POST PRIVATIZATION ASSESSMENT OF AGRO-INDUSTRIAL COMPANIES ON THE WELLBEING OF FARMERS: THE CASE OF TURIANI SUGARCANE OUT-GROWERS IN TANZANIA

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN MONITORING AND EVALUATION OF OPEN UNIVERSITY OF TANZANIA

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CERTIFICATION

The undersigned certifies that she has read and hereby recommends for acceptance by the Open University of Tanzania dissertation entitled: ***"Post Privatization Assessment of Agro-Industrial Companies on the Wellbeing of Farmers: A Case of Turiani Sugarcane Out-Growers in Tanzania"*** in partial fulfilment of the requirements for the degree of Master of Arts in Monitoring and Evaluation of the Open University of Tanzania.

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Date

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DECLARATION

I, **Nonge Ally Juma,** do hereby declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

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Signature

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Date

DEDICATION

To my mother Mwajuma Mohamed Kiure and my late father Juma Ally Nonge.

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ABSTRACT

Assessment of the impact of privatization of agro-industrial companies on the wellbeing of farmers has not been given much attention. Few studies have been conducted in this area which focuses on the impact of privatization on government, employees and consumers welfare. This study assesses the impact of privatization on the wellbeing of farmers to add value to existing knowledge. The overall study objective examined is to assess the impact of privatization of agro-industrial companies on the well-being of farmers. The researcher's understanding was guided by the theory of privatization, theory of change and theory of production. Data were collected through a cross sectional survey by using structured questionnaire complemented by field observations. A total of 70 sugarcane out growers in Turiani division (7 from 10 villages) namely Kidudwe, Lungo, Kunke, Lusanga, Dihongoya, Kizungu, Kwa Mtonga, Lukenge, Kanga and Dihinda) were randomly selected and interviewed. Checklists were used to gather information from out growers association. Descriptive statistics and regression analyses were used to analyze the data. The results of the regression analysis shows that age of respondent, the size of farm and gender of the respondent are all significantly affect wellbeing of sugarcane out growers. The study also revealed a directly and significant relationship between sugarcane production output with resources uses in out growers sugarcane production. The study concludes that privatization of agro-industry has resulted a number of productions and marketing challenges that hinder wellbeing of sugarcane out growers in the study area. Finally the study recommends a need to consider the welfare of all stakeholders in developing agriculture related policies, with the aim of meeting the welfare of all stakeholders along the entire supply chain.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AP	Average Product
BACAS	Bureau for Agricultural Consultancy and Advisory Services
BoT	Bank of Tanzania
DAHACO	Dar es Salaam Handling Company Limited
DFID	Department for International Development
ESRF	Economic and Social Research Foundation
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GM	Gross Margin
IMF	International Monetary Fund
IP	Impact Pathway
LFA	Logical Framework Approach
MCP	Millers Cum Planter
MFC	Marginal Factor Cost
MOA	Mtibwa Out growers Association
MoU	Memoranda of Understanding
MSE	Mtibwa Sugar Estate
MVP	Marginal Value Product
OUT	Open University of Tanzania
PSRC	Parastatal Sector Reform Commission
SAP	Structural Adjustment Programme
SBT	Sugar Board of Tanzania
SBW	Subjective Wellbeing

SLF	Sustainable Livelihoods Framework
SoE	State Owned Enterprise
SRI	Sugarcane Research Institute
TSPA	Tanzania Sugar Producers Association
TASGA	Tanzania Sugarcane Growers Association
ToC	Theory of Change
TPC	Tanganyika Planting Company
TR	Total Revenue
Tsh.	Tanzanian Shilling
TVC	Total Variable Cost
URT	United Republic of Tanzania
USD	United States Dollar

CHAPTER ONE

INTRODUCTION

1.1 Background

The success of Tanzania evolved from several social, political and economic statements that eventually produced the realities of the present time. In the past, Tanzania was commonly run along socialist ideology. During 1980's, the country was toiling the path of socialism and turned into capitalist economies, out of which privatization and its numerous stuff was evolved as a results of restructuring of national economic systems to meet the global challenges (Rabobank, 2013).

In the broad sense, privatization is roll-back of the state in the lives and activities of citizen and strengthening the role of markets while in a narrow sense, privatization is transfer of ownership from the public to the private sector, or transfer of control over assets or activities where ownership is retained, leaving management of assets and activity to private parties (Huton, R. 1998).

The main objective of the privatization is to eliminate inefficiency in public enterprises by turning them over to private enterprises and running them on pure business principles (World Bank, 2001). Evidence emerging subsequently shows that private firms outperform state owned enterprises in efficiency and profitability and that privatization leads mostly to improvements in operating and financial performance (Tvaronaviciene, M. & Kalasinskaite kr. 2005).

In Tanzania sugar industry is among privatized firms following liberalization policies. The Sugar Industry is a major contributor in the earnings of foreign exchange by

contributes about Tshs. 12.3 billion to government revenue; and contributes Tsh. 19.8 billion to sugarcane out growers; employs 14,000 people directly in the estates and account for 30,000 seasonable employees in the out-grower schemes and 81,360 people on secondary employment. Finally, through its various income activities the industry contributes to Poverty Reduction efforts in the country (Matango, 2006).

The tanzania sugar industry has been characterized by two production model, namely the estate and out-grower production model. The out-growers are organized under out-growers association which are registered under the "Societies Act, 2002" and the "Cooperatives Act, 2003" supply approximately 50 percent of cane crashed by the Mills in Kilombero, Mtibwa and Kagera (SBT, 2010).

To date all the four sugar industries in Tanzania mainland have been privatized as the means of removing the fiscal burden and performance inefficiencies. Despite the decision of the government to privatize her sugar industries in 1990's, still the performance of the sector is questionable as a problem of sugar deficiency in the country continues undiminished. The sugar deficiency in the country is associated with the inability of sugarcane farming industry to supply the required quantity of sugarcane. The situation causes low contribution of sugar industry's to country GDP and poor standard of living of sugarcane farmers (PPSRC, 2002).

Since the mid-1990s, many studies have estimated the impacts of privatization on economic growth, employment, poverty, income distribution, survival of local firms and to the welfare of customer. Nonetheless, the real impact of privatization on the welfare of farmers remains a much debated and controversial subject. This study

therefore intends to asses post-privatization effects of agro-industrial companies on the wellbeing of farming households by describing the socioeconomic status, efficiency in the resources uses and determine the profitability of farmer with a particular interest of sugarcane out-grower in Turiani Division.

1.2 Problem Statement and Justification

Agro-industry plays a fundamental role in overall economic development, alongside changes in rates of poverty linked to the scale and distribution of changes in incomes among those whose livelihood is linked to them (FAO, 1997). The transformation of agro-industrial companies from the public to the private owned enterprises (popular known as privatization) as pursued by the country in late nineties, has critical implications for the welfare of participants along the entire length of the supply chain in terms of economic, social, cultural and technological of which farmers are among them (Kikeri, S., Nellis, J. and Shirley, M. (1992)).

As far as sugar is concerned, in Tanzania there are two production models. These are estate and out grower scheme (Matango, 2006). Looking at out growers sugarcane production trends in Turiani as shown in appendix III, it has been fluctuating year after year with a general declining trend from 62.0.% of cane milled by the factory in the seasonal year 1998/99 which is the year of privatization of Mtibwa Sugar Company to 21.0% of cane milled in seasonal year 2015/16. Similarly, despite the increase in number of sugarcane out grower in the area, the number of active sugarcane out growers decrease progressive from 6,000 in privatization year to 500 in 2016 (Matango, 2006; NBS, 2016). All these have an implication on the wellbeing of sugarcane out growers in the area which give the need for this study.

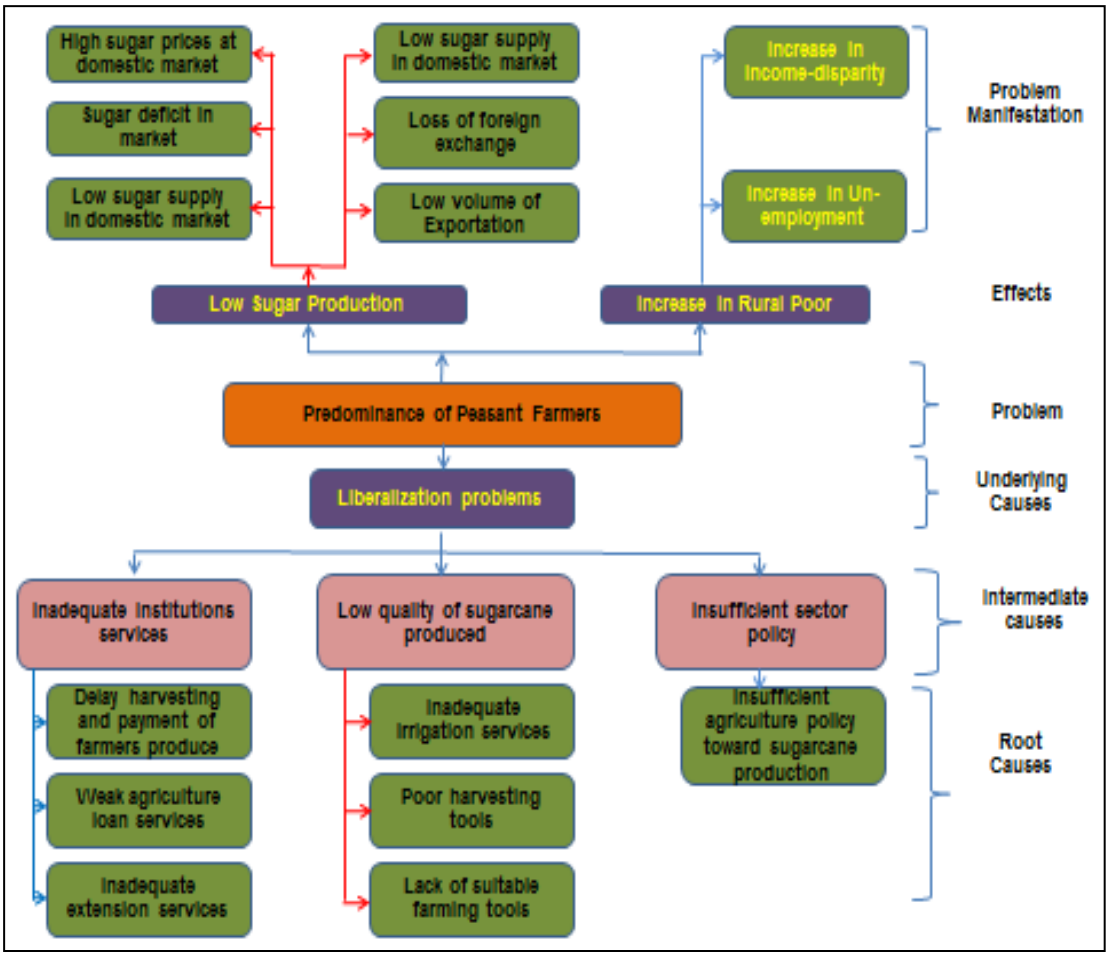

Figure 1.1: Problem Tree Analysis

1.3 Justification of the Study

In an effort to increase sugar supply in Tanzania, several strategies have been implemented by the government in order to strengthen the performance of sugarcane industry. These strategies vary from improve the performance sugar industries as well the improvement in sugarcane productivities in terms of agronomic practices and socio economic factors.

Several studies have been conducted to assess sugarcane production and marketing (agronomic practices and socio economic factors) in Tanzania. These include Chongela, J. (2008) who looks on economic analysis of out growers sugarcane

production scheme at Ruembe sugarcane basin; Regnard, I. (2006) who investigates the influence of Mtibwa Sugarcane out growers scheme on household poverty reduction; Msuya, E & Ashimogo, G. (2005) who assessed technical efficiency of sugarcane production in Turiani division in Mvomero district; Tarimo, J. and Takamura, Y. (1998) who assessed sugarcane production and marketing in Tanzania.

Despite these good work, limited research efforts have been directed towards investigating the efficient and effectiveness of the industry resulting from implementation of privatization policy. Specifically from farmers point of view as they are the main supplier of inputs in term of raw materials in which the factors behind are very likely to be the source of sugar inefficiency in the country. This leaves a knowledge gap including the question of, has privatization brought in economic development? Has the welfare of Tanzanians specifically farmers, been improved since the country embarked on privatization?

This study therefore designed to fill the policy gap by assess the post privatization effect of agro-industrial companies on the wellbeing to farmers in view of the fact that the returns accrued by the farmer will determine their wealth as well as resource use in sugarcane production and hence the increase in sugar supply. The indicators examined are sugarcane profitability, economic resources (including financial resources and physical resources uses) and human capital resources (including education and skills). The key rural livelihoods related research questions that will be investigated in this study are:

(i) Has privatization of agro industrial Companies affected sugarcane household's livelihood?

(ii) To what direction and extent has household resources use changed after privatization and how has these affected the farm output?

1.4 Scope and Limitations of the Study

1.4.1 Scope of the Study

The study took 1999 as the base year given that this is the time substantive privatization of Mtibwa Sugar Company had been accomplished after the publication of the PSRC Master Plan in 1993. The study is from 1999 to 2017, a period considered long enough for a policy change to have the impact. The scope of the study covers the sugar sectors of the Tanzania economy to demonstrate how the privatization on this sector bore different results to the economic well-being of the farming communities. The aggregate production of the sugarcane during the period will be analyzed and their growth pattern assessed.

1.4.2 Limitations of the Study

(i) The issue of farmers' well-being is a national panacea. But the area of this study is restricted with the sugarcane farmers in Turiani division only.

(ii) The period from 1999-2017 with 1999 as a base year is considered for study.

1.5 Significance of the Study

Since privatization started in the late 90s no major known assessment of its effect to the farmer's well-being has been done. The only widely known study undertaken in the country was the privatization impact assessment for infrastructure sector conducted by the government in 2005. Together with this are a number of studies assessing the impact of privatization to firms, employees and government welfare.

In any case, these cannot be used to justify the overall impact of privatization in the country as it covers mostly, the narrow definition of the privatization. Hence there is a need to have independent evaluation of the policy with the aim of extending the assessment to the effect of privatization to farmers in an effort to cover the wide definition of privatization.

The study contributes to the existing literature by providing empirical evidence on how implementation of privatization policy in Tanzania bore different result to farming households specifically sugarcane out growers. Furthermore, this study will developed a base for a more detailed overall effect on privatization in Tanzania, not only on the farmers' well-being but also on the overall economic development of the country with its timing assists the policy makers as the country embarks on the industrialization slogan popular known as "TANZANIA YA VIWANDA INAWEZEKANA" as implemented by the Tanzania fifth government.

Therefore, this study is significant since after understanding the effect of privatization of the agro-industrial companies on the well-being to farmers we could shed important insights on the transition process, and such information could assist policymakers to identify the optimal policies to continue further economic growth in the country in an effort to met the government desire of putting the country to middle income country in 2025.

1.6 Research Objectives

1.6.1 General Objective

The general objective of this study is to assess the post privatization effect of agro-industry on the well-being of farmers. The specific objectives of the study are:

1.6.2 Specific Objectives

(i) To determine the influence of social economic factors on farmers wellbeing under privatization era.

(ii) To examine out grower's post privatization resource use efficiency in sugarcane production,

(iii) To determine constrains and challenges being faced by farmers under privatization era of Mtibwa Sugar Estates.

1.7 Hypotheses

This study is guided by the following hypotheses:

(i) There is no influence of socioeconomic factors on farmer's wellbeing under privatization of Mtibwa Sugar Company.

(ii) There is no inefficient in use of resources by sugarcane out growers under privatization era.

(iii) There are positive and negative consequences of privatization; however the latter exceed the positive in case of sugarcane out grower in Mtibwa area.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

A review of the literature relating to privatization of agro-industry and its implication on the wellbeing of farmers is presented in this chapter to establish the areas of departure from the earlier studies, which this study can fill.

2.2 Definitions and Conceptualization of Concepts

2.2.1 Privatization Meaning

The word 'privatization' has attained global popularity in 1980s when the conservative British Prime Minister Margaret Thatcher started her country down the path of reduced government involvement in goods and service provision. The term was originally coined in 1969 by Peter R. Drucker in his book The Age of Discontinuity as cited by Yergin, (1998) where he said, "… government should spend more time governing and less time providing services to the public. It should either purchase services from the private sector, or simply stop producing." Since then "privatization" has become a commonly used phrase throughout the world (Megginson, W. & Netter, J. 2001). Several authors have attempted to define it; according to Gabel (1987) the term privatization has two meanings.

The first is a financial transaction, which is the sale of a publicly owned asset to the private sector. The second is the transfer of the authority to make resource allocation and decisions from the government to the market place. More general, privatization is any transfer of ownership or control from public to private sector. A more exacting

definition would require that the transfer be enough to give the private operators or owner's substantive independent power (Megginson, W. & Netter, J. 2001).

2.2.2 Sugarcane Out-growers

Out growers is a diverse group of cane growers with area sizes ranging from less than one hectare to over 100 hectares (BACAS, 2004). It is a system that intends to enable ordinary peasants to join the production of cash crops (United States Department of Agriculture, (2004). The out-growers schemes are usually formed with special agreement between the company and farmers. For the case of sugarcane out-growers in Tanzania, they grow cane within the supply area for delivery to the mills and are registered with the mills and with the Sugar Board for the delivery of cane to the Mills (SBT, 2006).

2.2.4 Agro-industry Definition

Agro-industry can be defined as post-harvest activities involved in the transformation, preservation and preparation of agricultural production for intermediary or final consumption, typically increases in importance with regard to agriculture and occupy a dominant position in manufacturing as developing countries step up their growth. Agro-industry plays a fundamental role in the creation of income, employment opportunities and final act as the value added to agriculture products (FAO, 2009).

2.2.5 Farmer's Well-being

There are a couple of definitions of well-being. According to (Gough, & McGregor, J. (2007)), wellbeing is multi-aspect notion, and it is described only with the help of the combination of four concepts including: (a) a human has wellbeing if they exist in

accord with their nature and their essence; (b) a human has wellbeing if they understand (are conscious of) what are good things of life for them and have an opportunity and intention to achieve these good things; (c) a human has wellbeing if they have an opportunity to realize their potential as human beings; (d) a human has wellbeing if the society constituting the grounds of the state creates conditions and provides opportunities for them to exist in accord with their nature, realize their potential as human beings, and achieve the good things of life that human strives to achieve.

In some of the study, well-being and welfare have been used interchangeably and synonymously. Gonyou, (1993) distinguishes between an animal's well-being and welfare such that, well-being is all that the animal experiences from moment to moment while welfare is all that the animal experiences during a longer period. The latter concept relates to past, present and future states. Using this distinction, welfare becomes the sum or integration of past, present and a future state of well-being thus any factor which affects an animal's well-being also affects its welfare.

Wellbeing can be objective or subjective. The objective aspect of wellbeing is characterized by the third and fourth concepts and may be described with terms defining material wellbeing and the quality of life: these terms are formed and influenced by such factors as the level and stability of income, the conditions of residence, the opportunity of having education, the quality of the social and natural environment, safety and security, and the opportunity to realize social and civil rights and needs. Subjective wellbeing is characterized by the first and second concepts and may be conceptualized only as an internal subjective experience of each particular

individual. (Stiglitz, J. and Sen, A. (2009)). Understanding the category of wellbeing allows the formation of approaches to its specification, measurement, and evaluation Erikson, (1993).

2.2.6 Wellbeing Determination

According to McGregor (2007) there are three main dimensions (3D's) of wellbeing. These include what people have (objective), what people can do (relational) and what people feel about what they have and can do (subjective). Objective and relational wellbeing which forms core wellbeing captures household income and others like knowledge, life expectancy, assets and food security. Subjective wellbeing as an end in life which evaluates people's satiation with their life situations, is emerging as a complement to the more traditional and material ways of measuring poverty and deprivation. It stands at the heart of the argument for a more human-centered approach to development and helps us to rethink indicators and policies for pro-poor policy (Diener et al., 1999). Several factors can be used to determine the wellbeing of people in a particular population. These include; income/wealth factors, demographic factors, belief system factors, and personal/genetic factors.

2.2.6.1 Income/wealth Factors

Wellbeing is positively related to income or wealth. Thus richer individuals or nations usually record higher levels of wellbeing relative to poor people or nations. Diener et al. (1999) report that the substitution effects of income with basic needs like food, shelter, clean water and health is the reason why it relates positively with wellbeing. Further, the perception of one's incomes being enough among his peers also determines wellbeing (Ferrier-i-Carbonell, 2005). Evidence from Easterlin (1995)

supported by Clark and Oswald (1994) relates that wellbeing varies directly with individuals' income and inversely with the income of others. McBride (2001) and Argyle (2001) both found a negative co-efficient between wellbeing and the income of others (reference group).

2.2.6.2 Demographic Factors

Demographic characteristics like education, gender, age, whether the individual works or not and number of children also influences wellbeing. On age, Veenhoven (2006) relays that age has a concave relationship with subjective wellbeing. People then are happier in their early life's (twenties) and latter life's (after fifty years) and less happy in the mid years when they are involved in work.

On the other hand, Diener et al., (1993) found that education had a marginal but significant effect on wellbeing with the effect being more pronounced in Low Income Countries. Though some studies on subjective wellbeing concur that women are relatively happier than men, empirical findings suggest no significant effect of gender on subjective wellbeing.

2.2.6.3 Belief System Factors

Religion according to Pollner (1989) and Ellison (1991) correlates positively with well-being. Studies have found religiosity to be high among lower income groups relative to higher income groups. The paradox however is that lower income from literature presumably correlates negatively with happiness. The rationalization here is that religion gives psychological and social meaning to life, especially to people who have lost all forms of social support (Inglehart, 1999).

2.2.6.4 Personality and Genetic Factors

Studies have found out that highly motivated people, socializers and people who have the tendency of smiling often are more inclined to be happy with their life as a whole. There is strong evidence regarding genetic influences on life satisfaction. Research findings using monozygotic twins in America found similar levels of subjective wellbeing in twins even when they are raised apart. Based on these findings, Lykken and Tellegen (1996) assert that 80% of long term subjective wellbeing is heritable, implying that subjective wellbeing seldom change with time or circumstance. However, evidence from countries in the former Soviet Union, Belgium and Italy were subjective levels that have risen and fallen over the years, suggesting strongly that there is more to subjective wellbeing than the genetic make-up of the individual (Inglehart, 1999).

2.2.6.5 Other Determinants of Subjective Wellbeing

Wellbeing (SWB) is supported by several other theories. Dolan et al., (2011) in his theory of top down and bottom up approach, suggested that subjective wellbeing is influenced by macro social factors like wealth, freedom, social participation, education and equality. Keyes (2002) in a continuum theory argues that the most satisfied individuals are those with complete or sound mental state of health.

Furthermore, Durayappah (2010) propounds that subjective wellbeing is influenced by the 3P's theory being: individuals' past experience with life, their present life situation and the prospects they have about the future. Similar, Veenhoven (1999) found that job satisfaction is positively influenced satisfaction with life. According to Veenhoven (2006), intrinsic motivation, person-fit organizations and social benefits are important

precursors to life satisfaction, while job complexity, compulsory extra hours and work home conflict negatively influenced happiness with life as a whole.

In an effort of measuring the wellbeing of an individual, Stiglitz, J. and Sen, A. (2009) conclude that objective wellbeing can be measured and evaluated by measuring their corresponding values meanwhile; subjective wellbeing can be measured by the level of life experiences of particular person. This study adopt the Stiglitz, J. and Sen, A. (2009) objective wellbeing measurement aspect thus farmers well-being is taken to be associated with farmers income derived from sugarcane production, out growers level of sugarcane production, number of active sugarcane out growers, level of out growers sugarcane sucrose and incidence of unemployment in the study area as all have an effect on the fulfillment of individual needs of the out growers.

2.3 Theoretical Literature Review

The earliest and powerful theoretical basis guiding privatization of public enterprises could be traced back to a famous work 'wealth of nations' by Adam Smith (1937). He wrote that managers of other people's business could not well be expected to strive to maximize profits with the same anxious caution with which partners in a private firm frequently strive to do. This is because without ownership stake, an employee manager is not entitled to most of the profits generated through efficiency. Therefore negligence and profusion is most likely to prevail in the management of the affairs of other people's property. This puts general views that the theoretical framework behind the idea of privatization is largely depending on understanding the concept of property rights. In order to develop an expanded theoretical review of privatization, a multi discipline organization theories namely property theory, systems theory, contingency

theory, real options theory, institutional theory, agency theory, resource based views, transaction cost economics and the Theory of Change (ToC) has to be taken into consideration Graeme, H. (2000). In this study, in an effort of assessing the basic concept of the study, namely privatization of agro-industry and farmer's well-being, privatization theory and the theory of change will be used. In addition the two concepts are linked by the theory of production with its criterion for efficiency on resource allocation will be used in an effort of measuring the efficiency in sugarcane production. From the efficiency in sugarcane production the achievement of privatization objective, which is increase in efficiency in the production system will be used as a ground of judging the wellbeing of farmers.

2.3.2 Theory of Production and the Criteria for Efficiency Resource Allocation

The theory of production in economics consists of an analysis of how entrepreneurs, under a given 'state of art' or technology, combine various inputs to produce a stipulated output in an efficient manner (Baumol, 1977). Decision-makers are presumed to be concerned with the maximization of some measure of achievement such as profit or efficiency. The analysis of efficiency in general, focuses on the possibility of producing a certain level of output at lowest cost or of producing the optimal level of output from given resources. Thus efficiency measurements that show the scope for improved performance may be useful in the formulation and analysis of agricultural policy (Russell and Young, 1983).

The core of production theory relevant to efficient resource allocation is based on the concept of production function and the law of diminishing returns. A production function in general is an expression of the relationship between the physical inputs

and output. On the other hand the law of diminishing marginal returns is actually an empirical assertion of reality and it states that as the amount of the variable input increased, with other input held constant, a point is reached beyond which the marginal product declines. This law is valid under the following condition s (i) the state of the technology is given, (ii) there exist other productive services whose quantities can be held constant.

A production function of the classical type includes ranges of increasing, decreasing and negative marginal returns. In term of the total product curve these ranges help to define the three stages of production, illustrated in the following diagram.

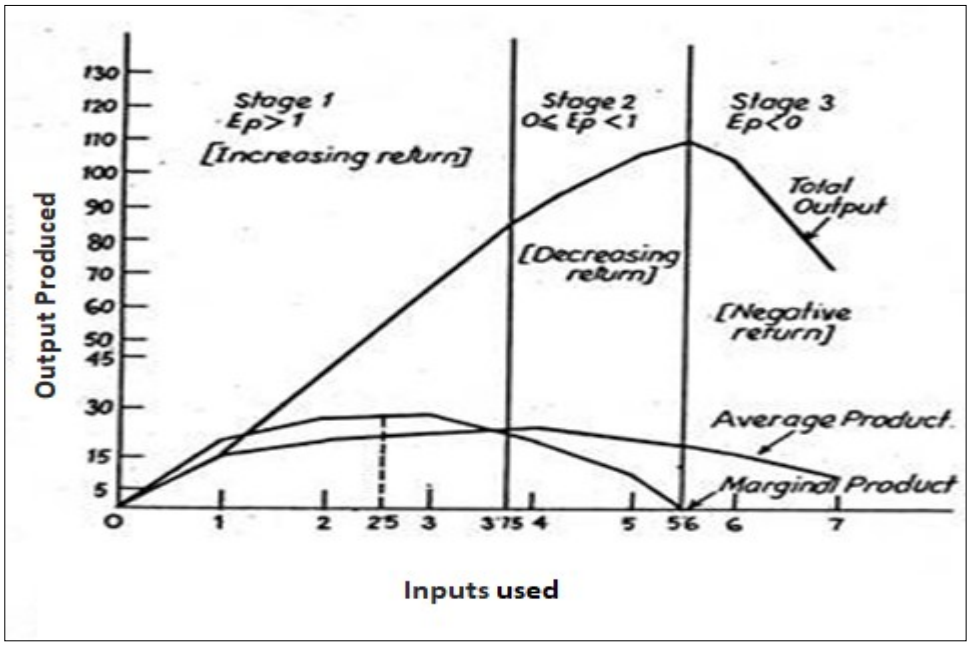

Figure 2.1: Stages of the Production and Rational Resource Uses

Sources: Bravo, et al (1994)

According to Bravo, et al., (1994), any level of resource utilization in stage I of production is clearly uneconomic since increasing average returns to the variable input

are associated with underutilized fixed inputs. A rational producer would never operate in this region since application of the additional variable inputs could always bring about higher average productivity and thus the fixed inputs are present in too large proportion relative to the variable input. However in the extreme short run, it may be necessary for the producer to operate in stage I if there is no possibility of applying more variable input or allowing some of the fixed inputs to remain idle. It must be remembered that as the length of run under consideration increases, more and more of the fixed factors become variable until in the extreme long run all factors can be said to be variable.

Stage III covers the other area of irrational production. Here, the marginal product of the variable input is negative implying a declining total product. In stage III the resources input is combined with fixed inputs in uneconomically large proportions and the variable input is used beyond the point of zero marginal products. Under these circumstances, withdrawal of some of the variable inputs will always lead to an increase in total output. It is theoretically possible for farmers to operate in such regions due to lack of information and resource adjustment problems. Nonetheless, instance of it happening are likely to be isolated and rare.

Thus under conditions of rational decision making stages I and III are eliminated from a production process. Production must occur in stage II between the extensive and intensive productivity margins of the variable input. In other words, production must take place within the range of the variable input application, which runs from maximum Average Product (AP) to zero Marginal Products (MP). Therefore for the

profit maximization firm, the level at which the variable input is applied to the fixed factors can never fall outside this stage.

The elasticity of production is the degree of responsiveness of the output to a unit change in input used. From regression equation, the coefficients of the independent variable (a_{ith}) of the Cobb Douglas function are the elasticities of production with respect to particular variable. The value of the elasticities indicate whether each additional input used results in constant (Ep=1), increasing (Ep>1) or decreasing (Ep<1) productivity. The sum of the individual elasticities in a particular production function, gave the rate of return (r) which implies the stage of production for a particular enterprise (that is whether stage 1, 2 or 3) (Olukosi and Ogungbile1989)

2.3.1 Theory of Privatization

Privatization is a mult-organizational theory, namely, systems theory, contingency theory, real options theory, institutional theory, agency theory, resource based views, and transaction cost economics. The common to these theories is the involvement of objective of improves efficiency in production system (Poole, R. 1996). Despite of these facts, theoretical framework behind the idea of privatization is largely depending on understanding the concept of property rights theory. The theory rest on the idea that in order to develop an expanded, specialized market system, a society must have an efficient way of dealing with numerous transactions which rely heavily on formal and well-defined property rights (Mankiw, N. (2001).

This argument is further evidenced in De Soto (1996) who states that, “To be exchanged in expanded markets, property rights must be ‘formalized’, in other words,

embodied in universally obtainable, standardized instruments of exchange that are registered in a central system governed by legal rules". An important implication of well-defined property rights is that it creates strong individual incentives, which according to Easterly, W. (2001), is a significant factor in the quest for long term growth.

Literature shows that there are the pros and cons of privatization. Proponents of privatization believe that, the private sector responds to incentives in the market, while the public sector often has non-economic goals. In other words, the public sector is not highly motivated to maximize production and allocate resources effectively, causing the government to run high-cost, hence low-income enterprises Easterly, W. (2001). According to the Coase Theorem, individual parties will directly or indirectly take part in a cost-benefit analysis, which will eventually result in the most efficient solution. From the privatization perspective, the Coase Theorem implies that by shifting the assets from the state to the private investors, the market will become more effective in dealing with numerous externalities. Medema, G. (1999).

Bach, (2000) affirm such a belief by arguing that public enterprises are inefficient because they are operated to pursue certain objectives (e.g. excess employment), to satisfy the political aspects. After privatization, the cost for politicians to intervene in the firm in order to promote their personal goals becomes prohibitively, because privatization drives a wedge between the manager and the politician.

Similar argument is further recommended by Bennett, J (2004) who advocates that governments run business poorly for reasons of lack of performance, corruption,

political influence, mismatch between the role of the government and business interest. The basic argument given by them is that governments have few incentives to ensure that the enterprises they own are well run while private owners do have such an incentive.

Despite the above advantages, privatization has a number of critics. Among the opponents of privatization includes Kodras (1997) who challenges the claims concerning the alleged lack of incentive, saying that governments have to ensure that the enterprises they own are well run, as they must answer to the people. He argues that a government, which runs nationalized enterprises poorly, will lose public support and votes, while a government, which runs those enterprises well, will gain public support and votes. Thus, democratic governments do have an incentive to maximize efficiency in nationalized companies, due to the pressure of future elections.

This argument is further evidenced in Starr (1987) who notes that profits from successful private enterprises tend to end up in private pockets rather than being made available for the common good. In his views, Starr believe that, if a government-owned company is privatized, its new owner(s) could stop providing this service to those who are too poor to pay, or to regions where this service is unprofitable.

2.3.2 Theory of Change

The idea of the Theory of Change (TOC) approach seems to have first emerged in the United States in the 1990s, in the context of improving evaluation theory and practice in the field of community initiatives. In the development field, it also grew out of the tradition of logic planning models such as the logical Framework Approach (LFA)

developed from the 1970s onwards. Despite the fact that LFA has been a basis of project planning for several decades, some questions have been raised as to its overall suitability as an approach for ensuring the use of research results and their translation into outcomes (Crawford, A. (1999). Perhaps its major failings are that LFA does not pay enough attention to involving key stakeholders and their networks to achieve impact, providing managers with information to learn and report to funding agencies, and establishing a research framework to examine the change processes that projects seek to initiate. Theory of change approaches can help to address these drawbacks of LFA, because of their explicit focus on all the key participants in the process (Douthwaite, B. (2007)).

Every programme is associated with beliefs, assumptions and hypotheses about how change happens about the way humans work, organizations, political systems or ecosystems. Theory of change is about articulating these many underlying assumptions in a cause-effect relation between their actions and the intended changes (Isabel, V. 2012). A theory of change adds to an Impact Pathway (IP) by describing the causal assumptions behind the links in the pathways and what has to happen for the causal linkages to be realized (Blamey, A. and Mackenzie, M. 2007). According to Douthwaite, B. (2007) the theory of change consists the following generic components; activities, outputs, capacity changes, behavioral changes, direct benefits and well-being change, along with the associated causal link assumptions can be, and should be, identified and analyzed.

The theory identifies a chain of outcomes and a possibly wide range of causal link assumptions that need to occur if the direct benefits and well-being changes are to be

realized. The sequence of boxes in the figure is the associated IP of the results chain. The causal link assumptions shown in the dotted boxes identify what events and conditions have to occur for each link in the causal pathway to work as expected and what is necessary for the link to work. These assumptions are events and conditions that need to occur for the intervention to be successful thus regarded as the support factors (Cartwright and Hardie, 2012).

Figure 2.2 illustrates a basic generic ToC that has proven useful in a number of ways. The support factors plus the intervention activities are the intervention causal package represented by the ToC, which is expected to be sufficient to contribute to the results expected. That is, if the activities and the assumptions (support factors) occur, then the expected contribution will follow. External influences are events and conditions unrelated to the intervention and its causal package that could also contribute to the realization of the intended results. These could include another intervention with similar aims and/or general economic or social trends (Mayne, J. 2012b).

This theory is useful to this study as it takes the full range of consideration of the intended impact pathway from the privatization of agro-industrial Company to the well-being of farming households. By taking the consideration of the aim of privatization of agro-industrial Company to be the improvement of farmer's well-being and apply this to the proposed theory of change above, the outputs will be innovative technology and increase sugarcane production. The reach group should be the farming household decision-makers on sugarcane production issues. Behavioral changes would be the changes in production practices that occur as a result of the improved knowledge from innovative technology. Direct benefits would be increase

in income of sugarcane farmers and eventually change in farmer's well-being. Therefore in this study the theory of change is not only used to provide a single set of objectives and indicators against which an assessment is developed and rolled-out, but also it establishes an initial understanding against which questions, hypotheses and evidence can be tested.

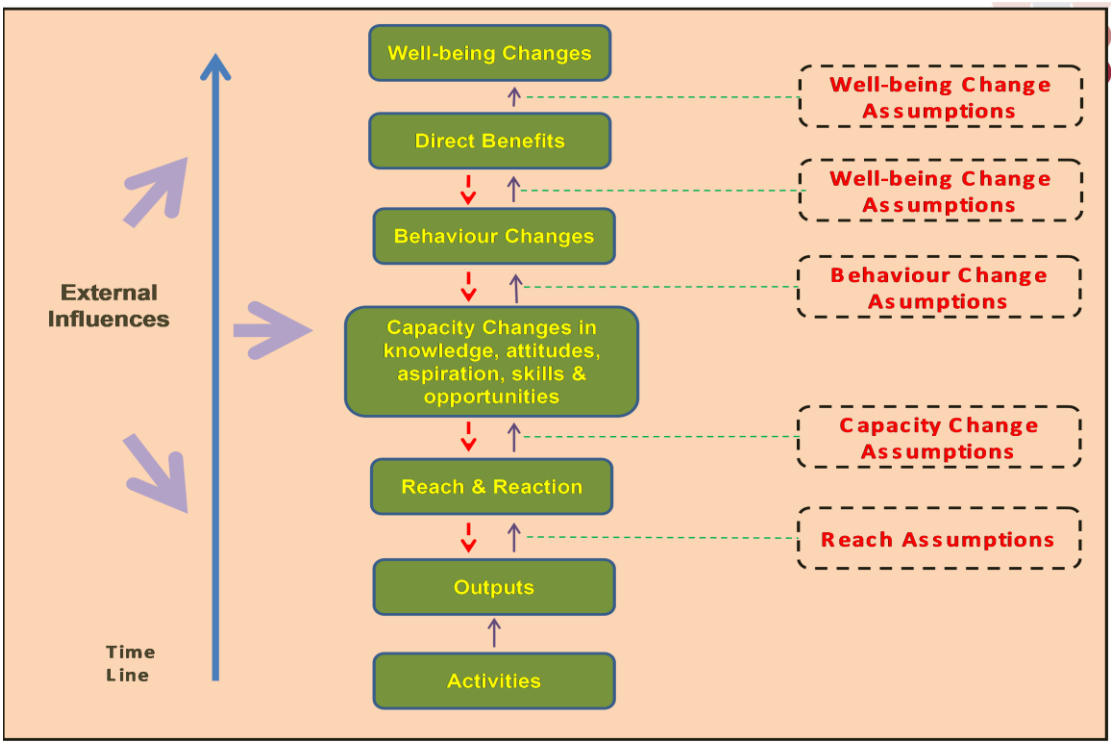

Figure 2.2: A Basic Generic Theory of Change
Source: Adapted from Mayne, J. 2012b

2.4 Empirical Literature Review

2.4.1 Agriculture and Rural Livelihoods

According to Soini, (2006) the livelihood comprise resource assets including capital, human, natural, social, physical and financial capital and access to use them that enable strategies to be employed in order to survive and attain desirable livelihoods outcomes such as income, food security, wellbeing and sustainable of natural resources. In Tanzania agriculture sector accounted for more than 50 per cent of GDP

and 75 per cent of export earnings; the sector remains important as some 80 per cent of Tanzanians depend on agriculture for their livelihood and 95 percent of their food (ESRF, 2005). Under this situation, the great number of rural population lost employment when there is the decline in agriculture. Decline in agriculture has led to effect on rural employment, which supports people livelihoods.

OXFAM (2000) pointed out that, Coffee crisis result in the reduction in school environment among the coffee farmer community. Thus, the decline of coffee production has increased problems on buying food, School fees, hence declining educational attainment in rural areas, health care and other expenses in Kilimanjaro. Similar evidence was also provided by Macauley, H. (2001) who stated that direct translation of underdevelopment of agriculture is the core of the long standing disappointing for African economies with its negative implication for people's livelihoods.

2.4.2 Contribution of Agro-Industry to Farmers Wellbeing

The agro-industrial sector is defined as the subset of the manufacturing sector that processes raw materials and intermediate products derived from agriculture, fisheries and forestry. The sector is taken to include manufacturers of food, beverages and tobacco, textiles and clothing, wood products and furniture, paper, paper products and printing, and rubber and rubber products, as in FAO, (1997). The sector accelerate economic development while improving income distribution by helping maintain a smooth flow of resources between the traditional sectors (primarily consisting of small-scale farms), and the secondary sectors (primarily composed of industries and manufactures (Holt, T. and Pryor, S. 1999).

Directly, agro-industry provides employment to people who are working in firms that process agricultural products and in servicing processing machines (Nambbodii, N. and Vasant, P. (2003), URT, 2008). On the other hand, the sub sector generates backward employment linkages by creating markets for raw materials produced by rural household while at the same times it provides forward employment linkages to people who are engaged in supplying processed products to the market (Khosla, R. and Sharma, M. 2012). Apart from employment generation the sub-sector also reduce post-harvest losses. The shelf-life of processed products is higher thus facilitates storage and transportation, therefore making agriculture more profitable both at the processing and marketing levels (Lazaro et al., URT, 2008).

From above it can be concluded that, agro-industrial enterprises play a key role in the evolution of higher-value markets for agriculture produce, which serves to stimulate demand for the products of primary producers. Thus it provide a reliable and stable outlet for farm products by providing reliable and better markets which favors farmers in provision of reliable market for their produce.

2.4.3 Overview of Tanzania Sugar Industry

Worldwide more than 100 countries in the world produce sugar derived from sugar cane and sugar beet. Over 79% of world sugar is produced from sugar cane, and the balance comes from sugar beet which is grown mainly in the temperate zones of the northern hemisphere. The biggest world exporters of sugar in values for 2004-2013 periods are Brazil (23.1%), France (7.0%), Thailand (5.8%) and German (5.2%). Recent, we have numerous products and by products derived from sugarcane such as sugar crystals; sugar syrup, molasses, bagasse and filter scum (Otieno, 2003). Africa's

share of global sugar production is around 5% with a similar figure for global exports but a higher one for imports, in consequence the continent is a net importer (Elobeid and Beghin, 2006).

In Tanzania, the history of Sugar Industry started in early 1924 when Tanganyika Planting Company (TPC) factory started, followed by two other sugar factories situated in Kilombero and Mtibwa in 1961 and 1962. Since then, sugar production has increased from the initial 2,000 tons in 1963 to 294,214 in 2013/14 (BOT, 2016). The out grower schemes started at Kilombero and Mtibwa after the first two years of sugar production. There was an obvious need to get supplementary sugarcane to fill the empty production capacities in the mills.

Currently the Industry is led by the Sugar Board of Tanzania (SBT) established by Sugar Industry Act, 2001. The Board is under the Ministry of Agriculture. Its roles and functions range from being a government regulatory agency for facilitation of harmony and growth in the industry through regulations, promotion, importations of sugar, seed varieties, development and funding research activities related to the industry (SBT, 2010). The principal stakeholders include the Government, Sugar Producers under the Tanzania Sugar Producers Association (TSPA). Again its members at the moment include Millers Cum Planter (MCP). In total about 14,000 Sugar Cane Out growers are found in the country who organized under 4 out grower Associations. These Associations formed an apex called, Tanzania Sugarcane Growers Association (TASGA). Both TASGA and TSPA are recognized by the Sugar Industry Act, 2001. Farmers and millers are represented through these two

Associations. The peripheral stakeholders, but important for the industry, include distributors, exporters, importers and consumers (Matango, R. 2006).

The Sugar Industry is a major contributor in the earnings of foreign exchange which contribute about US$ 28 million per annum; contributes about Tshs. 12.3 billion to government revenue; Tsh. 19.8 billion to sugarcane out growers; employs 14,000 people directly in the estates and account for 30,000 seasonable employees in the out grower schemes and 81,360 people on secondary employment. The industry also provides social amenities such as schools, hospitals, water supply, townships, roads and recreation centers. Finally, through its various income activities the industry contributes to Poverty Reduction efforts in the country (SAGCOT, 2012).

2.4.4 Overview of Mtibwa Out Growers Scheme

Mtibwa sugarcane out grower's scheme is one of the 3 fairly well-developed schemes in Tanzania since early 1960s. Two other schemes are at Kilombero where two sugar producing mills run under one management (KI and K2) factories currently under a multinational company called Illovo, based in South Africa and Kagera Sugar Company on the Western side of Lake Victoria in case of Tanzania Mainland.

The formation of the out growers associations in the out grower schemes started in the early 1990s when the parastatal sugar companies were about to be privatized. Mtibwa Out growers Association (MOA) was founded in 1996 with 25 founder members. Registered under Societies Ordinance; Registration number SO 8829 of 24th July 1996 (SRI, 2006).

2.4.5 Privatization in Tanzania

Tanzania like many African countries experiences the similar pattern in implementation of privatization policy. Statistics show that the country before privatization had over 400 state operated enterprises of which 339 were commercial and 56 non-commercials. Following privatization policy, a total of 266 state owned enterprises had been privatized (Kigoda, A. 2003). Out of these, 138 enterprises are now owned 100% by Tanzanians; 20 are owned by foreign investors by 100% and the remaining 123 are owned in form of joint ventures between foreign investors, the Government and Tanzanian investors (PSRC, 2004).

Privatization in Tanzania was started by the establishment of Presidential Parastatal Sector Reform Commission (PSRC). Before the enterprises being privatized, assets and liabilities had to be assessed. In addition PSRC had to establish guidelines as to which enterprises were strategic in nature and, therefore, should be preserved and which were commercially viable and selected for sale, which should be restructured and allowed to operate at least in the short run, and which were hopelessly indebted and/or inefficient and should be terminated.

Once these decisions were made the ones selected for sale had to advertised, discussions undertaken with potential buyers, and Memoranda of Understanding (MOUs) drawn up and signed by the successful bidders. A year or longer often ensues after the MOU is signed as the terms have to be approved by persons in the parent Ministry and then by the Cabinet. The involvement of the cabinet is an indicative of the fact that the PSRC is not a one-stop center but rather a coordinating body for privatization of SOEs. The full privatization/Public Private Partnership process were

involves the Carrying out of financial, commercial, technical and organizational appraisals (Temu, *et al.* 1999).

2.4.6 Tanzania Legal and Administrative Framework for Privatization

As part of the reforms, the Parastatal sector reform policy was first pronounced as a national policy by the Government in January 1992. In the same year the government launched The Presidential Parastatal Sector Reform Commission (PSRC) to co-ordinate the implementation of the government's economic reform efforts in the form of privatization. Its fundamental objective was to give a sharper focus to the government's role of maintenance of law and order and provision of economic and social infrastructure, ensuring a level playing field for efficient economic competition and balancing of economic and social activities (PSRC, 2002).

In the early 1992, SOEs activities in Tanzania were governed by two pieces of legislation, namely the Companies Ordinance of 1932 (Cap 212 of the laws of Tanganyika) and the Public Corporation Act of 1969 as modified by the Parastatal Organizations (Modification of Management Provisions) Act 1976 following the policy changes of the 1980s the SOEs legal and institutional framework had undergone considerable review. In April 1992, the Public Corporations Act of 1969 was repealed and replaced by the new Public Corporations Act 1992 to legalize private participation in the ownership of parastatals. In November 1993, the new Public Corporations Act was amended extensively to define the institutional framework and procedures for divestiture. The restructuring process is coordinated by PSRC, which also acts as the representative of the Ministry of Planning and Privatization, which is on the whole in charge of privatization in the country. The

PSRC's role included pre- qualification of bidders, evaluation of bid proposals, and negotiation with the winning bidder. The final decision regarding the privatization of the identified companies is made by the Cabinet of ministers under the chairmanship of the President (PSRC, 2002).

2.4.7 Forms of Privatization

Privatization can take many different forms, all of which entail some form of private sector participation in product or service delivery; principally there are three broad strategies for privatizing some or all aspects of the public sector production and delivery of goods and services. These are: (i) Direct sale of assets; (ii) Contracting and leasing; and (iii) Voucher system. The choice among these methods depends upon the particular need and conditions of the country in question.

2.4.7.1 Direct Sale of Assets

This strategy calls for the sale of all or part of the public enterprise to private Investors. The sale of the asset can be carried out through a public stock offering. If this strategy is successful, there will be a short term immediate benefit to the government in the form of increased revenues which it can use to finance expenditures, repay loans, or defer tax increases. The long-term benefits stem from reduced burden of government, the termination of subsidies and the efficient provision of goods or services by the private sector. If complete sell offs are not possible, the government could also look at partial sales to private investors with the sale of at least 51% of the shares or it can sell the assets on a piecemeal basis. Another alternative would be to sell the enterprise to the current employees or management (Debebe, F. 1993).

2.4.7.2 Contracting and Leasing

Contracting is a less visible form of privatization than asset sale. In contracting, the government uses private firms for the provision of goods and services. The private contractors will deliver goods and services to the government or to the public according to the terms and conditions specified in the contract. Contracts are usually awarded on the basis of competitive tendering. Private firms compete against one another to win the right to provide services offered by government. If the low cost providers win the bid, as should be the case, contracting will result in cost saving to the government (Debebe, F. 1993).

2.4.7.3 Voucher Systems

Voucher Systems are mechanisms designed to increase the purchasing power of selected group of consumers. Under this scheme, the government distributes vouchers to eligible consumers so that they can purchase goods and services from private suppliers. For example, housing vouchers enable low income families to find better housing in the rental market. Another area where vouchers are being promoted as viable way of privatizing is in education. However, in both of the above cases, the vouchers do not have monetary value and are not tradable between individuals.

In the context of privatization, the government distributes vouchers to the entire population or to a community on an equal basis to be used solely for the purchase of shares in a particular enterprise. The scheme envisages achieving a complete privatization within a relatively short period of time and avoids the difficult, costly and time consuming process that is associated with public offerings. The vouchers

could either have monetary value or be tradable or they could be used only to bid for shares in a particular state enterprise (Debebe, F. 1993).

2.4.8 Impact of Privatization

There is a mixed impact of the privatization in terms of both positive and negative effects. While some study proves on the positive results toward achieving privatization goal other study show the negative achievement toward the intended goal. In an effort to examine the impact of privatization and competition in the telecommunications sector around the world Li, W. and Colin Xu. (2000) used a comprehensive country-level panel data set covering the period from 1990 to 2001.

The study found out that, privatization which gave private owners control rights contributed substantially to improving the allocation of labor and capital, expanding service output and network penetration and improving labor and total factor productivities. The increase in competitive pressure has contributed substantially to growth in the sector by raising both factor inputs and total factor productivity. Similar evidence was also obtained in Wallsten, S. (2001b) who advocate that competition is significantly associated with increases in per-capita access and decreases in cost.

In case of Tanzania there is a mixed impact of the privatization in terms of both positive and negative effects. While some study proves on the positive results toward achieving privatization goal other study show the negative achievement toward the intended goal of privatization (Temu, et al. 1999). A study done by Nkonya, N. and Barreiro, J. (2012) on the analysis of incentives and disincentives for sugar in United Republic of Tanzania reveals that the privatization of the sugarcane industry has made

significant gains in terms of capital investments, area under cane and revenue generated for the Treasury. Total production by the four sugar companies climbed from a pre-privatization level of 112,903 tons of sugarcane in 1995/96 to reach a peak of 304,135tonnes in 2010/11.

Similar results were also obtained in a study by Mboya, (2001) in assessing the five aspects of performance indicators i.e. real sales growth, profit margin, sales per employee, number of employees and unit labor costs following the implementation of privatization policy at Tanzania Friendship Textile Mills. The study finds that although privatization has a positive impact to the firm's performance but still there has been conflicting opinion and interests in the firm.

According to him, the major source of conflict was the ignorance of the interest of the workers during the process, which in turn substantiate frequent strikes. Workers opposition to privatization often escalated because government fails to involve Labor union and address their concerns early in the reform process. For that case, privatization has demonstrably damaged the poor, whether through loss of employment and income, or through exclusive from, or reduces access to basic services (Rai, 2000).

Other studies conducted on privatization in Tanzania including (Emmanuel, J. 2009) who assesses customer satisfaction in pre and post privatization eras, focusing on Dar es Salaam Handling Company Limited (DAHACO). In this study the author found out that customer satisfaction had increased as the result of privatization of the company. A study conducted at Tanzania Breweries Limited by Dule, (2000) to access the

impact of privatization indicated that the productivity of TBL has increased after privatization. Robert C. and Matthias, V. (1994) were also assessing the impact of privatization on the level of financial savings, investment level and the cost of intermediation (interest rate spread). His study revealed that the level of financial savings had improved compare to the pre – reform period.

2.5 Research Gap

Although there has been much empirical study on the effects of privatization on efficient of the privatized firms and on the government welfare still there is a gap in terms of time, place and theme. The review of the literature has shown that much is known about the impact of privatization on the performance of privatized firms, government earnings and on consumer's welfare point of view. A gap still exists on the impact of privatization on the farmer's well-being who supplies the inputs to be used in privatized industries. Therefore, this study attempted to bridge the gap of time, place and theme by studying the impact of privatization on the well-being to farmers in Mtibwa Sugar Company.

2.6 Conceptual Framework

The study intended to explore an understanding of the concept of policy evaluation and its implication to farmer's wellbeing. To better incorporate socio-economic variables and contextual factors that affect farmer's livelihood such as gender, age, education, economic, social group and differences in access to livelihood assets, a Sustainable Livelihoods Framework (SLF) developed by the Department for International Development (DFID, 1999) has been adapted to suit the study's purposes. Based on this framework, livelihood comprises the capabilities, assets

(material as well as social means) and activities required for a means of living (Toner & Howlett 2001, Lautze et al. 2003). The framework gain popularity in 1990's, in poverty analysis by showing how, "a change in contexts, condition and trends can affects the access to livelihood resources which results different sustainable livelihood outcomes (Scoones, 1998).

According to this framework, people are viewed as operating in a context of vulnerability. Within this context they have access to certain assets or poverty reducing factors. These gain their meaning and value through the prevailing social, institutional and organizational environment. Moreover a change in transforming structures and processes that constitute the environment would have the influence on the livelihood strategies resulting emerging of new livelihood outcomes (DFID 1999).

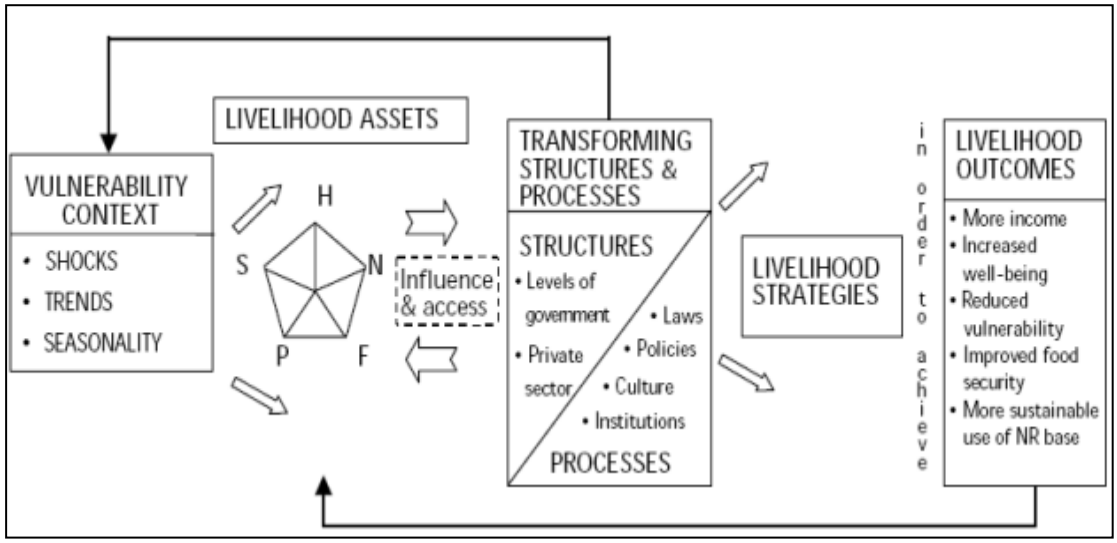

Figure 2.3: The Sustainable Livelihood Framework

Sources: DFID, 1999

Key:

H = Human Capital F = Financial Capital P = Physical Capital

N = Natural Capital S = Social Capital

The reason of adapting this framework is to capture the essence of knowing how the privatization was helping sugarcane out-growers to tap into and utilize a range of livelihood resources/capital assets in pursuing their well-being. Using the Sustainable Livelihood Framework above, under natural capital, questions that related to access to use of land, water for irrigation and how they are affected with privatization of agro industry will be assessed. Under human capital, focus will be paid on assessment of how production knowledge, education levels of farmers and good health of the farmers is affected following the privatization of agro-industry. Under social capital, the study will investigate the existing networks and relationships and how privatization of agro-industry helps farmers to tap them for building their well-being. The financial capital element will look at how privatization of agro-industry affects farmers' cash base, access to credit, as well as access to market. Finally, in physical capital, interest will be put on how privatization of agro industry affects the level of mechanization used, irrigation facilities, harvesting facilities, agro-chemical inputs and marketing infrastructure. Bearing on above facts, the framework will be served as a checklist for data-gathering, a route map for searching for possible linkages between different parts of the livelihood system and a guide for planning each step within this research.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The chapter describes how the study was carried out and techniques adopted in collecting relevant information on the research topic as well as data analysis. The chapter is organized subsections of the study including; research paradigm, research variables, research design, description of the study area, sampling techniques and sample unit, and data collection methods, instruments and analysis.

3.2 Research Paradigm

According to Eduardo, 1990 a research paradigm is a shared world or a set of assumptions on understanding reality. It built upon the positivism paradigm in order to generate knowledge in which facts are predicted and explained on the basis of their relationship. Research paradigm help the researcher to be independent in the sense of not being affected by research subject as well as to give a room to a researcher to quantitatively describe the facts and information obtained from the respondents. Following to the research paradigm, this study employed a descriptive quantitative methodology, which is based on collection and analysis of statistical data and obtain a limited amount of information from sample respondents.

3.2.1 Research Variables

Research variable can been described as any entity that can take on different values which can be considered as variables for example age, gender and treatment Kothari (2004). Variables can be numerical or quantitative. This study employed two variables, which are the dependent and the independent variables.

3.2.1.1 Independent Variable

According to Jackson, (2009), independent variable described as what you manipulate or what is naturally manipulated. In this study, the researcher used both socio economic factors and factors affecting agriculture production as the study independent variables.

3.2.1.2 Dependent Variable

Eduardo, (1990); Kothari (2004); and Jackson, (2009), describe the term dependent variable as what is manipulated by the independent variable. In this study the researcher use out grower's sugarcane yields as the study dependent variable in an effort of assessing the wellbeing of farmers under privatized era.

3.3 Research Design

According to Babbie and Mouton (2001), a research design is a "plan or blueprint showing how a researcher intends conducting his/her research". The importance of a research design is to provide a conceptual structure within which research is conducted and constitutes methodologies for data collection, measurement and analysis of variables. It also stands as an advance planning of the methods and techniques to be adopted for collecting data in views of research objective.

This study adopted a cross sectional quantitative research design in an effort of assessment of farmer's wellbeing resulting from the privatization of the Mtibwa Sugar Company in Turiani division. To assess farmer's wellbeing, the study involves analyzing the farmer's incomes arising from sugarcane on socioeconomic factors by using Cobb-Douglas production function and Gross Margin analysis. Additionally,

efficiency in the resource uses by using multiple regression analysis in the form of Cobb-Douglas production function is also used in an effort to assess the attainment of the common objective of privatization policy, which is the promotion of efficiency in the production system.

3.4 Sampling Frame

According to (Kothari, 2004) a sampling frame is a source material or device from which a sample is drawn. It is a list of all those within a population who can be sampled or a set of information used to identify a sample population for statistical treatment such as individuals or institutions. In this study, the sampling frame was drawn from membership register of Mtibwa Out growers Association.

3.5 Sample Size of the Study

The sample size of this study was randomly selected from sugarcane out growers members of the Mtibwa Out growers Association. Using a random sampling technique, semi structured questionnaire were used to collect data from 7 farmers selected from 10 villages giving a total of 70 outgrows. This was determined using the formula proposed by Israel (2012).

$$N = Z^2pq/e^2 \quad \ldots\ldots (1)$$

3.6 Data Collection Instruments and Techniques

3.6.1 Data Collection Instruments

Data collection instruments as described by (Kothari2004; and Jackson, 2009), refer to the devices or methodologies used to collect data and information for the research study by the researcher. Most of studies applied instruments such as questionnaires,

observations, focus groups, case studies, surveys, and documentary reviews to collect relevant information for the study. This study adopted questionnaire as data collection instrument. Using a semi structured questionnaire data was systematically collected from respondents. The data collected was from production and income earned by farmers from sugarcane as well as from other income generating activities. Farmers will also interview on different aspect related to wellbeing indicators in an effort of giving their views on how privatization of Mtibwa Sugar Estate (MSE) has contributed to the changes on these indicators. The data collected will also be supplemented by the secondary data from Mtibwa Out grower Association (MOA), Mtibwa Sugar Estate (MSE) and Sugarcane Board of Tanzania (SBT).

3.6.2 Data Collection Techniques

Based on (Kothari2004; and Jackson, 2009), the term data collection technique has been described as a systematic methodology of data mining in the research study. Since this study had implied a cross sectional quantitative design, the researcher adopted structured questionnaire approach as the appropriate technique as a sources of primary data. This technique gives a room to respondents to provide reliable data for the study in a self-administered way so as to allow the researcher easily statistically describe the research findings in an understood way.

In this study, data collected includes production inputs, input costs, production output, output price, yield from sugarcane and income data of other crops grown, other income generated activities, household expenditure and socio economic characteristics of the respondents. Additional information collected included comments by the farmers on major issues related to the privatization of the Mtibwa Sugar Estate and

management of the sugar sectors. Furthermore, respondent will also requested to comment on their accessibility of physical assets and how privatization of the company contributed to such direction. The data gathered is also supplemented by the secondary panel data obtained from various sources with the aim of assessing changes of farmer's wellbeing under privatization era of MSE.

3.7 Sampling Techniques and Sample Unit

This research was conducted in Mvomero District within the sugarcane growing area of Turiani Division. By using multistage sampling, four wards namely Mtibwa, Sunguja, Diongoya and Kanga were chosen purposively to obtain a sample of farmers due to their potentiality in growing sugarcane. Similar, a combination of multistage and purposive sampling techniques was also applied to obtain 10 villages namely Kidudwe, Lungo, Kunke, Lusanga, Dihongoya, Kizungu, Kwa-Mtonga, Lukenge, Kanga and Dihinda. The target population of the study is the sugarcane out growers in Turiani Division while the sampling unit is the individual farmer in the study area growing sugarcane,

3.8 Description of the Study Area

3.8.1 Location of Turiani Division

Turiani division in located in Mvomero district about 130 km from Morogoro Municipality along Kilosa-Handeni road. The district lies between longitudes 37^{o} 10' to 38^{o} 31' East of Greenwish and between latitudes 5^{o} 5' to 7^{o} 4' South of the Equator. Turiani is found at longitude 37^{o} 36' East and Latitude 6^{o} 00' South with altitude between 380 and 520 meters above sea level. The division is comprised of five wards namely, Mtibwa, Sungaji, Mhonda, Diongoya and Kanga. The division headquarter is

located in Sunguja ward (Regnard, 2006). With an average monthly rainfall of about 106mm making up a total annual rainfall of about 1270mm, the division provides a suitable climate for tropical and subtropical varieties of crops Msuya, E & G, Ashimogo (2005).

3.8.2 Population

According to the population census of 2002 (URT, 2004), Mvomero District had a population of about 260 525 people with a population growth rate of 2.6%. Turiani had a total population of about 90,129 with an average of 4.6 people per household and an average population density of 22.3 people per square kilometer.

3.8.3 Economic Activities

The main crops grown in Turiani Division are sugarcane, paddy, maize, cassava and banana. Other crops include beans, millet, cowpeas, potatoes, groundnuts, citrus fruits, mangoes, jackfruits, coconut, tomatoes, and eggplant. With exception of paddy and sugarcane field, cultivation is carried out mainly by use of the hand hoe, using primarily family labour and hired labour when the situation demands. Few individuals own tractors. In the division few individuals keep livestock such as dairy cows, swine, goats, local chicken and ducks.

3.9 Data Analysis

Both descriptive and inferential statistics will be used for data analysis. The Statistical Package for Social Sciences (SPSS version 17) will be used to analyze the data in association of MS EXCEL Solver 2010. The descriptive statistics included means, standard deviation, minimum and maximum values, while the multiple linear

regression function in the form of Cobb-Douglas Production Function was used to test factors that might have influenced gross margin and to analyze the efficiency in the resource uses. Furthermore, Gross Margin analysis will be used to assess the overall out grower's sugarcane profitability per hectare.

3.9.1 Budgetary Technique

Gross Margin Analysis is used to determine profitability of sugarcane production. It refers to the total income derived from an enterprise less the variable costs incurred in the enterprise. Gross margins are usually computed per year or per cropping season. They are an indicator of farm profit and they provide a useful tool in terms of farm management, budgeting and estimating the likely returns or losses of a particular crop (Forestry, 2009). In this study, Gross Margin analysis is employed to determine the overall gross margin per hectare of sugarcane production in the study area by using Microsoft Excel Solver in which the total variable costs were subtracted from the total revenue by using the following formular:

GM = TR – TVC …… (2)

Where GM = Gross Margin,

TR = Total Revenue,

TVC = Total Variable Cost.

3.9.2 Econometric Model Estimation

Cobb- Douglas functional in the following form will be used for inferential statistics for testing hypothesis (i) and (ii) of this study as shown in equation 3 and 4 respectively.

Model One

$LnY1 = \beta o + \beta 1X1 + \beta 2 \ln GENDER + \beta 3 \ln X3 + \beta 4X4 + \beta 5 \ln X5 + \mu$……(3)

Where: Y1 = Yield of sugar cane (tons) of the i^{th} farmer

β1…β5 = Parameters to be estimated

X1 = Age of Respondent

X2 = Gender of Respondent

X3 = Number of years in sugarcane farming

X4 = Education Level of Respondent

X5 = Farm size (ha)

ε = Random error term.

Model Two

$LogY1 = \beta o + \beta 1 \log X1 + \beta 2 \log X2 + \beta 3 \log X3 + \beta 4 \log X4 + \mu$ … …….....(4)

Where: Y1 = Yield of sugar cane (tones) of the i^{th} farmer

β1…β4 = Parameters to be estimated

X1 = Amount of Fertilizer application (Kg/ha)

X2 = Labor cost (in man days)

X3 = Amount of Herbicide application (in Liter)

X4 = Uses of extension Services

ε = Random error term.

To examine the resources use efficiency, the value and signs of β1, β2, β3 and β4 in the above function are used to determine the elasticities of production.

CHAPTER FOUR

STUDY FINDINGS AND DISCUSSION

4.1 Overview

This chapter presents the results and discussion of the study. The results are divided into three main sections. The first section addresses socio economic analysis covering general characteristics of the sample population, which include age, sex, marital status, household size, education and respondents' occupations. The second section analyzes and discusses the selected indicators related to wellbeing of sugarcane farmers in the study area. Problem and achievements encountered the farmers in production and marketing of sugarcane will also be presented with the aim of testing hypothesis (iii) of this study.

The third section discusses the empirical results from the Cobb-Douglas production function model showing the influence of socio economic factors on out grower sugarcane production. The section also discusses the empirical results from Cobb-Douglas production function models showing the existing relationship between sugarcane production and both socioeconomic factors and resources used in sugarcane production in the study area. In this case, model I and II in equation 3 and 4 were used in testing hypothesis (i) and (ii) of this study. Profitability analysis was also used as an additional tool for assess the wellbeing of farmers under privatized era.

4.2 General Characteristics of Sample Population

4.2.1 Respondents' Age Distribution

In this study, respondents were grouped into five age categories. Those aged 21 - 30 were 5.7 %, between 31 and 40 were 35.7 %, between 41 and 50 were 14.3 %,

between 51 and 60 were 22.9 and above 60 were 21.4%. The study also shows that about 55.7% of respondents were in the age group below 50 years as shown in Table 4.1. This finding is synonymous with Gal et al., (2018) who argues that younger people are commonly provides large working forces in economic activities.

Table 4.1: Respondents' Age Distribution

Age Group	Frequency	Percent
21 - 30	4	5.7
31 - 40	25	35.7
41 - 50	10	14.3
51 - 60	16	22.9
61 and above	15	21.4
Total	**70**	**100**

Source: Author's Fieldwork, 2018

4.2.2 Sex and Marital Status of the Respondents

The study involve, both male and female. Finding from Table 4.2a depicted that 68.6% of respondents were male while 31.4 % were female. Sex identification is essential in this study as it provided different information concerning gender relations as an implication to changes in farmer's wellbeing. The sampled population was characterized by 84.3 % who were married and 7.1 % single while 8.6 % were widows as shown in Table 4.2(b), the table also shows that a large number of interviewed households were married couple who either participate in sugarcane production or were participated in sugarcane production some years ago.

Table 4.2(a): and (b): Respondents' Sex and Marital Status

(a) Sex of Respondents		
Sex of Respondents	**Frequency**	**Percent**
Male	48	68.6
Female	22	31.4
Total	**70**	**100**

Table 4.2(b): Marital Status of Respondents		
Married	**59**	**84.3**
Single	**5**	**7.1**
Widow	**6**	**8.6**
Total	**70**	**100**

Source: Author's Fieldwork, 2018

4.2.3 Respondents Level of Education

People's way of thinking, stimulation of new ideals and economic opportunities are greatly influenced by level of education. In this study, levels of education were grouped into four groups, namely those with no formal education, those who attained primary level of education, those with secondary level of education and the forth group are those with collage level of education and above. Figure 4.1 shows that 6 % of respondents has no formal education, 77% attained primary education, 14 % attain secondary level of education and 3 % attained the collage education and above.

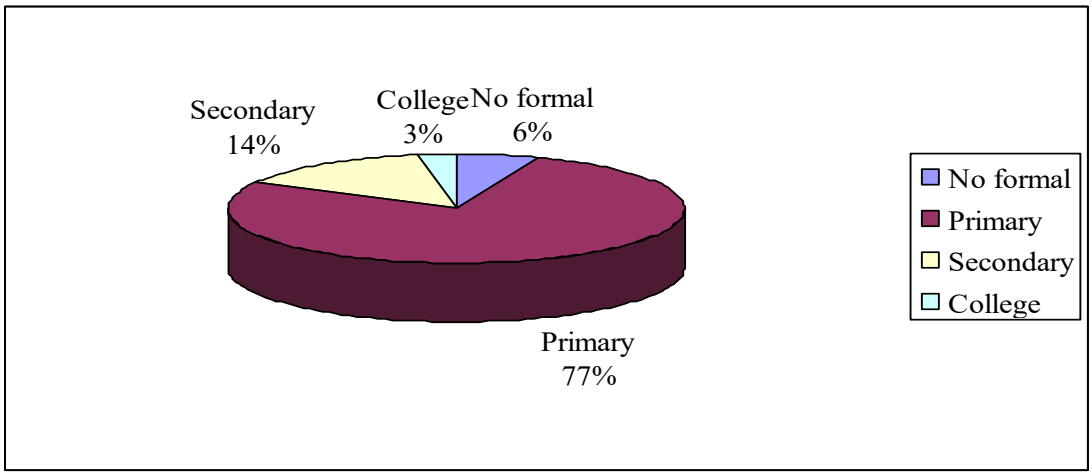

Figure 4.1: Respondents Level of Education

Source: Author's Fieldwork, 2018

4.2.4 Household Size of Respondents

Responses on Table 4.3 show that 21.4 % of respondents had household size ranging from one to four members, 65.7 % ranged from five to eight people and 12.9 % had household size ranging from nine to twelve people. It was important to analyze the household sizes because household size has an effect on sugarcane production as large households were considered to be an asset particularly in the provision of labor of which sugarcane farming heavily depended.

Table 4.3: Respondents' Household Size

Household Size	Frequency	Percent
1 - 4	15	21.4
5 - 8	46	65.7
9 - 12	9	12.9
Total	**70**	**100**

Source: Author's Fieldwork, 2018

4.2.5 Respondents Occupations

In this study, respondent's occupations were categorized into four groups as shown in Figure 4.2. Findings from the figure show that, 55.7 % of respondents are actively growing sugarcane as their main economic activity, while 44.3 % of respondents are no longer growing sugarcane as their economic activity. The result also shows that 100% of the respondents are engaged in other crop farming than sugarcane, 5.7 % engaged in business, 7.1 % in wage employment while 2.9 % of the respondents are engaged in other economic activities such as carpentry, fisheries and livestock keeping.

This result is contrail to Buberwa, F. 2013, who observe that 100% of the respondents in Turiani Division were engaged in sugarcane farming and 97.5% were engaged in other crop farming. The decrease in people involved in sugarcane farming with its slightly increase in people participate in other crops farming implies the presence of some challenges in sugarcane production as well as marketing and hence people quitting to other crops that seemed to be less challenges as the means of maintain their wellbeing status.

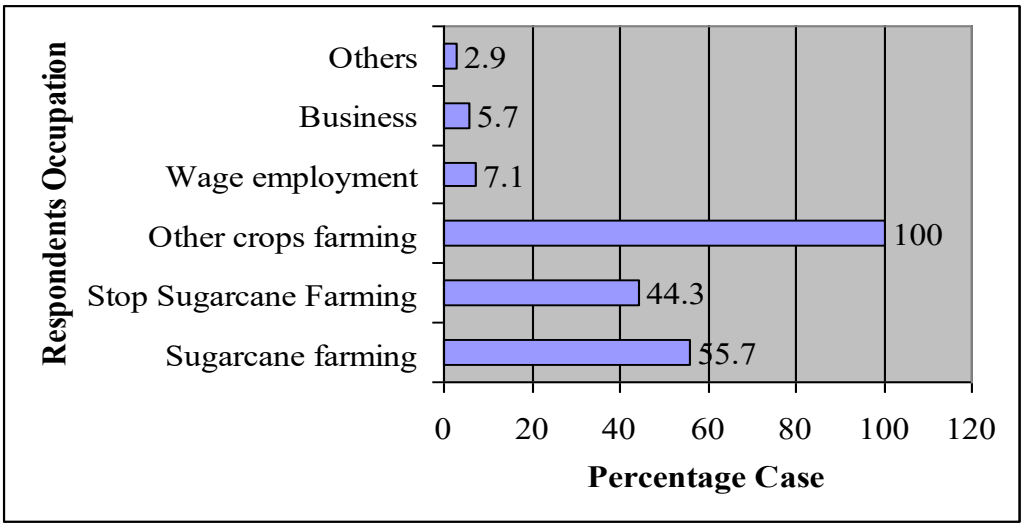

Figure 4.2: Respondents Occupation
Source: Author's Fieldwork, 2018

4.2.6 Household Farm Size

Findings on household farm size indicated on Figure 4.3. The results show that 11.4 % of respondents had farm size between 0.25 – 0.75 acres while 18.6 % had between 0.76 – 1.00 acre, 45.7 % had farm size between 1.10 – 5.0 acres and 18.6 % had 5.1 – 10.0 acres while 5.7 % of the respondents had a farm size of above 10.1 acres. In summary 75.7 % of respondents in the study area are small scales farmers who cultivate their crops in the farm area of less than five acre.

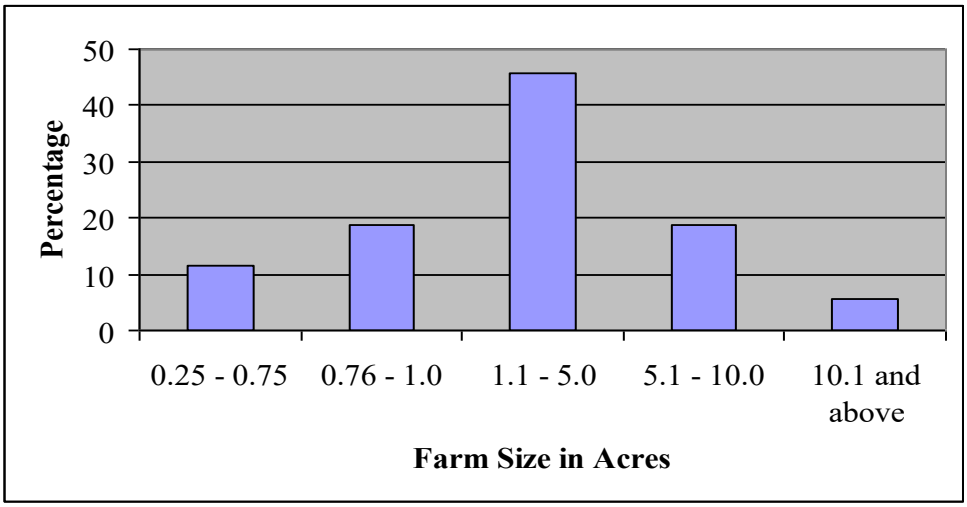

Figure 4 3: Household Farm Size
Source: Author's Fieldwork, 2018

4.3 Indicators of Wellbeing of Farmers

This study also analyzes the selected indicators for wellbeing of farmers in the study area. Based on Stiglitz, J. and Sen, A. (2009) wellbeing definition as adopted by this study, is taken to be associated with peoples economic resources (including production, income, wealth, property), education and skills and housing. For the purpose of this study, indicators for wellbeing of farmers analyzed and discussed includes changes in; amount of sugarcane produced, number of active sugarcane farmers, level of sugarcane sucrose determined, price gap between scale of sugar price and cane sugar offered by MSE over the farming seasons, level of un-employment and incidence of income poverty among the farming household in the study area. The changes in these indicators witness the changes in the wellbeing of farmers as all these indicators have effects on the income accrued by farmers in the study area.

4.3.1 Decrease in Out Grower Sugarcane Production from 1998/99 and 2016/17

Data from Mtibwa Out grower Association (MOA) gives evidence on change in weight of sugarcane produced by sugarcane out growers in the study area resulted

from sugarcane purchased by the MSL for the season between 1998/99 and 2016/17. Findings in Figure 4.4 show the up and down trend of sugarcane produced by the out growers over the period. From the Figure 4.4, it can be depicted that, the out grower sugarcane production has decreased from 211,325 tons in 1996/97 to 80,013 tone in 1997/98.

The possible causes of this could be the existence of extreme rainfall situation during the period as popular known as el-ninol and the transition process during privatization of MSL, faced the industry following the change of the management of the industry in 12 August, 1998. Within this farming year both old and new management fail to harvest out growers sugarcane effectively. Out grower sugarcane production start to increase again and reach to 259,952 tones in year 2005/06 and decreasing progressively to 23,449 tones in year 2016/17.

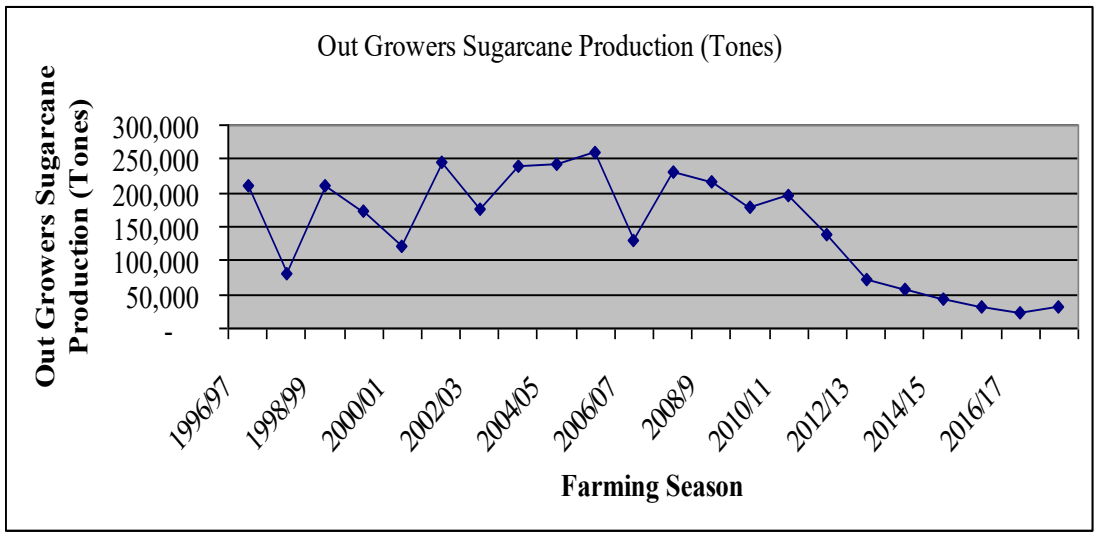

Figure 4.4: Trend of Out Growers Sugarcane Production Between 1996/97 and 2016/17

**- year of privatization of MSE and year of el-ninol

Source: Mtibwa Out growers Association (MOA), 2018

The interview with MOA secretary gives further evidence on the decrease in out grower sugarcane production in the period after privatization of MSL.

In his word the secretary of the association said that:

> *''At privatization (August, 1998) out growers were producing 62% of the cane milled by Mtibwa sugar factory. After privatization production of out grower cane dropped drastically to 10.1% in year 2017. This decrease is because of mismanagement, bad harvesting schedule practiced by favourism by the company staff.*
>
> *After privatization, a company scaling down services to out growers who largely depend upon the company to provide cane production and marketing oriented services such as land preparation, seed supply and timely harvesting of the sugarcane. Under privatized era, the company agricultural machinery and equipment were allocated to service the company first and by the time they finish caring their field the season is gone with the exclusion of farmers.''*(Secretary of Mtibwa Sugar Association (MOA), interviewed on 23.09.2018).

4.3.2 Decrease in Number of Farmers Participating in Sugarcane Farming

Human resource forms an important part of day-to-day operations in economic activities. In an effort to compare the number of farmers participating sugarcane farming in the study area, secondary data from Mtibwa Out growers Association and TULI SACCOS were used to compare the trend of percentage change of active sugarcane out grower for the period between 1998/99 which is the year of

privatization of MSE and 2016/17. The aim is to know if the number is increasing, decreasing or remain constant.

Figure 4.5 compares the percentage of sugarcane out grower who are actively grow sugarcane on a particular farming season relative to entire number of out growers who reported to be registered in an association on the same year. From the findings, it can be observed that, despite the increase in the number of farmers registered at the association over the period, but the number of active member decrease from 90.3 % in 1998/99 season which is a year of privatization of MSE to 35.6 % in the year 2016/17. This finding has an implication on the decrease of wellbeing of sugarcane farming household, as some of the farmers were no longer interested to cultivate sugarcane because of the challenges face the crop.

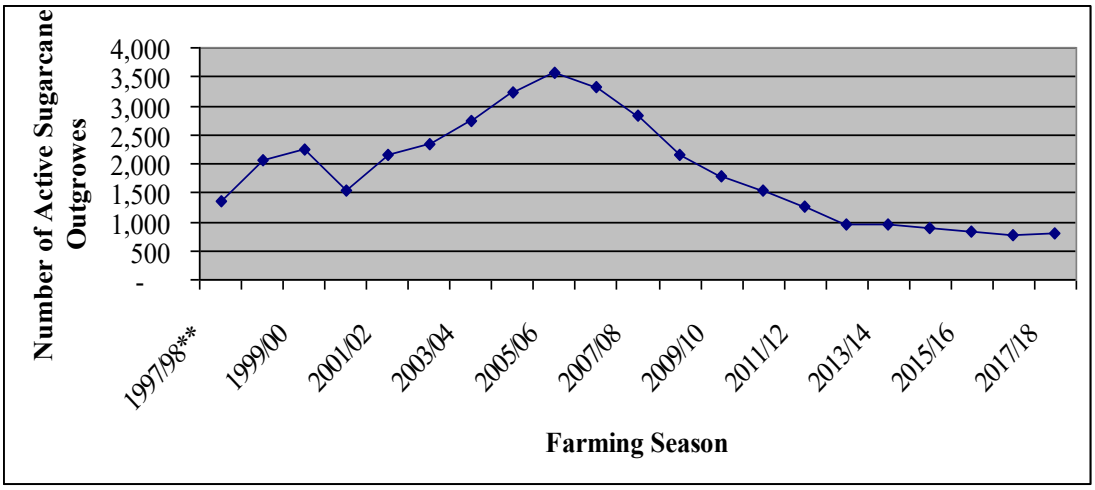

Figure 4.5: Trend of Active Sugarcane Out-growers Members Between 1996/97 and 2016/17

Source: Mtibwa Out growers Association, 2018

The interviews with Village Agriculture Officer at Kunke Village showed that people neglected their sugarcane farming after failing to maintain the production due to existence of several challenges facing the crop. The village Agriculture Officer said:

"*Farmers found it difficult to maintain their sugarcane farms as a result of the delaying in payment of their sugarcane, poor price offered by the company, problem of firing to their matured sugarcane and the problem of livestock fed to their crops. For example in 2000/01 farming season, about 434 farmers in Turiani stop sugarcane farming, 7,700 acres of sugarcane abandoned of which about 2,500 acres were planted other crops due to the existence of the above challenges.*

Despite the selling agreement which require MSE to pay for the farmers produce for the period between 30 – 45 days, but the average delay is between 2 to 6 months. This resulting some of the farmers' fields not weeded, rising in weeding costs as weed intensify leaving the cane produce little tonnage with low sucrose, low prices to farmers and eventually the increase in debts among the farming households.

Furthermore, the problem of delay in payment of sugarcane supplied to the factors extend its effects to private investors who provide transport services and loading of sugarcane to the factory as the owner of cars and operation machines for sugarcane loading fail to service their vehicles. This result number of cars for providing this service to decrease from an average of 86 and 90 to 14 only" (Kunke Village Agriculture Officer, interviewed on 3.9.2018).

4.3.3 Decrease in out Growers Cane Sucrose Level Determined

The current sugar regulatory regime allows different approach to be used in determination of the price of the out growers sugarcane. MSE use the rendement

determination process of which a sample of sucrose percentage from every 50 tones of out growers' sugarcane is measured and used as the basis for determines prices for cane sugar supplied by particular farmer. Table 4.5 shows the decrease in the average sucrose level of cane sugar supplied by the out growers from 10.4 percent in year 2009 to 8.4 percent in year 2012. The decrease in level of sucrose of out growers cane has an implication on the income of the out growers as the higher the level of sucrose is the higher the prices offered by the company.

Table 4.4: Decrease in Out Growers Cane Sucrose for Years 2009 to 2012

Year	Sucrose (Percentage)
2009	10.4
2010	10.2
2011	9.8
2012	8.4

Source: Mtibwa Out growers Association, 2012

4.3.4 Increase in Prices Gap between Scale of Sugar Price and Cane Prices

The current sugar regulatory framework does not consider the value of all tradable products from sugarcane including sugar, molasses and baggase that are used in animal feed and production of biogas that can be used as cost reduction mechanism in generating electricity. This leaves a loopholes to the milling company to decide in their favors such that whatever there is an increase in the in sugar prices and other tradable by-products resulting from the milling of cane, still there is no reflection of the increase in the cane sugar supplied by the outgrows.

Bearing the fact that, on average ten tons of sugarcane in the study area yield about one tone of sugar in the cause of milling process, Figure 4.6 show that, despite the

increase in sugar factory prices from 350,000 Tsh/tonne in year 1998/99 to 1,220,000 Tshs/tonne in year 2016/17 the cane sugar supplied by out growers increase from only 120,000 Tshs/tonne to 580,000 Tshs/tonne over the two period.

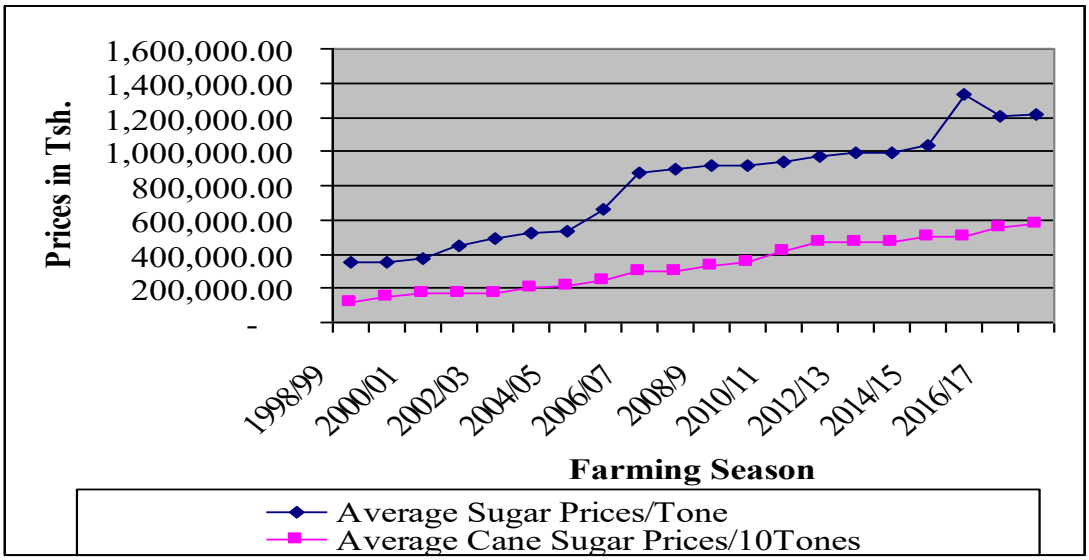

Figure 4.6: Sugar and Out growers Cane Price Gap between 1998/99 – 2016/17

Source: Mtibwa Out growers Association, 2018

This finding is also evidenced in an interview with male out grower in Madizini village who pointed that:

> *''In the market mechanism of balancing the prices of sugar in the country, the price of sugar increase from 2,500 to 2,800 per kilograms in year 2016/17, which is equivalent to 300Tsh increase per kilogram of sugar. Bearing the fact that one tone of sugarcane yield 100kg of sugar. Thus every one tone of sugarcane yields extra 30,000 Tsh from this prices increase.*
>
> *Despite this increase the owner of the industry in a negotiation meeting for setting sugarcane price in 2017/18 farming season offer the increase in price of 3000Tsh. Per tone only (from Tsh. 55,000 to 58,000 Tsh) . The*

reason provided by the MSL is the ongoing bad financial position of the industry that the increase in sugar will be use to enhance the industry operations.''(Male respondent, Interviewed on 7.9.2018)

4.3.5 The incidence of Un-employment in the Area.

According to ILO, 2005, unemployment is the presence of 'surplus' labor that could affect the current level of production due to lack of economic activities. Unemployment is caused by absence of economic activities that generate income to people. In this study, respondents were asked to give their opinion on whether the change in institutional reforms associated with privatization of Mtibwa Sugar Company has caused unemployment or provided opportunities to people. Findings on table 4.5 indicated that 64.3% of respondents revealed that people had lost their reliable economic opportunities, while 35.7% report that the policies through private ownership of the company had provided economic opportunities.

Table 4.5: Influence of Privatization of MSL on Unemployment in the Study Area

Description	Frequency	Percent
Unemployment	45	64.3
Provide Opportunities	25	35.7
Total	**70**	**100**

Source: Author's Fieldwork, 2018

4.3.6 The incidence of Income Poverty in the Study Area

According to World Bank, 1999, poverty is the condition of life where people lack sufficient resources to supply their basic needs for survival. There are different approaches of measuring poverty. Among them is the use of income of people in the

given area. In this study, out growers income derived from sugarcane is grouped into four groups namely, those with income less than Tsh. 240,000/= per annual, those with income between 240,000/= and 1,000,000/= per annual, those with income between 1,000,001/= and 5,000,000/= per annual and those with income above 5,000,000/= per annual. The aim is to analyze the trends of income poverty within the cane farming society in the study area to see if it increase, decrease or remain constant.

Figure 4.7 indicates that, farmers who earn less than Tsh. 240,000/= per annual from sugarcane production has decrease from 63% to 23% between the farming year 1997/98 and 2005/06 respectively. Farmers with sugarcane annual between 240,000/= and 1,000,000/= increase from 19% to 45%, farmers with an annual income between 1,000,001/= and 5,000,000/= increased from 4% to 28% while farmers with cane annual income above 5,000,000/= increase from 0.5% to 4% in same respective years.

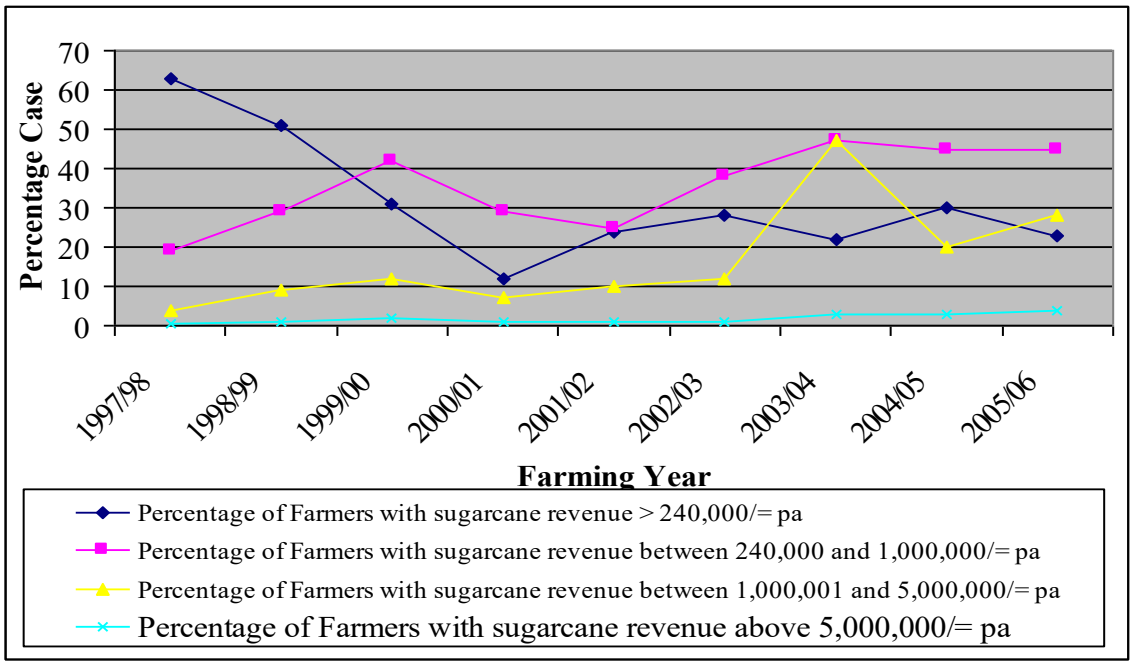

Figure 4.7: Income Poverty Reduction Trends in the Study Area Between 1997/98 and 2005/06

The Figure 4.7 also indicate the rapid decrease in percentage of farmers with income less than 240,000/= per annual due to shifting of the farmers to higher income level which is an indication of the ability of the sugarcane farming enterprise to contribute positively in the reduction of income poverty in an area.

4.4 Causes of the Decline in out Grower's Sugarcane Production

This study go further by analyze the possible causes of the changes in the indicators of wellbeing of farmers shown above in an effort of identifying if the changes is caused by the changes in policy toward management of the in the study area or not. Findings from the respondent's interview revealed that government policies including privatization of MSE and policies related to land use plans contributed to decline in out grower's sugarcane production in the study area. Failure of the policy for privatization of state own enterprises with its context of the regulatory regime to focus on issues for enhancement of farmers wellbeing cause negative effect in out growers sugarcane production.

The policies factors associated to the changes in indicators of wellbeing as identified in this study are indicated in Figure 4.8. From the table it can be observed that 74.3% of the respondents reported that failure of implementation of land use plans among different land uses especially between farming and livestock keeping, results some of out growers cane farms to be fed by livestock. 81.4% report that the pricing setting strategy as practicized by the sugarcane milling industry is in favor of the industry welfare only. 100% reported that un attractive marketing arrangement such as delay harvesting of out growers produce are the causes of the changes of indicators above while 15.7% report other causes such as burning of the mature cane before harvesting

schedule. Bearing the fact that, both unattractive marketing arrangement and inefficiency in pricing setting strategy yield high percentage case, this witness the fact that privatization of MSE within the framework of sugar regulatory regime are the great causes of the changes in indicators above.

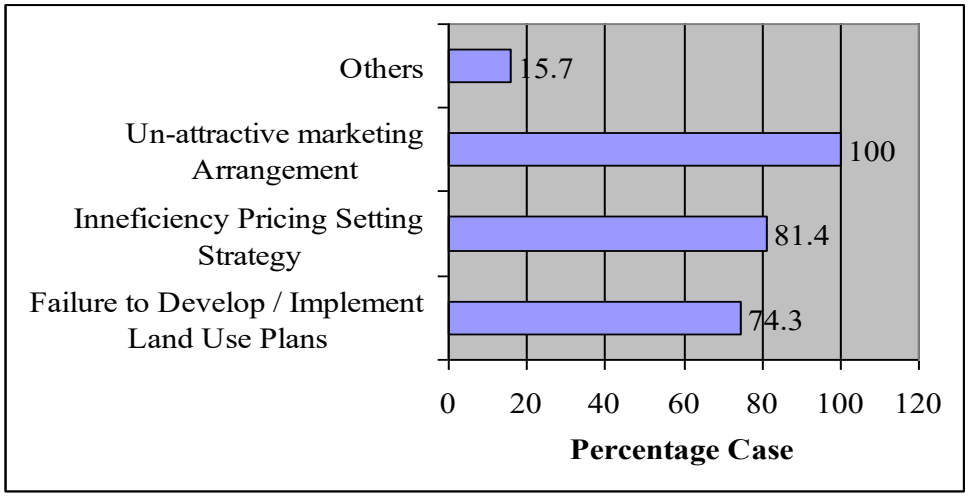

Figure 4.8: Causes of the Changes in Indicators of Wellbeing of out Growers
Source: Author's Fieldwork, 2018

This finding is also evidenced in an interview with former secretary of Mtibwa Out growers Association who pointed that:

> *''The monopolistic environment created by the sugarcane regulatory regime during privatization era under which 40km radius is the cane conservation area together with the favourism loopholes created by the sugarcane regulation are the main causes of the recent poor trend in sugarcane production.*
>
> *For example, recently the MSE is operating inefficiency at about 56% of its full capacity. Given this capacity, the 40km radius of sugar cane catchments area acts as major disincentive for farmers to increase cane production as they are bound by regulation to sell their sugarcane only to MSE despite the*

inefficiency of the industry. This cause only a limited amount of the outgrows produce to be purchased by the mill depending to its capacity and leaving the farmers with no alternative market for their produce.

Limited market share cause loss to out grower as about 70,000 tons of their sugarcane amounted to 3.5 billion Tsh. fail to be purchased by the MSE in farming season 2011/12 – 2012/13. The effects of out growers cane sugar not purchased by the Mtibwa sugar mill extends to the wellbeing of farmers by increasing the loan defaulters in the sugarcane households as recently a number of their houses were marked X for sale by the banks (NMB and CRDB) by failing to pay their sugarcane development loan.''(Former Secretary of Mtibwa Out growers Association, interviewed on 24.9.2018).

4.5 The Results of Regression Analysis

4.5.1 Overview

In this study, two models of regression analysis is done in an effort of determine the influence of socioeconomic factors and resources uses in production of sugarcane in the study area. The aim is to test hypothesis (i) and (ii) of this study.

4.5.2 The Influence of Socioeconomic Factors on Sugar Cane Production in the Study Area

This section intends to test hypothesis i of this study. The predictor variables, includes average years in sugarcane farming, average size of sugarcane farms, average age of respondents, gender of respondents and education level of respondents. Table 4.6, 4.7 and 4.8 show the results of regression analysis carried out to show the influence of socioeconomic variables in sugarcane production in the study area.

The 81.7% of proportion of variation in sugarcane production has been explained by the variation in age of respondents, number of years in farming, farm size, and level of education and gender of respondents jointly as shown in Table 4.6. The R-square measures the proportion of variation in the dependent variable accounted for by explanatory variables. The remaining 18.3% is explained by other factors, which were not included in the econometric model.

Table 4.6: Model Summary

R - Square	Adjusted R - Square	Standard Error	Observation
0.843	0.817	.69003	70

Source: Author's Fieldwork, 2018

The empirical results from the analysis of variance show that explanatory variables included in the model contribute statistically significant to sugar cane production in the study area as the F-value (31.744) is statistically significant at P = .0001 as shown in Table 4.7.

Table 4.7: Analysis of Variance

Model	Sum of Squares	df	Mean Square	F-value	P-value
Regression	151.146	10	15.115	31.744	.000[a]
Residual	28.092	59	.476		
Total	**179.238**	**69**			

Source: Author's Fieldwork, 2018

Table 4.8 indicates that land under sugarcane (farm size) had a negative but significant relationship for the farm size at 0.25-0.75 hectare and 0.76-1 hectare at

significant level of ($p<0.01$) and ($p<0.05$) respectively. While a positive and significant relationship also for the farm at 5.1-10.0 and 10.1 and above hectare at significant level of ($p<0.01$). This showed that an increase by a hectare of the sugarcane production in the study area would result in a drop in the amount of sugarcane yield for farm of size 0.25-0.75 and 0.76-1 hectare and vice versa for farm of size 5.1-10.0 and 10.1 and above hectare.

This could be a result of the existence of poor management by small scale farmers in the study area with land farming between 0.25-0.75 and 0.76-1 such that an increase in land size of one hectare will associated with failure to manage the farm. This result was similar to that of Dlamini et al. (2010) who concluded that as the size of the sugarcane farm increases, technical efficiency of smallholder sugarcane farmers' associations decline and that leads to a poor crop, which negatively affects the profit.

The coefficient for farming experience is -.073 and statistically insignificant. Number of years of out growers in cane farming was expected to be positively and significant to sugarcane yield. This is contrary to the a priori expectations of this study. This could be a result of the existence of several challenges, which are outside the capacity of farmers such that experiences cannot used to solve the particular challenges.

The coefficient for age of respondents is 1.534 and significant at ($p<0.01$) and had positive relationship with sugarcane yield per hectare. This means that an increase in age of respondents by 1 year will result in an increase of 1.534 tonne of sugarcane per hectare.

The coefficient for gender of the respondents (male) is 0.449 and significant at ($p<0.05$) and had positive relationship with sugarcane yield per hectare. This means that being male farmers in the study area will result in an increase of sugarcane yield by 0.449 tons per hectare. This can be explained by the fact that the existences of several challenges in the production of cane sugar in the study area cause the female out growers to be more affected than their male counterpart.

Table 4.8: Parameters Estimates

Variables	Parameters	Coefficients	Std error	t-stat	P-value
Intercept	A	-2.481	2.091	-1.187	0.240
Age of Respondents	a_1	1.534**	0.528	2.903	0.005
Experience of Respondent	a_2	-0.073	0.140	-0.522	0.604
Size of Farm					
Farm Size 0.25-0.75 acre	a_3	-2.122**	0.315	-6.737	0.000
Farm Size 0.76-1 acre	a_4	-0.724*	0.284	-2.551	0.013
Farm Size 5.1-10 acre	a_5	1.320**	0.240	5.509	0.000
Farm Size 10.1 and above	a_6	2.138**	0.422	5.072	0.000
Education Level of Respondent.	a_8	-0.502	0.378	-1.327	0.189
No formal Education	a_9	0.099	0.261	0.380	0.705
Secondary Education	a_{10}	0.265	0.517	0.512	0.610
College Education	a_9	0.449**	0.207	2.176	0.034
Gender (male respondent)					

Notes: * = Significant at $p < 0.05$

** = Significant at $p < 0.01$

Source: Author's Fieldwork, 2018

4.5.2 Efficiency Uses of Resources in Sugarcane Production in the Study Area

Table 4.9, 4.10 and 4.11 indicate the results of regression analysis for the resources used for sugarcane production in the study area. The table shows that the coefficient of multiple determinations (R^2) was 0.379, which implies that 37.9% of variation in the dependent variable was explained by variations in the explanatory variables namely; Fertilizer, Herbicide, Labor and extension services. The remaining 58.5% was attributed to the random error term (μ). The F - ratio of 11.54 was significant ($P<0.01$). The estimated regression equation is presented as:

$Y = -0.279 + 0.387a_1 + 0.396a_2 + 0.922a_3 + 1.480a_4 + \mu$

The negative sign of intercept (A) in Table 4.11 implies that fertilizer, herbicide, labor, and extension services are underutilized as and hence sugarcane production is expected to decline by 27.9%. The coefficient with respect to a particular variable shows the extent to which, the variation in particular variable explains the variation in the dependent variable. In Cobb-Douglas production function model, these coefficients represents the elasticity's of production with respect to each of the corresponding explanatory variables: Fertilizer, Herbicide, Labor and extension services. Thus, for fertilizer as an input, the elasticity of production was found to be 0.387 implying that an increase in the fertilizer by 1.0%, while holding all other factors of production constant, will increase the yield of sugarcane by 0.387%. The t-ratio value of 3.848 for land was also found to be significant ($P<0.01$). Herbicide has an elasticity of production of 0.396. This means that an increase in the use of herbicide by 1.0%, while holding all other inputs constant will increase the output of sugarcane by 0.396%. Herbicide was found to be an important input in determining

the output of sugarcane and was found to be significant (P<0.05). Similarly, the elasticity of production for labor and extension service was found to be 0.922 and 1.480 respectively. This implies that any increase in labor and extension service by 1.0%, while holding other inputs constant, will lead to an increase in the total output of sugarcane by 0.922% and 1.480% respectively which are also significant at (P<0.01). Compared to other resources used in sugarcane production, extension service seems to have high uses. The high contribution of extension services compared to other three resources in sugarcane production is attributed by the effort of the fifth government in employing extension officers in every village thus they are readily available.

Table 4.9: Model Summary

R - Square	Adjusted R - Square	Standard Error	Observation
0.415	0.379	1.26983	70

Source**:** Author's Fieldwork, 2018

Table 4.10: Analysis of Variance

Model	Sum of Squares	df	Mean Square	F-value	P-value
Regression	74.427	4	18.607	11.539	.000[a]
Residual	104.811	65	1.612		
Total	**179.238**	**69**			

Source: Author's Fieldwork, 2018

Table 4.11: Parameters Estimates

Variables	Parameters	Coefficients	Std error	t-stat	P-value
Intercept	A	-.279	.744	-.375	.709
Fertilizer (kg)	a_1	.387	.101	3.848	.000
Herbicide (Liters)	a_2	.396	.187	2.119	.038
Labor (Man/days)	a_3	.922	.206	4.481	.000
Extension Service	a_4	1.480	.377	3.922	.000

Source: Author's Fieldwork, 2018

The estimated coefficients of the regression model were also elasticities of production, presented in Table 4.11. The result showed that elasticities for fertilizer, Herbicide, Labor and extension service were 0.387, 0.396, 0.922 and 1.480. The elasticities less than unity were estimated to be positive decreasing functions indicating that the allocation and utilization of the variables were in stage of economic relevance of the production function (Stage II). The elasticity for extension service (1.480) greater than one indicate a positive increasing function to the factors, indicating that the allocation and utilization of the variables were in stage of un-economic relevance of indicating underutilization of resources implying that its allocation were in irrational stage of production (stage I) of the production process.

The return to scale was 3.185 (r>1), which was an indication that on the whole, out growers sugarcane production in the study area was in stage I, implying that inputs were under-utilized. At this stage of irrational production (stage I), could be increased by using more of the production resources. This result was in contravene with the findings of Msuya, E., & Ashimogo, G. (2005), that sugarcane out growers in Turiani area operated in the irrational stage (stage III) of the production function with a return to scale of -0.2137.

4.6 Profitability of Out Growers Sugarcane Production

According to Abbot, 1990, Gross margin of farm activity is the difference between gross income earned and the variable cost incurred. In this study the variables cost involved in out growers sugar cane production includes cost of ploughing, harrowing, ridging, seed canes acquisition, planting, weeding, herbicides acquisition herbicide application, fertilizers acquisition, fertilizer application, harvesting and the cost of

transports. Based on the formula given in equation 8 of this study, the sugarcane gross margin in the study area is 232,280 Tsh.

Table 4.12: Gross Margin Analysis of out Grower Sugar Cane Farming

(a)Variable	
Cost Item	**Amount in Tsh./Acre**
Ploughing	40,000.00
Harrowing	35,000.00
Ridging	40,000.00
Seed canes	120,000.00
Planting	50,000.00
Weeding	70,000.00
Herbicides Acquisition	120,000.00
Herbicide Application	30,000.00
Fertilizer Acquisition	280,000.00
Fertilizer Application	30,000.00
Cane Harvesting	250,000.00
Cane Transporting	220,000.00
Total Variable Cost (TVC)	**1,285,000.00**
(b) Total Revenue (TR)	**1,517,280.00**
(c) Gross Margin (GM)	**232,280.00**

Source: Author's Fieldwork, 2018

The results from Table 4.12 revealed that sugarcane production in the study area is a profitable enterprise as it yield positive gross margin. Using the prevailing marketing prices for respective items, the gross margin of out grower's sugar cane production in the study area was obtained by reducing total variable cost from total revenue as shown below.

Out grower's sugarcane production Gross Margin = 1,517,280.00 Tsh/ha - 1,285,000.00 Tsh/ha

= **232,280.00 Tsh/ha**

CHAPTER FIVE

CONCLUSIONS

5.1 Introduction

This study aimed at assessing the post privatization effect of agro-industry on the well-being of farmers. More specifically the study aimed at determining the social economic effects of privatization of agro-industry on the well-being of farmers, examining post privatization resource use efficiency in sugarcane production, determining constrains and challenges being faced by farmers in the course of privatization and final to proffer appropriate policy framework for ameliorating the current challenges facing the privatization policy in Tanzania.

5.2 Discussion of the Findings in Summary

The overall purpose of this study was to assess the post-privatization effect of agro-industry on the wellbeing to farmers, which was an important attribute in evaluate the implementation of privatization policy in the country. Having an understanding on the effect of privatization of agro-industrial companies on employees and government (for example Swai, 2014 and Nsegiyumva, 2005) it was important to assess the privatization effects of agro industrial companies on the wellbeing of farming households.

A total number of (n=70) respondents were involved in the study. The researcher approached the study using a cross sectional quantitative design. In determining the social economic effects of privatization of agro-industry on the well-being of farmers, the study findings show that under privatization era of the MSE, the wellbeing of

sugarcane out growers in terms of the production output are influenced by socio-economic factors including age of respondents, education level, gender of respondents, number of year in sugarcane farming and size of land under sugarcane farming. Furthermore, the study also shows the existence of poor farm management by the out growers as most of the farmers failed to perform some of the farm operation.

An empirical finding from the study also reveals that there is the underutilization of the resources by out growers in sugarcane production in the study area. This is evidenced by the increasing return to scale of resources used, which implies that there were no optimal uses of resources which is the characteristics of region I of production function. Besides the underutilization of resources, findings from gross margin analyses showed that sugarcane production enterprise was a profitable enterprise with a positive margin of about 232,280.00 Tsh/ha.

5.3 Conclusion

5.2.1 Influence of Socio-economic Factors on out Growers Wellbeing

By examining the influence of socioeconomic factors on out growers sugarcane production the study revealed that, both age of respondents, size of farms and gender of respondents are significantly (with $p<0.05$) affect out growers sugarcane production. The results also shows that female out growers are more affected than male. This can be explained by the fact that the existences of several challenges in the production of cane sugar in the study area cause the female out growers affected more than male counterpart. These results concurred with findings in previous studies by Bombo, F., 2013.

Taking from the effort of measuring the wellbeing of an individual as stated by Stiglitz, J. and Sen, A. (2009), farmers well-being is taken to be associated with farmers income derived from agriculture production this made the researcher to conclude that , socioeconomic factors as hypothesized in this study have an influence on farmer's wellbeing. Hence the hypothesis that, there is no influence of socioeconomic factors on farmer's wellbeing under privatization of Mtibwa Sugar Estate is rejected.

Furthermore, the analysis of the reasons for the existing trends are caused by policy changes mainly privatization of MSE with its effects on sugarcane marketing structure and institutional arrangement.

5.2.2 The Influence of Resource use Efficiency on Sugarcane Production

The study has shown that resources are insufficiently utilized with negative sign of intercept for out grower's sugarcane production. This implies that fertilizer; herbicide, labor, and extension services are underutilized. According to Bravo, et al., 1994, this implies the underutilization of resources, which is the characteristics of first region of production function and therefore if his system is to be improved, re-allocation of resources for better use is encouraged.

Resources uses as hypothesized in objective two of this study have an influence on sugarcane production in the study area. An increase in the use of fertilizer, herbicide, labor and extension services in production of sugarcane are all significantly increase (at $p < 0.5$) the level of sugarcane production in the area under privatized Mtibwa Sugar Estate. Hence hypothesis that, privatization of Mtibwa Sugar Company has no

influence on sugarcane out grower resource uses in the study area is rejected. Despite the underutilization of the resources, analysis of the gross margin for the out grower sugar production has shown that out growers sugarcane production was a profitable enterprise with a positive margin of about 232,280.00 Tsh/ha.

5.2.3 Constrains and Challenges Faced by the Farmers and their Changes in the Course of Privatization

Analysis of the indicators of wellbeing of farmer in the study area revealed the existence of more challenges than opportunities to sugarcane out growers which eventually cause decrease in sugarcane production in the study area under privatized era of MSE. Below are some of the challenges facing out growers sugarcane production:

(i) The decrease in out growers sugarcane production from 211,325 tones in farming year 1996/97 to 80,013 tones in year 1997/98 which is the year of privatization of Mtibwa Estate. Increase to 259,952 tones in 2005/06 before it decreasing progressive to 195,112.4 tones in farming year 2010/11.

(ii) Decrease in the number of active sugarcane out growers from 90.3% in year 1998/99 to 71.4% in farming year 2005/06.

(iii) Decrease in out grower's cane sugar sucrose from 10.4 in year 2009 to 8.4 in year 2012.

(iv) The increase in price gap of scale of sugar price supplied by the sugar industry and out growers sugarcane supplied to the industry from 230,000 Tsh to 570,000Tsh. in farming season 1998/99 and 2006/07 respectively.

(v) Reduction in the income poverty in the area among the sugarcane growing household for people with income below 240,000Tsh. per annual from 63% to 23% in year 1997/98 and 2005/06 respectively. Beside this reduction, the study also finds that 66.9 of the farming households still have sugarcane annual income of less than 1,000,000 Tsh per annual.

Therefore hypothesis that, there are positive and negative consequence of privatization; however the latter exceed the positive in case of sugarcane out grower in Mtibwa area is accepted.

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5.4 Recommendation

Based on the findings of the study, the following recommendations are made by this study with the aim of enhancing out growers wellbeing in the study area.

(i) Effort on reviewing sugarcane pricing structure should be done from existing structure of pricing the sugarcane from rendement (sucrose content) scale only to new structure that consider also other sugarcane byproducts such as molasses and bagasse that are used to feed animals and production of energy respectively with the aim of sharing income between factory and out growers.

(ii) As the means of enhancing diminishing out grower's sugarcane production in the area, the existing government structure has to be used in development and enforcement of by-laws to protect the out growers in the study area.

(iii) The existence of multiple associations (including MOA and TUCOPRCOS) in the study area is among the factor that weakens associations powers of

bargaining for out growers rights as the competitiveness of the farmers in the supply chain depend on their collective action. For that case, efforts have to be made to re organize the existing farmers association in the study area to undertake joint production and marketing to enhance their collective efficiency.

(iv) Need to consider the welfare of all stakeholders in developing agriculture related policies, with the aim of meeting the welfare of all stakeholders in the chain including inputs supplier, producer, processors and distributors.

(v) Timely provision of agro-inputs to farmers for enhancing resources usess, which could lead to higher yield. An effective system should be put in place where farmers should be linked with service providers and community money lenders. To meet the demand of the estate in terms of high quality cane supply and to generate sufficient funds for the out grower farmers, the issue of low cane yield should be addressed through provision of high yielding, disease resistant, productive and pest/disease free cane seeds through improvement of the estate farms.

5.5 Areas for Further Research

In addition to that post-privatization assessment of agro-industrial companies on the wellbeing of farmers. With the existence of several challenges facing sugarcane out growers under privatization era, a study recommended further study on impact evaluation on agro industrial companies on the wellbeing of farming household on measuring the outcome of privatization.

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APPENDICES

Appendix I: Sugarcane Farmers Questionnaires

POST-PRIVATIZATION ASSESSMENT OF AGRO-INDUSTRIAL COMPANIES ON THE WELLBEING OF FARMERS QUESTIONNAIRE.

A case of Mtibwa Sugar out-growers in Tanzania

This questionnaire aims to collect data to facilitate completion of a Master's degree in Monitoring and Evaluation for the Post-Privatization Assessment of Agro-Industrial Companies on the Wellbeing of Farmers in Tanzania. The information obtained will remain confidential and will not be used for any other purpose. Your cooperation in completing the questionnaire as accurately as possible will be appreciated.

SECTION 1: BACKGROUND INFORMATION

1.1 Questionnaire number:	1.2 Date of interview:	1.3 Name of enumerator:
1.4 Name of respondent:	1.5 District:	1.6 Division:
1.7 Ward:	1.8 Ward:	1.9 Village:

SECTION 2: RESPONDENT CHARACTERISTICS

2.1. Age of respondents (Years)……...

2.2 Gender ( ) 1= Male 2= Female

2.3. Marital status ( ) 1= Single 2= Married 3= Divorced
4= Widow/er 5= Separated

2.4. Education level ( )

1= No formal education 2= Adult education 3= Primary education
4= Secondary education 5= Post secondary 6= University education
6= Post graduate training 7= Others (Specify)…….

2.5. House hold size……

2.6. Household composition

No	Sex M=1, F= 2	Age	Relationship to HH (1=Head; 2=Spouse; 3=Child; 4=Other)	*Occupation 1, 2, or 3
1				
2				
3				
4				

*Occupation: 1= Activities related to sugarcane production, 2= other activities, 3= not applicable e.g students

2.7. How long the household have been living in the place? …….……(Years)

2.8. What is ethnic group for the household head?……..

2.9. What is the main occupational/activities during the last 24 months? (tick)

Activity	**time split in %**	**Activity**	**time split in %**
1. Crop farming (sugarcane)		2. Crop farming (other crops)	
3. Wage employment		4. Petty business	
5. Business		6. Other (Specify)	

SECTION 3: HOUSEHOLD ASSETS

3.1 Tools Possessed	**3.2 Do these tools work? 1 = yes, 2 = no**	**3.3 Gross estimated value of tools possessed**
1. Radio/ Radio Cassette		
2. Telephone/cellphone		
3. Refrigerator		
4. Sewing Machine		
5. Television set		
6. Furniture (Chairs, Sofas, Wardrobes, Beds, etc.)		
7. Clocks		
8. Iron (Charcoal/Electric)		
9. Cooker (Electric or gas)		
10. Motor vehicle		
11. Motorcycle		
12. Bicycles		
13. Goods cart/ Wheelbarrow		
14. Hoes		
15. Solo		
16. Water pump		
17. Tractor		
18. Plough/ Harrow		

19. Dehusking/milling machine		
20. Beehives		
21. Farm building		
22. Family house		
23. Other (Specify)		

3.4 How many livestock does this household own?

	Actual number	**Value**
Chickens,ducks and geese		
Sheep and goats		
Pigs		
Cattle		
Others (Specify)		

SECTION 4: DETAILS ON SUGAR CANE FARMING

4.1 When did you start cultivating sugarcanes? ……(years in farming)

4.2 Fill in the table below about land issues in five years

Annual farming description	**Acreage under farming (in ha)**	**Land ownership (1 = Own, 2 = Hired)**	**Area under sugarcane in ha:**	**Area under other crops in ha:**
2017		1 = ……. (in Ha) 2 = ……..(in Ha)		
2016		1 = ……. (in Ha) 2 = ……..(in Ha)		
2015		1 = ……. (in Ha) 2 = ……..(in Ha)		
2014		1 = ……. (in Ha) 2 = ……..(in Ha)		
2013		1 = ……. (in Ha) 2 = ……..(in Ha)		

4.3 Annual farming production details

Year	**Sugarcane Farming**		**Other Crops Farming**	
	Production in Kgs	**Payment received After Sales**	**Production in Kgs**	**Payment received After Sales**
2017				
2016				
2015				
2014				
2013				

4.4 Major factors considered by the household as main contributors to the success or otherwise in their sugarcane production detailed above:

i. ……

ii. ……

iii. ……

4.5 Estimate investment and production cost of sugarcane in the last farming year guided by the table below (Investment cost per ha as of 2017)

Basic operations	Estimated cost	Any comments
Land Hiring		
Land clearing		
1st ploughing		
2nd ploughing		
Harrowing		
Ridging		
Seed cane		
Planting		
Irrigation systems		
Fertilizer		
Pesticide		
Herbicides		
Fire break		
Harvesting		
Loading		
Transportation		
Water		
Others (specify)		

4.6 Is there a possibility for to expand area for planting sugarcane? ( )

1= Yes 2 = No

4.7 Give reasons for four answer in 4.8 above

(i) ……..

(ii) …….

(iii) …….

SECTION 5: Sugarcane out grower's wellbeing

5.1 Extension services

5.1.1 How often did you attend meetings, receive advice or get visited by extension officers from the government or any other institution engaged in agriculture extension services in last 24 months? Please fill the table below.

Name of institution/project	**Type of institution (code)** ***1 = Government extension service*** ***2 = Investor/ Sugar factory*** ***3 = NGO*** ***4 = Private Company*** ***5 = International organisation*** ***6 = Farmers' Association*** ***7 = Research institutions*** ***8 = Others (state)***	**Number of visits**
1)		
2)		
3)		
4)		
5)		

5.1.2 What specific aspects of agriculture did you receive professional advice, in the last 24 months? (Tick √ if YES and X if NO)

1) Farm preparations and planting ( )

2) Harrowing, fertilizers and pesticides ( )

3) Harvesting and Transporting ( )

4) Others (Specify).....

5.1.3 In general, are you satisfied with the quality of extension services in your area? 1=Yes 2=No ( )

5.1.4 Give reason for your answer in above……

5.2 Sugarcane Marketing arrangement

5.2.1 Is there a contractual arrangement between the out grower and the factory?

( ) 1= Yes 2=No

5.2.2 If Yes, have you ever seen that contract. ( ) 1=Yes 2= No

5.2.3 Is the contract renewed on yearly basis ( ) 1=Yes 2= No 3= Don't know

5.2.4 Do you participate personally in price setting ( ) 1=Yes 2= No

5.2.5 If not, who sets price? ( )

1=Our association 2= The miller 3= SBT 4= Other (Specify)……

5.2.6 Are you satisfied with the current sugarcane price? ( ) 1=Yes 2=No

5.2.7 If no what is to be done to correct the situation? ……

5.2.3 How is sugarcane transportation from the field to the mill organized? ( )

1= Managed by the mill 2= Managed by the association

3=individual farmer's arrangement 4= Other (Specify) ……..……

5.2.4 How is payment for cane transportation effected? ( )

1 = Deducted from sales proceeds by miller

2 = Deducted from sales proceeds by the association

3 = Paid upfront by farmers

4 = Other (Specify) ……

5.2.5 Indicate the marketing problems you experience in selling your sugarcane.

1= no problem ( ) 2= low price ( ) 3= lack of transport ( ),

4= delayed payment ( ), 5= unstable prices ( ), 6= lack of market outlet

( ) 7= others ( ) specify….. ……

5.3 Sugarcane Harvesting

5.3.1 For sugarcane to be harvested a permit (OGR number) has to be obtained from the factory. Is obtaining permit a problem? ( )

1= yes 2= no

5.3.2 How long does it take to get that permit?.....days.

5.3.3 Do you pay for the permit? ( )

1= Yes 2= no

5.3.4 If yes how much does you pay for it …….

5.3.5 Is there any delay between sugarcane burning/ harvesting and transportation?

1= yes 2= no

5.3.6 Is transport to factories a problem? ( )

1= yes 2= no

5.3.7 Is there any loss of sugarcane through transporting to the factory? ( )

1= yes 2= no

5.3.8 If yes, what are the estimates of sugar loss during transportation in 2016/2017 season …….(tons)

5.3.9 Who supervise your sugarcane to the weighbridge?.....

5.3.10 Are you satisfied with the way sugarcane is weighed? ( )

1= yes 2= no

5.3.11 If no, give reasons…….

5.4 Seed-cane acquisition

5.4.1 Where do you obtain cane- seed?.....

5.4.2 How much did you spent on cane- seed …….

5.4.3 Have you ever used clean seed-cane (Hot water treated)? ( )

1= yes 2= no

5.4.4 If no, give reason……. ..

5.5 Access to Finance

5.5.1 Have you ever borrowed money from a friend/relative or financial institution for cane production? ( )

1=Yes 2=No

5.5.2 If Yes, please give the following details about the loan

Institution	**Year**	**Amount borrowed**	**Loan period**	**Total amount paid back**	**Difficult in securing loan 1= Easy 2= Moderately difficult 3= Very difficult 4= indifferent**	**Whether finished repaying in time 1=Yes 2=No**	**Comment**

5.5.3 In which activities did you use the money borrowed? ( )

(a) Ploughing (b) Planting (c) Irrigation (d) Fertilizer application

(e) Plant protection measures (f) Harvesting (g) Harvesting (h) Transportation

(i) Others (Specify).....

5.5.4 How does privatization of Mtibwa Sugar Company Limited contributed to above sugarcane trend (5.1 – 5.5)?

i. …….

ii.……

iii.…….

5.5.5 In your opinion what you think will be the best approach to favor farmers wellbeing with respect to privatization of Mtibwa Sugar Company……

……

……..

Thank you for your cooperation and contribution to this study.

Nonge Ally Juma
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Appendix II: Checklist for Out Growers Associations

1.0 Background and history

(i) Short history of the association

(ii) Registration type (association or cooperative?)

(iii) Number of members

(iv) Objectives of the associations

(v) Activities of association

2.0 Functional and managerial structure

(i) What are the main functions of the association?

(ii) How is the association financed to perform its functions?

(iii) What are the roles of the association on enhancing the wellbeing of farmers.

3.0 Functional relationships with Mtibwa Sugar Estate.

(i) In performing its functions how do you collaborate with Mtibwa Sugar Estate?

(ii) What constraints does the association encounter in the process of collaboration?

(iii) Do you think the current institutional relationship between the association and Mtibwa Sugar Estate insures efficiency, productivity and profitability of the sugarcane out growers?

(iv) If no what proposals do you have to improve the institutional relationship between MOA and Mtibwa Sugar Estate?

4.0 Participation in the enhancement of wellbeing of out growers

(i) What are the important services the association provides to out growers?

(ii) In what way does these services association play a role in the enhancement of wellbeing of out growers?

(iii) Which other institutions contribute to the effort of the association on serving the out growers.

(iv) How does the association collaborate with other institutions in delivering the services to out growers?

(v) What are the challenges the associations face on delivering these services?

(vi) What do you think is the best way of delivering these services.

5.0 Effect of privatization of the MSL.

(i) Do you have any contract arrangement with your sugarcane buyers?

(ii) If yes, what is the nature of the arrangement in terms of (sugarcane supply, price setting, product quality, payment mode and other services provision)?

(iii) In your opinion, what is the state of wellbeing of out growers following privatization of MSL.

(iv) How does privatization of MSL contributed to the above state of outgrows.

(v) In your opinion, what will be the best way of enhancing out growers wellbeing under privatized MSL.

6.0 Other issues

(i) In your opinion, is there any other issues contributed to the recent wellbeing state of out growers?

(ii) If yes, what are they?

(iii) What should be done to address them?

Appendix III: Mtibwa Sugar Factory, Cane Contribution by Out growers Error! Not a valid link.

Source: MOA, 2017