

**FACTORS MOTIVATING WOMEN'S PARTICIPATION IN CONTRACT  
SUGARCANE FARMING IN MUMIAS SUB-COUNTY, KAKAMEGA COUNTY,  
KENYA**

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Requirements for the Award of the Degree of Master of Science in Community  
Studies and Extension of Egerton University**

**EGERTON UNIVERSITY**

**DECEMBER 2015**

DECLARATION AND RECOMMENDATION

**DECLARATION**

This Research Thesis is my original work and has not been presented for a degree or any other award in any other University.

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## **DEDICATION**

To God my source of strength, who has given me assurance of eternal life, good health and the inspiration to carry on with this study against many odds. To my late bro, Joseph Makhotsa Oyombera, who heartily wished me well by facilitating my education in formative stages of learning, and my aged father, John Ambani, who long predicted I am destined for the heights and has continued inspiring me to go for my best in life.

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## ABSTRACT

The sugar sector generates an estimated 12 billion shillings annually, supporting livelihoods of about six million people in Kenya. Women bear the greatest responsibility of managing contracted sugarcane while men benefit from the profits as farming contracts are owned by the latter. Aspects of critical evaluation of patriarchal structures, equitable sharing of sugarcane profits and compensation for labour provided on the farms have not been documented and these comprised the focus of this study. The purpose of the study was to examine factors motivating women's participation in contract sugarcane farming in Mumias sub-county, Kakamega County. The Research design used was cross sectional survey. The target population consisted of 57,568 women in the contracted households, who were the main labour providers within the County. Accessible population comprised of 3,305 spread within Ekeru and Lureko sub locations which form Mumias sub-county. Systematic sampling technique was used to select a sample size of 118 respondents. Two focus group discussions were conducted in both Ekeru and Lureko sub-locations. In each sub-location, the focus group comprised eight women, who included four contracted women farmers and four non-contracted women who provided labour on the household farms, adding up to 16 in the two sub locations. Data was collected using questionnaires administered to all the 118 selected respondents. Focus group discussion guides were used to collect thematic data narratives from the Focus Groups. The validity and reliability of the instruments was ascertained using content validity and Cronbach's alpha coefficient respectively. Pre-test results in the latter yielded 0.709. Data was analyzed using descriptive and inferential statistics aided by Statistical Package for Social Sciences (SPSS) version 17.0. The inferential statistics used were linear multiple and simple regression to establish the influence tested at 0.05 level of significance. The findings established that patriarchy had a higher influence, showing a variability of 67.1% on women's participation than sharing of sugarcane proceeds which had 59.7% and labour compensation, 39%. The study indicated that all the three factors significantly (0.000) determined the way women participated in contract farming in households. The study recommended establishment of sound government and company policies and encouraged viable household strategies that would harness and direct the energies of these women in the study area towards contract farming, while achieving a win-win situation in the household. Such strategies include contracting actual workers on the farms to allow them participate in decision making and share in farming profits.

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## LIST OF ABBREVIATIONS AND ACRONYMS

<b>AMS</b>	Agricultural Management System
<b>BBS</b>	Broad Based Survey
<b>FAO</b>	Food and Agriculture Organization
<b>GII</b>	Gender Inequality Index
<b>GOK</b>	Government of Kenya
<b>HIV &amp; AIDS</b>	Human Immune Virus & Acquired Immune Deficiency Syndrome
<b>KESREF</b>	Kenya Sugar Research Foundation
<b>KIM</b>	Kenya Institute of Management
<b>KSB</b>	Kenya Sugar Board
<b>MOA</b>	Ministry of Agriculture
<b>MOCO</b>	Mumias Out grower Company
<b>MOE</b>	Ministry of Education
<b>MOSSACO</b>	Mumias Out grower Society Savings and Credit Company
<b>MSC</b>	Mumias Sugar Company
<b>ODS</b>	Out grower Development Services
<b>PRS</b>	Poverty Reduction Strategy
<b>SPSS</b>	Statistical Package for Social Sciences
<b>SUKARI SACCO</b>	Sukari Savings Cooperative Company
<b>TCH</b>	Tons of Cane per Hectare



## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to the study

The disadvantages facing women and girls in the world are a major source of inequality. All too often, women and girls are discriminated against in health, education, but more specifically in agriculture and its labour market related benefits with negative repercussions for their freedom and participation (UNDP, 2010)

Rural women, all over the world, are active agents of environmental protection, economic and social change. They play crucial roles in ensuring food and nutrition security, eradicating rural poverty and improving the well-being of their families, yet they are in many ways, constrained in their roles as farmers, producers, investors, caregivers and consumers resulting from gender based stereotypes and discrimination (Odero-Wanga, Ali-Olubandwa & Mulu-Mutuku, 2010). These challenges deny them equitable access to opportunities, resources, assets and services (FAO, 2003; Gallaway, Gatti, Hinkie & Schingle, 2008; Mmasaaba, 2012).

In the Caribbean, rural women perform important tasks in food production, income generating activities, nutrition and the management of natural resources, yet their limited access to productive resources such as land, labor, capital and technology, all serving as collaterals for credit compromise their effectiveness in carrying out their tasks (FAO, 2003).

Investing in rural women and girls accelerates progress toward eradicating poverty and hunger, improving health outcomes, and achieving the international standards in line with the Millennium Development Goal number one and three: eradication of extreme poverty & hunger and promotion of gender equality through empowerment of women. In recognizing the need to eliminate all forms of discrimination against rural women and girls, it is necessary to address the inequalities and multiple disadvantages they face, and promote equal treatment of rural women, irrespective of their race, marital status, age and disability (Kamara, 2012).

A study by Jakku & Bellamy (2008), has shown that women suffer exclusion from male-dominated rural networks both internationally and in Kenya. Studies by Food and

Agriculture Organization (FAO), (2003) on Africa, confirm that power relations are embedded in the structure of the family under universal patriarchy which favours men. This hierarchical and patriarchal character of the family leaves little room for equality, which is perceived to form a true basis for democratic cooperation in households such as collective working on the rural farms.

Although women play an important role in Kenyan economy and food security for their families, their access to factors of production grounded in traditional law restricted even collateral, through land-use rights or land titles were rare until recently (ToR, 2014). Various arguments have been raised on the growing recognition that women are largely an untapped opportunity for fostering innovation and facilitating change especially in the Kenyan sugar industry (Ali-Olubandwa *et al.*, 2010; Kidula, 2007 and Gakunu, 2004). Studies indicate that 80% of women in Kenya live in rural areas, fully engaged in agricultural production which includes contract sugarcane farming, but this statistic ideally does not resonate well with the disturbing 57% of the national index on poverty experienced in the country given their outstanding contribution (GOK, 2009)

The sugar sector in Kenya contributes significantly to the national economy generating over twelve billion shillings annually and this supports livelihoods of about six million people. The sugar output in the country stands at 450,000 metric tons against a national demand of 610,000 metric tons. The deficit is usually bridged through importation of commodity from other sugar producing countries (Kenya Sugar Board, [KSB], 2007 & 2012). According to studies by Sifundza & Ntuli (2001), sugarcane contract farming was initially introduced as a plantation crop. In this regard, when large-scale cash cropping is introduced, the perception and attitude of men are that the household head is culturally regarded as the host, hence men become heavily involved in this sector, with women being increasingly responsible for household subsistence production. This attitude naturally regards the woman in the household as a labour provider that deserves no compensation (Kidula, 2007)

Legislation on contract farming recruitment process requires identification of land ownership where the chosen cash crop has to be grown (Mmasaaba, 2012). This helps in neutralizing conflict, fraud and trespass cases in the long period of contract cash crop farming. The contract document stipulates the responsibilities and obligations of each

party in the agreement. The legitimate land owner, in this context the man in most cases becomes the candidate for contracting, thereby disfavoured the woman, caretaker of the sugarcane farm (Kidula, 2007). The company staff, therefore, constrained by this legal requirement, engage the man into contract sugarcane farming by signing a binding agreement between the man, referred to as 'the farmer' and the company, referred to as the 'miller' (KESREF, 2006).

In the contract sugarcane farming model, the role of the sugar company is to supply the out-grower contracted farmers with all required inputs and services such as land preparation, planting material, fertilizers, weed and pest control, harvesting and transport (Kidula, 2007). At the time of contract signing, the contract provides a clause that enjoins the wife or someone else on the farming contract agreement as an agent to transact contract business when the contract holder is not available (Kenya Sugar Research Foundation, KESREF, 2006). The expectation is that the wife shall handle contract farming inputs and services only when endorsed by the contract holder, but this does not accord her direct rights to reap financial benefits from the crop.

In Mumias sub-county, sugarcane is a lifeline for the majority of the households operated on contract farming model, managed on small holder farms contributing nearly 60% of the total sugar production in Kenya (GoK, 2010). Contract sugarcane farming refers to the practice a farmer engages in sugarcane farming business by signing a written document that has a legal binding with the miller outlining specific obligations and rights for each party. This model in the past has immensely contributed to the national economy; however, most households are uprooting sugarcane and planting food crops shrinking both production and income (see plates 1, 2).



Plate 1: Previous sugarcane farm (Ekeru Field 17 plot 8) now under Maize intercropped with pulses for income maximization for the household (Source: Field photo, 2015)



**Plate 2: Woman inspecting the performance of her maize farm previously under sugarcane (Ekeru Field 23 plot 4).**

For instance the area under sugarcane in the study area is less than one acre, yet the average land size per household is established to be between two and five acres (Kidula, 2007)



**Plate 3: Sugarcane farm (Lureko Field 19 plot 2) intercropped with beans despite high level of sugarcane gaps.**

Women, who are the main workers, hold the biggest role of managing the crop on contract farming model while men benefit from the profits. Majority of the latter own both the land and farming contracts which forms the criteria for sugar cane payments and subsequent utilization, besides giving them mandate to join sugar cane membership bodies (Makhandia, 2010 and Agisu, 2013).

Analysis by Kidula (2007) on yield performance in Mumias out grower scheme drew a conclusion that cane growers are operating with yields far below the feasible potential yields and these returns are too low to be ploughed back into maintenance of the cane crop as well as meet the households 'basic needs'. Further, Wawire *et al.* (2007); KSB (2007 & 2012) and Mutonyi (2014) have similarly observed a decline in sugarcane yields in the main production zone of Mumias which hosts the study area resulting in decline in income (see Figure 1 in appendices)

In this study, the decline in yield from a high of 110 tons of canes per hectare (tc/ha) in 1997 to a low 46.8 tons of canes per hectare according to KSB (2012) was viewed to be triggered by factors influencing participation of women, which if not addressed could compromise on the much needed labour support from the women on the sugarcane farms. These factors include aspects of patriarchy in the household, the way sugarcane income is

utilized and whether or not women are compensated for labour they provided on these farms.

Women in Mumias Sub-county rarely got opportunities to make contract sugarcane farming decisions had insignificant rights to both land and sugarcane contract ownership and as a consequence only a minority were represented in sugarcane bodies (Makhandia, 2010; Agisu, 2013). Similarly, they hardly obtained a sufficient share of the sugarcane income and were marginally compensated for the labour they provided on the farms. There were also a complex range of other global, regional and local trends and challenges impacting adversely on agriculture in the region of study (Jakku & Bellamy, 2008 and Gakunu, 2004). The need to motivate the women therefore ought not to be underemphasized.

This study targeted Mumias Sub-county because it is the central host to the entire Mumias sugarcane scheme which accounts for 60% of the total sugar production in Kenya, raised largely from small holder farms, contributing significantly to the national economy. Women here, bore the greatest responsibility in managing the crop on contract farming model with men simply benefitting from the profits.

Further, situational analysis from findings by Wafula & Marete (2005) raise three salient areas of concern: overburdening of women and their children on the farms but with very little returns; land and sugarcane leasing without family consent causing bad feelings amongst household members and small land holdings enjoined into uneconomical joint contracts that leave no land for food crops. These further demoralized the women in the household and could have resulted in low motivation among the women and could be the reason contract sugarcane farming has been declining for over a decade in the Sub-county of study.

## **1.2 Statement of the Problem**

The sugar sector significantly contributes to the national economy generating an estimated 12 billion shillings annually in Kenya, supporting about 6 million people. The total sugar production in Kenya has been 450,000 metric tons against a national demand of 610,000 metric tons, with Mumias Sugarcane zone contributing 60%, but presently, this has been declining. The deficit is usually bridged through importation. Mumias Sugar zone is centrally hosted in Mumias Sub-county with the cash crop raised largely from

small holder farms. Women, who are the wives of men in households of contracted sugarcane farms, bear the greatest responsibility in managing the crop on contract farming model while men benefit from the profits. The majority of the latter own both the land and farming contracts which form the criteria for sugarcane payments and subsequent utilization, besides giving them mandate to join sugar cane membership bodies. In consequence, women rarely get sufficient opportunities to make gainful use of sugarcane proceeds, contract farming decisions and are marginally compensated for the labour they provide on the farms. This may have resulted in their low motivation and could be the reason contract sugarcane farming has been declining with subsequent low yields for over a decade in the Sub-county. There was therefore a need to conduct a research on factors influencing participation of Women in Contract Sugarcane Farming in the study area.

### **1.3 The Purpose of the Study**

The purpose of the study was to examine selected motivational factors influencing women's participation in contract sugarcane farming within Mumias Division, Kakamega County.

### **1.4 Objectives of the Study**

The objectives of this study were:-

To establish the influence of patriarchal structures at the household level on women's participation in contract sugarcane farming within Mumias Division.

To establish the influence of utilization of sugar cane proceeds at the household level on women's participation in contract sugarcane farming within Mumias Division.

To determine the influence of compensation for labour provided on household sugarcane farms on women's participation in contract sugarcane farming within Mumias Division.

### **1.5 Hypotheses of the Study**

The following hypotheses were tested at significance level of 5%, (0.05).

H<sub>01</sub>: There was no statistically significant influence of patriarchal structures at household level on women's participation in contract sugar cane farming.

H<sub>02</sub>: There was no statistically significant influence of utilization of sugarcane proceeds at household level on women's participation in contract sugar cane farming.

H0<sub>3</sub>. There was no statistically significant influence of Compensation for labour provided on sugar cane farms at household level on women's participation in contract sugar cane farming.

### **1.6 Significance of the Study**

Information obtained from the study is expected to be of significance to policy makers, entrenched authorities in devolved government, researchers, sugar company management, extension agents and households in various ways:

Policy makers may use the outcome of the study to improve existing policies that target the marginalized members in households as women in order to meet the objectives of the Poverty Reduction Strategy (PRS) and gender equality empowerment as envisaged in the Millennium Development Goals towards attainment of vision 2030.

Researchers shall understand the role played by women as active participants in contract sugar cane farming, hence recommend appropriate gender sensitive strategies to policy makers that enhance their participation leading to increased sugarcane yields.

Mumias Sugar Company management shall appropriately educate the households on the importance of embracing a household strategy, thereby arousing cooperation in contract sugarcane farming agreements leading to improved sugarcane yields. The company may also use the findings of the study to formulate sustainable strategies that could benefit the entire sugar industry in Kenya.

Finally, households may understand the relationship between motivated women in contract sugar cane farming and their participation with ultimate impact on sugar cane yields. This shall enable them to effectively recognize and enlist women's participation towards improved sugar cane yields.

### **1.7 Scope of the Study**

The study narrowed itself on married women in Mumias Sub County who, traditionally are the main care takers of contract sugar cane farms, providing much of the labour required on the household farms. These women were wives of men in households of contracted sugar cane farmers in both Lureko and Ekeru sub-locations that make up the Sub County. The study aimed at examining selected motivational factors influencing women's participation in contract sugar cane farming which envisage: experience from



patriarchal structures in the household; joint utilization of proceeds from sugarcane farms and compensation for labour rendered by women on the farms.

### **1.8 Assumptions of the Study**

This study applied the following assumptions.

1. The respondent's willingness to participate in the study and provide honest responses.
2. The influence of intrinsic motivation (internal factors - core values) was assumed to have insignificant bearing on the respondents' participation in contract sugarcane farming, unlike the extrinsic motivation (rewards and benefits).

### **1.9 Limitation of the study**

There were some notable challenges in getting spousal consent to engage married females in the interviews given many of them were not contracted and therefore not direct parties to contract farming. Some homes were polygamous and identifying which female to participate in the study was a challenge. However, these were turned into opportunities given the researcher's long experience in field extension. Secondly, given the study area was limited to only two sub-locations it was a challenge in doing generalization of the findings to the huge Mumias Sugarcane scheme and by proxy the entire geographical sugar region in the country. This was overcome by ensuring a high sample size was used and a fitting recommendation was made to replicate the study to cover all the other sugar schemes in the country.

### **1.10 Operational Definition of Terms**

**Area Leader:** In this study, referred to a farmer owning a contract farming unit but has oversight role over the rest of the contract farming units in a jurisdictional area administratively referred to as a 'sub location'. Usually, the area constitutes a number of 'blocks' or 'fields'

**Block Leader:** In the context above, this referred to a sugar cane farmer who oversees other farmers in contract sugarcane farming jurisdictional area referred to as a 'block' or a 'field'.

**Contract sugarcane farming** This referred to the practice farmers under Mumias sugar company do sugarcane farming business with the company by signing a written document that has a legal binding to the two parties, “the farmer” and “the company” outlining specific obligations and rights for each party respectively.

**Household:** For the purpose of the study, this referred to a single decision making unit comprising of a husband and wife with a joint function and was interchangeably used to refer to the nuclear family.

**Influence:** This is the capacity to affect character, development, or behaviour of someone or something, or the effect itself (Oxford dictionary, 2008). In this study this meant the ‘effect’ or ‘power’ that selected motivational factors or lack of them have on voluntary and sustained women’s participation in contract sugar cane farming with respect to sugar cane yields among households in Mumias Division.

**Leader:** Is a person or a thing that goes ahead of others in a certain field in terms of excellence, success and so on (Oxford dictionary, 2008). In the context of Mumias Division, the ‘leader’ for the block or the area usually, is the best performing farmer with respect to cane husbandry.

**Motivation:** Motivation has been defined as the process of stimulating people to actions that accomplish the set goals (Luhombo, 2010). In this study, the researcher considered motivation to mean extrinsic factors of benefit or reward to women in households of contract farming perceived to spontaneously trigger their action towards sustained participation in contract sugarcane farming in Mumias Division.

**Motivational Factors:** In this study these factors referred to three areas: experience from patriarchal structures (which envisage decision making, ownership and control on land and farming contract, representation in investment bodies and membership in sugarcane advocacy institutions); utilization of sugarcane proceeds and compensation for labour provided on the sugarcane farms.

**Patriarchal structures:** These are unwritten code of conduct, power relations, perception or attitude that male gender have towards female members of society which defines the way they are expected to do things (Mmasaaba (2012). In this study this referred to power relations in the household which include: decision making, property ownership and control as land and sugar cane farming contract; representation or

membership in sugar cane bodies as KESREF, KSB, MOCO, MOSSACO and SUKARI SACCO credit institutions and perceptions or attitudes of society towards women in the study area.

**Sugarcane Contract:** This is an agreement in form of a written document referred to as “contract”, usually covering responsibilities and obligations of each party, the manner in which the agreement can be enforced and the remedies to be taken if the contract breaks down (Eaton & Shepherd, 2001). For the purpose of this study, this referred to a legally binding written document between the miller, Mumias Sugar Company and the farmer, usually land title deed holder, who grows, maintains and supplies the physiologically matured sugarcane to the miller in exchange for cash accrued from the supplied cane weight at market rate less the value of advanced inputs.

**Women’s Participation:** Participation is ‘a process by which people are enabled to become actively and genuinely involved in defining the issues of concern to them and taking action to achieve change’ (Doherty, 2002 & Mwangi, 2004). For the purpose of this study, this referred to the engagement of women within contract sugarcane households with respect to identification and selection process; planning and provision of labour to the sugarcane farms or cash to maintain the farms, consulting with extension officers for technical information (monitoring and evaluation process); managing of contract sugarcane farming business.

**Women:** In this study, these were wives of men in contracted households or contracted widows who do all the care taking functions in contract sugar cane farming such as providing labour and protecting the crop from damage. This is because they constitute the majority of residents on the sugar cane farms and therefore are naturally charged with the responsibility of managing the sugar cane crop.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter discusses the literature that is relevant to the study. It covers general work on women and contract farming, then narrows down on women motivation and participation in contract sugar cane farming as a business in which the four motivational factors are discussed as they relate to the region of study. These envisage: experiences from patriarchal structures; utilization of sugarcane proceeds and compensation for labour provided on sugarcane farms. It then ends with both a theoretical and conceptual summary and premise upon which the conceptual framework for the study has been developed.

##### **2.1.1 Women in Contract Farming**

Contract farming has been in existence for many years as a means of organizing the commercial agricultural production of both large and small-scale farmers (Eaton & Shepherd, 2001). Contract farming needs to be promoted through small growers rather than corporate bodies undertaking large-scale farming on their own. This concept is premised on the belief that family labour led by the women would always be available in the household (Kidula, 2007).

In the Caribbean, studies show rural women perform important tasks in food production, income generation, nutrition and management of natural resources, yet they are still limited from accessing productive resources such as land, labour, capital and technology that serve as collaterals to credit. This compromises their effectiveness in carrying out their tasks. In Jamaica and Ghana, women farmers principally engage themselves in the same activities and similarly experience serious production constraints with respect to factors of production, usually with men becoming owners of farming contracts but women rendering unpaid family labour leading to low productivity and income (FAO, 2003).

In Tanzania, women carried out both farm operations, especially in key cash crops like Sugarcane, continued with most of the farm work in production of household foodstuffs

and nearly all the reproductive work (cooking, fetching water, fuel / firewood and childbearing (Kidula, 2007). Nonetheless, they still experienced constraints in access to and control over key resources such as land, credit, farm input / equipment, labour supply and information which then led to lower yields on their household farms. Eaton & Shepherd (2001) argue that sustainable contract farming arrangements such as sugarcane can only be viable when the various parties, including women, see themselves involved in a long-term mutually beneficial relationship. This is because contract sugarcane farming is seen to be well integrated with other aspects of technology transfer such as input supply, and other agricultural services, and has good links with both researchers and farmers according to findings by Kidula (2007).

Survey findings carried out in the entire Mumias sugarcane growing scheme by Wafula & Marete (2005) sparingly address this subject of women farm managers' participation in contract sugar cane farming. Their findings seem to raise three salient areas of concern: overburdening of women and their children on the farms but with very little returns; land mortgaging, popularly referred to as "cane leasing," without family consent causing bad feelings amongst household members; and small land holdings enjoined into uneconomical joint contracts that leave no land for food crops.

To guarantee continued participation, it is not very clear at this point in time whether women labour providers in Mumias Sub County are sufficiently motivated by family structures, fair sharing of proceeds from the sugar cane farms and getting adequately compensated for the labour they render on these farms. This study therefore undertook to establish the influence of these selected motivational factors on women's participation in contract sugarcane farming within Mumias Sub County, Kakamega County.

### **2.1.2 Women Motivation and Participation**

Motivation has been defined as the process of stimulating people to actions that accomplish the goals or a set of processes that arouse, direct, and maintain human behavior towards attaining a goal (Luhombo, 2010). Women participation, on the other hand refers to varying degrees of involvement of the female gender, in this case rural women, in contract sugarcane farming (Mwangi, 2004). In this context, this may range from contribution in labor, cash, and involvement in consultation, administration, management and decision making. This study focused on what motivates women into this

participation and further ascertains its nature in Mumias Sub-County under contract sugarcane farming model.

Studies by Arias (2004) in analyzing the subject of motivation seem to focus on two contexts: intrinsic (driven by internal factors such as co-values and fun) and extrinsic (external factors such as rewards or benefits). Arias observes a paradox that intrinsic motivation is far stronger than extrinsic motivation yet external motivation can easily act to displace intrinsic motivation. This study, on this basis, heavily focused on the context of external motivation in which it sought to evaluate external motivating factors that influence participation of women farm caretakers in the study area.

Motivation has become a significant concept in society today. Supermarkets use loyalty cards and discounts, airlines use air miles, companies use bonuses and commissions, institutions use promotions and mobile phone companies use *bonga* points to sustain participation. This trend resonates well with arguments by Mwangi (2004) who observes that for any development to be sustainable it is important that household members on the ground identify with it and have a sense of ownership.

Mulwa (2004), states that "...unless people are actors in activities and programmes that affect their lives, the impact of such interventions become negative, irrelevant or insignificant in transforming their lives." Kidula (2007), bearing the same paradigm, points out that participation in development activities is a goal-oriented phenomenon that is contingent on the attainment of benefits. Luhombo (2010) argues that people, in this context women on household sugarcane farms, would definitely take part in projects that deliver or are likely to deliver direct and immediate benefit to them.

Motivation is a major driver that engages individuals and groups into meaningful participation that emancipates them from the negative effects of abject poverty (Doherty, 2002). Motivating rural communities whose majority, 80% are women is increasingly recognized as critical to pursuing sustainable development (Jakku & Bellamy, 2008). Motivation of individuals and communities in this way is considered to be an aspect of the resilience of societies that reflects gratitude, learning, and flexibility to experimentation and adoption of novel solutions.

Significantly, it has been observed that any community development venture should involve people among other characteristics (Heyworth, 2003; Luhombo, 2010), and therefore any household resource management that fails to recognize this feature is also prone to have a weakness in its management model thereby leading to low motivation, low participation and therefore poor output, in this case, low sugarcane yields.

It was therefore the interest of this study to analyze selected motivational factors influencing participation with respect to women engaged in contract sugarcane farming in Mumias Sub County. These factors include: experience from patriarchal structures; sharing proceeds from the sugarcane farms and obtaining compensation for labour provided on the sugarcane farms.

## **2.2 Influence of Patriarchal Structures on Women's Participation in Contract**

### **Sugarcane Farming**

Makhandia (2010) observes that the strength and pride of society depends on the ability to build strong institutions at the local level. A similar observation indicates that formal education positively contribute to the efficiency of resource allocation and utilization among the small scale farming households of maize and cotton in Machakos and Meru Counties. This is because formal education is found to positively relate to the overall managerial abilities of households. However, it has been observed where education as a social process is open to males and females in household, the patriarchal society favours males.

Traditionally, it has been established that gender disparity manifests itself as a wide gap between the sexes so that heads of households, usually men, have always had greater access to land, credit and extension services. Similarly in schools, girl child dropouts, being higher than boy child dropouts, make them proportionally less educated than boys (GoK, 2010).

To some extent, all societies treat men and women differently, thus the current status of gender relations treats male dominance in decision making as legitimate natural, obvious and inevitable (Human Rights Watch, 2003). According to Mmasaaba (2012), the expectations are applied to the gender fashion and the societal roles they play. Thus

gender roles vary depending on the particular socio-economic, political and cultural context and help to determine women's access to rights, resources and opportunities.

Popular participation in development has been a much sought after phenomenon by development planners and administrators to the extent that while it is ideally a means of development it has become a goal to be attained (Mwangi, 2004; Wafula & Marete, 2005). The underlying assumption is that the attainment of popular participation in development programmes is a prerequisite in the attainment of development goals.

It is not clear however, how the expected participation among women farm managers is related to these gender based disparities in the households within the study area. It is against this background that the study seeks to explore the influence of patriarchal structures among women in the households on participation, in a context of contract sugar cane farming, within Mumias Division.

### **2.2.1 Decision Making in Contract Sugarcane Farming**

Several writers have argued in favour of participatory decision making observing that involving subordinates (and in this respect, women in households), in decision making improves the quality of the decisions and the effectiveness of the organization which leads to achievement of the organizational goals, in this case, the household goals (Armstrong, 2006; Luhombo, 2010).

Although women continue to play the leading role as food producers and make up more than than 80 percent of the labour force in the rural agricultural sector (Ali-Olubandwa *et al.*, 2010; Mmasaaba, 2012), they are still denied the opportunity to make crucial decisions affecting farm production. This disregards the fact that active participation improves the quality of decision making. The argument is further supported with findings by Kidula (2007), which reported shortage in food production due to shift in land use from food crop production to contract sugarcane production.

Jakku & Bellamy (2008) both agree in their arguments that the absence of women in enterprise leadership is not a reflection of lack of interest, but of obstruction by those who



hold power to determine who shall lead the industry. This is unlike the case experienced in Australia where there has been tangible, though slow progress towards better representation of women in decision-making (SCARM, 2001). This observation agrees with Makhandia (2010) who confirmed that there is still the belief that women are not supposed to make decisions on farming in households.

According to studies carried out by Parsons (2004), decisions regarding growing of contracted sugarcane, allocation and utilization of all available and scarce household resources are vested in the household head as he owns both the land and the farming contract. For instance, it has been reiterated that small-scale producers, who are largely men, contract all their land to sugarcane alone to fulfill their responsibilities to the miller, and then suffer from severe lack of cash income and food while waiting for their cane to mature.

Small scale farming accounts for three quarters of the total subsistence production in Kenya, in which, women have been found to form the majority. A survey carried out in Kenya established that 61% of women were involved in farming as their main occupation as compared to 24% of men yet decision making processes and property rights seem to be largely in the hands of the latter (Oywaya-Nkurumwa & Kathuri, 2006).

Jakku & Bellamy (2008) observed that embracing the principle of participation in the sugar industry may help to identify a broader range of strategies for all those marginalized in decision making and participation at all levels of the sugar industry. Importantly, a clear need exists for new approaches to enhance the participation of women in industry's decision-making and training initiatives thereby helping embrace change. The findings by Avila & Gasperine (2005) have reported that education is the most effective way to empower the women to get out of poverty due to the fact that educated women have easier access to resources, employment and income generating opportunities. Rosegrant and Cline (2003) further elaborated that education encourages movement into more remunerative non-farm work, thus increasing the household's income. In agricultural areas, education works directly to enhance farmers' ability to adopt technology and achieve higher rates of return on land.

In this area of study, no literature has documented who makes decisions with respect to contract sugar cane farming. This underlines the reason for this study. This study therefore seeks to establish whether women engaged in contract sugarcane farming are

allowed to make sugarcane farming decisions in their households as a mode of participation to ameliorate the current declining sugar cane yields.

### **2.2.2 Attitude and Perception of the Society towards Women Engaged in Contract Sugarcane Farming**

Attitude and perception associated with patriarchy place the man in a superior position to the woman with land inheritance favouring the man (Mmasaaba, 2012). In most cases where contract farming is a practice, many of the contracted farmers are men. This is because contractual terms such as proof of land ownership and societal norms of patriarchy governing households usually disenfranchise the women (Daley & Mokoro, 2011). Studies show that many of the women in the households are forced to seek off-farm employment elsewhere, where they are unavailable to actively participate in the care of their own crop (Parsons, 2004). This is against a common trend previously experienced of men travelling to other urban centres in search of gainful employment as women remain behind to care for the crop with prospects of monetary gain (Kidula, 2007; MOA, 2009; Oywaya-Nkurumwa & Kathuri, 2006; Wafula & Marete, 2005).

Mulwa (2004) has observed that the primary concern of any development undertaking is to improve people's lives in developing their capacities and inherent potential for self actualization and enable them assume responsibilities that go with self determination. It is against this background that the study seeks to explore the influence of these cultural attitudes and perceptions in the society on women farm managers' participation in contract sugar cane farming.

### **2.2.3 Ownership and Utilization of Land in Contract Sugarcane Farming Households**

Land as a factor of production is a vital resource for rural livelihoods. Rural livelihoods are a key concern today as countries in Southern and Eastern Africa propose changes in the regulation of land rights. There has been a growing interest in the last few years to integrate human rights in development policies and programs (Human Rights Watch, 2008). Unequal ownership and control of land is a critical factor which creates

differences between men and women in relation to economic well being, social status and empowerment. In Kenya for example, less than five percent of the holders of land titles are women (Kameri & Mubuu, 2002).

Women's lack of access to land is historically grounded in the colonial era (Mmasaaba, 2012). In the pre-colonial economy, many tribes were agriculturalists who practiced a mixed economy mainly for subsistence. The population to be fed was quite low, and the abundance of land, which enabled shifting cultivation, helped keep the structure quite constant. In agricultural communities, women were charged with the duty of feeding the household and men took to exploiting the land. They therefore monopolized both the process of production and agricultural skills. This meant that they controlled the agricultural surpluses.

The power of allocating land was in most communities' retained by men and in this arrangement; security of tenure was based on rights of use, which were mainly enjoyed by men. Power of allocation by men was derived from the fact that most of the societies were patrilineal (Mmasaaba, 2012). This fact was also reflected in the various rules of succession under which women in most communities did not inherit land.

European colonialism introduced changes such as individual ownership of land and tenureship based on an indivisible title and not on use. Registration gave individual title holders the security and power to deal with their land as they deemed fit. It so happened that only rights of allocation were recognized as registerable interests; since men retained these, a large proportion of men were registered as owners. The traditional rules of inheritance which favoured men continued, and women could in no way be aided to acquire land. Ownership and control of land resources are crucial in accessing other resources, including credit facilities, good health, nutrition, housing and education for children. Lack of control on this important resource puts women in a precarious position (Mmasaaba, 2012).

Economic and social changes over time have affected the kinds and quantities of resources available to rural women farm managers. For instance, it has been noted that an estimated seventy percent of land in Mumias Division is under contract sugarcane farming with over 65% contracted in the names of land owners, often the men, but with over 80% of the needed labour being provided by women farm managers (GoK, 2010;

Ministry of Agriculture (MoA), 2009). Studies report a general decline in sugarcane production (see figure 3), resulting in a drop in household income within Mumias Division (Ng'ang'a, 2010; Kidula, 2007; KESREF, 2002).

Although sugarcane contract farming recommends that two-thirds of the farmer's land remain for food production as a third goes to sugarcane farming (Kidula, 2007), the average land size for cane production has been declining steadily due to population pressure (Wawire *et al.*, 2007). It is not documented if the initial rule of 'two-third versus a third' still holds.

Besides, it has not been documented if women are owners of household land in Mumias Division or are comfortable with current land ownership and household land inheritance. It is also not clear if women in Mumias Division are allowed to set aside land for both sugarcane development and subsistence food crop production. This study therefore, sought to establish whether women are allowed to own and utilize land in the households of contracted sugarcane farms and how this influences their popular participation in contract sugarcane farming in the division.

#### **2.2.4 Women and property rights and control in households of Contract Sugarcane farming**

It has been observed that Kenya needs to rewrite its intestacy law to give women in households clear expectations for the judicial process and distribution of the estate in an event of a loss of a spouse. This notwithstanding, is legitimized in the rights based approach which empowers vulnerable groups in society like women labourers in households, children and persons with disability by giving them a chance to participate in the processes and decisions that ultimately affects their lives (Gallaway *et al.*, 2008).

Studies indicate that women, because of prevailing local land ownership patterns, are not granted access to credit and training that could significantly increase their productivity and therefore improve on their participation (FAO, 2003). As has been attested by Mmasaaba (2012), over 80 % of the population in most countries live in rural areas where communities are male-controlled and consequently very traditional. Control of natural resources in this arrangement has been masculinized for centuries. For instance, as land tenure became institutionalized, it automatically became a practice to register land ownership in men's names only.

In this context, it was observed that before demarcation and registration, land as a resource was communally owned and utilized and the issue of who owned it or had rights to the outputs did not arise. This is because whatever came out from it was mostly for home use. With the advent of land registration, household ownership is not key, rather individual ownership is. In this way, land became masculinized as agriculture continued to remain feminized. The more resource ownership diminishes, the more control is imposed on it. Here the woman is left with little choice but to become dependent.

Studies by Mmasaaba (2012) and FAO (2003) advance the views that uncertain access to land and a history of losing land rights have greatly discouraged women's long-term investments or improvements in their own land where they are responsible for household food security. With this fear therefore women's land rights worldwide have been threatened by land tenure changes within both small-scale and large-scale rural development schemes and through classic and titling programs. In this respect Makhandia (2010), observed that most sugar cane farming contracts are held by men with only few being women.

As pointed out by Mwangi (2004), regarding control, household management teams like a family, are expected to make joint decisions on what to do and how to do it regarding set objectives, daily workflow, personnel, finance and most importantly embrace enhanced partnership. This is thought to be the benchmark for success in the overall service provision and more often, operational and financial support to household managed services.

It is unclear if women in Mumias Division do have rights of title deed to the household land. It is also not clear if women in the area of study have rights and control over sugar cane farming contract and how these motivate their participation in contract sugarcane farming and ultimate sugarcane yields. This study therefore seeks to find out the influence of women property rights and control on their participation in contract sugar cane farming within Mumias Division.

#### **2.2.5 Women's Rights in Sugarcane Representative Institutions**

The criteria in agricultural cooperatives for membership emphasize land ownership, which more often than not is held by men (Alston, 2003). This means that the woman who is not a registered member cannot take part in the decision making processes of the

cooperative even when decisions have a direct impact on her efficiency as a producer. Similarly, in recruitment for contract sugar cane farming, such representation is critical.

Participation represents a means for people to advocate for themselves and transform their situations. Since the International Youth Year in 1985, for example, the United Nations General Assembly has defined participation as comprising four components: economic participation, relating to work and development; political participation, relating to decision-making processes; social participation, relating to community involvement; and cultural participation, relating to the arts, cultural values and expression (Luhombo, 2010). In Mumias Sub County, it was not clear if women in households are adequately given a chance to participate in representative institutions from where they can freely air their views that concern their involvement in the contract sugar farming.

All four elements are reaffirmed in the Convention on the Rights of the Child and are central to the creation of a culture of respect for people of all ages including the women. It was on this basis that the researcher proposed to establish whether women are adequately represented in sugarcane related institutions that lobby for their interests as they participate in contract sugarcane farming.

### **2.3 Women and Utilization of Sugar cane Proceeds**

In Africa, for instance in Ghana, it has been documented that economic reforms have been strategized to enable benefits to largely accrue to medium and large scale farmers in the cocoa sector, where insignificant number of women were owners or employed. However, studies indicate that households headed by women experienced a sharp decline in poverty levels (FAO, 2003).

Women use less credit and other financial services and are much less likely to purchase inputs such as fertilizers, improved seeds and mechanical equipment. This is thought to be related to the level they utilize sugar cane income. If employed, they are more likely to be in part-time, seasonal and low-paying jobs; and receive lower wages for the same work, even when they have the same experience and qualifications (Kidula, 2007).

Findings by Ali-Olubandwa *et al.*, (2010) indicate that women farmers in Kakamega County have been economically impoverished and this has weakened the region's economy. It was not clear whether inadequate motivation of these women could be

significantly contributing to this condition. This study sought to establish the influence of utilization of sugar cane proceeds on women's participation in contract sugar cane farming within Mumias Division.

#### **2.4 Compensation of Women Labourers in contract sugar cane farming**

Women have a work load that includes fetching water and firewood besides being custodians of menial work on the farms (Alston, 2004). They have less education and less access to agricultural information and extension services (Kidula, 2007). In Kenya, women provide over 80% of agricultural labour (GoK, 2010), performing such roles as planting, weeding and fertilizer application. Mumias sugar company uses women as contract labourers in their Nucleus Estate farms who are found to be more dependable than their male counterparts (Kidula, 2007). According to Sifundza & Ntuli (2001), most contracted small holdings were established in the belief that family labour would always be available. Women have, however, provided families with inadequate labour.

Statistics have shown that women contribute 60–80 per cent of labour in the household, reproductive activities and in agricultural production. They also work longer hours than men (GoK, 2010). Disparities have been noted in wages paid to women versus men for the same work activities performed in sugarcane farms in India whereby men earned between 150-200 rupees against women 60-80 rupees per day (Kidula, 2007). This wide disparity does not seem to compensate for the energy demand.

Further, production of both cash and food crops is very much an economic phenomenon that depends on the farmer's age, level of education, farming practices or whether or not the farmer is found available in the farm to organize and manage the farm activities (Mueller, 2000). Further observations by Mueller (2000) reported that the female share of the labour force has been rising in the past two decades, and that the highest participation rates are found among women aged twenty five to forty nine. Mueller further states that a growing demand for female labour attracts those strong and most able, willing and able to take advantage of the new opportunities within the wage sector. It was expected that age of the women would influence their involvement as labourers in sugarcane contract farming. However, these findings revealed that single mothers had a greater economic need but they also have more autonomy. This could be attributed to the fact that ninety percent among them provide labour on a daily basis, and at their age, despite owning land

for cash and food crop production, women above 50 years old would not have adequate time and energy for food crop production after providing labour in the sugarcane fields. Hence one form of crop shall be sacrificed in one way or another.

Throughout history women have been in charge of maintaining and reproducing domestic units by means of their labour, time and skill. Studies by Jakku & Bellamy (2008) indicate that women's domestic labour has not been regarded as labour, but rather as a fundamental part of their "virtue" as women, clearly expressed as something attributable to their nature as women. Working in the countryside has always seemed as an extension of domestic work and thus formed part of women's "natural" activities. Thus, agricultural duties were regarded an integral part of the home. This observation agrees with Makhandia (2010) who confirmed that most agricultural farms are managed by women as men are always in towns in search of jobs.

FAO (2003) established that about 90 percent of women in Ghana are self-employed or work as unpaid family labour in farming, agro-based enterprises or small scale manufacturing in the informal sector but with low productivity and low incomes. This is especially so in periods of labour shortage, where women are often engaged without any remuneration in post harvesting activities on cocoa plantations.

In Mumias Sub County, it was not very clear if remuneration for the labour rendered on the sugar cane farms by the women had any bearing to the way they are motivated to participate in contract sugarcane farming. This study therefore, seeks to establish whether women are remunerated appropriately as they render their labour on the sugar cane farms and how this influences their participation in contract sugar cane farming in Mumias Division.

## **2.5 Summary of gaps in Literature**

It is evident that plenty of literature has had a lot of discourse on women engagement in household agricultural production value chain though not much information is recorded with regard to influence on their participation level as attributed by patriarchal factors (property ownership/control, membership in advocacy bodies and representation in investment institutions), even and fair utilization of sugarcane income and remuneration for labour provided on the sugarcane farms. This study therefore attempted to examine



the influence of these factors on women's participation in contract sugarcane farming in Mumias sub- county, Kakamega County.

## **2.6 Theoretical Framework**

This research was guided by the expectancy theory postulated by Vroom (1964). The theory looked at the way ownership and expectancy patterns among women in households can shape the super structure end result, creating influence on their participation in contract sugar cane farming. One group in society is able to own and control the most important means of production within it. This gives power to the owner-controller class allowing it to shape or maintain aspects of the super structure favouring its class interests (Mwangi, 2004; Mulwa, 2004).The theory has been chosen because women participation in contract sugar cane farming is viewed as interplay between social relations and power dynamics in the households.

### **2.6.1 Expectancy Theory**

The development of this theory of motivation has been based on the work of Vroom (1964) in which it was specified that motivation is the result of three different types of beliefs that people have. Expectancy is the belief that one's effort will result in performance. This is when an individual believes that putting forth a great deal of effort will result in getting a lot accomplished. The motivation of the women in the households will in this context be influenced by the expectation that their effort in participating in contract sugar cane farming will lead to performance like increase in sugar cane yields thereby adequately addressing their numerous felt needs. Vroom also identified instrumentality, which is the belief that one's performance will be rewarded.

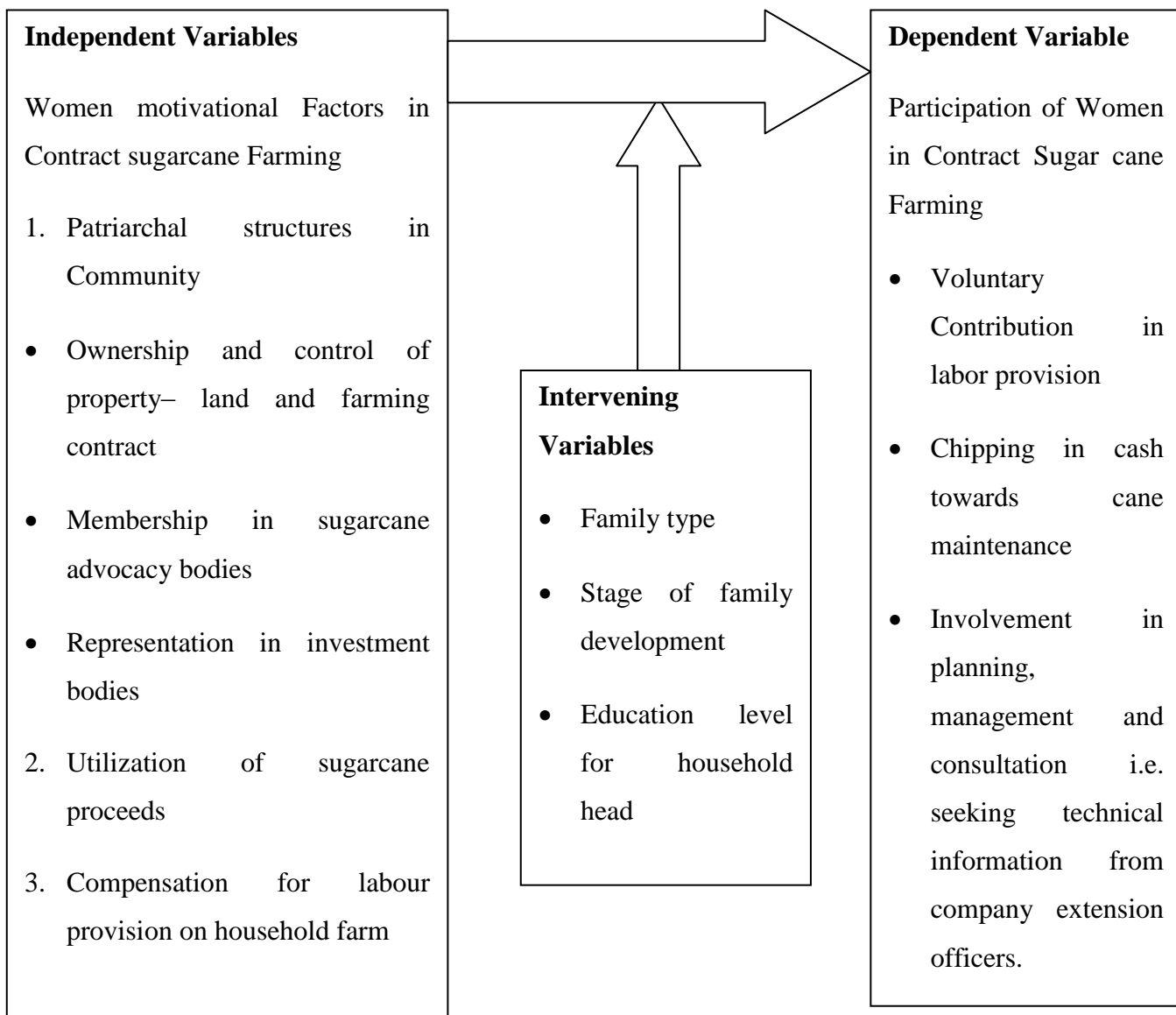
The main argument of instrumentality is, even though an individual performs at a high level, motivation may falter if that performance is not suitably rewarded. Thus women's cooperation in contract sugar cane farming will adversely be influenced if the efforts they put in the business do not lead to fair compensation. This may result in apathy. Lastly Vroom explained valence, which is the perceived value of the reward to the recipient. If women in households receive rewards that have low valence to them they may be poorly motivated which may influence their attitudes towards further engagement in contract sugar cane farming.

This is especially true if decision making that initiates household engagement in contract sugar cane farming does not involve and meet the felt needs of the women. According to Vroom the three factors combine together to create a driving force which motivates an individual to put in effort, achieve a level of performance, and obtain rewards at the end (Vroom, 1964). This theory helps us to understand what will influence the behavior of women in the households towards contract sugar cane farming. This may include the expectation that contract sugar cane farming will solve some of their felt needs and that there will be attractive benefits from the same.

## **2.7 Conceptual Framework**

The conception from Figure 1 is a derivative of the researcher in which it is visualized that motivation has a potential of determining participation of women engaged in contract sugarcane farming leading to increased yields. The independent variable in this concept is viewed to be factors of motivation, which shall be measured through: Patriarchal structures-access to and ownership of land and farming contract, decision making, societal perception/ attitude towards women and membership in sugar cane bodies; Utilization of sugarcane proceeds and Compensation for labour provision. Dependent variable in this study shall be participation of women engaged in contract sugar cane farming which shall be measured in terms of their contribution in labour provision, injecting cash towards cane maintenance, planning and management of contract sugar cane farming business and involvement in consultation on cane husbandry from Mumias sugar extension officers.

Intervening variables in the study, on the other hand, are 'other' variables that have the potential of influencing dependent variables like independent variables, thereby affecting participation and ultimately yields. They include: Family type (either monogamy or polygamy that could adversely influence the way sugar cane proceeds are utilized), Stage of family development (family obligations are lower when the family is small with young children than when it is large with grown up high school/college going children), Education level of household head (the higher the level of education household head has, the better the quality of decisions made for the household and vice versa. In this study, intervening variables have been controlled by including them in the data collection instrument so as to delineate their effect from that of independent variables.



**Figure 1: Conceptual Framework on Influence of Motivational Factors on Women's Participation in Contract Sugarcane Farming**

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1 Introduction

This chapter covered largely the methodology of the study which includes research design, location of the study, the population of the study, the sampling procedure and sample size, instrumentation, data collection procedures and data analysis.

#### 3.2 Research Design

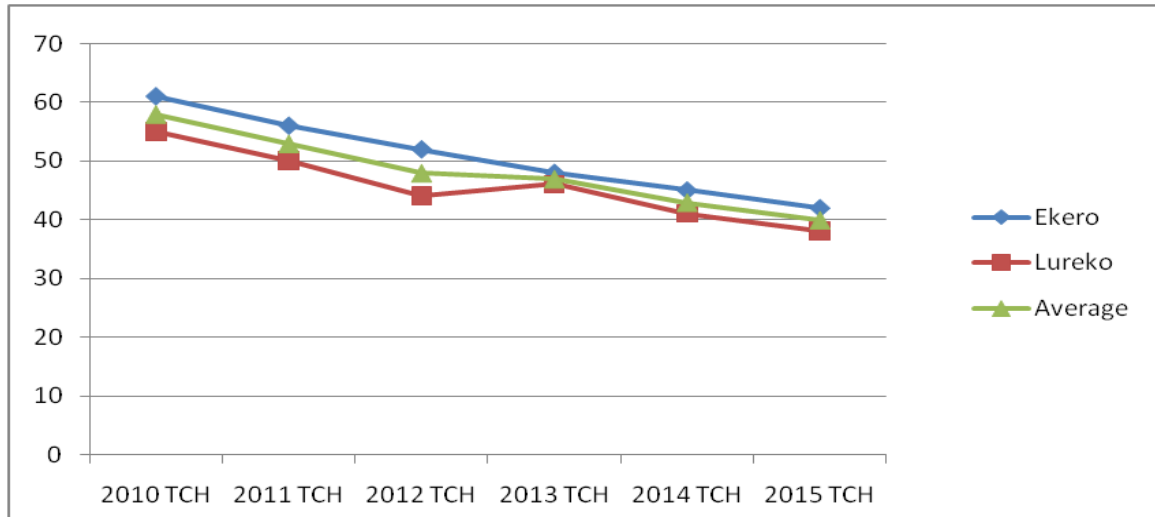
This study used the cross sectional survey. This looks at a variable at a particular point in time, does not involve manipulating variables, is often used to look at prevalence of something in a given population and allows the researcher to look at numerous aspects at once. In this study, the researcher chose the design to look at patriarchal structures, utilization of sugarcane proceeds and compensation for labour provided on the farms with respect to women's participation in contract sugarcane farming at one point in time without manipulating the variables (Mugenda & Mugenda, 1999; Kathuri & Pals, 1993).

#### 3.3 Study Location

The study was carried out in Mumias Division, Kakamega County which according to government administrative units constitutes four locations: Lureko, Matawa, Nabongo and Ekeru. For ease of administration of field operations against the available field staff, Mumias sugar company management has sub-divided the division into two main manageable blocks renamed 'sub locations'. These are: Ekeru sub location, which comprise the original Ekeru location and Lureko sub location which include the original Lureko, Nabongo and Matawa locations, together covering an area of 1,428.72 ha.

The Division lies within the Mumias sugar zone with sugarcane farming as the main economic activity covering an estimated area of 3,879.22ha. The Division lies between an altitude of 1270-1300m above sea level and about 30 km north-west of Kakamega town having largely one agro-ecological zone, Low and Medium 1 (LM1) (KESREF, 2010). It has adequate rainfall of 1500-2000mm per annum, temperatures of 24-33<sup>0</sup>C and very deep friable loam soils favourable for agricultural production. Of late, the study location has maintained a steady decline in sugarcane yields for over one decade despite being epicenter for the huge Mumias sugarcane growing scheme with most of the tons that

serve the sugar plant within the shortest time and distance coming from the Division as observed by KESREF (2008) -see figure 2 and Appendix E.



(Source: MSC, Agronomy Statistics, 2015)

**Figure 2: Sugarcane yields for Mumias Division for the period 2010-2015**

### 3.4 The Study Population

The target population consisted of all the 57,568 women, wives of contracted men in households within Mumias sugarcane scheme, Kakamega County. The accessible population comprised all the 3,305 wives of contracted men in households within Mumias Division distributed as: Lureko (1916) and Ekeru (1389), (Agricultural Management System, AMS, 2007; Kenya Sugar Board, KSB (2007). This formed the sampling frame from which a sample was drawn for the study. These women are major workers on the farms constituting 61% of the residents in the area (GOK, 2009; Oywaya-Nkurumwa & Kathuri, 2006; Wafula & Marete, 2005).

### 3.5 Sampling Procedure and Sample size

This study used Systematic Random Sampling. This is a probability sampling technique in which each element of the accessible population has an equal chance of being selected (Kombo & Tromp, 2006; Babbie, 2001; Castillo, 2009). The study preferred Systematic Random Sampling because the researcher had a large accessible population to be analyzed, there was minimal bias and a farmers' register was available at the sugar company serving as a sampling frame. The researcher selected the first respondent by

picking one of the folded numbers corresponding to the first ten respondents on the register. The study derived a sample size of 118 respondents using a formula  $n = (NC_v^2) / (C_v^2 + (N-1) e^2)$  (Nasiurma, 2000; Kenya Institute of Management (KIM), 2009). To establish the  $K^{th}$  value, accessible population (3,305) was divided by the sample size (118) to give 28. This meant the researcher picked every 28<sup>th</sup> member systematically from the sampling frame (farmers' register) till the desired number (118) was reached (KIM, 2009; Fraenkel & Wallen, 2000; Mugenda & Mugenda, 1999; Kathuri & Pals, 1993).

$$n = (NC_v^2) / (C_v^2 + (N-1) e^2)$$

Where n=Sample size

N=Population (In this study was 3,305 women labourers in the households)

$C_v$ =Coefficient of variation (take 0.5)

e= Tolerance at desired level of confidence, take 0.05 at 95% confidence level.

$$n = (3,305 \times (0.5)^2) / ((0.5)^2 + (3,305-1) \times (0.05)^2)$$

$$826.25 / (0.25 + 8.26)$$

$$826.25 / 8.51$$

$$97.09165 = 98 \text{ respondents}$$

Plus attrition at 20%  $\approx$  118 respondents. This is in line with Kathuri & Pals (1993), who recommend that for survey research, there should be at least 100 participants in each major sub-group for survey studies in social sciences. The researcher therefore used a sample size of 118 respondents for the study. Two Focus Group Discussions (FGD) each comprising eight women were conducted in both Ekero sub location (on 22-04-2015) and Lureko sub location (on 28-04-2015) from households that practice contract sugarcane farming. The eight women were purposively selected to enable disclosure of desired views. This included four contracted women farmers and four non contracted women in contracted households. The researcher gave each member of the FGD an opportunity to participate and freely share their experiences as guided by a set of open ended questions not fully covered in the questionnaire. This was in line with the recommended number of each focus group: between six and twelve people (Escalada, 2010; Kombo & Tromp, 2006). This is because when the number is too small, the information gathered may not be adequate, and when too large, some participants may not effectively contribute to the discussion.

### **3.6 Instrumentation**

The study applied two instruments to collect data; A researcher guided questionnaire and Focus group discussion guide. The two tools were combined to complement each other and were found to be adequate to collect data for the study being conscious of the respondents' level of education. This is because the two instruments enable quick disclosure of a lot of information, especially when sample items are homogenous. They are also good at identifying and exploring beliefs, ideas or opinions in a community (Kombo & Tromp, 2006). Appropriate items in the two instruments were developed to capture the content and generate data on variables so as to meet the objectives of the study.

These included questions relating to patriarchal structures; utilization of sugarcane income and compensation from labour provision in contract sugar cane households. The researcher aided questionnaire is an outline of closed ended questions that form a basis for and guides the interviewing process, providing a structure that aids in obtaining the necessary information (Kathuri & Pals, 1993). Since this involves an oral exchange between the interviewer and the interviewee, it provided an option of clarifying items after they were presented (Mugenda & Mugenda, 1999). In this way, the researcher was able to evaluate the respondents' sincerity and insight while addressing language and intellectual difficulties (KIM, 2009).

This was achieved by the researcher visiting manageable number of sampled respondents in their homes and personally administering the instrument till all were done. KIM (2009), records that researcher aided questionnaire and focus group discussions enable a study to extract more sensitive and personal information from the respondents, which was adequately fitting for this study.

In Focus Group discussion groups, the researcher prepared a list of relevant themes not comprehensively covered in the questionnaire, each tailored at addressing specific research objectives and questions in the study. These themes included: The state of sugarcane yields in the Division and possible causes, the role played by women on sugarcane farms, patriarchal structures in households, how money from cane farming was being used in households and how labour provision on the sugar cane farms was compensated for in households.

### **3.6.1 Validity**

Validity is the extent to which the instrument measures what it purports to measure according to the researcher's subjective assessment (Mugenda & Mugenda, 2003), suggest that the validity of the instrument is asking the right question framed from the least ambiguous way. To ensure the content validity of the questionnaire and focus group discussion guide, the questions were developed to capture the content and generate data on variables so as to meet the objectives of the study. For further validation of the instrument, the researcher consulted with the experienced experts in extension at the Department of Applied Community Development Studies, Egerton University to determine their clarity, relevancy and adequacy. Their suggestions were used to make necessary adjustments, improving the same before embarking on data collection.

### **3.6.2 Reliability**

This refers to the consistency that an instrument demonstrates when applied repeatedly under similar conditions (Kathuri & Pals, 1993). In order to establish if the questionnaire and focus group discussion guides would yield same results at different occasions, reliability of the two instruments was ascertained by pre-testing them on a sample size of thirty respondents according to Kothari (2004). This was systematically selected from Lubinu sub location farmers' register, East Wanga Division, a different sugar cane growing region bearing similar conditions to the study division (Mugenda & Mugenda, 2003).

Although Kathuri & Pals (1993) recommends the smallest number that can yield meaningful results on data analysis in a survey research is twenty (20), this study preferred to employ 30 to ensure the instrument is highly reliable with collected data having no questions of ambiguity. This was scrutinized for the purpose of adjusting the instrument to ensure its correctness. Data collected was then analyzed and the results correlated to determine their reliability coefficient using Cronbach's Alpha Coefficient, a measure of internal consistency (Kothari, 1990; Fraenkel & Wallen, 2000).

With Cronbach's Alpha Coefficient the significance level for  $\alpha$  = should be at least 0.70. A reliability coefficient higher than the recommended 0.70 implies there is significant consistency among items measuring the concept of interest according to Mugenda & Mugenda (2003). The reliability coefficient of the research instruments in this study was



found to be significant at 0.709. All appropriate adjustments were made to improve on the construction and flow of items on the instruments.

### **3.7 Data Collection Procedures**

The researcher got approval from Egerton University Graduate School which enabled acquisition of a research permit from the National Commission for Science, Technology and Innovations (NACOSTI) to allow undertake the study. An official permission was sought for from the sub county commissioner (DC) Mumias and Mumias Sugar management, to access the contracted sugar cane households in the two sub locations. Also, the area sub-chiefs were conducted on the ground for permission. A brief introduction was made to the sampled respondents informing them about the study, its purpose and significance and how the findings would be used. The respondents were guaranteed of confidentiality and importance of their responses.

#### **3.7.1 Interviews**

The researcher visited the two sub locations, Lureko and Ekeru successively to meet and interview women respondents in the sampled households engaged in contract sugar cane farming. Researcher aided questionnaires focused and elicited the responses from interviewees. This was done within the stipulated time of two months, handling manageable number of respondents, one at a time, till all the 118 respondents selected were completed. The structure of the questionnaires had four main sections as they relate to women participation in contract sugarcane farming: respondents' demographics; factors of patriarchy; even utilization of sugarcane income and compensation of labour provided on the sugarcane farms.

#### **3.7.2 Focus Group Discussions**

Further, the researcher organized for focus group discussions (FGDs) in two strategic points in Lureko and Ekeru sub locations where members chose the time and venue for the meetings. Focus Group Discussion for Ekeru was convened on 22-04-2015 next to Ebwaliro ACK church between 10 am to 12.45 p.m. while that of Lureko sub location was at Ematawa primary school on 28-04-2015 at 2 pm. These groups were sampled purposively ensuring there is an equal mix of contracted and non contracted women. Thus, the group's composition was: four contracted women farmers and four non contracted married women in contracted households. Each group therefore comprised of

eight women participants as the recommended number of FGDs is between six and twelve (Escalada, 2010; Kombo & Tromp, 2006).

Before the start of discussions, each member of the group was requested to fill personal details on a registration form which had a number. The members were then assigned tags showing only the number which corresponded to the number given on the form. There was a time for introduction, and during discussions each member quoted their number before contributing. Permission was sought from the group to record the proceedings with a tape recorder giving a clear explanation to the participants as to the purpose and confidentiality of this arrangement in the study.

Moderated by the researcher, each member of the group was given opportunity to participate and freely share experiences as guided by a set of open ended questions to capture themes not fully covered in the questionnaire. Members gave their views on the various selected aspects of motivation with respect to women participation in contract sugar cane farming in the Division. These themes included:

1. Inadequate involvement in contract farming decision making process
2. Insufficient representation in investment institutions
3. Minimal membership in bodies that advocate for their rights in contract sugarcane farming.
4. Anonymous indication of willingness and commitment to offer continued labour support on household sugarcane farms as they needed to put food on the table for the household.

Questions were asked in an interactive group setting where participants were free to talk to each other. Discussions provided an atmosphere where the members became aware of their common challenges being able to come up with some suggestions of reaching their friends and peers who share similar experiences. This was aimed at informing sound recommendations that would go a long way improving current state of sugarcane yields to stabilize the sugar sector and national economy.

### 3.8 Data Analysis

Data collected was then analyzed using both descriptive and inferential statistics with the help of statistical package for social sciences (SPSS) version 17.0. Nominal, ordinal and likert scale data in the questionnaire instrument were captured in SPSS by converting dichotomous and qualitative values to quantitative values. Nominal data which was primarily qualitative (yes/no; male/female; satisfied not satisfied responses among others) was assigned quantitative values 1 and 0 for ease of statistical analysis. The influence of patriarchal structures in the area of study on participation of women engaged in contract sugarcane farming was analyzed inferentially using linear multiple regression. Linear multiple regression was preferred because the study required the testing of three aspects in hypothesis on patriarchy: property ownership and control, membership in advocacy bodies and representation in investment institution against participation as a constant. ( $y=b_0x+b_1x+b_2x+e$ , where  $y$  denotes influence on participation (dependent variable) with  $b_0x_0$ ,  $b_1x_1$  and  $b_2x_2$  representing the independent variables: property ownership and control, membership in advocacy bodies and representation in investment institutions respectively, and  $e$ , denoting error inhibiting the influence of the three factors on participation). Analysis was done at 5% ( $\alpha=0.05$ ) level of significance.

The influence of utilization of sugarcane proceeds and compensation for labour provision on women's participation in contract sugarcane farming was analysed inferentially by linear regression analysis. Linear Regression was preferred because the study required the testing of three hypotheses: proceed sharing and compensation for labour provided on sugarcane farms respectively against participation as a constant ( $y=bx+e$ , where  $y$  is the dependent variable-participation and  $bx$  represents the independent variables- proceed sharing and labour compensation respectively and  $e$ , is the degree of error inhibiting the influence on participation. Secondly it is the best analytical tool in measuring relationship and corresponding direction. Descriptive statistics was used in both cases to describe the characteristics of the respondents in the study and was presented by tables, percentages, and bar graphs.

Focus Group Discussions on the other hand yielded thematic narratives which were analyzed qualitatively. Focus Group Discussions (FGDs) yielded thematic narratives that were used to address gaps the questionnaire had left out. Themes that stood out in the study were: Women in the contracted households were not adequately involved in

decision making regarding cane farming; were marginally represented in investment bodies and had little membership in sugarcane advocacy institutions. Table 1 summarizes the data analysis procedures as per the study objectives.

**Table 1: Summary of Data Analysis**

<b>Hypothesis</b>	<b>Independent Variable</b>	<b>Dependent Variable</b>	<b>Statistical Analysis</b>
H0 <sub>1</sub> : Patriarchal structures has no statistically significant influence on participation of women in contract sugar cane farming	Patriarchal structures in community - Ownership and control of property-land and sugarcane farming contract - Membership in sugar cane advocacy bodies - Representation in investment bodies	Involvement in planning, management and consultation i.e. seeking technical information from company extension officers.	Linear multiple regression analysis
H0 <sub>2</sub> : Utilization of Sugarcane proceeds has no statistically significant influence on participation of women in contract sugar cane farming	Utilization of sugar cane proceeds	Chipping in cash towards sugarcane maintenance	Linear regression Analysis
H0 <sub>3</sub> : Compensation from labour provided on the sugarcane farms has no statistically significant influence on participation of women in contract sugar cane farming	Compensation for labour provision	Voluntary contribution in labour provision	Simple regression Analysis

### **3.9 Logistical and Ethical Considerations**

Approval was obtained from post graduate school, Egerton University. This enabled acquisition of a research permit from the National Commission for Science, Technology and Innovations (NACOSTI) , then from the sub county commissioner, Mumias and Mumias Sugar management, to access the contracted sugar cane households in the two sub locations. The area sub-chiefs were conducted on the ground for permission.

A brief introduction was made to the sampled respondents informing them about the study, its purpose and significance and how the findings would be used. The respondents were guaranteed of confidentiality and importance of their responses. Further, to ensure confidentiality and anonymity of the participants in the focus group discussions, their informed consent and permission were sought for to record the proceedings with a tape recorder giving a clear explanation for the purpose of this arrangement in the study.

## CHAPTER FOUR

### RESULT AND DISCUSSIONS

#### 4.1 Introduction

This chapter presents the results and discussion of the study. It begins by highlighting the respondents' demographic information, respondents' actual and desired level of participation, status report on contract sugarcane farming in the area of study, hypotheses testing on patriarchal structures, utilization of proceeds from contract sugarcane farming and compensation for labour provision on sugarcane farms, alongside the results and summary of findings.

#### 4.2 Demographic Information

In this study, a sample of 118 women was drawn using systematic sampling from the total number of women engaged in contract sugarcane farming in households within Mumias Division, Kakamega County as shown in Table 2.

**Table 2: Sample distribution of women by sub-location in Mumias Division**

Sub-locations	Frequency	Percent
Ekeru	58	49.2
Lureko	60	50.8
Total	118	100.0

Majority of the respondents (50.8%) came from Lureko sub location in tandem with the registered numbers in the farmers' register for Lureko and Ekeru respectively.

##### 4.2.1 Marital status

The respondents were asked to indicate whether they were married or widowed. They indicated by ticking the appropriate choice. Table 3 presents findings on the marital status.

**Table 3 Marital status**

Marital status	Frequency	Percent
Married	94	79.7
Widowed	24	20.3
Total	118	100.0

Most of the respondents were married (79.7%) implying majority were under patriarchal authority where the husbands had a greater say on key motivating factors such as decision making on proceed sharing, household labour provision and compensation; ownership of property, control and representation.

This agrees with studies by Jakku & Bellamy (2008) which show that women suffer exclusion from male-dominated rural networks. FAO (2003) further confirms that power relations in the households are embedded in the structure of the family under universal patriarchy which usually favours men and therefore bound to undermine their motivation. The study revealed that only a paltry 20.3% were widowed probably at advanced ages (see Table 5) and therefore exempt from the repressive effects of the above factors mainly because they have the responsibility of fending for their dependants. However, results indicated that their availability and involvement as labourers in sugarcane contract farming is more guaranteed and therefore greatly influenced sugarcane production, than the younger age-group who are largely urban dwellers with their working spouses. This also agrees with the findings of Mueller (2000) who reported that single mothers have a greater economic need but have more autonomy.

#### **4.2.2 Type of marriage**

The respondents were asked to indicate which type of marriage they were in; monogamous or polygamous. They indicated by ticking the appropriate choice. Table 4 presents findings on marriage type.

**Table 4: Type of marriage of respondents**

Marriage Type	Frequency	Percent
Monogamy	75	63.6
Polygamy	43	36.4
Total	118	100.0

Most of the respondents (63.6%) were in monogamous marriages. This is linked largely to their Christian background which advocates for monogamous marriages (see Table 7). Polygamous marriages are common with income diversion into non-core household expenses like lavish expenditure on the younger women-friends usually staying away in urban centres with the employed husband at the expense of elder wives who may be offering much of the required labour on the rural household farm. This finding did not corroborate with earlier surveys within the study area which reported high incidences of polygamy within the Division (Kidula, 2007) and which also reported that most men take full responsibility of their younger families during their early years of marriage, while their first wives concentrate on the family land. In such arrangement, as the number of wives in the household and consequently the number of dependants increase, the household income may not be adequate to be spread among all household members. In most cases the middle-aged women that form the most active age group in labour provision in the sugarcane farms (37-54 years of age on Table 5) tend to move into provision of hired labour in other contracted sugarcane farms at the expense of contracted household farm in order to meet the household needs.

#### 4.2.3 Age of Respondents

The respondents were asked to indicate their age range. They indicated by ticking the appropriate range. Table 5 presents findings on the age.

**Table 5: Age Range**

Age Range	Frequency	Percent
18-36	35	29.7
37-54	63	53.4
55 and above	20	16.9
Total	118	100.0



The age of the majority of the respondents fell between 37-54 years, represented by 53.4% with a small percentage (29.7%; and 16.9%) covering for lower age range 18-36 years and upper age range above 55 years respectively. This corroborated reasonably with findings by Kidula (2007) who established in her study on food security in Mumias division that most active age group in labour provision on the sugarcane farms is between 21-50 years, forming a prime age group whose majority are active and strong enough to provide labour in the sugarcane-contracted farms. The study also revealed that the older women (above 55 years) do not commonly form part of the active labour force but a number are involved (16.9%), mainly because of being widows, charged with the responsibility of fending for their dependants. This corroborated with findings by Mueller (2000) who reported that widows, although they have a greater control over property and more autonomy, possess a greater economic need and do not have adequate time and energy.

#### 4.2.4 Household size

The respondents were asked to indicate the number of members in their households. They indicated by ticking the appropriate number. Table 6 presents findings on household size.

**Table 6: Respondents' household size**

Household size	Frequency	Percent
1-5	26	22.0
6-10	79	66.9
Over10	13	11.0
Total	118	100.0

It was revealed that most of the households in the study area had between 6-10 members (66.9%) with 22% having 1-5 and 11% having over 10. This is largely attributed to the monogamous marriage type commonly found in the study area as can be seen in Table 4 above. This is moderate enough to render the much needed family labour attracting the expected compensation in return from the sugarcane proceeds/benefits.

#### 4.2.5 Religious affiliation of respondents

The respondents were asked to state whether they were Christians or Muslims. They indicated by ticking the appropriate choice. Table 7 presents findings on the religious affiliation.

**Table 7: Respondents' Religious Affiliation**

Religious affiliation	Frequency	Percent
Christianity	84	71.2
Islam	34	28.8
Total	118	100.0

The study indicated that the area is largely Christian (71.2%) with a paltry 28.8% being Muslim affiliates. This corroborates well with findings by Agisu (2013). However, of the two religions, Islam is a stronger proponent of patriarchy than Christianity through its doctrinal teachings in which women are given second/rear place even in the mosque as they approach 'Allah' (their God) as men take the first position. These mirrors the way women are considered when brokering for property ownership, control and decision making in the household.

On the other hand, orthodox Christianity hold that: "...God created both male and female in his own image and likeness. And God saw everything that he had made, and, behold, it was very good" (Genesis. 1:26-27, Korean Bible Society, (2010). In this context, one does not expect partiality between sexes and therefore there should be equitable access to power, decision making, property ownership, control and even representation in all matters of household management void of segregation and disenfranchisement that depletes God's endowed motivation of human beings.

#### 4.2.6 Occupation of respondents

The respondents were asked to indicate their occupation. They indicated by ticking the kind of job they engaged in besides sugarcane farming. Table 8 presents findings on occupation.

**Table 8: Respondents' Occupation**

Occupation	Frequency	Percent
Farmer (sugarcane)	42	35.6
Employed	2	1.7
Off-farm business	23	19.5
Others	51	43.2
Total	118	100.0

Results showed that most of the respondents (43.2%) were involved in other forms of agricultural farming such as horticultural and food crops (maize) farming; case in point is shown in plate 4.



**Plate 4: A woman weeding maize farm intercropped with pulses for income maximization on a previous sugarcane area (Lureko Field 5 plot 9).**

This is followed by 35.6% who were contracted by the sugar company as farmers, 19.5% were engaged in off-farm businesses as grocery sales and only 1.7% were found to be engaged in formal employment as primary teachers and social workers. The high number of women engaged in other business and local trading rather than sugar cane farming is

attributed to the drive to engage in activities that seem to address their felt needs in the household. This indicates there is a high displeasure from engagement in contract sugarcane farming straining popular motivation.

This resonates well with findings by Luhombo (2010) on what triggers motivation towards active participation in productive tasks. They all agree that this is a process that stimulates people to actions that accomplish the goals or a set of processes that arouse, direct and maintain human behavior towards attaining a goal. Findings by Mulwa (2004), reports that unless people are actors in activities and programs that affect their lives, the impact of such interventions become negative, irrelevant or insignificant in transforming their lives. This could explain why the lives of women in the study area have not changed despite their pivotal role in contract sugarcane farming.

Luhombo (2010) argues that people will always take part in projects that deliver or are likely to deliver direct and immediate benefits to them. In this context, only 35.6% of the respondents were allowed to contract with the sugar company as sugarcane farmers and these were largely found to be widows. Majority of the respondents (64.4%) were occupied with non-sugarcane related activities (employed, local trading or off-farm business, horticulture or food crop farming). Therefore as observed by Heyworth (2003), any community development venture such as sugarcane farming in the household must recognize involvement of key people among other characteristics, otherwise it is prone to yield poor output.

#### **4.2.7 Respondents' level of education**

The respondents were asked to indicate their education level. They indicated by ticking their level of education. Table 9 presents findings on level of education for the respondents. Formal education was considered as an important aspect in the study because it was expected to improve the quality of decisions made as key participants in contract sugarcane farming and with food crop production.

**Table 9: Respondents' level of education**

Education Level	Frequency	Percent
Never went to school	33	28.0
Primary	66	55.9
Secondary	18	15.3
Post-secondary	1	.8
Total	118	100.0

The study revealed that most of the respondents (83.9%) had up to primary as their highest level of education; this includes 28% who had no formal education. Only 15.3% had attained secondary education and a paltry 0.8% had gone beyond secondary level. Similar findings were noted in a study by Kidula (2007) and Agisu (2013) who reported that majority of the household members in the study area have up to primary level of education.

This therefore is at variance with findings by Avila & Gasperine (2005) who established that education is the most effective way to empower the women to get out of poverty due to the fact that educated women are good decision makers, have easier access to resources, employment and income generating opportunities. Education was however, observed by Rosegrant and Cline (2003) that it encourages movement into more remunerative non-farm work, thus increasing the household's income. In agricultural areas, education works directly to enhance farmer's ability to adopt technology and achieve higher rates of return on land, in this context, higher sugar cane yields as argued by Makhandia (2010).

#### **4.2.8 Husbands' age**

The respondents were asked to indicate the age of their spouses. They indicated by ticking the appropriate age range for their husbands. Table 10 presents findings on the spouse's age.

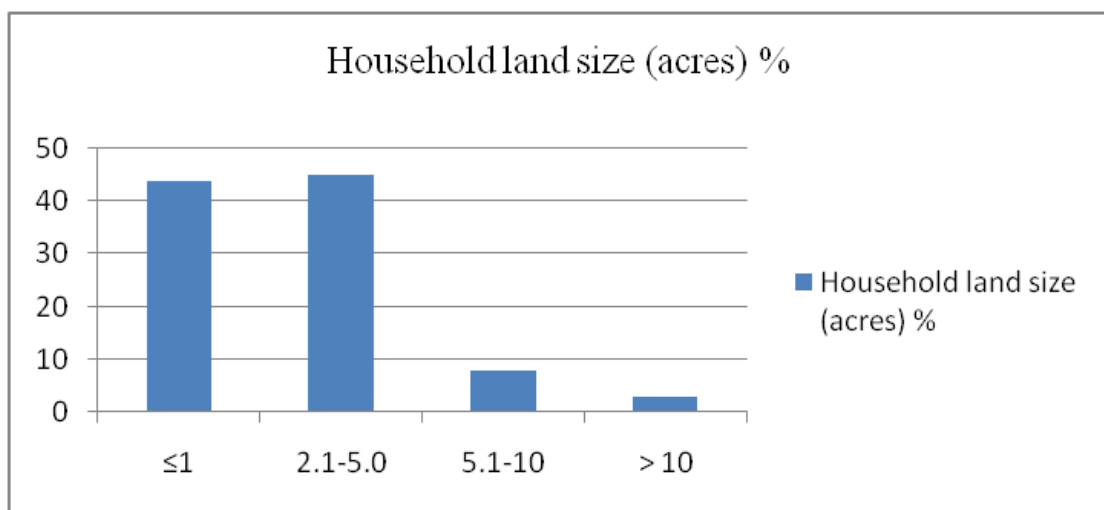
**Table 10: Husbands' Age**

Husbands Age	Frequency	Percent
18-36	19	16.1
37-54	50	42.4
55 and above	49	41.5
Total	118	100.0

The results revealed that most of the respondents' spouses (83.9%) were either sharing the same age bracket or were older than their wives (respondents). Whereas this is crucial for a stable and strong marriage union where mature decisions are expected to be made, it is one of the causes for advancement of patriarchal conflicts in the household to the detriment of the wife's voice (Mmasaaba, 2012).

#### 4.2.9 Size of household land

The respondents were asked to indicate the size of their household land. They indicated by ticking the appropriate size. Figure 3 presents findings on the size of household land.



**Figure 3: Size of household land in acres**

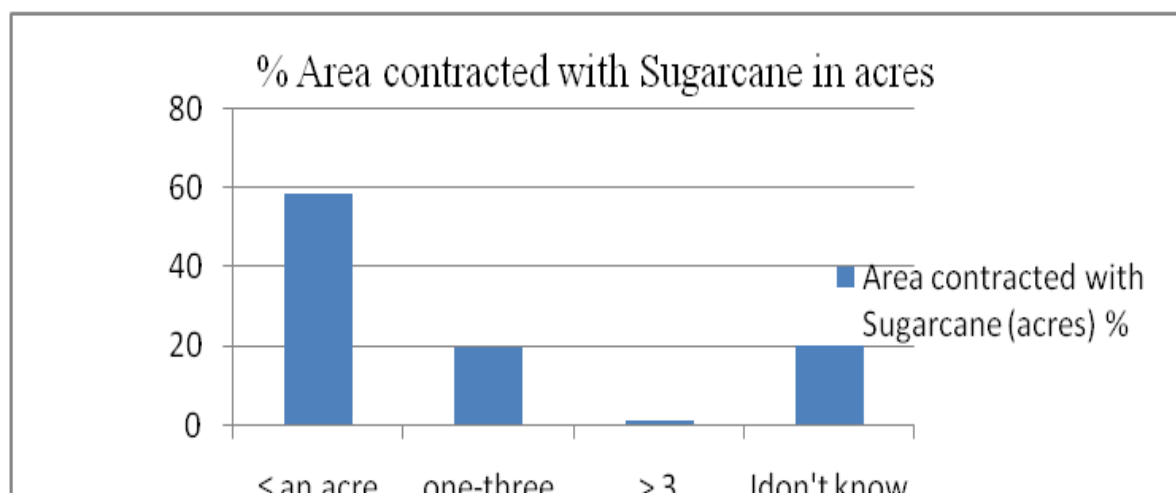
The average land size for farming per household within the study area has been declining over the years due to depressing yields, population rise and subsequent sub-division. It was expected that knowledge of the land size would serve as an outcome of the quality of

household information respondents have. The study indicated that a majority of households (89%) within the study area had  $\leq 5$  acres of land. This agrees with findings by Kidula (2007), who reported that most households in the area have  $\leq 2$  acres of land which is allocated for the homestead and different enterprises such as sugarcane, food crops and others. Due to minimum land sizes, it is a common practice for households to allocate most of the available land to sugarcane growing in a bid to meet the requirements of sugarcane contract farming, a decision that is largely made unilaterally by the household head (the husband) driven by patriarchy.

These findings further agree with studies by Agisu (2013) who reported that the land size per household determines the pattern of land allocation to other enterprises, and that households with smaller farms put higher proportion of their land into sugarcane growing in order to meet the requirement of the contract agreement. The study also revealed that households with more than five acres of land (5 acres) tended to allocate considerable portions of land for sugarcane (two-thirds) and food crops (only a third) against the requirement by the company (MSC) contract agreement of one third and two-thirds respectively (Kidula, 2007). In this study only 11% of the respondents who had  $\geq 5$  acres indicated that their family land could meet this criterion. This implies a joint decision making would be inevitable if viable contract sugarcane farming has to be practiced and loss of motivation reversed.

#### 4.2.10 Size of household land contracted with sugarcane in acres

The respondents were asked to indicate the size of their household land that was contracted under sugarcane. They indicated by ticking the appropriate surface area contracted. Figure.4 presents findings on the size of household land contracted.



**Figure 4: Area Contracted with Sugarcane**

The findings revealed that most of the respondents (58.5%) have contracted less than one acre of their household land, with 19.5% having between 1-3 acres of land under sugarcane and only 0.8% planted above 3 acres of sugarcane. This reveals the continual reduction of area under sugarcane in the sub county probably resulting from the respondents' despondency under study (see plate 6). These results corroborates with the findings of Wawire *et al* (2007) that continuous land sub division led to declining land size within the study area resulting to reduced total earning of the farmer and thus making her unable to meet the household's basic needs and diversify the income sources. This can be seen from Plate 5, where only a small area of the family land has been provided for sugarcane farming as homestead and other enterprises take the rest. This is explained by the fact that the economical land size for contract sugarcane farming is 1.0 Ha (Kidula, 2007; Agisu, 2013).



**Plate 5: Only a small area of Household land devoted to sugarcane farming in the study area (Lureko 20 plot 9)**

It was also noted that 21.2% of the respondents were not aware of the surface coverage for sugarcane on the household farm as expressed through the Focus Group Discussion (FGD) held in both Ekeru and Lureko:

*“Issues to do with sugarcane and lands belongs to husbands, women concern themselves with the kitchen work”* (FGD, 22 April 2015, Ekeru & Lureko).



This was a typical expression of effects of patriarchy and despondency on the respondents.

#### 4.2.11 Contract period for Sugarcane Farming

The respondents were asked to indicate the period households have been contracted with sugarcane. They indicated by ticking the appropriate contracted period. Table 11 presents findings on the period household has been contracted.

**Table 11: Contract Period for Sugarcane Farming**

Duration in years	Frequency	Percent
Not sure	43	36.4
0-10	16	13.6
11-20	36	30.5
Over20	23	19.5
Total	118	100.0

Majority of the respondents (36.4%) were not sure of the period the household has been involved in contract farming as quipped one participant at Lureko FGD meeting:

*“I got married to my husband when he was already contracted, how do I know when he entered contract sugarcane farming?”* (FGD, 28 April, 2015).

30.5% of the respondents had been in contract farming for the last 11-20 years; 19.5% for over 20 years and only 13.6% had up to 10 years of experience in contract farming. Table 11 indicates that the number of farmers who committed their land for sugarcane farming increased exponentially over the last twenty years.

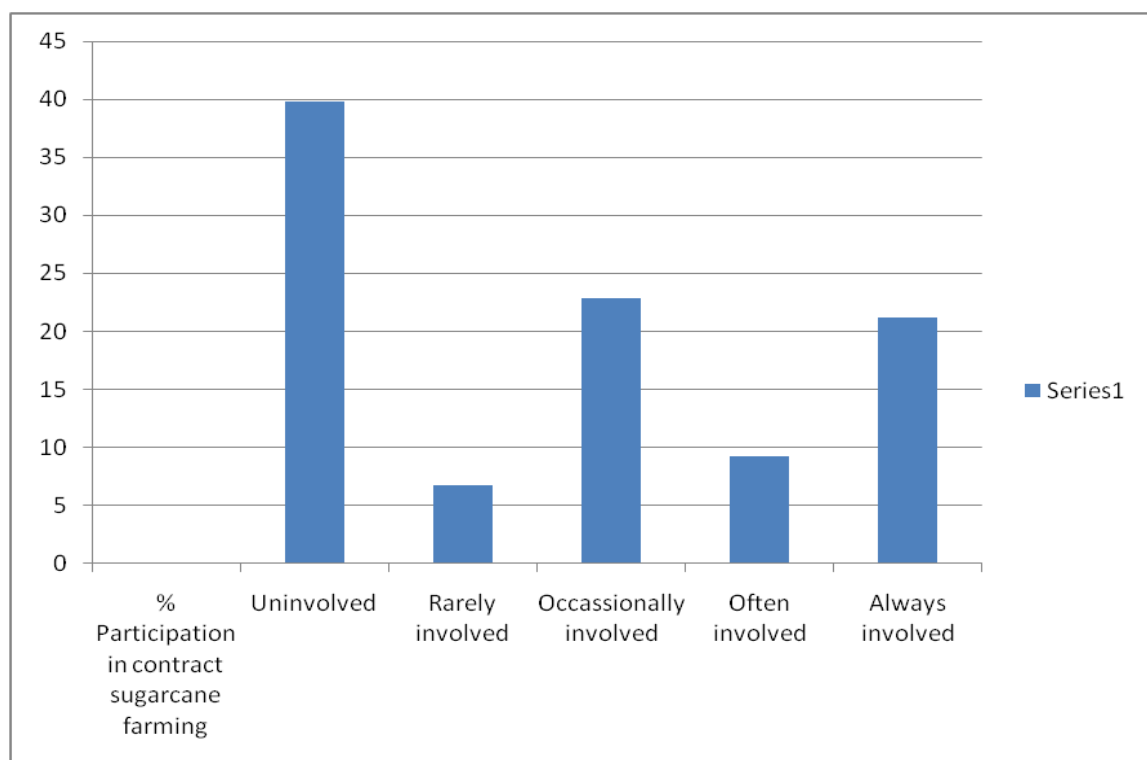
This has kept declining steadily until a bare 13.6% of the households have remained in contract sugarcane farming during the last ten years (KSB, 2012). This could be attributed first to the fact that, installation of the diffuser system in sugar processing around the year 2000 required that more sugarcane be milled per day due to the increased milling capacity of MSC. More farmers were therefore contracted to grow sugarcane in order to meet the factory requirement. Secondly, the culture of land sub division resulted in new contractual agreements being made by the new landlords independent of their

parents; hence more households were being involved in contract sugarcane farming. As time went by, this expansion has not matched the respondents' expectation, giving rise to the sudden decline in sugarcane contracting as more farms are being neglected and instead reverted back to food crop farming as in plate 5:

### 4.3.0 Respondents' level of participation in contract sugarcane farming

#### 4.3.1 Participation level

The respondents were asked to indicate their level of participation in contract sugarcane farming. They indicated by ticking the appropriate level. Figure 5 presents findings on the participation level of respondents.



**Figure 5: Respondents' Participation Level in Contract Sugarcane Farming**

The study revealed majority of the respondents (39.8%), were not participating effectively in the contract sugarcane farming business. Only 21.2% were always involved, and this were typically widowed, thereby inheriting the responsibility of managing the crop. 22.9% were casually involved, with 6.8% rarely involved, with only 9.3% often involved. This result revealed that 69.5% of the respondents were having issues on involvement in contract farming ranging from casual to complete non-

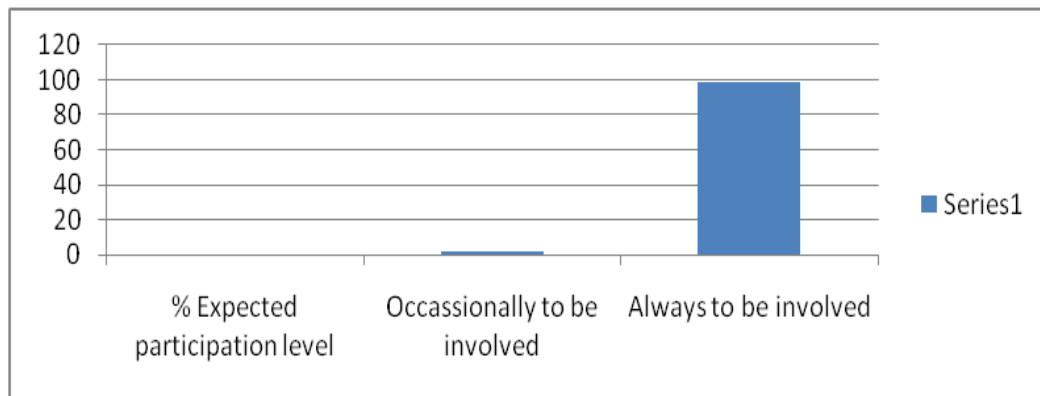
involvement, while only a few (30.5%), who were largely widows, could substantially be described as being involved.

This seems to corroborate well with studies by Arias (2004), who observed a paradox that intrinsic (internal) motivation though far stronger than extrinsic motivation, could easily get displaced by the extrinsic (external) motivation which is driven by rewards and benefits such as the ones in this study. Walker *et al* (2002) argues that motivation of individuals and communities is considered an aspect of the resilience of societies that reflects gratitude, learning and flexibility to experimentation and adaptation of novel solutions. This reasoning reconciles with Mwangi (2004) who observes that for any development to be sustainable it is important that all household members on the ground identify with it to build a sense of ownership.

#### 4.3.2 Expected level of Participation in Contract sugarcane farming

The respondents were asked to indicate which level of participation they would like to be involved in contract sugarcane farming. They indicated by ticking the appropriate expected

Figure 6 presents findings on the expected participation level.



**Figure 6: Expected level of Participation In Contract Sugarcane Farming**

Study findings indicated that majority of the respondents (98.3%) preferred to be always involved in contract sugarcane farming, with only 1.7% opting for casual involvement. This finding agree with observation by Luhombo (2010), who state that people's participation in development activities is a goal-oriented phenomenon that is contingent on the attainment of benefits. They therefore allude to the fact that women are always more than eager to take part in projects and tasks that deliver or are likely to deliver direct and immediate benefits to them. This implies that if they engage in activities that do not

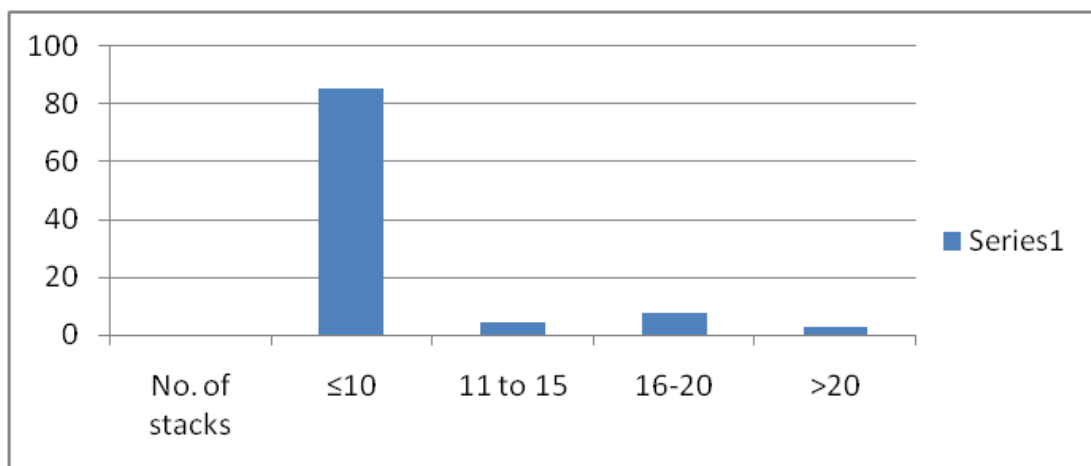
address their felt needs, they will get demoralized ending up withholding their popular cooperation and support.

#### 4.4.0 General status report on contract sugarcane farming in the study area

The findings under this sub section were used to explore concerns raised on declining contract sugarcane yields in the study area as related to the selected motivational factors among the women participants in the households.

##### 4.4.1 Number of stacks harvested from the respondents

The respondents were asked to indicate the number of stacks they harvested in the previous crop. They indicated by ticking the appropriate number. Figure 7 presents findings on the number of stacks harvested.



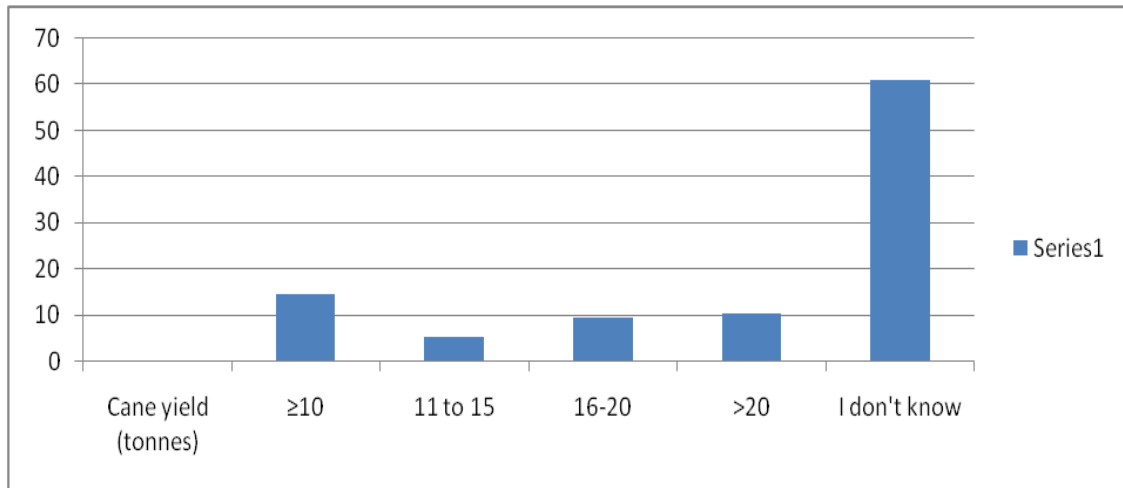
**Figure 7: Number of stacks from the respondents**

The study findings indicated that most respondents (85.6%) had less than 10 stacks, with 4.2% having between 10-15 stacks, 7.6% 16-20 stacks and only 2.5% having over 20 stacks. This could be attributed to the fact that the surface area of land most respondents (58.5%) allocated to sugarcane farming in the households was less than one acre (see Figure 5). Under best crop management practices, an acre of mature sugarcane crop in the study area is projected to yield up to 5 stacks weighing an average of 6 tonnes (KESREF, 2006).

#### 4.4.2 Yield of sugarcane harvested in tons from respondents

The respondents were asked to indicate the tons of sugarcane yield they got in the previous crop. They indicated by ticking the appropriate yield in tons. Figure 8 presents findings on

the number of tons that the harvested stacks yielded.



**Figure 8: Yield of sugarcane harvested in tons from respondents**

The findings indicated that majority of the respondents (61%) did not know the amount of tonnes their farms yielded, while those who could recall gave 21 tons and above (10.2%), 16-20 tons (9.3%) 11-15 tons (5.1%) and less than 10 tons (14.4%) respectively.

We can deduce from the study that most respondents did not recall their previous yield because they are not contracted as farmers to receive a payment statement that usually disclose the actual amount of tons the farm yielded though they may have seen and even known the number of stacks the household farm yielded. This reflects the fact that women have little say over land issues and do not have much information about the economic usage for cane farming such as field number, plot number, contract documents and income from the contracted crop. This could deplete motivation adversely affecting their level of participation.

Thus, despite all the rhetoric on gender equity over the past two decades, women all over Africa continue to face economic, socio-cultural and legal barriers that constrain their capacity to participate in decisions that hinge on farming and natural resource management, a situation that affects their ability to generate enough incomes that would

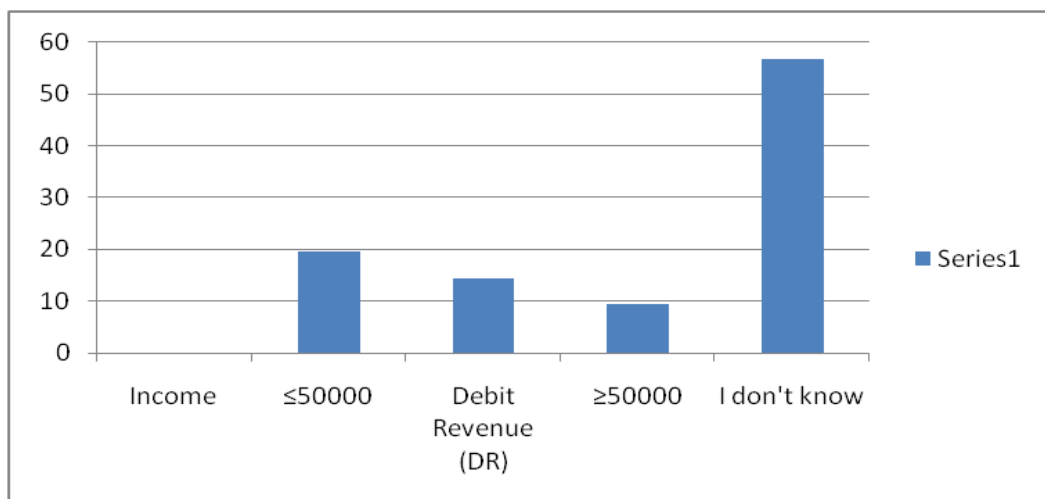
go towards improvement of standard of living of their households (Jakku & Bellamy, 2008).

Majority of those respondents who quoted  $\leq 20$  tons (forming 28.8%) reveal that the yield in the previous harvest was far below the expected 30 tons out of the unit acre surface area for most respondents. This is an indicator of declining yields. However, those who quoted 21 tons and above (10.2%), were within acceptable expected range, though few.

#### 4.4.3 Income from previous harvest of the respondents

The respondents were asked to indicate the amount of income earned from contract sugarcane in the previous crop. They indicated by ticking the appropriate amount in Kenya shillings.

Figure 9 presents findings on the income earned from the yielded stacks.



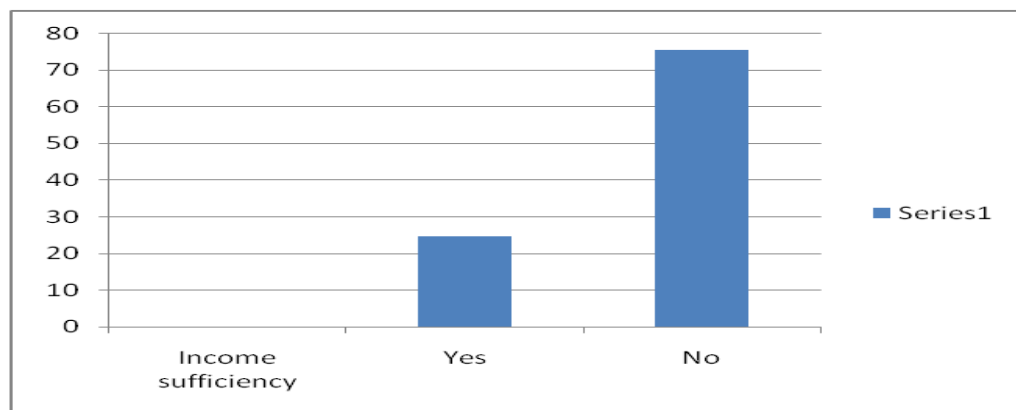
**Figure 9: Income from previous harvest of the respondents**

The study outcome revealed that majority of the respondents (56.8%) did not know the actual amount that their farm earned as they were largely non-contracted with the company, and therefore disadvantaged from accessing a farmer payment statement. Out of the expected 30 tons per acre and at the previous tonnage pay rate of kshs 3,875 per ton, an acre should yield kshs 58,125. This was after recovering all the sunken pre-harvest charges, which usually takes 50% of the cane value on average between the plant (main) and ratoon (subsequent) crops. From this basic calculation, the study revealed that only 9.3% of the respondents confirmed that they were breaking-even (making profit), but with 19.5% failing to make profitable earning from their sugarcane farm. A further 14.4% were operating negative revenue (Debit Revenue- DR) in their cane farming

business, meaning they were indebted to the sugar company having more inputs and services than the value of cane could pay for.

#### 4.4.4 Income expectation from the respondents

The respondents were asked to indicate if the amount of income earned from contract sugarcane in the previous crop was within their expectation or not. They indicated by registering their consideration. Figure 10 presents findings on their expected income in proportional to the area.



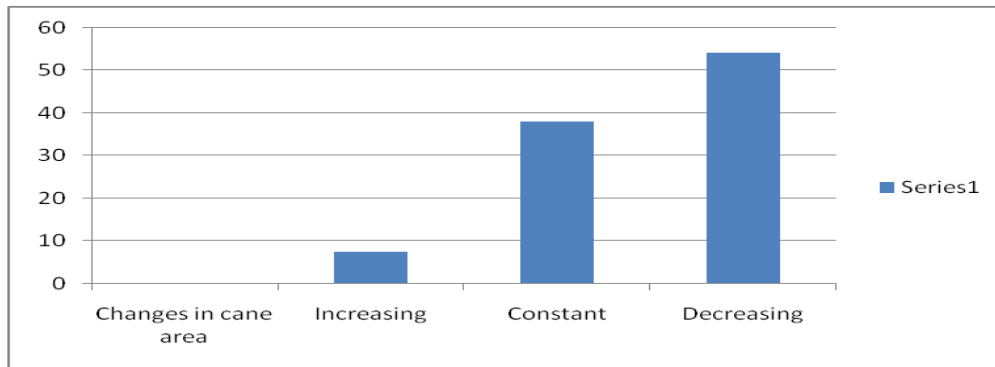
**Figure 10: Proportional income expectation from the respondents**

The study showed that most of the respondents (75.4%), did not consider their previous earnings as sufficient, with only 24.6% feeling satisfied. The plight of the majority is confirmed by the arithmetic done in Figure 10 which revealed that 19.5% earned below their expectation, 14.4% had a debt with the company after all incurred costs were recovered and 56.8% did not have an idea of how much their plot earned. Only 9.3% of the respondents were making profits on their sugarcane farms. The study thus revealed dependency on the majority of the respondents. This corroborates with findings by Mutonyi (2014) and Kidula (2007) that indicate sugarcane yields in this context of the study area are failing and could be straining the participation of women.

#### 4.4.5 Changes in cane area from among the respondents

The respondents were asked to describe the general changes in the total area of land under sugarcane to that of other crops in the households. They indicated by ticking the appropriate change as observed over the years.

Figure 11 presents findings on the change in total area under sugarcane in the study area.



**Figure 11: Changes in cane area from among the respondents**

Findings revealed that majority of the respondents' area under sugarcane is drastically decreasing; represented by 54.2%, with only 7.6% indicating the area was increasing. However, 38.1% were indifferent. This finding did not corroborate with a study by Kidula (2007) which indicated that area under sugarcane in the area of study had been increasing. The explanation to the later could be that initially, sugarcane contract farming acted as some form of collateral in schools and hospitals. The school, community and friends were sometimes prevailed upon by farmers to offer them credit on the promise that when cane is harvested the income will be used to clear the debt. In this context, expected proceeds from sugarcane payments were used as some form of insurance.

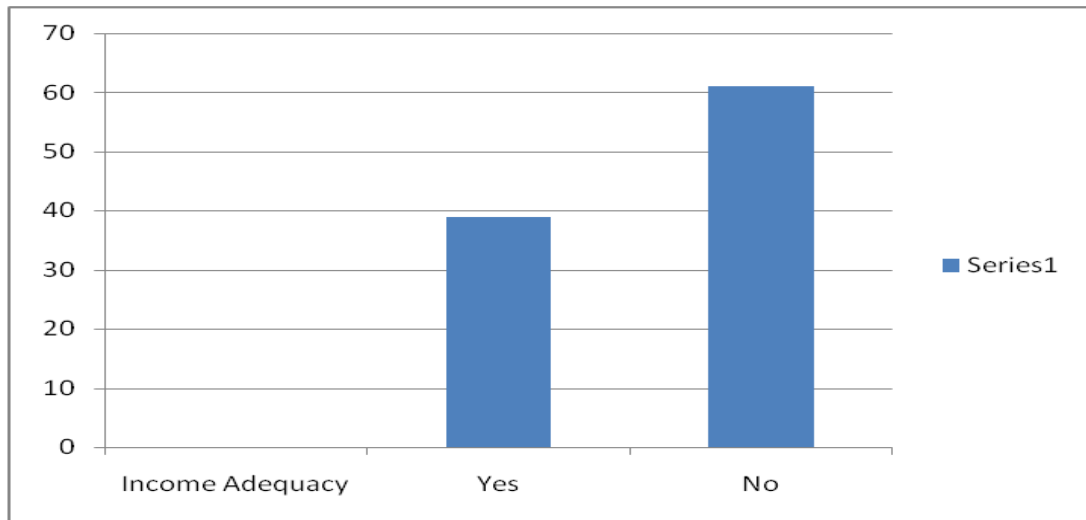
This is not so any longer. The decline in surface area may largely be resulting from displeasure of the women in contract farming in households besides meagre returns from the crop in preference for horticulture and food crops. This is where women have more control of the resources as argued by Wafula & Marete (2005). This most likely cushions the women from despondency arising from low reward system for their contribution in the household business (see Figures 9 and 10) where most of them could neither know the amount of tons nor monies earned from their household farm. This was similarly reflected in the FGD meetings held at both Lureko and Ekeru where the selected respondents anonymously spoke that

*“... Weeding work on contracted farms is left to me, but knowing the weight of harvested canes and the income thereof remains the preserve of the husband, can he let you know? If you insist to know, you will be sent back to your parents” for re- socialization (FGD, 22 April 2015, Ekeru and 28 April 2015, Lureko).*



#### 4.4.6: Income adequacy among the respondents

The respondents were asked to state whether or not the income earned is adequate for the households' regular needs. They indicated by ticking the appropriate position as observed over the years. Figure 12 presents findings on the income adequacy in the study area.

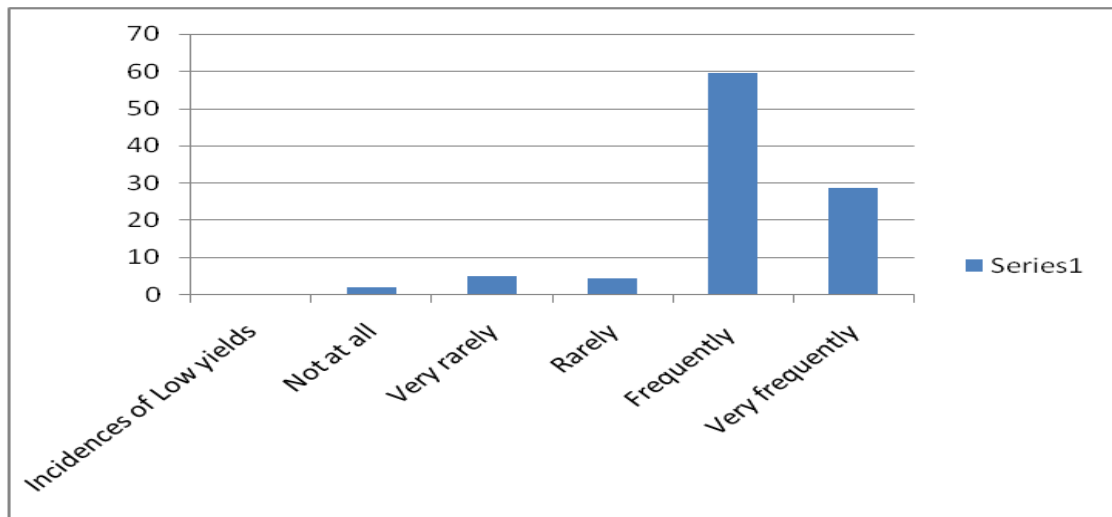


**Figure 12: Income adequacy among the respondents**

The study findings indicated that most of the respondents (61%) confirmed income accrued from contract sugarcane farming was not sufficient to ameliorate the household from current financial constraints. Only 39% admitted that the income sufficed household needs, majority of whom must have been the widowed women who had assumed full control of the contract (see Table 3). This findings corroborate with a study by Wafula and Marete (2005) who established that contract sugarcane farming overburdened women and their children on the household farms but with very little returns creating bad feelings amongst the women who have no alternative land for food crop production. Similar views are held by studies by GOK (2009); Ali-Olubandwa *et al* (2010) and Gakunu (2004) who confirmed that over 80% of women in Kenya live in rural areas fully engaged in agricultural production that seem not to have changed much of the 57% statistic of the national index on poverty experienced in the country

#### 4.4.7 Incidences of low Yields among the respondents

The respondents were asked to state the frequency households have experienced low incidences of sugarcane production. They indicated by ticking the appropriate frequency Figure 13 presents findings on the frequency the households in the study area were experiencing over incidences of low sugarcane production.



**Figure 13: Incidences of low sugarcane Yields**

Most respondents (88.1%) concurred that incidences of low sugarcane production have been frequent and more so, debit revenue (DR) cases, as reflected in Figure 10, with only 11.8% having the contrary opinion. This corroborates with studies by Kidula (2007), Mutonyi (2014) and KSB (2012) who drew a conclusion that cane growers are operating with yields far below the feasible potential yields and the returns are too low to be ploughed back into the maintenance of the cane crop as well as meeting the household's basic needs.

#### **4.5 Patriarchal structures influencing women's participation in contract sugarcane farming**

Objective number one of the study was to establish the influence of patriarchal structures on women's participation in contract sugarcane farming. The respondents were asked various questions regarding patriarchy in the household. These included basic knowledge on contract sugarcane farm, ownership and control of property (land and sugarcane farming contract) membership in sugarcane advocacy bodies and representation in investment bodies. Hypothesis testing was then done on property ownership, membership and representation in sugarcane organizations.

##### **4.5.1 Respondents general knowledge on Crop cycle and age**

The respondents were asked what crop cycle was for their sugarcanes on the household farms. They indicated by ticking accordingly. Tables 12 and 13 present findings on their knowledge level in contract sugarcane farming in the households.

**Table 12: Crop Cycle of respondents**

Crop Cycle	Frequency	Percent
Plant	37	31.4
Ratoon	46	39.0
Fallow	35	29.7
Total	118	100.0

Majority of the respondents (39%) indicated their crop cycle was ratoon, 31.4% plant crop and 29.7 % affirmed their crop had just been harvested and fallowed. This indicated most of the respondents were knowledgeable to distinguish plant from ratoon crops, and most farms had been under contract sugarcane farming for over eighteen months, enough in raising the first standard harvest-Plant crop. The findings were at variance with studies by Mmasaaba (2012) and FAO (2003), which advance the view that uncertain access to land and a history of losing land rights have greatly discouraged women's long term investments, improvement or interest on their own land where they are responsible for household food security.

**Table 13: Crop Age of respondents**

Crop Age	Frequency	Percent
0-8 months	54	45.8
Above 8 months	39	33.1
I do not know	25	21.2
Total	118	100.0

Most respondents (45.8%) indicated the age of their canes to be between 1-8 months, with only 33.1% being above 8 months. However, a reasonable 21.2% could not know the crop age for their family canes. This could be attributed to the fact that majority of

them were of primary level of education and mostly not on contract, hence hived off from household farm records by their spouses (see Table 9).

#### 4.5.2 Participation in farmer extension meetings

The respondents were asked who frequently attend farmer extension meetings with extension service providers. They indicated by ticking accordingly. Table 14 presents findings on their participation level in contract sugarcane extension meeting in the households.

**Table 14: Participation in Farmer Extension Meetings**

Who participate	Frequency	Percent
Self	43	36.4
Husband	75	63.6
<b>Total</b>	<b>118</b>	<b>100.0</b>

Most respondents (63.6%) said their husbands did as they were the contracted farmers, while only 36.4% of the respondents confirmed attending farmer extension meeting as they were on contract. In the study area, the person whom the sugar company recognizes as a full-time sugarcane farmer is one who is contracted. The study agrees with findings by Makhandia (2010), who argue that most sugarcane farming contracts are held by men with only few being women.

#### 4.5.3 Perceived views on role played by the respondents

The respondents were asked to say the perceived views on the role they play in contract sugarcane farming. They indicated by ticking accordingly. Table 15 presents findings on their perceived role in contract sugarcane farming in the households.

**Table 15: Perceived Views on Role Played by respondents**

Perceived Role	Frequency	Percent
Mandatory but not deserving reward	81	68.6
Mandatory but deserving reward	23	19.5
Gender defined and insignificant	14	11.9
<b>Total</b>	<b>118</b>	<b>100.0</b>

Most of them (68.6%) said the views of their spouses were that their work is mandatory but does not deserve formal compensation and this could be the main driver occasioning slowed motivation among women participants in contract sugarcane farming in the area of study (Luhombo, 2010). 19.5% of the respondents had the impression that their contribution is mandatory and deserves some form of compensation, Only 11.9% got the view that their work contribution is gender defined and insignificant.

#### 4.5.4 Land Ownership and tenure among the respondents

The respondents were asked who owns the land in the household and what nature of tenure was their household land. They indicated by ticking accordingly. Tables 16 and 17 present findings on ownership and tenure of land in the study area.

**Table 16: Land Ownership among the respondents**

Land ownership	Frequency	Percent
Self	16	13.6
Husband	102	86.4
Total	118	100.0

Majority of the study subjects (86.4%) held the view that their husbands were the main owners of the land, with only 13.6% being self owned. This small number of women owning land, as a basic factor of production in the household, adequately corroborates with Gallaway *et al* (2008) findings that established the need for Kenya to rewrite its intestacy law to give women in the households clear expectations for the judicial process and distribution of the estate in an event of a loss of a spouse. Similar views are shared by FAO (2003) and Mmasaaba (2012) who argues that uncertain access to land and history of losing land rights greatly discourage women's long-term investments on family land where they are responsible for both cash and food crop production and this could adversely be influencing their motivation and therefore participation in contract sugarcane farming.

**Table 17: Land Tenure among the respondents**

Land Tenure	Frequency	Percent
Freehold (bought)	19	16.1
Leased	18	15.3
Inherited	81	68.6
Total	118	100.0

Similarly, it was revealed that most of the land (68.6%) was inherited and this laid a strong patriarchal attachment on the way it was owned and controlled favouring the male gender. These findings corroborated with views of Mmasaaba (2012) who argued that as land tenure became institutionalized, it automatically became a practice to register land ownership in men’s names only. Land that was freehold (bought land) was represented by only 16.1% of the respondents, while 15.3 % indicated family land was possessed through leasehold arrangement.

#### **4.5.5 Property ownership expectation and rating by spouses of respondents**

The respondents were asked on their spouses’ expectation and rating towards property ownership. They responded by ticking accordingly. Tables 18 and 19 present findings on the expectation and rating of property ownership in the study area respectively.

**Table 18: Property Ownership Expectation by spouses of respondents**

Property ownership Expectation	Frequency	Percent
Yes	73	61.9
No	45	38.1
Total	118	100.0

Most respondents (61.9%) indicated that their spouses expected them to own property, though with a “medium” rating (see Table 19). Only 38.1% of the respondents showed that there were not expected to own any property in the household. These findings conflicts with Gallaway *et al* (2008) who argues that in Kenya, there is an urgent need to

rewrite intestacy law that will enable women in households to have clear expectations for judicial process and distribution of the estate in an event of a loss of a spouse. This argument only resonates well with the latter set of respondents.

**Table 19: Property Ownership rating by the respondents**

Rating on property ownership	Frequency	Percent
High	23	19.5
Medium	41	34.7
Low	26	22.0
N/A	28	23.7
Total	118	100.0

Most of the respondents in the study (34.7%) rated the level at which they are allowed to own property as “medium”, followed by “low” (22%). Only 19.5% of the respondents rated “high”, which must be from those respondents whose husbands died sometimes back and have had minimal wrangles in carrying out succession cause for the family land. However, 23.7% of the respondents remained indifferent on the subject implying that their spouses simply do not allow them to own property and are complacent.

#### **4.5.6 Respondents’ permission to control property**

The respondents were asked to state whether or not they are allowed to control property in the household. They responded by ticking accordingly. Table 20 presents findings of their opinion in the study area.

**Table 20: Respondents’ permission to Control Property**

Control of property	Frequency	Percent
Yes	75	63.6
No	43	36.4
Total	118	100.0

Majority of the respondents (63.6%) were allowed to control property by their spouses, with only 36.4% expressing doubt on the spouse’s nod for the same. These findings are in

conflict with Mmasaaba (2012), who affirms that over 80% of the population in most developing countries like Kenya live in rural areas where communities are male-controlled (patriarchal) and consequently very traditional. However, the researcher still re-affirmed that control of land and contract in this model of household strategy has been masculinized for centuries which could be influencing their morale in participating in contract sugarcane farming.

#### **4.5.7 Membership in Sugarcane advocacy bodies by respondents**

The respondents were asked to state whether or not they are represented in sugarcane union bodies. They responded by ticking accordingly. Table 21 presents findings of their views on representation in the study area.

**Table 21: Membership in Sugarcane advocacy bodies by respondents**

Membership	Frequency	Percent
Yes	36	30.5
No	82	69.5
Total	118	100.0

Majority of the respondents (69.5%) had very minimal membership in sugarcane advocacy bodies like MOCO and KESGA. Only 30.5% acknowledged that they are represented in these advocacy organizations for farmers. This is attributable to the fact that, the criterion for membership is hitched on contract ownership which was only common with widowed women in the households. This could be affecting the motivation of most respondents in contract farming and therefore inversely influencing their participation following the view by Mmasaaba (2012), Mwangi (2004), Ali-Olubandwa (2010) and Luhombo (2010).

#### **4.5.8 Representation in Investment Organizations by respondents**

The respondents were asked to state which investment organization they belong to. They responded by ticking accordingly. Table 22 presents findings of their views on representation in the study area.



**Table 22: Representation in Investment Organizations by respondents**

Representation in organization	Frequency	Percent
MOCO	3	2.5
MOSACCO	20	16.9
Sukari SACCO	6	5.1
Not applicable	77	65.3
Others (KESGA)	12	10.2
<b>Total</b>	<b>118</b>	<b>100.0</b>

Majority of the respondents (65.3%) were not represented in any of the available investment organizations. 16.9% acknowledged being members of MOSACCO, 5.1% in Sukari SACCO, and 2.5% said they were members of MOCO, while another 10.2% disclosed they belonged to other smaller farmer unions like Kenya Sugarcane Growers Association (KESGA). Alston (2003) observed that the criteria for membership in agricultural cooperatives emphasize land ownership, which more often than not is held by men. This means that the women who are not registered members cannot take part in decision making processes of the cooperatives even when decisions have a direct impact on their efficiency as producers. Similarly, recruitment for contract sugarcane farming is contingent and critical to gaining such representation in the investment bodies. These could as well be influencing their morale and participation in contract sugarcane farming.

#### **4.5.9 Sugarcane contract ownership by respondents**

The respondents were asked to state who owns the sugarcane farming contract in the household. They responded by ticking accordingly. Table 23 presents findings of their views on contract ownership in the study area.

**Table 23: Sugarcane Contract Ownership by respondents**

Contract ownership	Frequency	Percent
Self	38	32.2
Husband	80	67.8
<b>Total</b>	<b>118</b>	<b>100.0</b>

The study revealed that only 32.2% of the respondents were contracted farmers while majority, (67.8%) of their husbands was contracted farmers. This has to do with land ownership criteria which the company embraces in its recruitment policy to minimize on unnecessary legal land disputes. This corroborates adequately with studies by Kameri and Mubuu (2002) and Mmasaaba (2012) who both established that unequal control of land is a critical factor which creates differences between men and women in relation to economic well being, social status and empowerment. In Kenya for example, Kameri and Mubuu (2002), established that less than 5% of the holders of land titles are women. Mmasaaba (2012), similarly observed that women’s lack of access to land is historically grounded in the colonial era and since this is the basis for contract ownership it could be behind the eroding morale of participation among women in contract sugarcane farming.

**4.5.10 Receipt of Credit facility and Reasons for non-reception among respondents**

The respondents were asked to state whether they received any credit facility from the sugarcane farming and main reason for those who do not receive in the household. They responded by ticking accordingly. Tables 24 and 25 present findings of their views on credit facility and non-reception in the study area.

**Table 24: Credit Facility Received by respondents**

Received credit facility	Frequency	Percent
Yes	39	33.1
No	79	66.9
Total	118	100.0

Majority of the respondents (66.9%) said they had not benefited from the credit facility accorded to farmers like farm inputs or advance payments by financial institutions, largely because they were not contracted as farmers to have the contracts serve as collateral. Only 33.1% were able to benefit from the facility and most could have been widowed. This could be reason enough to erode motivation and subsequent participation in contract sugarcane farming.

**Table 25: Reason for Non Credit**

Reason for non credit	Frequency	Percent
I am not contracted and so lack collateral	115	97.5
I have alternative source of income for sugarcane development	3	2.5
Total	118	100.0

From Table 25 above, majority of the respondents (97.5%) attributed the reason of not being viable for credit to:

*“I am not contracted and so I lack collateral”* (FGD, 22 April 2015, Ekeru; 28 April 2015, Lureko).

Only 2.5% were able to access credit. This serves sufficient grounds for loss of motivation.

Further, statistical tests using linear multiple regression were done to establish influence of patriarchal structures on women’s participation in contract sugar cane farming. To this end the following hypothesis was formulated and tested at a significance level,  $\alpha = 0.05$  by Table 28 and formula ( $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$ ); where Y= Independent Variable;  $\beta_0$ =Y intercept;  $\beta_1 X_1$ =property ownership (2.79);  $\beta_2 X_2$ =membership organizations (0.750);  $\beta_3 X_3$ =investment representation (-0.760) and e=residual (error) term and the results are presented in Tables 26, 27 and 28. Hypothesis (H01): *“There is no statistically significant influence of patriarchal structures on women’s participation in contract sugar cane farming”*.

**Table 26: Model of fit table (Model Summary<sup>b</sup>)**

R	R2	Adjusted R2	Std. Error estimate	Change Statistics					Durbin-Watson value
				R <sup>2</sup> Change	F Change	df1	df2	Sig. F Change	
.819 <sup>a</sup>	.671	.659	.45895	.671	57.538	4	113	.000	1.855

**Predictors: (Constant), land /contract ownership; membership organizations, investment representation, b. Dependent Variable: level of participation**

From Table 26 above,  $R^2 = 0.671$ , implying that patriarchal structures (property ownership- Land and farming contract; membership in sugarcane bodies and representation in investment organizations) accounts for 67.1 % variability of the level of women participation in contract sugarcane farming. Similarly, the F- ratio = 57.538, which is significant at  $\alpha = 0.05$  since P-value is 0.000. This represents improvement in the prediction of the outcome by the regression model. In addition the Durbin-Watson value = 1.855, meaning that the assumption of independent errors is attainable according to Field (2003) who states that the closer the Durbin -Watson value to 2 the better the result and the higher the significance.

From Table 27, the F- ratio (221.069, 145.043, and 121.914) respectively are significant at  $\alpha = 0.05$ , implying that the regression model significantly improved the ability to predict the outcome variable. However, the F- ratio (221.069) for property ownership (land and farming contract) is the best predictor has a better prediction than that of membership organization (145.043) and representation in investment bodies (121.914) respectively because it is more significant. This is because ownership of land and sugarcane farming contract is the main criteria of being a bonafide participant in both sugarcane membership and investment bodies. This argument is the philosophy behind women's discouragement in long term investments or improvements on their own land where majority resides according to Mmasaaba (2012).

**Table 27: Influence of patriarchal structures on women's participation in contract sugar cane farming**

Model		Su of Squares	df	Mean Square	F	Sig.
1	Regression	734.349	1	734.349	221.069	.000 <sup>b*</sup>
	Residual	388.651	117	3.322		
	Total	1123.000 <sup>d</sup>	118			
2	Regression	802.211	2	401.106	145.043	.000 <sup>b*</sup>
	Residual	320.789	116	2.765		
	Total	1123.000 <sup>d</sup>	118			
3	Regression	854.364	3	284.788	121.914	.000 <sup>b*</sup>
	Residual	268.636	115	2.336		
	Total	1123.000 <sup>d</sup>	118			

**Table 28: Coefficients on patriarchal structures**

No	Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std Error	Beta			
1	Ownership (land/contract)	2.790	.308	1.714		9.049	.000*
2	Membership organizations	.750	.159	.914		4.725	.000*
3	Investment Representation	-.760	.111	-.491		-6.845	.000*

**Significant level P < 0.05**

Dependent Variable: participation level; b. predictor Variables: land/contract ownership, membership organizations and representation in investment bodies

From Table 28, the study revealed that ownership of property ( $\beta_1 = 2.79$ ), and this implies that when women's ownership of land and contract increases by a unit then their participation increases by 2.79 units. Similarly, respondents' membership in sugarcane organizations ( $\beta_2=0.750$ ), meaning that when women join membership organizations by one unit, their participation increases by 0.750 units. Finally, representation in investment bodies ( $\beta_3 = -0.760$ ), indicates that when a unit of women are represented in

investment bodies their participation in contract sugarcane farming decreases by 0.760 units.

The standardized beta coefficients ( $\beta=1.714$ ,  $0.914$  and  $-0.49$ ) indicate the number of standard deviations on the outcome caused by the predictor variables. When there is an increase of one standard deviation of land / contract ownership and organization membership, women participation increases by 1.714 and 0.914 standard deviations respectively. However, a decrease of participation by 0.491 standard deviations occurs when there is a unit increase in representation of women in investment bodies.

The study also demonstrates that the t- values are significant (property ownership=9.049; membership organizations=4.725; and representation in investment bodies= -6.85), since p values are all less than 0.05 significant level ( $P=0.000$ ). This implies that women ownership of land / contract and membership in sugarcane organizations increases their participation. However, their participation decreases when they get involved in investment bodies. The reason investment representation presents an inverse influence ( $-0.760$ ), unlike the other two is that once the women have sufficient off-farm investments from which they draw disposable income for the household, they tend to shift their focus away from contract sugarcane farming in order to give more attention to what is addressing their livelihood concerns as argued by Kidula (2007) and Luhombo (2010).

In sum, the results in Tables 26,27 and 28 reveal that the significance level (p-value) is  $0.000^*$ , indicating  $p < 0.05$ , for land / contract ownership, membership in sugarcane organizations, and representation in investment organizations. This shows that the influence of ownership on land and contract, membership in sugarcane organizations and representation in investment bodies among women engaged in contract sugarcane farming has a statistically significant influence on their participation. Therefore the null hypothesis is rejected and the alternative hypothesis accepted, *“There is a significant linear influence between participation level of women in contract sugarcane farming and ownership on land and contract, membership in sugarcane organizations and representation in investment bodies”*

#### **4.6.0 Contract sugarcane income utilization**

Objective number two of the study was to establish the influence of utilization of sugarcane income on women’s participation in contract sugarcane farming. The

respondents were asked various questions regarding how sugarcane income is utilized in the household. These included who owns the bank account, and by extension, the sugarcane contract, income recipient, equal sharing of income, income control and contentment level. Hypothesis testing was then done on proceed recipient and sharing at household level.

#### **4.6.1 Ownership of bank account**

The respondents were asked to state who owns a bank account that receives income from sugarcane in the households. They indicated by ticking appropriately. Table 29 presents findings on the bank account ownership in the households.

**Table 29: Ownership of Bank Account**

Bank A/C Ownership	Frequency	Percent
Wife	38	32.2
Husband	80	67.8
Total	118	100.0

Most respondents in the study (67.8%) complained they did not own a bank account, with only 32.2% stating the contrary. In Mumias Division, ownership of a bank account is a proxy indicator of sugarcane contract ownership. The findings revealed that few women who owned a bank account came from homes where their husbands had died and therefore succeeded their spouses through a contestable intestate succession cause from either traditional or legal courts. This findings corroborates with a study by KESREF (2006) which holds the view that the woman (the wife) handles contract farming inputs and services only when endorsed by the contract holder ( the husband), but this does not accord her direct rights to reap financial benefits from the crop and could therefore be affecting her participation.

#### **4.6.2 Recipient and sharing of contract sugarcane income**

The respondents were asked to state who receives sugarcane income in the households and how they share. They indicated by ticking appropriately. Tables 30 and 31 present findings on the recipient and mode of sharing income from sugarcane in the households.

**Table 30: Recipient of Sugarcane Income**

Recipient of income	Frequency	Percent
Self (woman)	39	33.1
Husband	79	66.9
Total	118	100.0

The study confirmed that only a minority of the respondents (33.1%) received sugarcane income, with majority (66.9%) confirming that their husbands did. This study finding corroborates with that of FAO (2003) who affirmed that just a handful of households headed by women did experience a sharp decline in poverty levels, implying most women in marriage did not have the luxury of managing financial benefits from the household farm, the husband did. The study further corroborates documentation on Ghana where economic reforms have been strategized to enable benefits to largely accrue to medium and large scale farmers in the cocoa sector, where insignificant numbers of women were owners or employed. Findings by Ali-Olubandwa *et al* (2010), which established that women farmers in Kakamega County have been economically impoverished, weakening the region's economy adequately corroborates with this study as well. This could be slowing up their active participation in contract sugarcane farming in the study area.

**Table 31: Equal Sharing of Sugarcane Income**

Equal income sharing	Frequency	Percent
Yes	39	33.1
No	79	66.9
Total	118	100.0

Most of the respondents (66.9%) reiterated the same results in Table 30 here in Table 31, with only a few (33.1%), mostly widows, agreeing to the contrary in their households. This finding similarly corroborates with documentation on Ghana which argues that economic reforms have been designed to enable benefits to largely accrue to medium and large scale farmers in the cocoa sector, where insignificant number of women were



owners or employed. However, studies indicate that households headed by women did experience a sharp decline in poverty levels (FAO, 2003).

Findings by Ali-Olubandwa *et al* (2010), further corroborates this results by documenting that women farmers in Kakamega County have been denied enabling environment to participate in the region’s economy. A woman reported in a FGD meeting held at Ekeru regarding equal income sharing:

*“...It is unimaginable to have equal sharing on sugarcane proceeds with the husband when in the first place the husband selfishly owns everything. The day this happens, he will demand back the dowry he paid your old parents”* (FGD, 22 April 2015; Ekeru).

This was a portrait of disillusionment and despondency among the respondents which could easily sacrifice their active participation.

#### **4.6.3 Financial Control by respondents**

The respondents were asked to state whether or not they have control over the income that accrue from sugarcane in the households. They indicated by ticking appropriately. Table 32 presents findings on control of sugarcane income by respondents.

**Table 32: Financial Control by respondents**

Financial control	Frequency	Percent
Self (wife)	38	32.2
Husband	80	67.8
Total	118	100.0

The study revealed that majority of the respondents (67.8%) did not have a say on how finances from cane farming were being utilized in the household. Only 32.2% seemed to have control on how sugarcane money was being used and these were largely the widows. These findings agree with Mmasaaba (2012), who argues that over 80% of rural dwellers in most countries are women living in communities that are male-controlled and therefore patriarchally traditional. Control of resources in this arrangement has become masculinized for centuries and these could be creating low motivation among the women

in the study area and therefore affecting their active participation in contract sugarcane farming.

#### 4.6.4 Contentment in Income Sharing

The respondents were asked to state whether or not they were contented with their level of control over the income that accrue from sugarcane in the households. They indicated by ticking appropriately. Table 33 presents findings on their contentment level with respect to control of sugarcane income in the households.

**Table 33: Contentment in Income Sharing**

Contentment	Frequency	Percent
Yes	48	40.7
No	70	59.3
Total	118	100.0

The study revealed that most of the respondents (59.3%) were not contented with the way sugarcane income was being managed in the household. Only 40.7% of the respondents were satisfied and as stated earlier, these were mainly widows. These findings corroborates with Ng'ang'a (2010), who argued that although seventy percent of land in Mumias Sub County is under contract sugarcane farming with 65% contracted in the names of land owners, largely men, most of the needed labour (over 80%) is provided by the women but with insignificant benefits. This could be adversely influencing their participation in contract sugarcane farming.

Further, statistical tests using simple linear regression were done to establish influence of utilization of sugarcane proceeds on women's participation in contract sugar cane farming. Hypothesis (H<sub>02</sub>): *“There is no statistically significant influence of utilization of sugarcane proceeds on women's participation in contract sugarcane farming”*.

**Table 34: Model of fit table (Model Summary<sup>b</sup>)**

R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate	R <sup>2</sup> Change	Change Statistics				Durbin-Watson value
					F Change	df1	df2	Sig. F Change	
.773 <sup>a</sup>	.597	.593	1.00854	.597	171.82	1	116	.000	1.898

**Significant at 0.05 (p<0.05)**

From Table 34,  $R^2 = 0.597$ , implying that utilization of sugarcane proceeds accounts for 59.7% variability to the level of women participation in contract sugarcane farming. Similarly, the F- ratio = 171.82, which is significant at  $\alpha = 0.05$  since P-value is 0.000. This represents improvement in the prediction of the outcome (women participation) by the regression model. In addition the Durbin-Watson value = 1.898, meaning that the assumption of independent errors is attainable according to Field (2003) who states that the closer the Durbin -Watson value is to 2 the higher the significance and therefore the better the result.

**Table 35: Influence of recipient of sugarcane proceeds on women participation**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	179.977	1	179.977	171.82	.000 <sup>a</sup>
	Residual	112.778	116	.972		
	Total	292.754	117			

**Significant at 0.05 (p<0.05)**

From Table 35, the F- ratio (171.82) is significant at  $\alpha = 0.05$ , implying that the regression model significantly improved the ability to predict the outcome variable. The significance level (p-value) yielded 0.000\* for recipient of sugarcane proceeds, which was less than 0.05.

**Table 36: Coefficients of recipient of sugarcane proceeds on participation of women in Contract Sugarcane Farming**

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	Predictor (proceed recipient)	7.036	.335	0.784	21.021	.000
	Dependent (participation)	-2.625	.193		-13.606	.000

**Significant at 0.05 (p<0.05)**

From Table 36, the study revealed that recipient of sugarcane proceeds ( $\beta_1 = 7.036$ ), implies that when women receives one unit of sugarcane proceeds, their participation increases by 7.036 units (Field, 2003). This agrees with FAO (2003) who observed that households headed by women did experience a sharp decline in poverty levels, no wonder, Heyworth (2003) and Luhombo (2010) rightly established that the success of any development venture must involve the relevant people among other characteristics.

The standardized beta coefficient ( $\beta = 0.784$ ) indicates the number of standard deviations on the outcome caused by the predictor variables. An increase of one standard deviation of women receiving sugarcane proceeds, raises their participation by 0.784 standard deviations. The study also demonstrates that the t- values are significant (proceed recipient  $t=21.021$ , since p value is less than 0.05 significant level ( $P=0.000$ )). This implies that when women receive sugarcane proceeds, their participation increases. This coincides with findings by Mulwa (2004) who observed that people are actors in activities and programs that transform their lives, otherwise such interventions become negative, irrelevant or insignificant.

In sum, the results in Tables 34,35 and 36 reveal that the significance level, p-value is ( $P=0.000^*$ ), indicating  $p < 0.05$ . Thus, recipients of sugarcane proceeds among women in sugarcane contract farming have a statistically significant influence on their participation. Therefore the null hypothesis is rejected and the alternative hypothesis accepted, *“There is a significant linear influence of the recipient of sugarcane proceeds on the participation of women in contract sugarcane farming in the area of study.*

#### 4.7.0 Labour provision factors

Objective number three of the study was to determine the influence of labour compensation provided on household sugarcane farms on women's participation in contract sugarcane farming. The respondents were asked various questions regarding their level, nature and frequency of labour provision on sugarcane farms; factors contributing to labour provision and compensation form and satisfaction level. Hypothesis testing was then done on labour compensation.

#### 4.7.1 Involvement level

The respondents were asked to state their level of involvement in contract sugarcane farming in the households. They indicated by ticking appropriately. Table 37 presents findings on the extent to which they are involved in contract sugarcane farming in the households.

**Table 37: Involvement Level of the respondents**

Involvement level	Frequency	Percent
Labourer	69	58.5
Farmer	27	22.9
Labourer and farmer	22	18.6
Total	118	100.0

Majority of the respondents in the study (58.5%), confirmed being labourers, with only 22.9% acknowledging to be contracted farmers with the company, and a further 18.6% qualifying to be both labourers and contracted farmers. These findings corroborates with a studies by Sifundza & Ntuli (2001) and Agisu (2013) who argued that most contracted small holdings were established on the belief that family labour would always be available at no cost.

#### 4.7.2 Nature of involvement

The respondents were asked to state the nature of involvement in contract sugarcane farming in the households. They indicated by ticking appropriately. Table 38 presents findings on their nature of involvement in contract sugarcane farming in the households.

**Table 38: Nature of Involvement**

Nature of involvement	Frequency	Percent
Commercial labourer	13	11.0
Domestic labourer	78	66.1
Both commercial and Domestic labourer	27	22.9
Total	118	100.0

Most respondents (66.1%) revealed that they were involved as domestic labourers; 22.9% were involved as both commercial and domestic labourers with only 11% rendering their services purely on commercial basis. When women's needs are not met by the household strategy, they opt to have this met from commercial assignments (weeding for other households for money) outside the home according to Mulwa (2004) and Doherty (2002). These findings corroborates with studies by Makhandia (2010) and Kidula (2007) who established that most agricultural farms are managed by women as men are always in towns in search of jobs if not idling about in the market centres. This observation reconciles with Alston (2004) who affirmed that women have a workload that include fetching water and firewood besides being custodians of menial work on the farms. This could be lowering their participation in contract sugarcane farming.

#### 4.7.3 Provision of labour on sugarcane farms

The respondents were asked to state who, in the households, provides the bulk of the labour in contract sugarcane farming. They indicated by ticking appropriately. Table 39 presents findings on labour provision in contract sugarcane farming in the households.

**Table 39: Provision of Labour on sugarcane farms**

Labour provision	Frequency	Percent
Famiy {self and children }	49	41.5
Hired	22	18.6
Both hired and family	47	39.8
Total	118	100.0

Majority of the respondents (41.5%) confirmed that labour in sugarcane farms is largely provided by the women and their children. Only 18.6% and 39.8% indicated that it was hired and a mix of hire & family respectively. Therefore, lack of deliberate recognition for this noble role they play is likely to immobilize the entire sugarcane farming activity in the study area. The results adequately corroborates studies by Makhandia (2010) who confirmed that most agricultural farms are managed by women as men are always away in towns in search of jobs.

#### **4.7.4 Labour compensation on sugarcane farms**

The respondents were asked whether or not they are compensated for the labour they provide on the sugarcane farms. They indicated by ticking appropriately. Table 40 presents findings on labour compensation in contract sugarcane farming in the households.

**Table 40: Labour Compensation on sugarcane farms**

Labour compensation	Frequency	Percent
Yes	50	42.4
No	68	57.6
Total	118	100.0

The findings of the study indicated that 57.6% of the respondents do not receive compensation for the labour they render on their farms with only 42.4% confirming the contrary, and these were largely widows. This corroborates with a study by Jakku & Bellamy (2008), who argued that women’s domestic labour has not been regarded as it actually was, but rather as a fundamental part of their “virtue” as women, clearly expressed as something attributable to their nature as women. This perspective regards agricultural duties for the women as integral part of the home. A similar concept stand out from the findings of FAO (2003), that established that about 90 % of women in Ghana are self-employed or work as unpaid family labour in farming, agro-based enterprises or small scale manufacturing in the informal sector but with low productivity and low incomes. This is bound to inevitably deplete their morale and therefore lower participation.

#### 4.7.5 Form of labour compensation

The respondents were asked the form in which labour is compensated for on the sugarcane farms. They indicated by ticking accordingly. Table 41 presents findings on the form of labour compensation in contract sugarcane farming in the households.

**Table 41: Form of Labour Compensation in households**

Form of compensation	Frequency	Percent
Cash	39	33.1
In kind material	25	21.2
Not Sure	54	45.8
Total	118	100.0

The outcome of the study indicated that majority of the respondents (45.8%) did not acknowledge any form of compensation. 33.1% said they got cash compensation, which comprised the greater lot of those few respondents owning a farming contract. In this respect they had a direct control over the sugarcane cash void of red-tape. 21.2% of the respondents affirmed they obtained compensation through material support or in-kind form, where the husband walked back home with a kilo of meat and clothing for the family, fixed the leaking roof of the family shelter, attended to various medical and educational concerns and procured other essential utilities for the family. This concept of despondency came out so distinctly during the two Focus Group Discussions held at both Ekero and Lureko on 22<sup>nd</sup> and 28<sup>th</sup> of April 2015:

*“What the ‘father of the children’ brings home for the family after earning sugarcane proceeds becomes my compensation for the toil on the sugarcane farm”*

This agrees with findings by Kidula (2007) Sifundza & Ntuli (2001) who argued that most contracted small holdings were established in belief that costless family labour would always be available.



#### 4.7.6 Labour contributory factors

The respondents were asked to mention the factors that make them provide labour on the sugarcane farms. They indicated by ticking accordingly. Table 42 presents findings on the factors contributing to labour provision in contract sugarcane farming in the households.

**Table 42: Labour Contributory Factors**

Labour contributory factors	Frequency	Percent
Subsidize family income	57	48.3
Inadequate farm labourers	53	44.9
Inadequate land to sustain a contract	5	4.2
Increased number of dependants	3	2.5
Total	118	100.0

Majority of the respondents (48.3%) attributed it to subsidizing family income, 44.9% attributed it to inadequate farm labourers while 4.2% and 2.5% attributed it to inadequate land to sustain a contract and increased number of dependants respectively. The results thus, give a clear insinuation that subsidizing family income is quite key in sustaining labour provision, implying when this arrangement fails, desired labour provision is likewise withheld or ceases altogether. This response however, conflicted with findings by Makhandia (2010) who observed that most agricultural farms are managed by women as men are always in towns in search of jobs. This could be because of high levels of economic inflation experienced in the households.

#### 4.7.7 Frequency of involvement as labourers

The respondents were asked how frequent they were involved as labour providers on the sugarcane farms. They indicated by ticking accordingly. Table 43 presents findings on the frequency of providing labour in contract sugarcane farming in the households.

**Table 43: Frequency of Involvement as Labour Providers**

Frequency of involvement	Frequency	Percent
None	7	5.9
Daily	74	62.7
Weekly	14	11.9
Monthly	23	19.5
Total	118	100.0

Majority of the respondents (62.7%) indicated that they were daily engaged in providing labour to the family farm, 19.5% said they did so monthly, 11.9% said weekly, but only 5.9 reported that they had given up providing their labour in contract sugarcane farming for reasons that the business is not benefitting them (FGD, 22 April 2015; Ekeru). The huge daily frequency reported corroborates with studies by Kidula (2007) who observed that women in Tanzania carried out, on daily basis, both farm operations, especially in key cash crops like sugarcane and continued with most of the farm work in production of household foodstuffs and nearly all the reproductive work such as cooking, fetching water, fuel, firewood and childbearing. This can indeed cause exhaustion depleting motivation and therefore slows participation if compensatory incentives are not considered.

#### **4.7.8 Compensation satisfaction from labour provided on sugarcane farms**

The respondents were asked whether or not they are satisfied with the form of compensation they obtained by being involved as labour providers on the sugarcane farms. They indicated by ticking accordingly. Table 44 presents findings on their level of satisfaction as they provide labour in contract sugarcane farming in the households.

**Table 44: Compensation Satisfaction from labour provided on sugarcane farms**

Compensation satisfaction	Frequency	Percent
Yes	38	32.2
No	73	61.9
N/A	7	5.9
Total	118	100.0

Majority of the respondents (61.9%) indicated that they did not get satisfied with the way they were being compensated as they engaged in contract sugarcane farming. Only 32.2% registered satisfaction and these were found to be mostly the widows whose husbands died and were now contracted:

*“I am on the contract because my late husband left me with young school-going children requiring school fees and other needs, so I had to succeed him through*

*the legal process in court and with the support of the company staff and local administration” (FGD, 28 April 2015; Lureko).*

For those who never got any compensation at all (5.9%) had no comment to give, implying they were in the lot of the dissatisfied. Thus, majority of the respondents (67.8%) in this study were dissatisfied and could favourably relate with findings by Arias (2004), which

observed a paradox that intrinsic motivation is far stronger than an extrinsic one, yet the later can easily act to displace the former leading to withdrawn participation and consequently low sugarcane yields.

Further, statistical tests were done to establish influence of compensation for labour provided on household sugarcane farms on women’s participation in contract sugarcane farming. To this end the following hypothesis was formulated, H03: *“There is no statistically significant influence of the compensation for labour provided on household sugarcane farm on women’s participation in contract sugar cane farming”*. Simple regression analysis was applied to test the hypothesis at a significance level,  $\alpha = 0.05$ .

**Table 45: Model of fit table (Model Summary<sup>b</sup>)**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate	ofChange Statistics					Durbin-Watson F Value
					R <sup>2</sup> Change	F Change	df1	df2	Sig. Change	
	0.625	0.390	0.385	1.24053	0.390	74.234	1	116	0.000	1.893

**Significant at 0.05 (p<0.05)**

From Table 45 above,  $R^2 = 0.390$ , implying that labour compensation accounts for 39% variability of the level of women participation in contract sugarcane farming in the area of study. Similarly, the F- ratio = 74.234, which is significant at  $\alpha = 0.05$  since coinciding P-value is 0.000. This represents improvement in the prediction of the outcome (women participation) by this regression model. In addition the Durbin-Watson value = 1.893, meaning that the assumption of independent errors is attainable according to Field (2003) who states that the closer the Durbin -Watson value is to 2 the higher the significance and therefore the better the result.

**Table 46: Influence of labour compensation on women participation in contract sugarcane farming**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	114.24	1	114.24	74.234	.000 <sup>a</sup>
	Residual	178.515	116	1.539		
	Total	95.966	117			

**Significant at 0.05 (p<0.05)**

From Table 46, the F- ratio (F=74.234) is significant at  $\alpha = 0.05$ , implying that the regression model significantly improved the ability to predict the outcome variable. The significance level (p-value) was 0.000\* for labour compensation, less than 0.05.

**Table 47: Coefficients<sup>a</sup> on Labour Compensation among the sampled respondents**

Model			Unstandardized Coefficients		Standardized Coefficients		Sig.
			B	Std. Error	Beta	t	
1	(Constant)	labour compensation	5.791	0.382	0.625	15.169	.000
	(Dependent variable)	participation	-1.991	.231	-0.695	-8.616	.000

**Significant at 0.05 (p<0.05)**

From Table 47, the study revealed that compensation for labour ( $\beta_1 = 5.791$ ), which implied that when women are compensated for one unit of labour they provided on the household sugarcane farm, their participation increased by 5.791 units according to Field (2003). This

similarly agrees with FAO (2003) who recorded that women headed households experienced a sharp decline in poverty levels, with Heyworth (2003) and Luhombo (2010) equally noting that the success of any development venture has to recognize, involve and motivate the relevant people among other characteristics.

Further, the standardized beta coefficient,  $\beta=0.625$  indicated the number of standard deviations on the outcome caused by the predictor variable. When there was an increase

of one standard deviation of women labour compensation, their participation increased by 0.625 standard deviations. The study also demonstrated that the t- values were significant compensation for labour provided ( $t=15.169$ ), since p-value (0.000) was less than 0.05 significant level. This implies that when women are compensated for the labour they offer on the sugarcane farms in households, their participation increases. This coincides with findings by Mulwa (2004) who observed that people are actors in activities and programs that address their felt needs, otherwise such interventions become negative, irrelevant or insignificant.

In sum, the results in Tables 45, 46 and 47 reveal that the significance level (p-value) is 0.000\*, indicating  $p < 0.05$ . Thus, compensation for labour provided in sugarcane farms among women has a statistically significant influence on their participation. Therefore the null hypothesis is rejected and the alternative hypothesis accepted, *“There is a significant linear influence of labour compensation on the participation of women in contract sugarcane farming in the area of study.”*

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter contains the summary, conclusion of the study with recommendations on how to improve on the selected motivational factors among women engaged in contract sugarcane farming to elicit continued participation and support in the Division of study. Derived suggestions for further research have also been outlined.

#### 5.2 Summary of Study Findings

The purpose of this study was to determine the influence of selected motivational factors on women's participation in contract sugarcane farming in Mumias Division. The study used the cross-sectional survey design, and a sample of one hundred and eighteen (118) women in contracted households was taken from the target population using a systematic sampling technique. Interviews and Focus Group Discussions were used to collect primary data from the targeted sample. Data was analyzed using both descriptive and inferential statistics. Regression analysis was used to determine the level of influence for each of the selected motivational factors on women participation in contract sugarcane farming. Hypothesis testing was done at significant level,  $\alpha = 0.05$ .

##### 5.2.1 Demographic factors of the respondents

The study established that most of the respondents were married and monogamous as inspired by the predominant Christian religion. The age bracket for most respondents was 37-54 years with a predominant household size of between 6 to 10 members. Most respondents were involved in other forms of agricultural farming such as horticulture, food crops and dairy. A few others were doing off-farm business while others were employed. Only 35.6% was fully engaged in contract farming as their main occupation as they were on contract as farmers. Majority of the respondents were of primary level of education, with only a few with post primary education. However, 28% never had any formal education. Most respondents shared age bracket with their spouses with a few being younger and older than their spouses respectively.

The land size for most households was 2-5 acres, with less than 1 acre being offered for sugarcane farming. However, 21.2% of the respondents did not have an idea on what area

of household land had been used for contract sugarcane farming. Majority of the respondents could not recall the period their household has been involved in contract sugarcane farming as a revenue stream. A few others said they had being in contract sugarcane farming for over 20, up to 20 and less than 10 years respectively.

### **5.2.2 Participation Level**

Most of the respondents reported that they were not involved in contract sugarcane farming as they were not contracted directly. However, those women who were on contract as farmers were either often involved or always involved. Majority of the respondents indicated a strong desire to be always involved in contract sugarcane farming if selected factors of concern could be addressed.

### **5.2.3 Patriarchal Structure in contract sugarcane farming**

A significant number of the respondents revealed that they were not having sufficient information on contract sugarcane farming. This was exhibited by their lack of knowledge on the crop age of their household farm, number of stacks yielded in the previous harvest and income the family farm earned. This was because farm records for the households were kept by the husband as a cultural norm given majority of their spouses had the sugarcane contracts in their names. Majority of the respondents explained that they did not get a chance to attend farmer extension meetings, instead their husbands did as they were the ones contracted, yet when it came to working on the sugarcane farms they left it to the women.

Most respondents reiterated that many jobs they performed on the sugarcane farms were considered by their husbands as mandatory, but not of high value deserving compensation. Most of the land in the study area was inherited, and therefore traditionally owned by the husbands. This explains why contract ownership lies with the husbands, with only a few cases of ownership with the respondents, who were typically widowed.

Although most respondents acknowledged that their husbands expected them to own property in the household, the rating for such ownership was largely medium to low. Most of the respondents were not represented in sugarcane union advocacy bodies like MOCO (Mumias Out growers Company), Mosacco (Mumias Out grower Savings Cooperative Society) and Sukari Sacco savings society. Consequently, majority did not obtain credit facility, which is tied to contract ownership.

Further, inferential statistics performed by regression showed that patriarchal structures which include: property ownership-land and farming contract; membership in sugarcane bodies and representation in investment organizations, did account for 67.1 % variability of the level of women participation in contract sugarcane farming. Similarly, the F- ratio was 57.538, which was significant at  $\alpha = 0.05$  since P-value was established to be 0.000. This represented improvement in the prediction of the influence of patriarchy on women participation in contract sugarcane farming by the regression model. In addition the Durbin-Watson value was 1.855, significantly close to 2, meaning that the assumption of independent errors is attainable according to Field (2003) who states that the closer the Durbin -Watson value to 2 the better the result and the higher the significance.

#### **5.2.4 Utilization of contract sugarcane farming**

Majority of the respondents confirmed that they did not own any bank account, with the exception of the few who were contracted farmers. The study also revealed that sugarcane income was earned by the respondents' spouses (the husbands). It was consequently clear that sugarcane income was not equally shared between the wife and the husband in the household. Majority of the respondents said that finances were controlled in the households by their spouses. In this regard, majority of the respondents expressed discontent on the way this was being exercised, with only a few, mainly contract holders, showing contentment.

Similarly, inferential statistics conducted by regression analysis indicated that utilization of sugarcane proceeds accounts for 59.7% variability of the level of women participation in contract sugarcane farming. Also, the F- ratio was 171.82, which is significant at  $\alpha = 0.05$  since P-value was found to be 0.000. This represents improvement in the prediction of the influence utilization of sugarcane proceeds has on women participation in contract farming by the regression model. In addition the Durbin-Watson value was established to be 1.898, significantly very close to 2, meaning that the assumption of independent errors is attainable according to Field (2003).

#### **5.2.5 Labour provision factors**

Majority of the respondents identified their level of involvement in contract sugarcane farming as "labourers" who were mainly serving on unpaid domestic terms. Implying they received no compensation. Only very few recognized themselves as contracted farmers.



When asked whether or not they were satisfied with these state of compensation, majority declined to confirm that they were satisfied. However, it was significantly observed that most respondents indicated a daily kind of frequency on the sugarcane farms as labourers. When asked to comment on factors contributing to labour provision, Majority of the respondents gave subsidizing depressed family income and high cost of hiring farm labour as major factors contributing to their provision of labour in household sugarcane farms, though concluding that they were yet to benefit from the fruits.

Further, inferential statistics conducted by regression analysis indicated that labour compensation accounts for 39% variability of the level of women participation in contract sugarcane farming in the area of study. Similarly, the F- ratio was found to be 74.234, which is significant at  $\alpha = 0.05$  since its coinciding P-value was 0.000. This represented improvement in the prediction of influence on women participation in contract sugarcane farming by the regression model. In addition the Durbin-Watson value = 1.893, significantly closer to 2, meaning that the assumption of independent errors is attainable.

### **5.3 Conclusion**

From the study findings, the following conclusions were drawn: -

Although majority of the respondents in the study area were from monogamous and Christian households, they were still held strongly by repressive patriarchal structures. This has exacerbated the low participation level among respondents contrary to their expectation of being heavily involved. This has evolved a trend of preferred involvement in other forms of agricultural farming such as horticulture, food crop and dairy farming as most respondents were finding no adequate space to address their felt needs in contract sugarcane farming. This arises from the fact that certain unaddressed motivational factors in the study area adversely immobilize the women's growth thereby demotivating them with the exception of the widowed women. This is notwithstanding their involvement to subsidize their depressed household income.

Patriarchal factors in the study area highly disfavour women to join sugarcane advocacy bodies, disallow them from owning a land title deed and sugarcane farming contract as long as the husband was still alive. The study revealed that when women were on contract, their participation level was at its peak. Further, attendance of farmers' education meetings was contingent on contract ownership and therefore a preserve of the

husbands in the households. This subjects the woman to ignorance with respect to acquisition of new farming technologies and therefore compromises on her motivation and participation. The study hence established that such factors of patriarchy has a higher motivational influence (67.1% variability) on women participation than sharing of proceeds (59.7% variability) and labour compensation (39.0% variability).

The study established that compensation of labour provided on the sugarcane farms is hardly done and this had a huge influence on the participation of women in labour provision in the area of study. This was observed from majority of respondents preferring engagement in other crops like food and horticultural crops besides off- farm business.

The study further indicated that women scarcely share in the sugarcane proceeds as contracts are mainly in the names of their spouses and this yielded a strong influence on their participation in contract sugarcane farming in the area of study. Since most of the money is received by the respondents' husbands, the women get disillusioned and withhold their cooperation. Most women did not have collaterals like owning a bank account, sugarcane farming contract, and land title deed which are contingent and inevitable precursors to accessing any credit facilities available from financial institutions. Hence most of the time they were financially deficient as sugarcane proceeds do not trickle down to them and this discourages them.

For sustainability to be realized therefore, the issues of government's role, the regulatory framework at both household and company levels, enforcement issues on women membership advocacy and representation, strengthening of their knowledge and financial capacities have to be looked into. In sum, the general constraints muzzling their motivation, especially patriarchal structures that contribute the highest variability must be addressed.

#### **5.4 Recommendations**

On the basis of the above conclusions the following recommendations are made from the study:

Government and the Mumias sugar company management should devise sound and appropriate policies and mechanisms, free from antagonisms that would ensure women's energies are harnessed and diverted into contract sugarcane farming to upscale sugarcane production in the area of study. There should be a change in policy which stipulates that

the contract be registered in the names of actual workers. This would improve farmer-miller relationships substantially and an increase in yields would be realized. Identify the women workers' extension needs in contract sugarcane production, and create opportunities to help them prioritize their activities in sugarcane production or in provision of labour. This could be afforded by mounting deliberate education programs for women in the study area to bring them up to speed with current farming technologies.

A sound household strategy should be put in place by the households to ensure a win-win situation exists between the wife and the husband with respect to contract sugarcane income sharing and appropriate compensation for labour. Credit facilities should be extended to women engaged in contract sugarcane farming on account of their spouses' credit worthiness as collateral. This shall enable them to invest their wholesome energies fully into contract sugarcane farming in the area of study. Husbands on the other hand, should be sensitive enough to plough back part of the proceeds as compensation for the labour provided on the farms by the women labourers.

### **5.5 Suggestions for Further Research**

This study can be replicated in other contract sugarcane growing areas in the country like Nzoia, Sony, West Kenya, Chemelil, Muhoroni, Soin and Pwani International Sugar Company to establish consistency of findings.

Further study should be done in the study area to delineate the influence of the selected motivational factors from the socio economic and managerial challenges currently influencing sugarcane production in the country. Thus, a study should be done to establish other factors that could be influencing the steady decline in sugarcane production per unit area in the area of study.

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## APPENDICES

### Appendix A: Women's Questionnaire

Dear Respondent,

Kindly respond to the following interview questions to the best of your ability. This is an academic research geared towards fulfilling the requirements for the award for a Master of Science Degree of Egerton University. The information you provide will only be used to evaluate selected Motivational Factors Influencing women's Participation in Contract Sugarcane Farming within Mumias Sub-county. The information you provide will be confidentially used only for the purpose intended.

Date of interview.....

Household No  MSC A/C No..... Field No.....  
Plot.....

#### Section A: Household Characteristics and Socio Economic Status

1. Location (*Tick appropriately*)

- Ekeru
- Lureko-

2. Marital Status

- Married
- Widowed

3. How would you describe the household into which you are married?

- Monogamy
- Polygamy

4. What is your estimated age in years?

- Below 18
- 18-36
- 37-54
- 55 and above

5. What is the size of your household in numbers?

- 1-5
- 6-10
- Over 10

6. What is your religion?

- Christian
- Muslim

7. What is your occupation?

- Farmer
- Employed
- Off-farmer business
- Others (specify).....

8. Please indicate your level of education

- Never went to school
- Primary
- Secondary
- Post secondary

9. What is the age bracket of your husband?

- Below 18
- 18-36
- 37-54
- 55 and above

10. Estimated size of the household land in acres

- Less than 2 acres
- 2.0 – 5.0 acres
- 5.1-10.0 acres
- Above 10 acres

11. What size of land in no.6 has been devoted to contract sugarcane farming alone (in acres)?

- Less than 1.0
- 1.0-3.0
- Above 3.0
- I do not know

12. For how long has your household been contracting land for sugarcane farming in years?

- Not sure
- 0 – 10
- 11 – 20
- Over 20

**Section B: Respondents level of Participation in contract sugar cane farming in relation to the household head (spouse)**

In the questions below, various statements are provided regarding the level of women’s participation in contract sugarcane farming at the household level. You are to rate the extend to which you think your spouse (household head) engages you (the wife) in contract sugarcane farming on a five-point scale ranging from never involved to always involved. Please indicate (by a tick) where appropriate.

1. Not involved- Your participation is not sought for
2. Rarely involved – You are minimally consulted before a decision is made
3. Occasionally involved- You are sometimes consulted before a decision is made.
4. Often involved- You are always consulted formally or informally before a decision is made.
5. Always involved- Responsibility to make the decision is fully delegated to you as individual or you decide jointly as a household.

**Respondents’ Level of Participation in contract sugarcane farming: Rating**

<b>Actual Level of participation</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>13. Identification and Selection</b>					
To what extent are you involved in the identification of the type of the crop to plant on your household farm?					
To what extent are you involved in deciding where on your household farm to set aside for this selected crop?					
<b>14.Planning</b>					
To what extent are you involved in determination of the size of the household farm to put under sugar cane?					
To what extent are you involved in deciding who is to be on the sugarcane farming contract?					
To what extent are you involved in deciding on labour issues and how much to compensate for such labour rendered in the sugarcane farms?					
To what extent are you involved in the way sugarcane proceeds are to be utilized after supplying to the sugar farm?					
<b>15.Management and Administration</b>					

To what extent are you involved in the attendance of the extension and education meetings with the company?					
To what extent are you involved in the determination of the type of seed cane varieties to plant on the household farm?					
To what extent are you involved in the allocation of funds for sugar cane development on the household farm?					
To what extent are you involved in consulting with company officers over the performance of the sugar cane on your household farm?					
To what extent are you involved in raising queries over errors on services rendered by the company on your household farm?					

**How would you like to be involved in the following areas of contract sugar cane farming with respect to items in nos.13-15 above?**

<b>Desired Level of Participation</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
16. Identification and Selection process of the C/sugarcane enterprise					
17. Planning process of the chosen enterprise					
18. Management and Administration process of the enterprise					
19. Monitoring and Evaluation process of the enterprise					

**Section C: General status Report on contract sugar cane farming**

20. How many stacks do you get your farm on average?

- Less than 10
- 10-15
- 16-20
- More than 20

21. How many tonnes of sugar canes did the contracted farm yield in the previous harvest?

- Less than 10
- 11-15
- 16-20
- 21 and above
- I don't know

22. How much was the income in no. 21 above in kshs? .....

23. Do you consider this adequate?

- Yes
- No

24. How do you describe the general changes in the total area of land under sugarcane to that of other crops in your farm over the years?

- Increasing
- Unchanged
- Decreasing

25. If your answer in 24 above is part 3 (decreasing) what are your reasons with respect to women's role in contract sugarcane farming?

.....  
.....  
.....

26. Has income from sugarcane been able to sustain the household?

- Yes
- No

27. During what time period did you first get involved in contract sugarcane farming as a labour provider?

- 1970-Todate

- 1981-Todate
- 1991-Todate
- 2001-Todate

28. Have you experienced incidences of low sugarcane production from your household farm over the past 10 years?

- Not at all
- Very rarely
- Rarely
- Frequently
- Very frequently

29. What are your other sources of income?

- Business
- Employment
- Others (Specify).....

**Section D: Factors Related with Utilization of sugar cane Income among women engaged on contract sugarcane farming**

30. Do you operate a bank account that is regularly serviced by income from farming contract?

- Yes
- No

31. On whose account do the sugarcane proceeds go after processing at the sugar company?     Self

- Husband

32. Do you have an equal share in the utilization of the proceeds from contract sugarcane farming?

- Yes
- No

33. Who has the greatest financial control on the household income arising from contract sugarcane farming?

- Self
- Husband

34. Are you satisfied with the status in no. 30 above?

- Yes
- No

**Section E: Labour Provision Factors Among women engaged in Contract Sugar cane Farming in Mumias Division**

35. What is your level of involvement in contract sugar cane farming?

- Labourer
- Farmer
- Both labourer and farmer

36. What is the nature of your involvement as a labourer?

- Commercial labourer
- Domestic labourer
- Both commercial and domestic labourer

37. Who provides the bulk of the labour in the sugarcane farms?

- Family (self and children)
- Hired
- Both family and Hired labour
- Others (specify).....

38. Is there compensation for the labour provided in no. 36 above?

- Yes
- No

39. If compensation is given in no. 36 above describe its form

- Cash
- In kind-material form
- Not applicable

40. What are contributory factors to your involvement in contract sugarcane farming as a labourer?

- Subsidize family income
- Inadequate farm labourers
- Inadequate land to sustain a contract
- Increased number of dependants

41. What is the frequency of involvement as a labourer?

- None
- Daily
- Weekly
- Monthly



42. Are you satisfied with the form of compensation given in no.36 & 38?

- Yes
- No

**Section F: Patriarchal factors influencing women's participation in contract sugarcane farming**

43. What cycle is the sugarcane crop on your household farm?.....

44. What is the age of sugarcane on your household farm in months?  
.....

45. In the household, who frequently attends farmer education meetings conducted by Mumias Sugar company extension officers?

- Self
- Husband

46. What are the views of your husband towards your role in contract sugarcane farming?

- Mandatory but not deserving compensation
- Mandatory but deserving compensation
- Gender defined and Insignificant compared to roles played by husbands

47. Who owns the land in the household?

- Self
- Husband

48. How is the land tenure?

- Freehold (bought)
- Leased
- Inherited
- Donated
- I don't know

49. Does your husband expect you to own property?

- Yes
- No

50. If your response in no. 49 above is yes give a value rating of such property

- High
- Medium

- Low
51. Does your husband allow you to have control over the household property?
- Yes
  - No
52. Do you belong to any farmers' organization / representative body which voices interests of contract sugarcane farmers?
- Yes
  - No
53. If your answer in no. 52 is yes, in which organization(s) are you a member?
- MOCO
  - MOSACCO
  - SUKARI SACCO
  - Not applicable
  - Others (specify).....
54. In whose names is the current sugarcane contract written?
- Mine
  - Husband
  - Daughter
  - Son
  - Leasee
55. Have you received credit (fertilizers, seed cane, company loans, bank advance/ loans, etc) in your names for contract sugarcane development in the last one year?
- Yes
  - No
56. If your answer in no. 55 above is No, give reason
- I am not contracted and so lack collateral
  - Have alternative source of income for sugarcane development

Thank you very much for volunteering your time to respond to these questions. May God bless you so much.

-----**END**-----

## **Appendix B: Focus Group Discussion Guide**

Dear Respondent,

Kindly feel welcome and free to participate to the best of your ability in giving your views over the items to be raised in this Focus Group Discussion. This is an academic research geared towards fulfilling the requirements for the award for a Master of Science Degree of Egerton University. The information you provide will **strictly** be confidential, to be used only for the purpose of evaluating Motivational Factors Influencing Participation of Women Farm Managers Engaged in Contract Sugarcane Farming within Mumias Division.

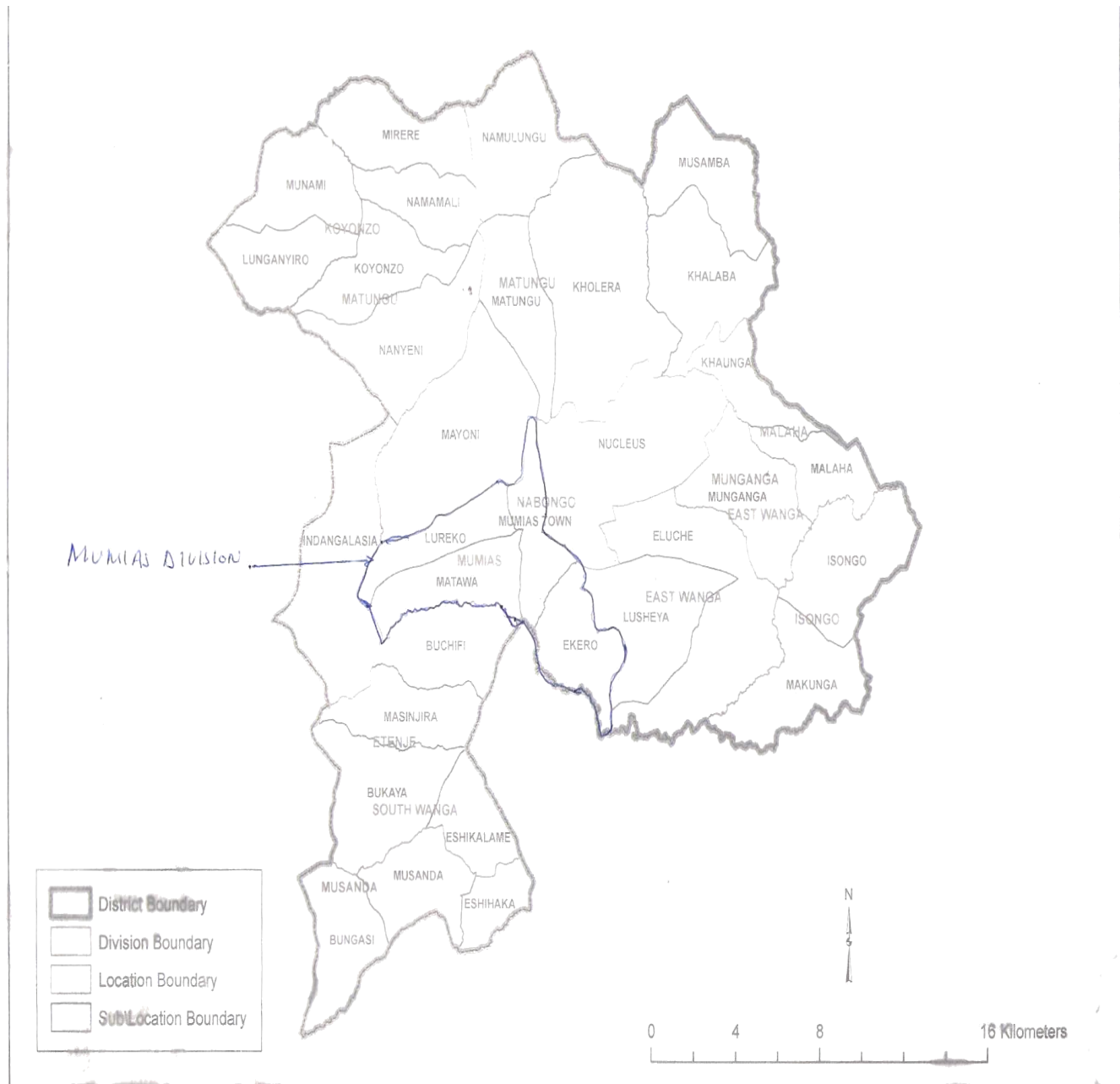
### **QUESTIONS FOR GROUP DISCUSSION**

1. What is the state of sugar cane yields in the Division? Explain the possible causes with respect to the Women in the household.
2. What major role is played by men and women in the households with respect to contract sugar cane farming? How are these roles compensated for?
3. What roles does society assign women to perform in the households?
4. What could be the influence of these assigned roles (patriarchal structures) on yields in sugarcane farming?
5. How are the proceeds from the sugarcane farms shared in the household?
6. In your opinion do you think the woman in the household is motivated enough to render her optimal participation in contract sugarcane farming?
7. What need to be done differently in the household to realize a change in the current trends in sugarcane yields?

*Thank you very much for volunteering your critical time to come and participate in this discussion. May God bless you so much.*

-----END-----

## Appendix C: Mumias Sub County Map



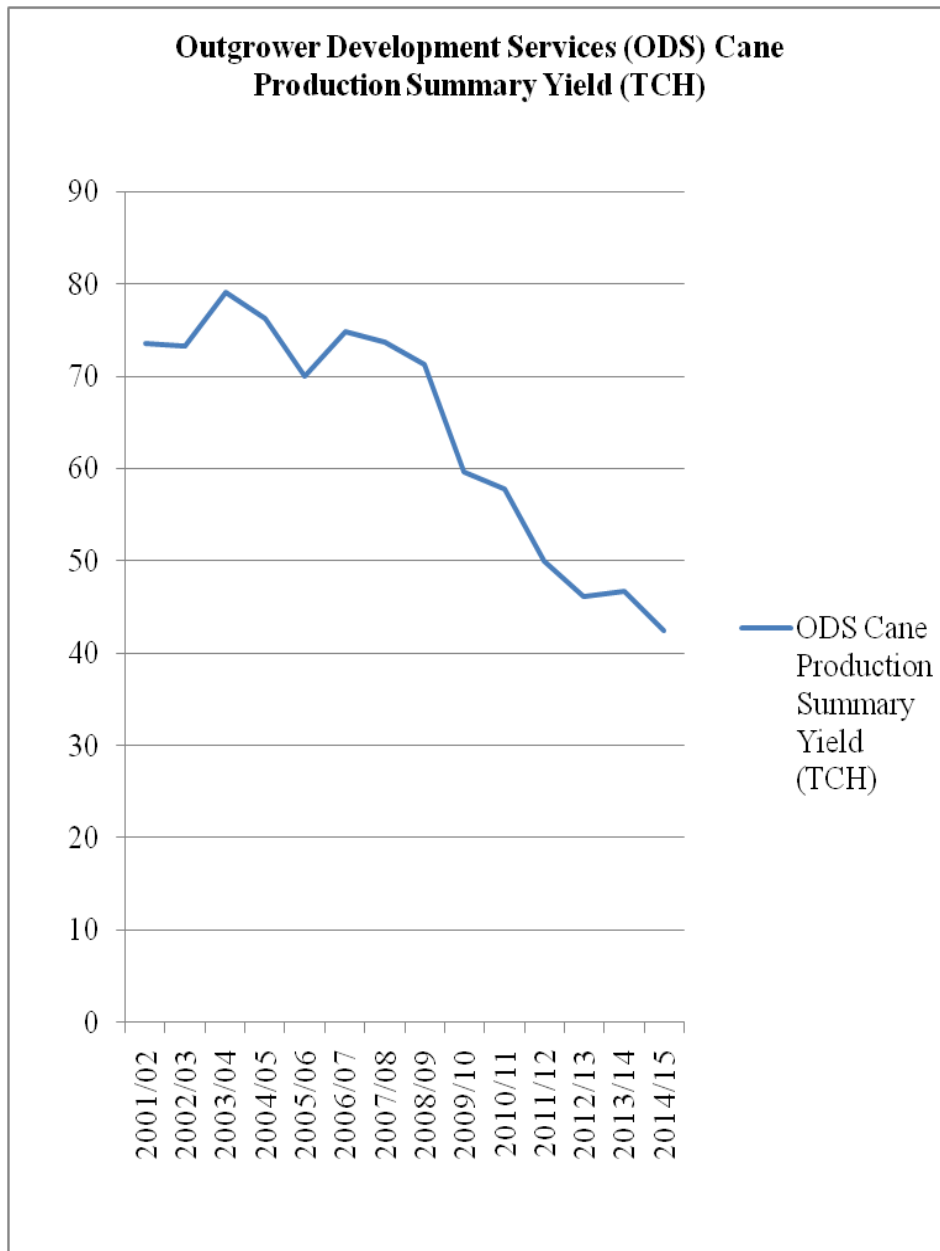
**Appendix D: A Tabular Presentation of ODS Cane Production For The Last 4 Decades**

ODS Cane Production Summary	
Financial Years.	Yield (TCH)
1972/73	-
1973/74	-
1974/75	93.2
1975/76	91.0
1976/77	100.0
1977/78	141.4
1978/79	149.2
1979/80	149.5
1980/81	139.4
1981/82	87.0
1982/83	73.1
1983/84	77.1
1984/85	73.9
1985/86	78.1
1986/87	78.8
1987/88	96.8
1988/89	102.1
1989/90	105.1
1990/91	101.0
1991/92	96.5
1992/93	83.7
1993/94	74.7
1994/95	78.1
1995/96	109.6
1996/97	117.9
1997/98	106.0
1998/99	94.2
1999/00	74.8
2000/01	60.3
2001/02	73.6
2002/03	73.3
2003/04	79.1
2004/05	76.2
2005/06	70.0
2006/07	74.8
2007/08	73.7
2008/09	71.3
2009/10	59.6
2010/11	57.8
2011/12	50.03
2012/13	46.2
2013/14	46.8

(Source: Head of Agriculture 1972-2014 Production Reports)

**Appendix E: A Graphical Presentation On Out grower Development Services (ODS)**

**Cane Production Summary**



(Source: Head of Agriculture 2000-2015 Production Reports )

## Appendix F: Research Authorization



### NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,  
2241349, 310571, 2219420  
Fax: +254-20-318245, 318249  
Email: secretary@nacosti.go.ke  
Website: www.nacosti.go.ke  
When replying please quote

9<sup>th</sup> Floor, Utalii House  
Uhuru Highway  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref: No.

Date:

7<sup>th</sup> April, 2015

**NACOSTI/P/15/0416/5530**


Aggrey Oyiengo Ambani  
Egerton University  
P.O. Box 536- 20115  
**EGERTON.**

#### RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*selected motivational factors influencing women's participation in contract sugar cane farming in Mumias Division, Kakamega County, Kenya,*" I am pleased to inform you that you have been authorized to undertake research in **Kakamega County** for a period ending **30<sup>th</sup> September, 2015.**

You are advised to report to **the County Commissioner and the County Director of Education, Kakamega County** before embarking on the research project.

On completion of the research, you are required to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

  
**DR. S. K. LANGAT, OGW**  
**FOR: DIRECTOR GENERAL/CEO**

Copy to:

The County Commissioner  
Kakamega County.

The County Director of Education  
Kakamega County.



## Appendix G: Research Permit

National Commission for Science, Technology and Innovation National Commission for Science, Technology and Innovation National Commission for Science, Technology and Innovation National Commission for Science, Technology and Innovation

**CONDITIONS**

- 1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit**
- 2. Government Officers will not be interviewed without prior appointment.**
- 3. No questionnaire will be used unless it has been approved.**
- 4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**
- 5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.**
- 6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice**

*Atieno*

**RESEARCH CLEARANCE PERMIT**

**REPUBLIC OF KENYA**

**NACOSTI**

**National Commission for Science, Technology and Innovation**


**Serial No. A 4818**

**CONDITIONS: see back page**



**THIS IS TO CERTIFY THAT:**  
**MR. AGGREY OYIENGO AMBANI**  
**of EGERTON UNIVERSITY, 0-50102**  
**MUMIAS, has been permitted to conduct**  
**research in Kakamega County**  
**on the topic: SELECTED MOTIVATIONAL**  
**FACTORS INFLUENCING WOMEN'S**  
**PARTICIPATION IN CONTRACT SUGAR**  
**CANE FARMING IN MUMIAS DIVISION,**  
**KAKAMEGA COUNTY, KENYA**  
**for the period ending:**  
**30th September, 2015**

**Permit No : NACOSTI/P/15/0416/5530**  
**Date Of Issue : 7th April, 2015**  
**Fee Recieved :Ksh 1,000**



*[Signature]*  
**Director General**  
**National Commission for Science,**  
**Technology & Innovation**

**Appendix H: Group photos for the Focus Group Discussions held in Lureko and Ekero sub locations**



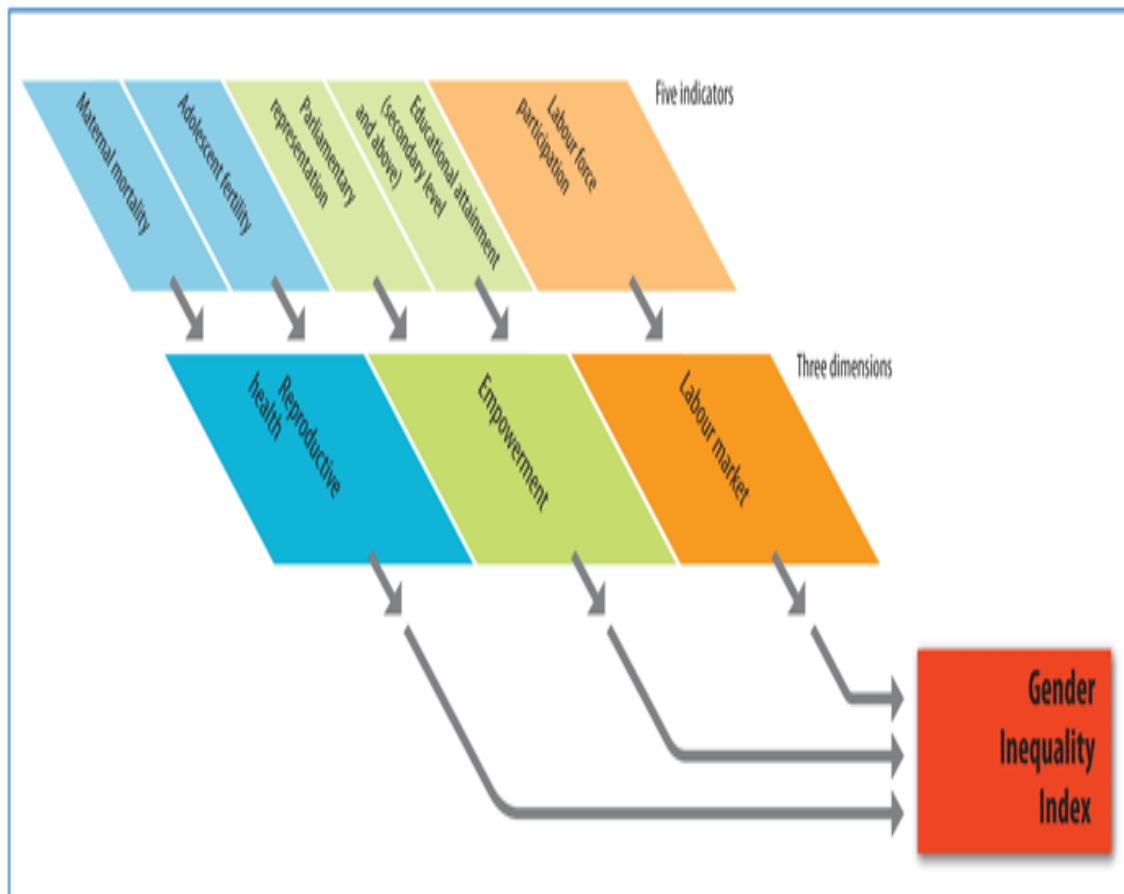
A Focus Group Discussion group Photo at a farmer's home in Lureko on 28 March 2015



A Focus Group Discussion group Photo next to a farmer's sugarcane cane plot in Ekeru on 22 March 2015

## Components of the Gender Inequality Index

GII—three dimensions and five indicators



Note: The size of the boxes reflects the relative weights of the indicators and dimensions.

Source: HDRO.

## Appendix I: Elements that constitute variance (GII) between Men and Women