUNGUZA UMASIKINI WA KIPATO KATIKA WILAYA YA MBOZI, MKOA WA MBEYA

1. Siku ya mahojiano.....
2. Jina la mhoji.....
3. Jina la mhojiwa.....
4. Number ya dodoso.....
5. Kijiji.....
6. Kata.....
7. Tarafa.....

SEHEMU B: TAARIFA ZA JUMLA LA MHOJIWA

8. Umri wa mhojiwa (miaka).....
9. Jinsi yako.....
10. Umri wako.....
11. Elimu yako.....

Tumia majawabu yafuatayo kujibu maswali 8-11

Sex	Education		Marital status	
1= Me 2= Ke	1= Hakuna 2= darasa la nne 3= Darasa la 8 4= Elimu ya watu wazima	5= Elimu ya msingi 6= Elimu ya sekondari 7= Chuo 8= Chuo kikuu	1= Oa/olewa 2= Sijaoa/olewa 3= Achika	4=Acha 5= Tengana 6= Ishi pamoja

SECTION C: LAND INFORMATIONS

12. Kaya yako inamiliki kiasi gani cha eneo (ekari)? .....
13. Kiasi gani cha eneo ulilima msimu uliopita(2007/2008) ? .....
14. Kiasi gani cha eneo lilipumzishwa msimu uliopita(2007/2008)? .....
15. Je, eneo hili linatosheleza malengo yako? (Wela alama ya tiki kwenye jibu sahihi)

1= Ndiyo ( ) 2=Hapana ( )

16. Kama hapana, ni kiasi gani cha ziada kinahitajika?.....(ekari)

17. Kat ya eneo ulilolima msimu uliopita, ni asilimia ngapi ya eneo ulilima;

(i) Mahindi.....(Acre)

(ii)Maharage.....(Acre)

(iii)Paprika..... (Acre)

(iv)Nyingine.....(Acre)

SEHEMU D: MUUNDO, MWENENDO, NA UFANISI WA SOKO LA KAHAWA.

18. Ni wanunuzi wangapi wa kahawa walikuja kununua kahawa yako msimu uliopoita (2007/2008)? ....

19. Wanunuzi hawa ni akina nani?

(i).....

(ii).....

(iii).....

(iv).....

(v).....

20. Uliuza wapi kahawa yako msimu uliopita? (Weka alama ya tiki kwenye jibu sahihi)

1= Mnada wa Moshi ( )

2= Wanunuzi binafsi ( )

3= Wengina (taja).....

21. Kama ni mnadani,ulipitishia tasisi gani? (Weka tiki kwene jibu sahihi)

1= KikundiFarmers group ( )

2= Ushirika wa kununua na kuuza mazao [AMCOS] ( )

3= hama cha ushirika ( )

4= Mimi mwenyewe ( )

5= Nyingine (Taja) .....

22. Kitu gani kilikufanya uuze mazao yako kwa mnunuzi uliyemtaja?.....

.....

23. Je Ulikuwa na uhuru wa kuuza kahawa yako kwa mnunuzi yeyote msimu uliopita(2007/2008)? 1. Ndiyo ( ) 2. Hapana ( )

24. Kama ndiyo ni namna gani .....

25. Kama hapana ni kwa nini .....

26. Uliuza kahawa yako ikiwa katika hali gani? (weka alama ya tik: kenye jibu sahihi)

1= Kahawa mbich ya matunda ( )

2= Kahawa kavu iliyosindikwa ( )

3= iliyokobolewa kiwandani ( )

4= Nyingine (Taja) ....

27.Ni kipimo gani ulitumia wakati wa kuuza kahawa yako?(Weka alama ya jibu sahihi katika jibu sahihi)

1=Mzani [Kilo] ( )

2=Nyingine (Taja)..... amabyo ni sawa na kilo .....ya kahawa ya matunda/Kavu iliyosindikwa/iliyokobolewa kiwandani

28. Uliuza kahawa kwa bei gani kwa kilo (2007/08)?

1= Mbich	Tsh//Kilo	2= Kavu	Tsh/Kilo	3= iliyokobolewa	Tsh/Kilo

29. Ulichukua muda kiasi gani kupata malipo yako ya kahawa?

(Siku).....

30. Ulininua pembejeo za kilimo kutoka kwa wauzaji wangapi msimu uliopita (2007/2008)? ....

31. Ni akina nani hao?

(i).....

(ii).....

(iii).....

(iv).....

(v).....

32. Je, ulikuwa na uhuru wa kuchagua muuzaji wa pembejeo za kilimo msimu uliopita (2007/2008)? (Weka alama ya tiki kwenye jibu sahihi)

1. Ndiyo ( )
2. Hapana ( )

33.Kama ndiyo ni kwa namna gani .....

34. Kama hapana kwa nini.....

35. Ulininuna wapi(Weka alama ya tiki kwenye jibu sahihi)

1= Mnunuzi binafsi ( )
2= Kikundi ( )
3= Ushirika ( )
4= Kwingine(Taja).....

36. Kitu gani kilikufanya ununue kwa muuzaji uliyemtaja hapo juu?(Weka alama ya tiki kwenye jibu sahihi)

1= Bei ndogo( )
2= Alikuwa anauza kwa mkopo na malipo alihitaji baada ya mavuno ya kahawa ( )
3= Duka la jirani ( )
4= Kwingine (Taja).....

37. Je, kulikuwa na ushindani wowte wa wanunuzi wa kahawa msimu uliopita (2007/2008)?

1=Ndiyo ( )
2=Hapana( )

38. Ulikuwa ushindani katika nini(Tick the appropriate answer)

1= Katika kununua kahawa ( )
2= Katika ununuzi wa kahawa na uuzaji wa pembejeo ( )
3= Mashindano mengine (Taja).....

39. Ushindani huo ulikuwa na madhara gani katika uuzaji wa kahawa yako? (Wekaalama ya tiki katika jibu sahihi)

1= Uhuru wa kuuza kahawa ( )
2= Vizuizi katika kuuza kahawa ( )
3= Nyingine (Taja).....

40. Kulikuwa na matokeo gani ya ushindani katika malipo ya kahawa yako(weka alama ya tiki kwenye jibu sahihi)?

    1. Muda wa malipo ya mauzo ya kahawa ulipungua ( )
    2. Muda wa malipo ya mauzo ya kahawa uliongezeka ( )
    3. Muda wa malipo ya mauzo ya kahawa haukupungua wala kulngezeka ( )
    4. Nyinginc(Taja).....

41. Kulikuwa na matokeo gani ya ushindani katika bei ya kahawa(Weka alama ya tiki kwenye jibu sahihi)?

    1= Bei ya kahawa kwa kilio iliongezeka( )
    2= Bei ya kahawa kwa kilio ilipungua( )
    3=Bei ya kahawa kwa kilo ilibakia palepale ( )
    4=Nyingine.....

42. Unaweza ukaelezea nini juu ya kukubalika kwa soko huria la kahawa juu ya upatikanaji wa pembejeo za kahwa na uuzaji wa kahawa?(Tick against the appropriate answer)

    1= Inakubalika kabisa ( )
    2=Inakubalika kidogo ( )
    3=Haikubaliki ( )

SEHEMU E: KUTATHMINI UPATIKANAJI WA PEMBEJEO KWA WAKULIMA WADOGO WA KAHAWA

43. Ulinunua wapi pembejeo za kilimo msimu uliopita wa 2007/2008?(weka alama ya tiki kwenye jibu sahihi)

    1= Muuzaji binafsi ( )
    2= AMCOS ( )
    3= Ushirika ( )
    4=Mnadani ( )

44. Kutoka nyumbani kwako, kulikuwa na umbali gani mpaka kwenye duka la pembejeo?
..... (Km)

45. Uliweza kununua pembejeo zako zote kulingana na mahitaji msimu uliopita (2007/2008)? 1= Ndiyo ( )
    2= Hapana ( )

46. Kama ndiyo, ni kiasi gani kilitengwa cha pembejeo msimu uliopita?.....

.....

AINA YA PEMBEJEO	KIASI(KILO) KWA KILA ZAO					
	Kipimo	Kahawa	Mahindi	Maharagwe	Mazao mengine	Bei/Kilo/lita
Mbolea za viwandani (Taja)	Kilo					
1.						
2.						
3.						
Nyingine (Taja)						
Mbolea za asili (Taja	Kilo					
1.						
2.						
3.						
Nyingine (Taja						
Madawa ya magugu(Taja)	Lita					
1.						
2.						
3.						
Mengine (Taja						
Madawa ya kuua wadudu	Lts					
1.						
2.						
3.						
Mengine (Taja						
Madawa ya kudhiti ukungu	Lts					
1.						
2.						
3.						
Mengine (Taja)						

47. Kama hapana,kulikuwa na sababu gani ya kutonunua pembejeo?

.....

SEHEMU F; UWEZEKANO WA WAKULIMA KUPATA MIKOPOJc,

48. Je, uliweza kupata mkopo wowote katika msimu uliopita?

1= Ndiyo ( )

2=Hapana ( )

49. Kama ndiyo, ulikopa kiasi gani..... (Tshs) na ulitakiwa kulipa kiasi gani..... (Tshs)

50. Ilikuchukua muda gani kupata mkopo baada ya kuomba?(Weka alama ya tiki kwenye jibu sahihi)

1=Siku moja ( )

2=Mwezi ( )

3=Mwaka ( )

4= Nyingine (Taja).....

51.Onyesha mahali ulipokopa, muda uliotakiwa kumaliza deni, na mpango wa mkopo.

Chanzo(Taasisis)	Muda wa kulipa mkopo	Aina ya mkopo	Mpango wamkopo

Ufunguo:

Chanzo (Taasisi)	Aina ya mkopo	Mpango wa mkopo
1=SACCOS 2=SACAS 3=Benki 4=Mtu binafsi	1= Fedha taslimu 2= Msaada 3=Vyote viwili	1=Rasmi 2=isiyo rasmi 3=vyote viwili

52. Kama hapana, ni kwa nini?

.....

.....

SEHEMU G; TIJA YA UZALISHAJI WA KAHAWA

53. Eneo kiasi gani lilikuwa la kahawa, miti kiasi gani na kiasi gani cha uzalishaji katika msim uliopita?

(i) Jumla ya eneo la kahawa..... (Acres)

(ii) Jumla ya idadi ya miti ya kahawa.....

(iii) Kiasi kilichozalishwa (Tani/Kilo/Ekari).....

54. Ni kwa nini uliweza kuvuna kiasi hicho cha kahawa ulichokitaja hapo juu?

.....

.....

55. Kat ya haya yafuatayo, unadhani ni kipi kilikuwa kikwazo kikubwa katika uzalishaji wa kahawa? (Weka alama ya tiki katika jibu sahihi)

(i) Wadudu na magonjwa ( ) (ii) Ukame ( )

(iii)Afya duni ya udingo ( ) (iv) Mtaji mdogo ( )

(v)Udhaifu wa huduma za ugani (vi) Bei kubwa ya pembejeo ( )

(vii)Bei ndogo ya kahawa ( ) (viii) Umri mkubwa wa miti ya kahawa ( )

(ix) Wanunuzi binafsi ( ) (x) Sabau (Taja).....

SEHEMU H: UBORA WA ZAO LA KHAWA

56. Ni katika madaraja gani na kwa kiasi gani cha kahawa uliyoiuza msimu uliopita?

(i) Daraja.....Kilo.....

(ii) Daraja.....Kilo.....

(iii)Daraja.....Kilo.....

(iv)Daraja.....Kilo.....

57.Ni kwa sababu gani ulipata madaraja uliyoyataja hapo juu?

.....

.....

58. Kati ya haya yafuatayo, unadhani ni sababu gani kubwa iliyopelekea kupata kahawa yenye ubora duni? (Weka alama ya tiki kwenye jibu/majibu sahihi)

(i)Wadudu na magonjwa ( ) (ii) Ukame ( ) (iii) Rutuba duni ya udongo ( )

(iv) Mtaji mdogo ( ) (v) Huduma duni za ugani ( )

(vi) Bei kubwa ya pembejeo ( ) (vii) Bei ndogo ya kahawa ( )

(viii) Umri mkubwa wa miti ya kahawa ( ) (ix) Wanunuzi binafsi ( ) (ix) Usindikaji duni wa kahawa (x) Sababu nyingine (Taja).....

SEHEMU I: MALINGANISHO KATI YA BEI YA KAHAWA KABLA NA BAADA YA SOKO HURIA KA KAHAWA

59. Ni enco kiasi gani uliitumia kwa kilimo cha kahawa kabla ya soko huria la kahawa? (1980s)..... (Ekari)

60. Ni eneo kiasi gani lilitumika kwa kilimo cha kahawa msimu uliopita? (2007/2008) ..... (Ekari)

61. Ni kwa sababu gani eneo limeongezeka/pungua/? (Weka alama ya tiki kwenye jibu sahihi)

1= Bei kubwa ya pembejeo ( ) 2=Bei kubwa ya kahawa ( ) 3= Bei ndogo ya kahawa ( )

3= Sababu nyingine (Taja).....

62. Bei ya kahawa iliyokobolewa kiwandani ilikuwa kiasi gani kwa kilo kabla ya soko huria la kahawa (1908s)?.....Tshs

63. Bei ya kahawa iliyokobolewa kiwandani ilikuwa kiasi gani kwa kilo msimu uliopita (2007/2008)?.....Tshs

SECTION J: DETEMINATION OF GROSS MARGIN

56. Ni gharama kiasi gani zilitumika katika shughuli za uzalishaji wa zao la kahawa msimu uliopita(@007/2008)?

ZAO	CHANZO CHA NGUVUKAZI				GHARAMA
	MALE	FEMALE	HIRED LABOR	TOTAL MANDAYS	
Uandaaji wa ardhi					
Upandaji					
Upigaji wa madawa					
Upogoleaji					
Uwekaji wa mbolea					
Upaliliaji					
Uvunaji					
Usindikaji					
JUMLA YA GHARAMA(SH)					

SEHEMU K: HUDUMA ZA UGANI

57. Je, kuna afisa ugani katika kijiji chako?

1=Ndiyo ( ) 2= Hapana ( )

58.Ni mara ngapi afisa ugani alikutembelea msimu uliopita (siku).....

59. Aina gani ya huduma ulipatiwa?

1=Elimu ya uzalishaji wa mifugo ( ) 2= Elimu ya uzalishaji wa mazao ( )

3= Marketing issues ( )

4=Huduma nyingine (taja).....

SEHEMU L: WADUDU WAHARIBIFU WA KAHAWA

60. Ulipiga mara nagpi madwa ya kudhibiti wadudu wa kahawa katika shamba lako msimu uliopita? .....

61.Ulipiga mara nagpi madwa ya kudhibiti ukungu katika shamba lako msimu uliopita?

.....

62. Kitu gani kilikusababishia ufanye kwa viwango ulivyotaja hapo juu (swali 61 na hapo juu).....

63. Ni aina gani ya wadudu uliokuwa unawadhibiti/kinga?

(i)..... (ii).....

(iii)..... (iv).....

SEHEMU M: UZALISHAJI WA MAZAO YA CHAKULA

64. Ulizalisha mazao gani ya chakula msimu uliopita (2007/2008)?

AINA YA ZAO	ULIVUNA KIASI GANI (KILO)?
1.	
2.	
3.	
4.	
JUMLA (KILO)	

65. Ulitumia siku ngapi kwa wiki katika shughuli za uzalishaji wa mazao ya chakula katika msimu uliopita(2007/2008)?

.....

SEHEMU N: UZOEFU KATIKA UZALISHAJI WA ZAO LA KAHWA

66. Ni kwa muda gani umekuwa katika uzalishaji wa zao la kahawa?

(Miaka).....

67. Unaweza kusema nini ju ya mwenendo wa ubora wa kahawa uliyokuwa ukizalisha kabla ya soko huria la kahawa(1980s) (eka alama ya tiki katika jibu sahihi)

1= Unaongezeka ( ) 2= Unapungua ( ) 3=Hakuna mabadiliko ( )

68.Unaweza kusema nini juu ya mwenendo wa ubora wa zao la kahawa baada ya soko huria (Weka alama ya tiki katika jibu sahihi(Tick the appropriate answer)

1= Unaongezeka ( ) 2= Unapungua ( ) 3=hakuna mabadiliko ( )

68. Unaweza kusema nini juu ya mwenendo wa tija ya zao la kahawa kabla ya soko huria (1980s)? (Weka jibu alama ya tiki katika jibu sahihi)

1= Inaongezeka ( ) 2= Inapungua( ) 3=Hakuna badiliko ( )

SEHEMU O: UTUNZAJI WA MAZAO SHAMBANI

70. Ni siku ngapi kwa wiki ulizitumia katika shughuli za uzalishaji wa zao la kahawa msimu uliopita (2007/2008)?

.....

71. Ni shughuli gani ulikuwa unazifanya katika shamba la kahawa?

.....

.....

SEHEMU P: MATUMIZI YA MAPATO YATOKANAYO NA KAHAWA

73.Ni kwa mgawanyo upi kiasilimia wa matumizi ya mapato yatokanayo na kahawa katika msimu uliopita?

(i) Kununua chakula .....%

(ii) Kujenga nyumba.....%

(iii) Kununua rasilimali..... %

(iv) Kulipa ada ya shule.....%

(v) Kulipia huduma za afya.....%

(vi)Others (Specify).....%

(vii)Jumla 100%

SEHEMU K; HALI YA UCHUMI KATIKA KAYA

74.Onyesha mali zilizo/zinazomilikiwa na kaya yako kabla na baada ya soko huria la zao la kahawa;

No	AINA YA MALI	KABLA	BAADA
1	Jemebe la mkono		
2	Panga		
3	Shoka		
4	Reki		
5	Mashine ya mkono ya kusindika kahawa		
6	Baiskeli		
7	Redio		
8	Toroli		
9	Mkokoteni		
10	Mkokoteni wa kukokotwa na wanyama		
11	Pampu ya kunyunyizia dawa mashambani		
12	Ng'ombe		
13	Mbuzi		
14	Kondoo		
15	Nguruwe		
16	Kuku		
17	Bata		
28	Mali nyingine (Taja)		

75. Je, hii ni nyumba yako? 1= Ndiyo ( ) 2=Hapana ( )

76. Sakafu ya nyumba yako imejengwa kwa kutumi;

1=Udong ( ) 2 =Mbao ( ) 3=Malumalu ( ) 4=Sakafu ( )

77. Je, kuta za nyumba yako zimejengwa kwa kutumia nini?

1=Mawe, sakafu na matofali ya kuchoma( ) 2= Matofali yasiyochomwa( ) 3= Miti na tope( ) 4= Nyasi ( ) 5= Nyingi (Taja)

(Specify).....

78. Ni nishati gani unayotumia katika kupika chakula chako?

1= Umeme 2=Kuni 3=Mavi ya ng'ombe 4= Mafuta ya taa 5= Mafuta ya taa na mkaa ( ) 6= Nyinginc (Taja)

79. Katika asilimia, kila chanzo hapa chini huchangia kiasi gani katika pato la kaya?

Mauzo ya kahawa..... %

Mauzo ya mazao mengine..... .%

Biashara ndogo ndogo..... %

Vibarua..... %

Kuuza pombe.....%

Misaada.....%

Kodi za pango.... .....%

Mshahara wa baba.....%

Mshahra wa mama.....%

Mauzao toka mgahawani.....%

Mengine (Taja).....%

Total **100%**

80. Je, mapato yako yanatosheleza mahitaji ya kaya ya kila siku?

1= Ndiyo ( ) 2=Hapana( )

81. Je, unapata wapi fedha kwa ajili ya uzalishaji wa mazao ya kilimo?(Weka alama ya tiki katika jibu sahihi)

1= Akiba zangu ( ) 2= Mkopo ( ) 3= Kutoka katika mradi/wafadhiri ( )

4=Chanzo kingine (Taja).....

82. Unaweza kueleza nini juu ya upatikanaji wa chakula katika kaya yako?

1= Nzuri sana ( ) 2= Nzuri ( ) 3= Wastani ( ) 4= Mbaya ( )

5= Mbaya sana ( )

83. Kaya yako inapata milo mingapi kwa siku? .....

84. Je, kaya yako inakuwa na chakula cha kutosheleza kwa msimu mzima?

1= Ndiyo ( ) 2= Hapana ( )

86. Kama hapana, kitu gani kinakufanya usiweze kuwa na chakula cha kutosheleza kaya yako kwa msimu? (Weka alama katika jibu sahihi)

1= Rutuba duni ya udongo ( ) 2= Mafuriko ( ) 3= Tekinolojia duni katika uzalishaji wa mazao ya chakula ( ) 4= Upungufu wa nguvu kazi ( ) 5= Bei ndogo ya mazao ( ) 6= Soko baya ( ) 7= Ukame ( ) 8=Njaa za msimu( ) 9 = Machafuko ( ) 10= Wanyama waharibifu ( ) 11= Mmomonyoko wa udongo ( ) 12= Upungufu wa ardhi ya kufugia mifugo ( )

87. Wakati wa kipindi cha upungufu wa chakula katika kaya yako, ni njia gani kaya yako inatumia kupata chakula?

Method used	**Yes**	**No**
Kununua chakula kwa mkopo		
Kununua chakula		
Kupata chakula cha msaada		
Kuomba msaada wa chakula kutoka kwa marafiki		
Kuomba msaada wa chakula kutoka kwa ndugu wa karibu		
Kuomba msaada wa chakula kutoka kwa majirani		
Kuchuka malipo ya awali ya kahawa		
Kuazima fedha kutoka kwa marafiki		
Kuazima fedha kutoka kwa ndugu wa karibu		
Kuazima fedha kutoka kwa majirani		
Kubadilishana mifugo na chakula		
Kuwapeleka watoto kwa ndugu wenye chakulaKupata msaada wa chakula kutoka serikalini/mashirika yasiyo ya kiserikali		
Njia nyingine(Taja)		

Asante sana kwa ushirikiano wako

Appendix 3: Focused group discussion checklist

1. Introducing the purpose of the discussion
2. What can you say about land in connection to coffee production?
3. What is the status of coffee marketing?
4. Accessibility to agricultural inputs and credits
5. Coffee productivity
6. Comparison of coffee marketing between before and after coffee market liberalization
7. The status of extension services
8. Challenges in coffee husbandry
9. Food crop production
10. Use of income from coffee
11 Who is a well of coffee producer?
12. What is a quality good house?