

EFFECTS OF CONTRACT FARMING ON FINANCIAL PERFORMANCE OF
SUGARCANE FARMERS IN MIGORI COUNTY: A CASE STUDY OF SOUTH NYANZA
SUGAR COMPANY, KENYA.

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DECLARATION

DECLARATION BY THE STUDENT

This thesis is my original work and has not been presented for examination in any other University or Institution of higher learning.

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DEDICATION

I dedicate this project report to my three children; Terry Onyango, Antony Onyango and Trevy Onyango, whom I owe an obligation for greater performance, by raising higher academic benchmark.

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ABSTRACT

In the last five years, the performance of the sugar industry has continued to face several challenges some of which include; high cost of production characterized by operational inefficiencies. Previous studies have expressed diverse views on whether there is correlations between contract farming and financial performance, with some researches arguing that contract farming affects financial performance of sugarcane farmers while others researches oppose this argument. The main objective of this study was to examine effects of contract farming on financial performance of sugarcane farmers in Migori County, with the focus on contracted cane farmers of South Nyanza Sugar Company limited, Kenya. The specific objectives of the study was to determine the effects of cane pricing method on sugarcane productivity, examine effect of cost of extension services on financial performance of cane growers, examine effects of delay in payment of cane proceeds on sugarcane profitability, and determine effect of delay in harvesting on profitability of sugarcane in Migori County. A stratified sampling technique was used to divide contract farmers according to the five sectors i.e Sector I, II, III, IV and V. Simple random sampling was used to select farmers from each strata. Slovinc's formula was used to calculate an appropriate sample size from a population ($n = \frac{n}{1+n(e^2)}$). Data was collected using a structured questionnaires, consisting mainly with closed ended questions. Quantitative data was analysed through percentages and mean and multiple regression using Statistical Package for the Social Sciences (SPSS) software, and presented in tables and figures. The study was motivated by the conflicting views of the previous researchers on the effect of contract farming on the financial performance, with others researchers citing strong positive relationship between contract farming and the financial performance while others oppose the argument. The study concluded that contract farming is having a negative effect on financial performance of sugarcane farmers in Migori County. The study recommended the need to re-examine cane pricing based on tonnage, a rethink of cost of extension services on offer and an enhancement of supervision of the same, and a need to sensitize farmers to develop earlier maturity cane variety so that the turnaround time is reduced.

ACRONYMS AND ABBREVIATIONS

COMESA	Common Market for Eastern & Southern Africa
DAP	Diamonium Phosphate
GDP :	Gross Domestic Product
FAO	Food and Agriculture Organization
FRP :	Fair and Remuneration Price
KENSGU	Kenya Sugarcane Growers Union
KESREF	Kenya Sugar Research Foundation
KSB :	Kenya Sugar Board
MAFAP	Monitoring African Food and Agricultural
NAS	National Adaptation Strategy
NSB :	Nyanza Sugar Belt
PI :	Preparation Index
POCS :	Pure Obtainable Cane Sugar
SADC :	South African Development Community
SDL :	Sugar Development Levy
SNSB :	Nyanza Sugar Belt
SonySugar :	South Nyanza Sugar Company Limited.
SRA :	Strategy for Revitalization Agriculture
TC :	Tons of Cane
TCD :	Tons of Cane per day
TS :	Tons of Sugar

DEFINITION OF TERMS

Definition of Operational Terms

For the purpose of the study, the following terms shall be used as they apply to the study:-

Contract farming: Refers to agreement between sugar cane farmers and millers whereby farmers undertake to grow cane, maintain and deliver it to millers. On the other hand, the millers also agree to provide inputs such as fertilizers, chemicals, seed cane and other related services. The millers also guarantees market to farmers on the maturity of cane.

Contracted cane farmer: Refers to the farmer with an agreement with SonySugar to produce sugarcane and has access to farm inputs, extension services and other services offered by SonySugar.

Extension services: Refers to services offered to cane farmers by the millers to improve their farm productivity.

Financial Performance: Refers to total farm income plus interests accrued on late payments.

Motivation: Refers to any factor that causes farmers to concentrate in cane farming with a view of getting more income.

Sector: refers to segment, location in a given neighbourhood of farmers designed by millers mainly to make it easier for supply of inputs, extension services and other agricultural activities.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Contract farming is an agricultural production arrangement in which a farmer commits to producing a given agricultural product in a given manner and the buyer commits to purchasing it (Gugerty Mary, 2010). Contract farming therefore involves the buyer specifying which extension services to provide i.e farm inputs to be provided and at what price, harvesting period, the pricing method and the farmer agreeing to deliver when the product matures. Financial performance is one of the main reason cited why many farmers opt for contract farming. Numerous studies of contract farming emphasizes financial performance as the principle incentive for farmers to enter into contract farming. Financial performance, as widely used in farm management literature, is net farm income plus interests (Mishra Ashok & Williams, R. 2009). This measure was adopted for this study and is defined as Gross farm income plus interest accrued less operating costs

While contract farming is widespread globally and particularly in many developing countries (Prowse Martin, 2012), there are conflicting views on its effect on financial performance of smallholder farmers. A study conducted in India by Gulati et al, (2008), argues that contract farming improves financially performance of the small holder farmers since it enables farmers to access ready markets and also to access global markets. Minot Nicolas, (2014) also conducted a similar study in USA and concluded that contract farming increases financial performance of the small holder farmers dues to guaranteed market and access to extension

services offered on credit. This implies that contract farming enhances the income of farmers due to economies of scale enjoyed by farmers in the contract farming arrangement.

On the other hand, Little and Watts, (1994), Singh, (2002) argue that contract farming is a means of exploiting farmers by the large agribusiness firms due to the unequal bargaining power. They criticize contract farming on the basis that most of the contractual terms are too costly for smallholder farmers to comply with and that most large firms break the contractual terms at the expense of the smallholder due to unequal market power. Guo and Jolly (2008) conducted research on contract farming argue that contract farming is only beneficial for large scale farmers and that it only serves to push smallholder farmers out of the market and could even lead to inequality and entrench poverty among the rural smallholder farmers.

Mandla and Masuku (2012), in Swaziland established that a farms's financial performance is anchored on good contract terms between the farmer and the buyer. They concluded that there is a strong relationship between contract farming and financial performance of small scale farmers due to benefits derived from extension services like timely weeding, fertilization, and timely harvests, all of which are determined in the farming contract.

Gumbo (2008), conducted a study on effect of contract farming in Western Kenya on profitability found that out-growers achieve higher incomes in comparison to non out-grower households. The study noted that contract farming can introduce new technology and enable farmers to learn new skills which results into better return on farm assets. Minot et al, (2009) conducted a study on effect of contract farming on the return on farm assets in USA. The study concluded the financial performance of farmers under contract agreement were higher by from 8% to 15 %, compared to non-contracted farmers. A study by Waswa (2012) of three sugarcane contract farming projects in Western Kenya found that farmers retained only 34-34% of gross income, while companies retained the rest.

A study by Kenya Sugar Board (2010) on three sugarcane contract farming projects in Western Kenya found that farmers' income were reduced by company-driven deductions over which

farmers had no control. They argued that contract farming leads to poverty amongst farmers due to failure by the buyers to observe their contractual obligations such as timely supply of farm inputs, timely harvesting and timely payment of farm proceeds.

From the background information it is clear that there is contradicting views by different researchers on the effect of contract farming on the financial performance of farmers. This leaves a gap which the existing literature are yet to fill. The question therefore remains as to whether contract farming indeed improves the financial performance of the farming communities or it has a negative impact on their financial performance.

1.2 Statement of the Problem

Contract farming is ideally meant to improve the financial performance of farmers by guaranteeing them ready market and critical extension services such as fertilizers, farm chemicals, timely weeding, timely harvest and transportation to the Market or factory. Nevertheless, some studies have criticized contract farming and concluded that it is an evil because it may be an avenue for large agribusiness firms to exploit the small scale farmers. On the other hand, some studies are of the view that that contract farming increases financial performance of the small holder farmers dues to guaranteed market and access to extension services offered on credit. A study on effect of contract farming on the return on farm assets in USA concluded that financial performance of farmers under contract agreement were higher by from 8% to 15 %, compared to non-contracted farmers. A study of three sugarcane contract farming projects in Western Kenya found that farmers retained only 34-34% of gross income, while companies retained the rest. The study found that the income of farmers were reduced by companies' driven deductions over which farmers had no control. The study concluded that... *“it is widely acknowledged that high cost of input and delayed response to cane fires are directly controlled by the company to significantly depress financial performance of farmers”*.

In view of the above, there are contradicting views on the effect of contract farming on the financial performance of farmers across the world. The question therefore still remains as to

whether contract farming indeed improves the welfare of the farming communities or not. It is against this background the researcher seeks to contribute onto the debate.

1.3 Objective of the Study

The main objective of the study is to establish the effects of contract farming on financial performance of sugarcane farmers in Migori County, using South Nyanza Sugar Company Ltd as a case study. The Specific objectives of the study were to:-

- i. Determine the effects of cane pricing method on financial performance of farmers.
- ii. Establish the effect of cost of extension services on financial performance of sugarcane farmers.
- iii. Determine the effect of delay in harvesting of cane on the financial performance of farmers.
- iv. Establish the effect of delay in payment of cane proceeds on financial performance of farmers.

1.4 Research Hypothesis

The researcher adopted null hypothesis, **H₀**, which holds the view that there is no significant influence of contract farming on the financial performance of cane farmers in Migori County. The hypothesis test was designed to test all the four independent variables of contract farming and their relationship on the financial performance of cane farmers in Migori County as follows:-

- i. **H₀₁**, Cane pricing method has no effect on financial performance of farmers.
H_a, Cane pricing method affects financial performance of farmers.
- ii. **H₀₂**, Cost of extension services does not affect financial performance of cane farmers.
H_a, Cost of extension services to cane farmers affect financial performance of cane farmers.
- iii. **H₀₃**, Delay in harvesting of cane has no effect on the financial performance of farmers.
H_a, Delay in harvesting of cane affects financial performance of cane farmers.

iv. **H₀₄**, Delay in payment of cane proceeds by Sony Sugar has no effect on the financial performance of farmers.

H_a, Delay in payment of cane proceeds by Sony Sugar affects financial performance of farmers.

1.5 Significance of the Study

The information from this study may be useful to many stakeholders in the sugar industry. The study is useful to farmers as it provide information useful to them in making decisions with regards to contract farming. The findings of the study is useful to the sugar millers in evaluating impact of contract farming on cane production within the region. This will assist millers in developing policies geared towards enhancing financial performance of cane farmers in order to increase cane availability in the region. Financial performance of cane farmers can be boosted if the contract between farmers and millers is well framed to the benefit of both parties.

The study may also be useful to sugar research institute (KESREF) and sugar directorate who may use the findings of the research to formulate policies which are necessary to ensure the sugar industry remains competitive not only in Kenya but within the COMESA region. The study findings and recommendations are also important to the Government of Kenya, through the ministry of Agriculture, Fisheries and Natural resources in making policies to ensure the interests of smallholder farmers are safeguarded.

1.6 Scope of the Study

The study took place in Migori County, Awendo Sub-County. The Sub County lies squarely within the sugarcane zone of Sony Sugar. The study area has approximately 2,100 contracted sugarcane farmers contracted by Sony Sugar. The researcher used farmers contracted by Sony Sugar as its targeted population. Awendo sugar belt was specifically selected for the study because the contracted sugar cane farmers have been in this farming business since the inception of Sony Sugar in 1979.

1.7 Delimitations of the study

The study was dependent on the accuracy and reliability of information from the samples that were selected. The study also depended on the accuracy, and reliability of secondary data from research institutes and other published source materials. In dealing with the research limitations, the researcher picked each limitation and addressed it diligently. On accuracy and reliability, the reliability of the data was determined using test-r-test method and the result was found to be positive

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the concept of contract farming, contract farming in Kenya and in particular, Migori County, theoretical framework, theories related to contract farming and a review of literature related to the study. The chapter also covers summary and the gaps identified and conceptual framework.

2.2 Concept of Contract farming

Contract farming has been in existence for many years as a means of organizing the commercial agricultural production of large and small-scale farmers (Eaton, 2001). Contract farming is an agreement between farmers and an Organization for the production and supply of agricultural products under forward agreements, frequently at predetermined prices. According to Singh (2002), contract farming is best promoted through small growers rather than corporate bodies undertaking large scale farming on their own. The type of contract used depends on a number of factors such as the nature of the product, the primary processing required, if any, and the demands of the market in terms of supply and reliability. Crops such sugarcane require long-term contracts that can be amended periodically.

Feasibility study carried out by a United Kingdom based Agricultural firm, Booker Tate in 1979 with regards to contract farming in Kenya suggested production of cane by contracted farmers and a small acreage under company owned Nucleus Estate. The report was adopted by sugar millers in western Kenya and farmers enthusiastically responded to the prospect of contract farming and voluntarily registered their land for cane farming. Since then, the number of contracted farmers has increased from the initial with 510 contracted cane farmers in 1979 to 30,000 contracted cane farmers in the year 2015 (KSB, 2015). Contracted cane farmers supply approximately 80% of sugar-cane milled by sugar millers in Kenya, (KSB, 2015). Some studies have revealed that contracted farmers lacked commitment and consequently sold the

supplied farm inputs and didn't weed their cane leading to financial losses. According to research by Sorre (2005), contract farmers in Kenya used inputs supplied under contract on other cash and subsistence crops or sold them. Wawire et al, (2008) reports that farmers' poor attitude towards cane contracts was one of the causes of poor financial performance amongst sugarcane farmers.

2.2.1 Contract farming in Kenya

Sugarcane is produced by about 200,000 small-scale farmers who supply over 80% of the cane milled by the sugar companies in Kenya (KSB, 2015). Out of this 80% of farmers have entered into farming contract with millers. Currently, there are 11 sugar factories in Kenya and all of them have entered into farming contract with sugarcane farmers (KSB, 2012). However, despite these arrangements, financial performance of sugarcane growers has remained elusive over the years as they continue to languish in poverty. A study by Action Aids on the poverty prevalence rate within the sugar belt indicated that out of the 200,000 small scale sugarcane farmers, 40% cannot afford basic needs in life.

2.3 Theoretical review

2.3.1 Effects of cane pricing method on financial performance of sugarcane farmers

S. Potlola (2010) developed a model of testing cane pricing method that incorporated Government mandatory minimum price model for sugarcane and compares with the financial performance of cane farmers. The Government mandatory minimum price model predicted that both the quality of cane and the factories' profit from unit cane purchased were higher when it uses ex-post pricing model as compared to the Government mandatory minimum pricing methods. These gains come at the expense of increased cultivation costs incurred by farmers. The empirical result found that cane cultivation costs of farmers are significantly higher when the ex. post pricing model is used and this has negative impact on the financial performance of farmers.

A research conducted by KSB (2012) suggested that cane pricing based on sucrose contents may motivate farmers to improve on cane quality. However, producing higher quality involves extra effort by farmers hence impact negatively on their financial performance if payment based on tonnage delivered is applied.

2.3.2 Effects of cost of extension services on the financial performance of sugarcane farmers

A study by Guirkinger (2008) show that extension services enable cane farmers in developing countries to overcome some barriers that they face such as access to capital and credit facilities .Other empirical analysis also shows that extension services provides significant benefits to farmers through increased farm incomes Waswa, et al., (2012) have the view that input costs provided in form of extension service by millers influence the net income of the sugarcane farmers. This is because the more input costs are put in the farming activity correctly, the more the income is attained by the farmers.

2.3.3 Effects of delay on harvesting on financial performance of farmers

A study conducted by Bogdan and Doerge (2005) on effects of harvest delays on corn hybrid performance. The results showed that nearly 90% of the yield loss associated with delayed corn harvest occurred when delays extended beyond mid-November. This impacted negatively on the farm income of farmer. Higher plant populations resulted in increased grain yields when harvest occurred in early to mid-October. Only when harvest was delayed until mid-November or later did yields decline at plant populations above 30,000/acre, hence a reduction of income level of farmers. Delaying harvest until November decreased grain moisture content by 5.8% (from 23.8 to 18.0%).

A study conducted by Rein (2005) on effects of delay in cane harvesting on financial performance of farmers noted that millers prefer processing green cane since increase in the quantity of leaves and tops accompanying the cane. This affects recovery of sugar, the effective capacity of the mill and milling costs. This enable them pay farmers relatively high prices resulting into increased financial performance by farmers since millers wishes to maximise the

biomass input for cogeneration or by-product purposes, the leaves and tops have significant value and are required at the mill. The study concludes that in order to achieve maximum financial performance of farmers, there should be timely harvesting of their cane and let them be delivered to the factory while still fresh.

2.3.4 Effects of delay on payment to farmers proceeds on financial performance of cane farmers

A study by Chirwa and Kydd (2006) on farm level productivity in smallholders' tea estate found that delay in payment of tea proceeds motivated farmers to break away from small holders association to form their own associations. They sought contractual arrangement directly with commercial estates who gave those better services and prompt payment on their proceeds. The study found that these farmers received their proceeds on timely compared to farmers who were contracted to millers. The result showed that farmers who received their proceeds and other extension services on time were 1.7 times more productive than those whose proceeds delayed by selling direct to Factories. The study concludes that the service package in contractual arrangement in tea farming matters. Farmers enter into the same contract model as tea farmers and they suffer delay in receiving payment proceeds.

2.4 Empirical literature

Available literature shows that the costs of contract participation by agribusiness firms and smallholder farmers can be explained through the Transaction Cost Economic (TCE) theory, agency theory and the conical incomplete contract theory. These concepts are explained hereafter.

2.4.1 Transaction Cost Economic (TCE) Theory

The transaction cost approach to the theory of the firm was created by Ronald Coase (1937). Transaction cost refers to the cost of providing for some good or service through the market rather than having it provided from within the firm. In order to carry out a market transaction, it

is necessary to discover who it is that one wishes to deal with, to conduct negotiations leading up to a bargain, to draw up the contract, to undertake the inspection needed to make sure that the terms of the contract are being observed.

There are a great variety of arrangements in producing goods. In agriculture often most of the labor force works on a day-to-day basis. In other industries the labor force may be permanent, tied to the firm with long-term contracts. Repair services in some firms may be supplied by an internal organization; in others it is provided by specialized firms from outside. The unsuitability of short term contracts arise from the costs collecting information and the costs of negotiating contracts. This leads to long term contracts in which the remuneration is specified for the contractee in return for obeying, within limits, the direction of the entrepreneur. He noted that there are inconveniences of market transactions, but if transactions are not governed by the price system there has to be an organization. The object of a business organization is to reproduce the conditions of a competitive market for the factors of production within the firm at a lower cost than the actual market.

This theory is related to the study in the aspect of transaction cost such as the cost of providing seed cane, fertilizers and other farm inputs which is later recovered from the farmer when the crop is harvested and transported and delivered to the factory. The cost of inputs are recovered with interest and therefore affects the financial performance of contracted cane farmers. The interests on inputs can be avoided if the farmer develops his own cane using internal resources, thereby increasing the financial performance.

2.4.2 The Conical Contract theory - the Incomplete Contract concept

Complete contract approach has largely dominated the past literature. Classical applications includes structural incentives in order to overcome asymmetric information problems such as moral hazards and adverse selection. The key assumption is that complete contract farming theory governs all aspects of performance and all contingencies. Because all parties are able to foresee relevant contingencies (Schmitz, 2001). The incomplete contracts problem refers to the

design of contracts when important variables, such as quality of traded goods, cannot be observed or verified by a court of law effectively, thus making them “incomplete contracts” (Foss and Klein, 2008). Wilkinson (2005) argues that although contracts are an important method of conducting business, they are incomplete due to the problem of bounded rationality. It is impossible to foresee every future contingency of the contracting parties and uncertainty about the future states of nature.

This theory is related to the study to the extent that in cane contract farming arrangement, the key variable such as quality quantity of cane when it mature cannot be accurately determined at the time of signing contract. As such, in case of breach of contract, it is normally difficult to quantify the loss.

2.4.3. The Agency theory

Agency theory can be separated into two branches: positivist and principal agent theory. Agency theory deals with the relationship between two parties. Positivist theory tends to be descriptive and mainly concerned with the governance mechanisms of contracts, while principal-agent theory develops quantitative models to solve for contractual optimum (Eisenh 1989). Agency theory assesses the optimal contractual relationship between principal and agent given the information asymmetry and degrees of risk aversions. It helps us to enhance our understanding of how and why different contractual arrangements evolve. It has less to say about the whole picture of how different vertical coordination systems evolve such as strategic alliances and closely managed supply chains (value chains). In an agency relationship, the agent (e.g., the farmer) is expected to behave in accordance with the goals of the principals (e.g., lenders, wholesalers, and processors). The theory focuses on the contract between these two parties and seeks to determine the optimal contract, i.e., the contract with the most efficient organization of information and the lowest cost.

Agency theory suggests two main strategies of control: behavior based and outcome based (Eisenhardt 1985). When the behavior of the agent is observed, a behavior-based contract is

optimal. In the case of complete information, the agent is aware of his/her behavior, but the principal is not. In the case of incomplete information, if the agent is rewarded based upon his/her behavior, the agent may shirk. In both cases, the principal has two options; either the principal can purchase information about the behavior of the agent and reward good behavior or the principal can reward the agent based on outcome. The optimal choice occurs between the two alternatives based on the trade-off between the cost of measuring behavior and the cost of measuring outcomes and transferring risk to the agent (Eisenhard, 1985).

This theory is relevant to the study to the extent that in cane contract farming, contractual relationship between principal and agent mostly involves information asymmetry and degree of risk since the outcome is dependent on future conditions which cannot be accurately determined at the time of signing the contract. The researcher adopted the agency theory since it best relevant to the study.

2.4.4 Empirical studies

A number of studies have been conducted about effects of contract farming on the financial performance of small scale farmers. Waswa et al, (2010) conducted a study on commercial sugarcane farming in western Kenya. The study was aimed at determining the long-term financial effects of sugarcane farming on indigenous food crops and vegetables in Mumias and Nzoia sugar belts of western Kenya. Up to 188 respondents in three divisions of Mumias and 178 respondents of three divisions in Nzoia were purposively selected. The results of the study found that sugarcane contract farming significantly contributed into improved financial performance of small scale farmers. This was particularly because farmers were guaranteed market at a reasonable price. Farmers could also afford to maintain their crop on time leading to improved financial performance. The study recommended that efforts should particularly focus extension services and pricing methods to ensure farmers maximize on their returns.

A study conducted by Dindi (2013) on factors affecting Sugarcane farming in western Kenya. The main objective of the study was to establish effect of contract farming on the profitability of

sugarcane farming. The report found that 92% of the sugarcane milled in MSC was supplied by contracted farmers. The report noted a continuous decline in financial performance and sugar productivity in outgrowers. The average productivity of contracted farms had declined from a high of 137 tons of cane per Ha (TCH) in 1973 to 58 TCH in 2013. This has adversely affected mill-cane requirement by Mumias Sugar Company. Descriptive study design was used to investigate into factors influencing sugarcane production by contracted cane farmers. Purposive sampling was used to select a sample of 262 farmers from a target population of 2619 contracted cane farmers. The data collection instruments included self-administered semi-structured questionnaire for farmers. Secondary data was obtained from Agricultural reports of Mumias Sugar Company. Data was analysed using both qualitative and quantitative means. The study findings revealed that bureaucratic system of contract farming was lengthy and hence demotivated farmers from engaging into sugarcane farming. The findings also revealed that MSC was not honouring their contractual responsibility of providing extension services such as fertilizers and harvesting time.

Fredrick Muli (2010), conducted a study on challenges facing smallholders' sugarcane farmers in Kwale County. The Objective of the study was to identify factors which determine financial performance in Sugarcane growing by smallholders of sugarcane in Kwale. The result of the study revealed that extension services, timely harvesting, and good crop husbandry were very critical factors effecting the financial performance of small scale farmers in Kwale. The study concluded that farmers need flexible contract agreement, more access to extension services and more farmers' education in order to realize good financial performance.

Mandla & Masuku (2012) in their study on cane growers in Swaziland concluded that farmers required extension services and motivation to be commercially oriented in order to improve cane yields hence good financial performance. Karanja, Jayne & Strasberg (1998) in their study on determinants of fertilizer adoption and use in Kenya revealed that contract farming was one of the major contributor to good financial performance by Maize farmers.

A number of theories have been advanced to explain the relationship between contract farming on financial performance of sugarcane farmers. Wynne (2009) argues that contract farming reduces direct incentive for sugarcane growers to enable them produce and deliver quality cane with the high sucrose contents. This implies that in situations where the contract agreement pegs cane prices on quantity of cane delivered, farmers are normally not focused on the quality of cane hence in the final end their financial performance will reduce. Patlolla, (2010) also holds to the same theory. He argues contract farming in most cases is not structured to motivate farmers into improving their financial performance. The resultant effect is reduced financial performance. According to his theory, contract farming does not create incentive for farmers to deliver clean high sucrose sugarcane and the millers to improve sugar recovery, with overall increased financial performance by farmers.

Mandla & Masuku (2012), in his study on sugar-cane profitability in Swaziland reported that farmer's financial performance was significantly affected by contractual arrangement between them and millers. The study revealed that farmers who contracted their cane made more profit compared to those who did not sign contract with sugar millers. This is because they had access to better extension services and they were guaranteed of fertilizers and timely harvesting of cane to the factory. Contracted farmers also had an opportunity to pre negotiate the selling price in advance. The study by Odede (1992) reported that contracted sugarcane farmers employed various techniques e.g sale of fertilizer, lease of cane in order to settle demands for school fees, and other subsistence expenses. In the process of satisfying these requirements for cash and socio-economic factors cane yields was affected hence reduced financial performance.

Nuthall & Padilla (2009) in their study found out that contract farming was an effective way of improving technical efficiency in the production of sugar-cane in Philippines, hence increased financial performance among small scale farmers. They recommended contracting of farmers with long farming experience and young farmers who lacked farming experience and would eventually benefit from extension services to improve on their financial performance.

2.5 Summary of the literature and Research Gaps

From the above literature review, it is clear that there is conflicting views on the effect of contract farming of the financial performance of small hold farmers. While Waswa et al, (2010), Fredrick Muli (2010) and Masuku (2011) holds to the theory that contract farming has a positive influence on financial performance of farmers. Other scholars (Dindi. 2013; Odede 1992 and Patlolla, 2010) are holding a contrary view. They argue that contract farming in most cases is not structured to motivate farmers into improving their financial performance. In the process of farmers diverting services offered to them by millers to satisfy their immediate requirements for cash and socio-economic factors, cane yields is negatively affected, hence reduced financial performance. The question therefore still remains as to whether contract farming indeed improves the welfare of the farming communities or not. It is against this background that the researcher sought to contribute into the debate.

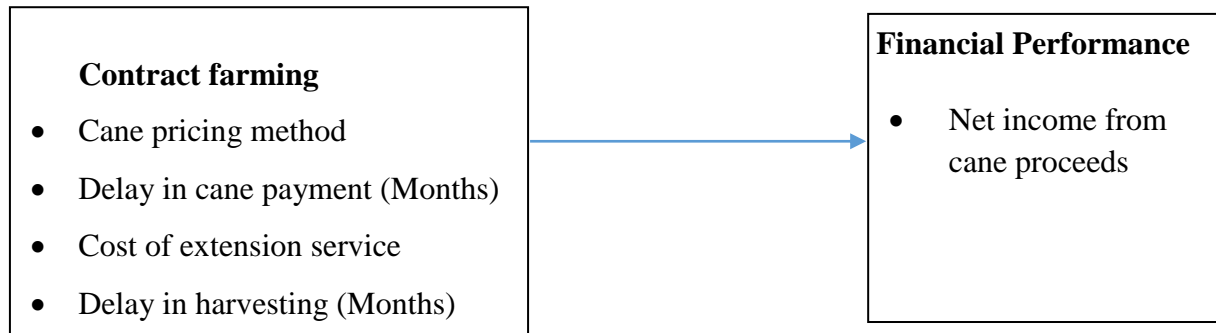
2.6 Conceptual framework

This section covered the effects of contract farming on the financial performance of farmers in Kenya, with specific focus in Migori County, Awendo- Sony Sugar belt. It explains the independent and dependent variables adopted for the study and how they are related to each other. The arrow explains the relationship between the two variables and how they influence each other. Contract farming is an agricultural production arrangement in which a farmer commits to producing a given agricultural product in a given manner and the buyer commits to purchasing it (Gugerty, 2010). Under contract agreement, the company and the farmer have different obligations to fulfil that affects financial performance of farmers. Sugarcane farmers engage into cane production with a motivation to improve their financial performance. Figure 1.0, shows the various variables and how they influence each other in this research study.

Figure 1.0 study variables and how they influence each other

Independent variables

Dependent variable



Source: Author (2016)

Financial performance is a dependent variable because its output varies as a result of the independent variables, Waswa (2012). The desire to improve financial performance creates tension in the farmers, and the tension motivates them into sugar-cane farming. It is a measure of gross income plus interests less operating expenses (Ashok, 2013).

Contract farming is an independent variables and is evaluated with respect on how they affect the dependent variable. The independent variables under contract farming are cane pricing method, which can be based of tonnage of produce or quality of the crop, delay in payment of cane proceeds , say, after two weeks or after one month, depending on contract agreement. Another variable under contract farming is cost of extension services in terms of dissemination of technology, application of farm input to farmers and harvesting period which is based upon maturity of the crop. Intervening variable influence the relationship between independent and dependent variables. In this study, the control variable is Government Policies but it will not be examined.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the area of study, study population, sampling frame, sampling techniques, instruments for data collection, data collection procedure, validity of research instruments, data analysis and ethical considerations.

3.2 Study area

The study area was Migori County, contracted farmers of Sony Sugar. This Company was appropriate for this case study because it is one of the sugar factories in Kenya with the highest number of contracted farmers (KSB, 2014). According to the statistics by Kenya Sugar Board, The Company had contracted over two thousand cane farmers as at 31st December, 2014. Sony Sugar has also been chosen because it has contracted cane farmers since its inception 1979. In view of this, the researcher obtained information from long experienced farmers. In addition, the factory is the only one that has entered into contract farming in the region as compared to the other two rival factories within the region such as Trans-Mara and Sukari Industries Ltd . The table below shows sugarcane growing zones in Kenya.

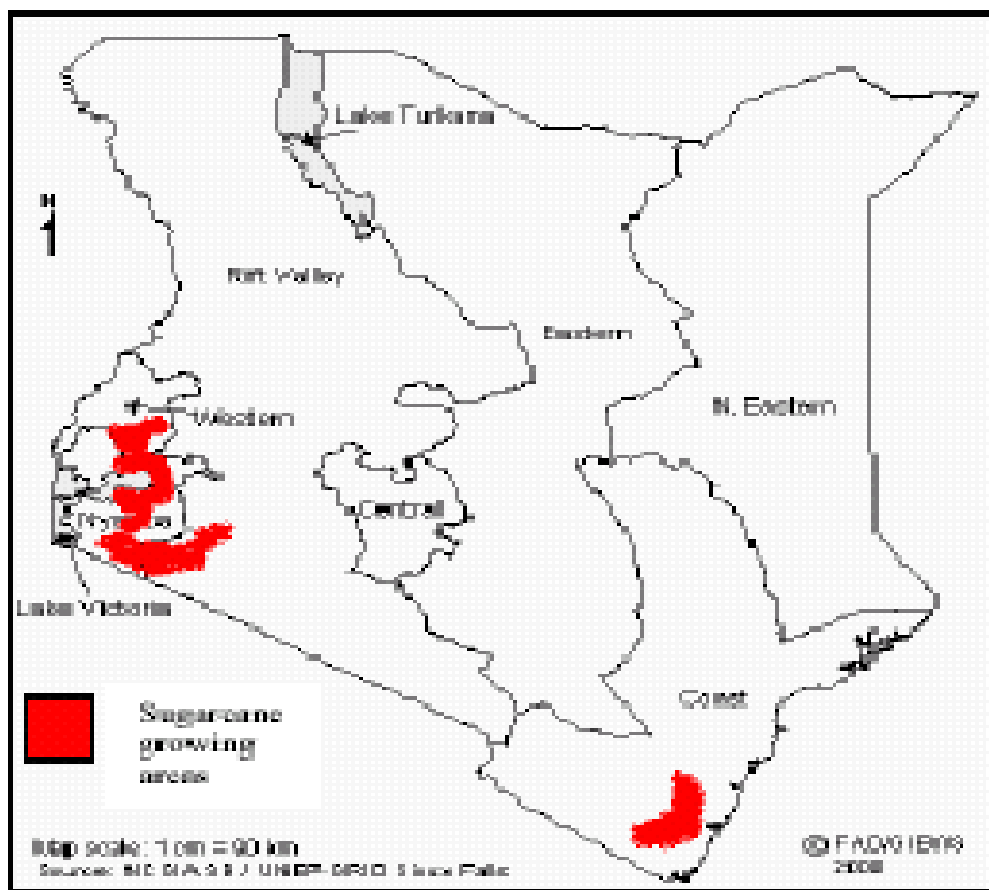


Figure 2.0 Sugarcane growing areas in Kenya.

3.3 Target Population

The study was conducted in Migori County, Awendo sugar belt. The target population was 2,100 contracted sugarcane farmers of Sony Sugar. The contracted farmers who are currently active and are divided in to five sectors as shown in table 1.2 below:-

Table .1: Targeted population for the study (contracted sugarcane farmers of SonySugar)

No	Sector	Area	Number of contracted farmers
1	Sector 1	Awendo area	475
2	Sector 2	Uriri	382
3	Sector 3	Wasweta	474
4	Sector 4	Oyani Masai	412
5	Sector 5	Lichota	357
	Total		2,100

Source: Author (2016)

3.4 Sample size

The researcher used purposive sampling techniques to select three hundred and twelve (312) contracted, from 2,100 contracted farmers who were noted to have over 8 years' experience in contract farming within the region. Purposive sampling techniques because it enables the researcher to targets selected sample who are best suited to provide the needed information require for the research, (Oso and Onen, 2013). In this regard, the researcher targeted cane farmers from the five sectors, with at least Eight (8) years in contract farming. Eight (8) years' experience in cane farming was chosen because it is the complete period of cane contract covering both plant crop and subsequent two ratoon crops. The researcher will use the slovin's formula to figure out what sample size is appropriate. Slovins formulae was most appropriate since the researcher did not know something special about a population, which can help determine a sample size you need to take (Oso, 2013). The formulae is written as $n = N / (1 + e^2)$ where n = Number of samples, N = Total population and e = Error tolerance.

Step 1: the researcher figured out what desired as confidence level to be. For this study, the researcher set a confidence level of 95 percent (which will give a margin error of 0.05).

Step 2. The researcher then put the data of the population in each sector into the formula. In this example, the researcher used a 95 percent confidence level with a population size of 312 contracted farmers with over eight years. $n = N / (1 + N e^2) = 268$

Table .1: Calculation of sample size from targeted population

Sector	Total population(Number of contracted farmers)	Number of farmers with over eight years' experience (purposive sample)	Sample size (using slovins formulae- $n = N / (1 + N e^2)$)
Sector 1	475	77	65
Sector 2	382	61	53
Sector 3	474	59	51
Sector 4	412	36	33
Sector 5	357	79	66
Total	2,100	312	268

From the table above, it shows that two hundred and sixty eight will be samples across the five sectors given a proportionate sample according to the targeted population in each sector.

3.6 Sampling techniques

A stratified sampling technique was be used to group the farmers into five sectors as classified by SonySugar. From each strata, simple random sampling was used to select farmers who have been identified from the sectors. Simple random sampling technique has been chosen because it provides equal chance to farmers to participate in the exercise (Mugenda, 2010). Stratified sampling will be used in heterogeneous population to obtain homogeneous population according to sectors. A stratified sampling technique has been chosen because it ensures equal probability sample and avoid misrepresentation of any strata that might occur (Oso and Onen, 2013).

3.7 Testing of Hypotheses Measures, Independent variables and Dependent variables

Operationalization of the study variables will be done as per the objectives of the study: each variable will be formulated through questionnaire as shown in Appendix III and will be used during data collection process. Operationalization of the study variables was established as shown in Table 1.3.

Table 1.3: Study variables and Measures

No	Objectives	Hypothesis	Variables		Measurements
			Independent	Dependent	
1	<ul style="list-style-type: none"> Determine the effects of cane pricing method on financial performance. 	Cane pricing method has no effect on financial performance of farmers.	Cane Pricing method	Net income from cane proceeds	<ul style="list-style-type: none"> Cane price per ton Ratio of net farm income plus interest to total farm assets
2	<ul style="list-style-type: none"> Examine whether cost of provision of extension services has significant influence on financial performance of farmers. 	Cost of extension services does not affect financial performance of cane farmers.	Cost of extension services to farmers (in Kshs)	Net income from cane proceeds	<ul style="list-style-type: none"> Extension service costs such as fertilizers costs, ploughing, survey costs, and herbicides harvesting cost and transportation costs charged by millers on contracted farmers. Provision of weeding, ploughing, harvesting and transport services by SonySugar to its contracted cane farmers. Ratio of net farm income plus interest to total farm assets
3	<ul style="list-style-type: none"> Investigate whether delay in payment of cane proceeds has significant impact on financial performance of farmers. 	Delay in harvesting of cane has no effect on the financial performance of farmers.	Payment period (in months)	Net income from cane proceeds	<ul style="list-style-type: none"> Number of Months taken before contracted cane is harvested. Ratio of net farm income plus interest to total farm assets
4	<ul style="list-style-type: none"> Evaluate whether delay in harvesting of cane has impact on the financial performance of farmers. 	Delay in payment of cane proceeds by Sony Sugar has no effect on the financial performance of farmers.	Harvesting period (in months)	Net income from cane proceeds	<ul style="list-style-type: none"> Number of Months taken before contracted cane farmer is paid its proceeds. Ratio of net farm income plus interest to total farm assets.

3.5 Data Collection Instruments

The instrument used to obtain data from contracted farmers was administration of questionnaires. Interview schedules was also conducted on some farmers to be able to obtain their opinion on the information that was required. This was appropriate since both questionnaires and interview schedules are used to collect basic information from a sample (Oso, 2013). Each item in the questionnaire was developed to address specific research objectives. The questionnaire contained both open and close-ended questions. This instrument was used in the study because it is convenient to administer when handling a large group of respondents and the type of questions to be administered are to be standard, they are confidential, save on time, not biased and cover wide area, (Catherine, 2012).

3.6 Validity of the instruments

Data validity was ensured through use of experts in research projects. The questionnaires and interview guides was given to the two experts to carry out validity check on the instruments. The researcher then made corrections based on the advices obtained from the research experts.

3.7 Reliability of the instruments

Reliability of a research instrument is a measure of the consistency of research instruments in eliciting similar data from the same respondents after administering the instruments for two or more times within a considerable time lapse apart in between the two or more distinct times of the instruments' administration (Orodho, 2005). Reliability was determined using test-retest method. The instruments was administered to a sample of 60 selected contracted farmers of Nzoia Sugar. The instruments was collected and all responses coded 1. After 14 days, the same instruments was administered to the same sample (re-test). The instruments was collected and coded 1 for the same response to the same item as in the first test, and coded 2 for a different response from the first administration. The total score of each respondent on the same instruments on both code were obtained. This produced a total of 120 scores, 60 from each code. The researcher then compile the

two sets of data obtained; with data points obtained in the first trial denoted as X_i and those which was obtained in the second trial denoted as Y_i . A correlation coefficient between the corresponding X_i and Y_i data points was calculated using the Pearson Product-Moment Correlation Coefficient formula:

$$r = \frac{\sum(X \cdot Y) - \frac{\sum X \cdot \sum Y}{N}}{\sqrt{[\sum X^2 - \frac{(\sum X)^2}{N}] \times [\sum Y^2 - \frac{(\sum Y)^2}{N}]}}$$

Where: X_i and Y_i was the data points after operationalizing into numeric form. The correlation coefficients value (r) lies between -1 and +1 where -1 and +1 indicates perfect relationships while 0 or near to it indicates no discernible relationship between the two variables(Kasomo,2006). A correlation coefficient as high as between (0.7 - 1), was considered acceptable for reliability testing since it means that the instrument had high test-retest reliability (Mugenda & Mugenda, 2003).

3.8 Data collection procedures

The researcher sought and obtained approval from Rongo University to conduct the research on the proposed topic. Also, the researcher sought and obtained permission from National Commission for Science, Technology and Research (NACOSTI). The researcher also wrote an introductory letter to the Managing Director, Sony Sugar, and obtained permission for data collection. Once these permissions had been obtained successfully, the researcher carried out a pilot test administered to 60 respondents from non-selected areas with an objective of adjusting the questionnaires where necessary. A brief explanation about the study was given to contracted cane farmers before the questionnaire is given. Both open and close-ended questions was used to allow for in-depth information gathering on effect of contract farming on cane production in Migori County. The researcher administered semi-structured questionnaire to cane farmers in each of the four sectors.

3.9 Data processing and Analysis.

The researcher collected and analysed both Primary (Questionnaires) and result of interview schedules. These were analysed through percentages, mean and multiple regression analysis using SPSS (Statistical Package for Social Scientists) software, and presented in tables and figures. Multiple regression was used to help the researcher to learn more about the relationship between independent or predictor variables and a dependent (financial performance in this case) variable. Once this information had been compiled for the three independent variables (cane pricing method, payment period, extension service and delay in harvesting), it was interesting to see whether and how these variables relate to the financial performance of sugarcane farmers. Mean is a measure of how variables tend to congregate together. This study will compare the mean scores of effect of quantity based cane payment system on profitability of sugar millers.

3.10 Ethical considerations of the study

The researcher gave the participants an assurance that their identity will remain anonymous in order to uphold privacy. Therefore, they were asked not to write any of their names on the questionnaire. The participants also were also assured that all information obtained from them will be confidential as it will only to be handled by the researcher and such information will only be used for the intended purpose. After obtaining a research authorization letter from Rongo University, the researcher submitted a copy to management of Sony Sugar. The researcher pre-visited Sony Sugar to establish rapport with the management and staff of the institution before the actual data collection date. This made researcher familiar with the respondents to allay any fears. The questionnaires were personally administered by the researcher.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

The purpose of this study was to establish the effect of contract farming on financial performance of sugarcane farmers in Migori County. Data for analysis was collected from contracted farmers of Sony Sugar Company and divided in five sectors. This was necessary since these were the key respondents when examining contract farming and farmers financial performance.

4.2 Response Rate

Data for compilation of this study were collected from contracted sugar cane farmers drawn from Migori County. Out of a total of 268 questionnaires send to the field, a total of 202 usable questionnaires were returned. This corresponded to a response rate of 75 %. This response rate was deemed adequate since as noted by Fowler (2002), the whole point of conducting a study is to obtain useful, reliable and valid data in a format that makes it possible to analyze and draw conclusions about the target population.

4.3 Socio-demographic characteristics of farmers

Socio-demographic characteristics of contracted farmers were measured in terms of gender, marital status, age, education, experience in contract farming and farm size. Choice of these socio-demographic characteristics was informed by the need to control for their influence since previous studies indicate that they have potential to impact on financial performance (Chen and Chang, 2005). Besides, choice of farm size was necessary to help categorize farmers in terms of small scale or large scale. Consequently, farmers with farm size 0.1 - 3 Ha were categorized as small scale farmers while those with over 3 Ha were categorized as large scale farmers.

Results of the analysis of socio-demographic characteristics presented in Table 4.1 revealed the following: A majority of the farmers (72%) were male. Most of them were married (84%). The

main level of education for the farmers was secondary school (52%). A large proportion of the farmers (65%) had 11-20 years' experience in contract farming. A majority were small scale farmers with farms ranging from 0.01 – 3 Ha (80%).

Table 4.1: Distribution of Farmers Socio-demographic Characteristics

Socio-demographic characteristic	Category	n	%
gender of respondent	male	144	72.0
	female	58	28.0
	Total	202	100.0
marital status	married	169	84.0
	single	33	16.0
	Total	202	100.0
age of respondent	20-30	42	21.0
	31-40	24	12.0
	41-50	118	58.0
	over 50	18	9.0
	Total	202	100.0
respondents level of education	informal	19	9.0
	primary	22	11.0
	secondary	104	52.0
	university	57	28.0
	Total	202	100.0
experience in contract farming	1-10	12	6.0
	11-20	131	65.0
	21-30	36	18.0
	over 30	23	11.0
	Total	202	100.0
total Area of firm in Ha	0.01-1	62	31.0
	1.01-3	98	49.0
	3.01-5	28	14.0
	over 5	12	6.0
	Total	202	100.0

Source: Survey Data (2016)

4.4 Cane Pricing and Financial Performance of Contracted Sugarcane Farmers.

Objective one of the current study sought to determine how cane pricing methods affect financial performance of sugarcane farmers. A mixed methods framework of analysis was used. First, farmer perceptions of cane pricing and financial performance were analyzed using

descriptive statistics of the farmers’ questionnaire responses. Second, thematic analysis of responses from the interviews with farmers was conducted.

4.4.1 Descriptive Analysis of Farmer Perception of Pricing Methods

Three items on the farmer questionnaire were used to examine farmer perceptions regarding cane pricing methods. Respondents were asked to indicate the degree with which they agreed with the three items reflecting cane pricing. Responses were elicited on a 5-point liker scale (1-strongly disagree; 2-disagree; 3-neutral; 4-agree; 5-strongly agree).

Results of the descriptive analysis of farmer responses presented in Table 4.2 indicate that contracted sugar cane farmers tended to have a negative perception of the cane pricing methods employed. A majority of the farmers (56%) cumulatively agreed that cane pricing based on tonnage delivered was responsible for the decline in sugarcane production in Awendo sugar belt. Farmers were also of the view that sugarcane payment based on tonnage did not provide incentives for farmers to improve on their cane productivity (67% cumulatively agreed). On the question of economic poverty, most farmers (56%) cumulatively disagreed that cane pricing based on tonnage delivered was responsible for economic poverty faced by cane farmers in Awendo region.

Table 4.2: Distribution of Farmer Perceptions of Effect of Cane Pricing on Farmers Financial Performance

	SD		D		N		A		SA	
	f	%	f	%	f	%	f	%	f	%
1.Cane Pricing based on tonnage delivered is the main cause of decline in sugarcane production in Awendo sugar belt	37	18.0	28	14.0	25	12.0	40	20.0	72	36.0
2.The sugarcane payment based on tonnage does not provide incentive for farmers to improve on their cane productivity	8	4.0	25	12.0	34	17.0	88	44.0	46	23.0
3.Cane pricing based on tonnage delivered is responsible for the economic poverty of cane farmers in Awendo region	76	38.0	36	18.0	26	13.0	21	10.0	43	21.0

Source: Survey data analysis (2016)

The implication of these results is that despite cane millers continued use of pricing cane based on tonnage delivered this practice does not auger well with farmers and this may be responsible for apathy shown towards cane farming in the region.

4.4.2 Analysis of Farmers Interview Responses

In order to probe further on their perceptions regarding cane pricing in the region, farmers were subjected to a one on one interview. Two items on the farmer’s interview schedule focused on farmer perception towards cane pricing. First respondents were asked to candidly express their opinions regarding the methods used by millers in pricing cane in the region. Second, they were asked to enumerate factors that could be responsible for economic poverty experienced in the region. Results of thematic analysis are shown in Table 4.3.

Table 4.3: Farmer Perceptions on Cane Pricing used by Millers

Question	Theme	Sub-themes
Candidly express your opinion with regards to methods used by millers to price cane in this region	Miller negligence	<ul style="list-style-type: none"> • Cane spillage • Broken tractors delay cane delivery • Faulty weighing machines
	Weight manipulation	<ul style="list-style-type: none"> • Manipulation of weights exploits farmers • Some weighbridges not calibrated
	Lack of incentives	<ul style="list-style-type: none"> • No motivation • Increase in corrupt deals • Cut-throat competition
Enumerate factors that could be responsible for economic poverty experienced in this region	Life style	<ul style="list-style-type: none"> • A culture of laziness • Spendthrift lifestyle
	Crop cycle	<ul style="list-style-type: none"> • Long crop cycle • 24 months for maturity is too long

Source: Survey data (2016)

Interviews with farmers revealed some themes and sub-themes in regard to cane pricing in the region. On the question of farmer opinions regarding cane pricing, three themes emerged. Farmers were of the opinion that miller negligence contributed to cane spillage and sometimes tractors broke down occasioning delay in cane delivery and reduced tonnage when people take

cane from the broken tractors. Besides, farmers observed that negligence among millers resulted in faulty weighing machines that gave inaccurate weights.

The second theme that emerged was that of weight manipulation. Concerns were raised by farmers that at times millers manipulate weight to exploit farmers. Besides, some weigh bridges were at times not calibrated and could therefore not accurately reflect the true tonnage of cane delivered. Lack of incentives was another theme that consistently reverberated among farmers. They noted that basing cane pricing on tonnage does not motivate small scale farmers whose cane weight are relatively low. Moreover, farmers were of the opinion that this approach to pricing leads to cut throat competition among farmers and sometimes results in corrupt deals when some shrewd farmers collude with those manning weighing to inflate weights.

When asked to enumerate factors that could be responsible for economic poverty experienced in the region, two factors emerged. Life style was attributed to poverty with farmers pointing towards a culture of laziness and spends thrift lifestyles. Crop cycle was also attributed to poverty experienced. Farmers noted that the crop cycle of up to 24 months before maturity was rather too long. Thematic findings, tended to corroborate findings from the descriptive analysis of questionnaire responses. The implication therefore is that contracted farmers in the region have reservations with cane pricing on tonnage and fear that this approach denies them optimal financial performance.

4.5 Cost of Extension Services

The second objective of the study sought to examine whether the cost of extension services has an effect on financial performance of sugarcane farmers. In order to answer this objective, respondents were exposed to four sets of items on the farmer questionnaire and two items on the farmer's interview schedule.

4.5.1 Extent of Farmer Reliance on Extension Services and the Effect of Cost of Extension Services on Financial Performance.

First, respondents were asked the extent to which they rely on extension services offered by sugar companies. Second, they were asked the extent to which cost of extension services offered by millers affects their cane farming productivity. Results presented in Table 4.4 show that a majority of contracted cane farmers (42%) often rely on extension services offered by millers. Some farmers (18%) however indicated that they do not at all rely on extension services offered. Mixed reactions were elicited on the question of cost of extension services and cane farming productivity. Whereas 29% of the farmers were of the view that cost of extension services significantly affects cane farming productivity, 23% were of the view that the effect of cost of extension services was very significant in cane farming productivity. On the contrary, 21% felt that it was not significant.

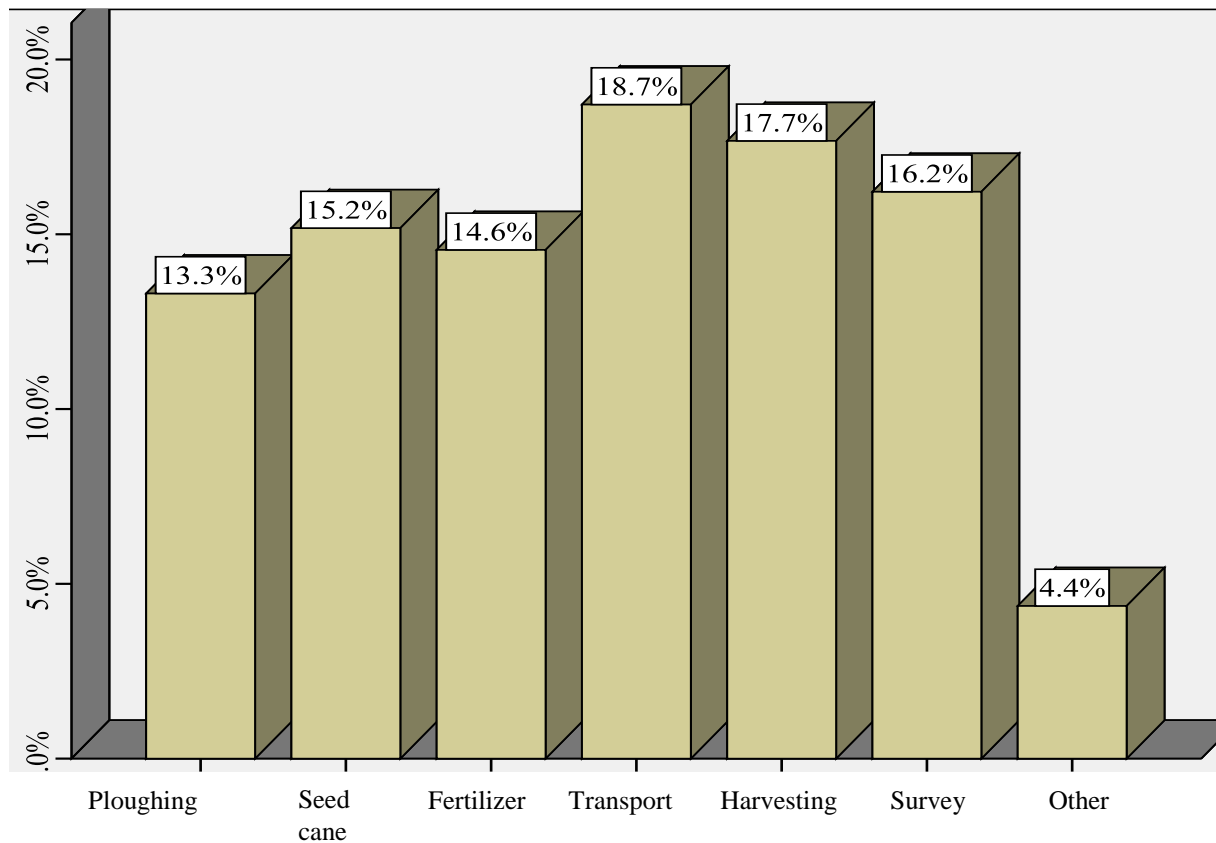
Table 4.4: Farmer Reliance on Extension Services and Perceived Effects on Financial Performance

Question	category	f	%
To what extent do you rely on the extension services offered by Sugar Companies?	not at all	36	18.0
	less often	38	19.0
	neutral	14	7.0
	often	85	42.0
	quite often	28	14.0
	Total		202
To what extent do you think the cost of extension service affect your cane farming productivity?	not significant	42	21.0
	less significant	23	11.0
	neutral	32	16.0
	significant	57	29.0
	very significant	46	23.0
	Total		202

Source: Survey Data (2016)

4.5.2 Sugarcane Extension Services offered by Sony Sugar over the last 5 years.

Results of the analysis of responses to the question seeking to establish the types of sugarcane extension services cane farmers received from Sony Sugar over the past five years are presented in figure 4.1. It is shown that in the last five years, farmers received a variety of extension services in almost equal measures with transport (18.7%) forming the bulk of the total services offered. Other key services have also claimed significant proportions of all the services offered. Ploughing/land preparation which was offered the least in the category of major services stood at 13.3% of all services. Other auxiliary services offered possibly on individual requests were offered at a rate of 4.4% over the last five years.



Source: Author (2016)

Figure 4.1: Extension Services offered to Farmers in Awendo Sugar belt over the last Five Years. These findings show that cane farmers in Awendo sugar belt have access to a variety of extension services usually provided by Sony Sugar to enable use of appropriate cane farming methods. These services range from land preparation to cane harvesting and transportation to the company. Besides, other services such as loans are occasionally extended to individual farmers on request.

4.5.3 Cost of Extension Services and Financial Performance of farmers in Awendo Sugar Belt

To further examine the impact of extension services, respondents were asked the extent to which they agreed with effects of the cost of some of the extension services offered on various aspects of cane farming. Responses were elicited on a 5-point likert scale (1-strongly disagree 2-disagree; 3-neutral; 4-agree; and 5-strongly agree).

Results presented in Table 4.5 show that though Sony Sugar provides extension services in a variety of ways, the cost of these services acts as a hindrance for their being fully utilized by cane farmers. Respondents tended to cumulatively agree that cost of extension services offered by Sony sugar inhibits productivity of sugarcane in the region (55%); that cost of seed cane has

contributed to the decline in profitability of sugarcane farmers in the region (57%) that the cost of extension services offered by millers has led to apathy among farmers towards cane farming (51%); and that the cost of fertilizer provided has led to farmers not applying required fertilizer quantities (64%).

Table 4.5: Farmer Perception of Cost of Extension Services on Financial Performance

Statements of Possible Effects of Cost of Extension Services	SD	D	N	A	SA
	%	%	%	%	%
1. Cost of extension services offered by Sony Sugar inhibits the productivity of sugarcane in the region.	12.0	26.0	7.0	12.0	43.0
2. Cost of seed cane provided by Sony Sugar has contributed to the decline in profitability of sugarcane farming in the region	9.0	19.0	15.0	20.0	37.0
3. Cost of extension services by millers have led to apathy among sugarcane farmers towards cane farming	12.0	22.0	15.0	20.0	31.0
4. Cost of fertilizer provided by Sony Sugar has led to many farmers not applying required fertilizer quantities	4.0	8.0	14.0	17.0	57.0

Source: Survey Data (2016)

The implication of these results is that cane farmers in the study area feel constrained by costs of extension services. Despite the notion of extension services being noble, the cost of these services can derail their use by farmers and this jeopardizes application of appropriate cane farming methods which reduces farmer's financial performance. Besides, when costs become inhibitive, corruption and middlemen creep in leading to substandard services.

4.5.4 Analysis of Farmers views on Cost of Extension Services and Financial Performance

Three items on the farmer's interview schedule were used to elicit farmers' views with regards to cost of extension services and cane farming in Awendo sugar belt. First farmers were asked the extent to which they rely on extension services offered by sugar companies. Second, they were asked to enumerate sugarcane extension services that they had received. Third, they were asked to extent to which cost of extension services offered by sugar companies affected their productivity. Table 4.6 displays results of thematic analyses of farmer's responses.

Table 4.6: Farmer Reliance on Extension Services and its Effect on Financial Performance

Question	Response	
1. To what extent do you rely on extension services offered by sugarcane companies?	<ul style="list-style-type: none"> • Fully (1-10 years experience) • 70% (11-20 years experience) • 40% (21-30 years experience) 	
2. Which sugarcane extension service have you received from Sony Sugar over the last 5 years?	Experience (1-10 years) <ul style="list-style-type: none"> • Land preparation <ul style="list-style-type: none"> • Cane seed • fertilizer • Transport • Harvesting Experience (11-20 years) <ul style="list-style-type: none"> • Seed cane • Transport Experience (21-30 years) <ul style="list-style-type: none"> • Seed cane • Transport 	
Question	theme	Sub-themes
3. How does the cost of extension service affect your cane farming productivity?	Interest rate	<ul style="list-style-type: none"> • Interest charged affects income • Interest charged not predetermined when signing contract
	Service rendering	<ul style="list-style-type: none"> • Charged for services never rendered • Charged highly for poor services • Employee charges loaded to farmers
	Double charges	<ul style="list-style-type: none"> • Those send to render services demand payment again • Middlemen exploit farmers

Source: Survey Data (2016)

Results reveal varied extent of reliance on extension services among cane farmers in Awendo sugar belt and a variety of extension services received over the last 5 years. On the question of the extent they relied on extension services offered by sugarcane companies, farmers with 1-10 years' experience indicated fully reliance. Farmers with 11-20 years' experience indicated that they relied on extension services for up to 70%. However, farmers with an experience of 21-30 years relied on extension services for up to 40% only.

On the question of the sugar cane extension services received in the last 5 years, less experienced farmers (1-10 years) appeared to go for as many services as offered. On the contrary, more experienced farmers (over 10 years) opted for transport and seed cane services. These results indicate that reliance on extension services offered by sugarcane companies

depends on experience in cane farming. Most experienced farmers try to limit their reliance on extension services and only use those which they must such as transporting cane and seed cane. On the contrary, inexperience among beginning farmers means that they tend to take all services offered.

When further asked how the cost of extension services affects their cane farming productivity, three themes emerged. First, farmers pointed to interest rates charged by the companies. The concern was that sometimes the interest charged was quite high and eats into farmer's gains. Another key concern was that interest rate is never predetermined when signing contracts. This makes it difficult for farmers to predict total expected costs at the end of the period.

Service rendering was also a common theme among respondents. The view was that sometimes companies charged for services not rendered. Moreover, they were at times charged exorbitantly for poor services. It also emerged that some employees double up as farmers and load their charges onto other unsuspecting farmers. The third theme across responses was double charging. Some farmers noted that they pay companies for extension services, yet those sent to render these services also demand payment from farmers. In essence, this culture perpetuates middlemen who exploit farmers.

4.6 Delay in Cane Harvesting and Financial Performance in Awendo Sugar Belt

The third objective of the current study sought to evaluate whether delay in harvesting of cane has impacts on the financial performance of farmers. Evaluation of delay in cane harvesting was conducted using the cane farmer's questionnaire. First farmers were asked how significant delay in harvesting of cane affects production of sugar cane in the region. Next, they were asked to indicate their level of agreement on four items reflecting possible impacts of delay in cane harvesting.

Results presented in Table 4.7 show that cane farmers in Awendo sugar belt perceive delay in cane harvesting as having negative impacts on their sugarcane productivity in the region. On the question of how significant delay in cane harvesting affects production of sugarcane in the

region, 39% of the respondents were of the view that the effect was significant while 53% were of the view that the effect was very significant.

Moreover, respondents tended to cumulatively agree that farmers whose cane is harvested in time realize more output compared to those who don't (88%); that delay in harvesting is the main reason why some farmers have opted for alternative crops (88%); and that productivity of cane farming has declined with failure to harvest mature cane by Sony sugar (91%).

Table 4.7: Farmer Perceptions of the Effect of Delay in Cane Harvesting on Financial Performance

Statements of Possible Effects of Delay in Harvesting	Category	f	%
Delay in harvesting cane affects the production of sugarcane in the region	not significant	6	3.0
	less significant	11	5.0
	Neutral	0	.0
	Significant	78	39.0
	very significant	106	53.0
Delay in harvesting of cane by Sony Sugar has negatively impacted on the productivity of sugarcane in the region.	SD	8	4.0
	D	18	4.0
	N	20	5.0
	A	102	25.0
	SA	112	62.0
Farmers whose cane is harvested in time realize more output compared to those who don't.	SD	6	3.0
	D	10	5.0
	N	8	4.0
	A	64	32.0
	SA	112	56.0
Delay in cane harvesting is the main reason why some farmers have opted for alternative crops apart from sugarcane	SD	3	3.0
	D	6	3.0
	N	12	6.0
	A	108	54.0
	SA	68	34.0
Productivity of cane farming has declined with the failure to harvest mature canes by Sony Sugar	SD	5	2.0
	D	6	3.0
	N	8	4.0
	A	44	22.0
	SA	138	69.0

Source: Survey Data, 2016

The implication of these results is that cane farmers consider timely harvesting of their crop key to their continued participation in farming. Consequently, delay in cane harvesting being witnessed in the region could be having a negative impact on cane productivity. This is occasioned by some farmers who opt to diversify to alternative crops at the expense of sugarcane.

4.7 Delays in Payment and Financial Performance of Cane Farmers

The fourth and last objective of the current study sought to investigate whether delay in payment of cane proceeds has significant effects on financial performance of farmers. Investigation of effects of delay in payment of cane proceeds was conducted across farmer respondents using the farmer questionnaire. Respondents were asked to indicate their agreement or disagreement with four items selected to reflect potential effects of delay in payment of cane produce. Table 4.8 displays farmer response scores.

Table 4.8: Farmer Perceptions of Effect of Delay in Payment of Cane Proceeds

Possible effects of delay in payment of cane proceeds	SD	D	N	A	SA
	%	%	%	%	%
1.Delay in payment of cane proceed has affected the production of sugarcane in Awendo sugar belt	11.0	21.0	24.0	27.0	17.0
2. Most farmers in Awendo region have opted for other cash crops other than sugarcane due to delay in payment of the proceeds.	21.0	32.0	15.0	11.0	21.0
3.The delay in payment of cane proceed is the main reason why farmers have abandoned cane farming	19.0	27.0	20.0	18.0	16.0
4. Failure to pay cane proceed has resulted in poor crop maintenance, leading to poor yield per hectare.	9.0	6.0	4.0	26.0	55.0

Source: Author (2016)

Farmers had contrasting views regarding the effect of delay in payment of cane proceed on diverse aspects of farming. Cumulatively, 44% of the respondents tended to agree that delay in payment of cane proceed have affected the production of sugarcane in Awendo sugar belt. On the contrary, 32% of the respondents cumulatively disagreed. A large proportion of respondents (53%) tended to cumulatively disagree that most farmers in Awendo region have opted for other cash crops. On the question of abandonment of cane farming, 46% of respondents cumulatively

disagreed that delay in payment of cane proceed is the main reason why farmers have abandoned cane farming. A sizeable proportion (34%) however tended to agree. There was overwhelming agreement that failure to pay cane proceed has resulted in poor crop maintenance leading to poor yield per hectare (81%).

The mixed results imply that the situation in Sony with regards to delays in payment of cane proceed may not be severe. Farmers are still loyal to cane farming although occasional delays in payment have led to poor yield. Results showing that 32% of cane farmers agreed to having opted for other cash crops should be reason for concern. This is because when farmers abandon cane farming then millers in the region would bear the brunt.

4.8 Financial Performance of Cane Farmers in Awendo Sugar Belt

Financial performance of cane farmers in Awendo sugar belt was the dependent variable of the current study. This was measured through farmer's perceived ability to meet financial obligations as a result of engaging in cane farming. Respondents were asked to indicate their levels of agreement with five items reflecting financial performance. Results presented in Table 4.9 show that most farmers were of the view that they were struggling financially.

Respondents cumulatively disagreed that their returns on assets had increased over the last five years (63%); they also cumulatively disagreed that they were able to pay for their farm inputs within stipulated or agreed timelines (66%). On whether they were able to finance their operations from their return on farm assets without borrowing external debts, farmers disagreed (65%). They however, tended to cumulatively agree that they struggled to meet their short term financial obligations (60%); and that they often received debit balances from their proceeds as opposed to credit balances (51%).

Table 4.9: Distribution of Financial Performance among Cane Farmers

Financial performance indicators	SD		D		N		A		SA	
	f	%	f	%	f	%	f	%	f	%
1. Contracted cane farmer's return on farm assets has increase over the last five years	56	28.0	72	35.0	14	7.0	44	22.0	16	8.0
2. Contracted cane farmers are able to pay for their farm inputs within the stipulated or agreed timeliness.	44	22.0	89	44.0	12	6.0	34	17.0	22	11.0
3. Contracted farmers are able to finance their operations from their return on farm assets without borrowing external debts.	66	33.0	64	32.0	6	3.0	43	21.0	22	11.0
4. Contracted cane farmers struggles to meet their short term financial obligations.	8	4.0	40	20.0	32	16.0	92	46.0	28	14.0
5. Most contracted cane farmers get debit balance from their proceeds as opposed to the credit balances.	30	15.0	48	24.0	20	10.0	54	27.0	49	24.0

Source: Author (2016)

The essence of these results is that cane farmers in Awendo sugar belt appear to be performing poorly financially. Most of them have not realized returns as anticipated and are hardly able to pay inputs on agreed timelines. Often, they end up with debit balances and are unable to meet short term financial obligations.

4.9 Results of Hypothesis Tests and Discussions of Findings

A total of four hypotheses were formulated and tested in the present study. Multiple regressions were used to test the hypotheses with a view of establishing the contributions of each of the contract farming indicators to financial performance of the farmers. Prior to conducting regressions, correlations were first computed to ascertain whether indeed there were relationships between contract farming indicators and financial performance.

4.9.1 Existence of Relationship between contract farming and financial performance

Pearson's Product Moment Correlations were used to examine whether relationships existed between contract farming indicators and financial performance. This was relevant given that regression can only be conducted after correlations have been confirmed (Tabachnick & Fidell, 2013). Results of correlations presented in Table 4.10 show significant positive correlations among contract farming indicators and significant negative correlations between farming

indicators and financial performance of farmers. Confirmation of existence of relationships between variables therefore set the framework for conducting regressions to establish particular contributions of each contract farming indicators.

Table 4.10: Correlations between Contract Farming Variables and Cane Farmers Financial Performance

Variables	1	2	3	4	5
1. Cane pricing method	1				
2. Cost of extension services	.921**	1			
3. Delay in harvesting	.932**	.891**	1		
4. Delay in payment	.748**	.749**	.799**	1	
5. Financial performance	-.888**	-.840**	-.844**	-.695**	1

Source: Author (2016)

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

4.9.2 Testing Whether Cane Pricing Methods Significantly Influences Financial Performance of Cane Farmers.

Hypothesis H_{01} postulated that cane pricing method has no significant influence on financial performance of farmers. To test this hypothesis, regression was used since as noted by Blaikie (2003), it is the best way to examine influence. The regression model summary presented in Table 4.11 reveals that the adjusted R-square value was 0.913 showing that contract farming variables account for up to 91.3% of the variance in farmer's financial Performance.

Table 4.11: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.956 ^a	.914	.913	.18257	2.179

a. Predictors: (Constant), Delay in harvesting, Cane pricing, Extension cost, Payment period

b. Dependent variable: Farmers Financial Performance

The ANOVA output shown in Table 4.12 further revealed that multiple regressions were statistically adequate for examining influence relationships. The F-statistic was significant ($F_{4,95} = 1009.005$, $p < 0.05$).

Table 4.12 ANOVA^b

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	126.840	4	31.710	1009.005	.000 ^a
Residual	2.986	95	.031		
Total	129.826	99			

Source: Author (2016)

a. Predictors: (Constant), Delay in harvesting, Cane pricing, Extension services cost, Payment period

b. Farmers Financial Performance

An examination of the regression coefficients displayed in Table 4.13 revealed that cane pricing has a negative and significant influence on financial performance of farmers ($\beta = -.462$, $p < 0.05$). Consequently, an increase of 1 standard deviation in cane pricing was likely to reduce financial performance of farmers by 0.462 standard deviations

Table 4.13: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	6.071	.108		56.055	.000
Cane pricing	-.414	.076	-.462	-5.482	.000
Extension service cost	-.377	.074	-.399	-3.639	.001
Delay in Payment	-.305	.088	-.337	-3.474	.001
Delay in harvesting	-.167	.053	-.133	-3.168	.002

Source: Author (2016)

The hypothesis that cane pricing method has no significant influence on financial performance of farmers was therefore rejected meaning that cane pricing method does indeed influence financial performance of farmers.

These findings from the hypothesis testing reflect the descriptive and thematic findings which tended to show that continued pricing of sugar based on tonnage delivered has had a negative effect on farmers. Farmers have formed an opinion that they do not get fair services when

pricing is based on tonnage. They were also of the view that sometimes millers manipulate weight to exploit them. Moreover, some weighbridges are not calibrated. They also contend that some employees who double up as cane farmers manipulate weights of other farmers.

The findings are consistent with previous findings which show that the cane pricing approach used can impact either positively or negatively on both the quality of cane and the factories profit from unit cane purchased (Potlola, 2012). Indeed the findings in the study showing a negative impact of cane pricing on farmers financial performance supports findings by KSB(2012) that although cane pricing based on sucrose contents may motivate farmers to improve on cane quality, it involves extra effort by farmers and therefore farmers financial performance is affected if payment is based on tonnage delivered.

The findings that farmers are against payment based on tonnage delivered also reflects the findings by Waswa et al. (2010) that though sugarcane contract farming significantly contributed towards improved performance of small scale farmers, pricing methods used could deter them from optimizing their returns. This is therefore a strong argument for a review of pricing methods used by sugar millers considering that farmers are not entirely satisfied with them. More importantly, farmers desire to have sound financial performance and would definitely shun approaches which they find not favorable to them.

4.9.3 Testing the Hypothesis that there is no significant relationship between cost of extension services to cane farmers and their financial performance

An examination of the regression coefficient attributed to cost of extension services shown in Table 4.15 revealed that cost of extension services negatively and significantly affects farmers financial performance ($\beta = -.399, p < 0.05$). This implies that when cost of extension services increase by a unit standard deviation, the financial performance of the cane farmer's declines by 0.399 standard deviations. The implication is that cost of extension services offered to cane farmers eats on their potential gains.

These findings support the descriptive and thematic analyses findings which showed that the cost of extension services is inhibitive to most farmers and this leads to mushrooming of middlemen who end up offering substandard services. Furthermore, findings points towards fear among farmers towards high interest rates charged for extension services which tends to reduce their anticipated earnings. Other farmers even fear being charged for poor services rendered.

The findings in the present study that cost of extension services negatively impact on farmer's financial performance contradict several existing studies. According to Waswa et al. (2012), input costs provided inform of extension service by Millers influence sugar cane farmers net income and hence cost of extension services should correlate positively with income attained. Bonder and Guiking (2007) hold the view that extension services should essentially offer handsome returns to cane farmers. In their findings, they show that through extension services, farmers are able to overcome several barriers. Similar views are held by others (Warning and Key, 2007).

The question then is why farmers in the Awendo region should suffer negative financial effects as a result of cost of extension services when these services have potential for improving their financial performance. Possible explanations to this would be that most of the sugar cane farmers in this region as seen from acreage owned are small scale farmers who find cost of extension services expensive and turn to middlemen who give them substandard services, costs and hence are not able to realize expected outputs. The findings that cost of extension services reduces financial performance of cane farmers in the Awendo sugar belt however support other findings. Muli (2010) for instance identifies cost of extension services as a major challenge facing smallholder sugarcane farmers in Kwale County.

4.9.4 Testing the Hypothesis that Delay in Harvesting of Cane has no Significant Effect on the Financial Performance of Farmers

Regression results in Table 4.13 revealed that delay in harvesting cane was a negative and significant predictor of cane farmers financial performance ($\beta = -.337, p < 0.05$). Increased delays

in cane harvesting by 1 standard deviation could therefore lower farmer's financial performance by 0.337 standard deviations. These results corroborate descriptive findings which revealed that delay in cane harvesting being witnessed in the region continues to have a negative effect on cane productivity. Indeed, the findings show that some cane farmers are opting for other alternative crops as a result of delay in cane harvesting.

These findings of decline in farmer financial performance occasioned by delay in cane harvest support findings by Doerge (2005) that delays in harvest can lead up to 90% yield loss and hence negative effect on farm income. The current findings also support findings by Dindi (2013) that the continuous decline in financial performance and sugar productivity among out growers in Western Kenyan could be attributed to among other factors harvesting time. These findings then lend credence to scholars arguing against contract farming (Odede, 1992; Patlolla, 2010) since delay in harvesting is a contractual breach that leaves farmers in financial difficulties.

4.9.5 Testing the hypothesis that delay in payment of cane proceeds has no effect on cane farmer's financial performance

The regression coefficient attributed to delay in payment of cane proceeds presented in Table 4.13 revealed that delay in payment of cane proceeds has a negative and significant effect on cane farmers financial performance ($\beta = -0.133$, $p < 0.05$). This shows that an increase of 1 standard deviation in delay of payment of proceeds has potential to bring down farmers financial performance by 0.133 standard deviations. Consequently the hypothesis that payment of cane proceeds has no effect on farmers financial performance could not be sustained. The small value of the regression coefficient supports descriptive analysis findings which tended to show that payment of cane proceeds may not be a severe occurrence in Sony Sugar. The findings that delay in payment of cane proceeds impacts negatively on farmer's financial performance, however, supports findings by Chira and Kydd (2006) that delay in payment of proceeds can leads farmers demotivation.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the findings, discussion of findings in line with existing literature, conclusions, and recommendations made.

5.2 Summary of findings

The overall finding of the current study is that factors associated with contract farming such as payment methods, cost of extension services, timeliness in cane harvesting, and timely payment of cane proceeds are crucial to financial performance of cane farmers. This is because all these factors influence financial performance of cane farmers in one way or the other. The following is therefore a summary of the findings in line with the study objectives.

5.2.1 The Effect of Cane Pricing Methods on Financial Performance of Cane Farmers

The first objective sought to establish the effect of cane pricing methods on financial performance of cane farmers. Results from analyses established that contracted sugar cane farmers tended to have a negative perception of the cane pricing methods employed. Despite cane millers continued use of pricing cane based on tonnage delivered, farmers are not entirely happy with this method this may be responsible for apathy shown towards cane farming in the region. Several factors contribute to farmers distaste for this method of pricing cane and include: miller negligence that may result in reduced tonnage; weight manipulation by those tasked with weighing cane; and lack of incentives for small scale farmers;

Regression analysis results confirmed that cane pricing has a negative and significant influence on financial performance of farmers and may therefore be responsible for the lack of interest in cane farming in the area.

5.2.2 The Effect of Cost of Extension Services on Financial Performance of Sugarcane Farmers

Research objective two sought to examine whether the cost of extension services has an effect on financial performance of sugarcane farmers. Through descriptive and t analyses of farmer's responses, it was established that a majority of cane farmers in the sugar belt rely on extension services offered by millers. The study further revealed that a variety of extension services are offered to farmers and include transport; harvesting; survey; ploughing and preparation; provision of seed cane and fertilizer among others. Despite these services being on offer, the study revealed that farmers feel constrained by their costs.

A key revelation of the study is that experience in cane farming plays a key role in the decision to go for extension services with starting farmers opting for as many services but most experienced farmers try to limit their reliance on extension services and only use those which they must such as transporting cane and seed cane. Moreover, high interest rates; poor service rendering; and double charging were identified by farmers as avenues through which extension services affects their cane farming productivity.

The regression results revealed that cost of extension services negatively and significantly affects farmer's financial performance. Consequently, cost of extension services offered to cane farmers in the region is viewed to reduce potential gains that could be made by farmers. Most farmers were found to belong to the small scale category that could not sustain cost of extension services.

5.2.3 The Effect of Delay in Cane Harvesting on Financial Performance of Cane Farmers

The third objective of the study focused on evaluating whether delay in harvesting of cane has any effect on the financial performance of farmers. Descriptive analysis of farmer responses was conducted to answer this objective. The study established that cane farmers in Awendo sugar belt perceive delay in cane harvesting as having negative impacts on their sugarcane productivity in the region. Cane harvesting was found not to be timely and this could be

interfering with their continued participation in cane farming. Delay in cane harvesting being witnessed in the region is having a negative impact on cane productivity such that some farmers have opted to diversify to alternative crops at the expense of sugarcane farming.

The regression analysis further revealed that delay in harvesting cane was a negative and significant predictor of cane farmer's financial performance. For every unit percentage increase in the delay in cane harvesting, financial performance of farmers is likely to suffer a loss of 0.167 percentage points.

5.2.4 The Effect of Delays in Payment of Cane Proceeds on Financial Performance of Cane Farmers

The fourth and last objective of the current study sought to investigate whether delay in payment of cane proceeds has significant effects on financial performance of farmers. To address this objective perceptions of farmers were collated and analyzed. The study revealed that despite the feeling amongst farmers that there were delays in payment of cane proceeds, most farmers are still loyal to cane farming although occasional delays in payment have led to poor yield. The study also revealed that a small proportion of 32% of cane farmers have opted for other cash crops.

The regression results confirmed that delay in payment of cane proceeds has a negative and significant effect on cane farmer's financial performance. A unit percentage increase in delay of payment of cane proceeds has potential to bring down farmers financial performance by 0.305 percentage points.

5.3 Conclusions

In view of the findings discussed above, the study concluded that contract farming is having a negative effect on financial performance of sugarcane farmers in Migori County. This is as a result of various factors that underlie contract farming.

Effect of Cane Pricing Methods on Financial Performance of Cane Farmers

First and foremost, cane pricing methods are crucial to financial performance of cane farmers. Continued use of pricing based on tonnage may not be achieving desired effects but rather is causing apathy among the farmers who feel that millers are exploiting them through this method. There is fear among cane farmers that negligence on the part of millers leads to cane spillage and therefore farmers lose valuable tonnage before weigh ins. Besides, farmers have feelings that use of cane pricing based on tonnage allows millers to manipulate weights leading to under payment.

Effect of Cost of Extension Services on Financial Performance of Sugarcane Farmers

Despite the potential effective use of extension services has on the yield of sugar cane, farmers in Migori County who are mostly small scale are finding costs associated with these services rather high. Its interest rate charged on advanced subsidies appears not predetermined on signing of contract and this does not auger well with farmers. Besides, at times the services paid for are not rendered or are of poor quality. Consequently, more experienced farmers don't really use most of the extension services offered.

Effect of Delay in Cane Harvesting on Financial Performance of Cane Farmers

Delay in harvesting of cane is affecting financial performance of cane farmers. Some farmers have therefore opted for other alternative crops to complement their income since this delay in cane harvesting has left them struggling financially.

Effect of Delays in Payment of Cane Proceeds on Financial Performance of Cane Farmers

Delay in payment of cane proceeds is not so much of an issue though whenever it arises; it reduces financial performance of cane farmers. Despite occasional delays in payment of cane proceeds which have been witnessed, most farmers are still loyal to cane farming. The sizeable proportion of contracted farmers who are opting for other crops should however be reason for concern.

5.4 Recommendations

In view of the conclusion made above, the following recommendations are made:-

5.4.1 Recommendations for theory and practice.

Interviews with cane farmers raised several issues of concern with regards to contract cane farming and farmers financial performance in Migori County. Following these issues, the study makes the following recommendations

- 1) Considering the importance of sugar and sugar cane farming, there is need to reexamine cane pricing based on tonnage which seems to be causing dissatisfaction among cane farmers in Awendo sugar belt. This may be achieved either through farmer sensitization forums or addressing concerns such as negligence and weight manipulations raised by the farmers.
- 2) Recent developments in the sugar industry require a rethink of cost of extension services on offer and an enhancement of supervision of the same. This may encourage cane farmers to exploit these services for better crop yield. Millers ought to ensure that farmers get the quality of service that they pay for and that they are not exploited by middle men.
- 3) There is need to sensitize farmers to develop earlier maturity cane variety so that the turnaround time is reduced and the effect of delayed harvesting which amplify waiting period of farmers is effectively managed. If all farmers adopt cane which mature within a period of 14 months as opposed to 24 months, it would result into a quick return on investment and the end result is increased financial performance to cane farmers.
- 4) While it is appreciated that logistic problems can cause delay in cane harvesting, millers should be aware that this is not received well by cane farmers. There a need expedite cane harvesting so that farmers are able to plan for timely preparation for the next crop.
- 5) Cane proceeds provide satisfaction to cane farmers after toiling for a long period. It is recommended that on this basis, payment of cane proceeds be paid timely to motivate cane

farmers continued participation in farming. Diversion to other crops will not only hurt farmer's income but will also affect millers operations.

5.4.2 Recommendations for Further Studies.

The study was only conducted in Migori County. To boost the external validity of the findings, similar studies should be conducted in other cane growing Counties with a view to establishing whether the findings of this study can be replicated for the entire Country.

While the current study posits negative relationships between the contract farming and farmers financial performance, the study relied only on farmers input. Future studies should therefore consider incorporating management views as well as views of other stake holders.

APPENDICES
Appendix 1 WORKPLAN

Activity	Time
Proposal writing	January-March,2016
Presentation and Corrections	March,2016
Defence corrections	March-April,2016
Data collection and coding	April-June,2016
Writing of draft and submission	July-August,2016
Revision of draft	October,2016
Thesis presentation	October,2016

Appendix 2
RESEARCH BUDGET

S/No	Activity	Amount (Ksh)
1	Proposal preparation	
a	Stationery	3,000
b	Typing & printing 50 pages @30/= a page	5,500
c	Photocopying @3/= a page	7,000
d	Binding at 100/= a copy	8,200
e	Transport to consult supervisor*21	12,000
f	Flash disk	3,000
2	Data collection	
a	Stationery	1,500
b	Preparation of questionnaires	3,000
c	Transport to sites and back	8,000
d	Data analysis and thesis write-up	
e	Stationery	2,500
f	Typing and printing of 8copies	6,000
g	Binding	5,500
h	Sub-total	65,200
i	Contingency 10%	6,000
j	Grand total	71,720

APPENDIX 3

QUESTIONNAIRE

Dear Respondent,

I am a Masters' student at the Department of Business Studies, Rongo University, carrying out a research study on effects of contract farming on financial performance of sugarcane farmers in Migori County, a case study of South Nyanza Sugar Company Ltd, Kenya.

I kindly request you to answer the questions below. All responses will be handled confidentially.

Thank you,
Kennedy Onyango.

Part A: Background information

(Kindly tick as appropriate)

1. Gender

Male () Female ()

2. Marital status

Married () Single ()

3. Age set in years

20-30 years () 31-40 years () 41-50 () over 50 years ()

4. Level of education

Informal education () Primary education ()

Secondary education () University education ()

Part B Payment Method

On a scale of 1 to 5, where 1 represent Strongly Disagree (SD), 2 represent Disagree (D), 3 represent Neutral, 4 represent Agree and 5 refers to Strongly Agree. To what extent to you agree with the statement below:-

S/NO	Issues	Level of agreement with the statement				
		1	2	3	4	5
2	Cane Pricing based on tonnage delivered is the main cause of decline in sugarcane production in Awendo sugar belt					
3	The sugarcane payment based on tonnage does not provide incentive for farmes to improve on their cane productivity					
4	Cane pricing based on tonnage delivered is responsible for the economic poverty of cane farmers in Awendo region					

Part C Cost of extension services

1. *On a scale of 1 to 5, where 1 represent not at all, 2 represents Less Often, 3 represent Neutral, 4 represents often and 5 refers to quite often . To what extent do you rely on the extension services offered by Sony Sugar?*

Level of agreement with the statement				
1	2	3	4	5

On a scale of 1 to 5, where 1 represent not significant, 2 represents less significant, 3 represent Neutral, 4 represents significant and 5 refers to very significant. To what extent do you think the cost of extension service affect your financial performance?

Level of agreement with the statement				
1	2	3	4	5

Which sugarcane extension service have you received from Sony Sugar over the last 5 years? Please tick as appropriate.

S/NO	Extension service	Tick where applicable
1	Ploughing/ Land preparation	
2	Seed cane supply	
3	Fertilizer supply	
4	Transport services	
5	Harvesting	
6	Survey	
7	Any other (specify)	

On a scale of 1 to 5, where 1 represent Strongly Disagree (SD), 2 represent Disagree (D), 3 represent Neutral, 4 represent Agree and 5 refers to Strongly Agree. To what extent to you agree with the statement below:-

S/ N O	Issues	Scale score				
		1	2	3	4	5
2	Cost of extension services offered by Sony Sugar has significantly contributed to the financial performance of farmers					
3	Cost of seed cane provided by Sony Sugar has contributed on the decline in financial performance of cane farmers					
4	Cost of extension services by millers have improved economic livelihood of sugarcane farmers.					
5	Cost of fertilizers by SonySugar has improved the productivity of cane farming in the region.					

Part D Payment period

On a scale of 1 to 5, where 1 represent Strongly Disagree (SD), 2 represent Disagree (D), 3 represent Neutral, 4 represent Agree and 5 refers to Strongly Agree. To what extent to you agree with the statement below:-

S/ NO	Issues	Scale score				
		1	2	3	4	5
1						
2	Delay in payment of cane proceed has affected the financial performance of cane farmers					
3	Most farmers in Awendo region have opted for other cash crops other than sugarcane due to delay in payment of the proceeds.					
4	The delay in payment of cane proceed in the main reason why farmers have abandoned cane farming					
5	Failure to pay cane proceed has resulted in poor crop maintenance, leading to poor yield per hectare.					

Part E Harvesting period

On a scale of 1 to 5, where 1 represent not significant, 2 represents less significant, 3 represent Neutral, 4 represents significant and 5 refers to very significant. To what extent to you agree with the statement below:-

1. Delay in harvesting of cane affect the production of sugarcane in the region?

Scale score	1	2	3	4	5
Response					

2. On a scale of 1 to 5, where 1 represent Strongly Disagree (SD), 2 represent Disagree (D), 3 represent Neutral, 4 represent Agree and 5 refers to Strongly Agree. To what extent to you agree with the statement below:-

NO	Issues	Scale score				
		1	2	3	4	5
1						
2	Delay in harvesting of cane by Sony Sugar has negatively impacted on the financial performance of farmers in the region.					
3	Farmers whose cane are harvested in time have better financial performance compared to those who don't attend.					
4	Delay in cane harvesting is the main reason why some farmers have opted for alternative crops apart from sugarcane.					
5	Financial performance of cane farmers have declined with the failure to harvest mature canes by Sony Sugar.					

Part F Financial Performance

Use a scale of 1 to 5 to indicate your level of agreement with the following statement on your financial performance of Individual farmers/ group farmers contracted by Sony Sugar. (1=Strongly disagree; 2=Disagree; 3=Not sure; 4=Agree; 5=Strongly Agree).

S/NO	Statement	
1.	Contracted cane farmer's net income has increased over the last five years	
2.	Contracted cane farmers are able to pay for their farm inputs within the stipulated or agreed timeliness.	
3.	Contracted farmers are able to finance their operations due to better financial performance	
4.	Contracted cane farmers struggles to meet their short term financial obligations.	
5.	Most contracted cane farmers get debit balance from their proceeds as opposed to the credit balances.	

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