

The Influence of Selected Factors of Motivation on Women's Participation in Contract Sugar Cane Farming in Mumias Division, Kakamega County, Kenya

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Abstract

Challenges facing women are a major source of inequality often discriminating against them specifically in the agricultural labour market. Unless women farmers in households are motivated to be actors in contract farming activities and programs, the impact of such interventions remain insignificant in transforming their lives and the lives of others. As the contribution of women in contract farming diminishes in the rural households where they form the majority in crop production within the regional and national economy, family livelihoods are severely affected. This paper examines the influence of selected factors on women's participation in contract sugarcane farming in Mumias Division, Kakamega County, Kenya. The study used cross-sectional design. Systematic sampling technique was used to select 118 women engaged in contract sugarcane farming in the households. In addition, two-focus discussion groups (FGDs) each comprising eight women were selected purposively. Data was collected using interviews and FGD guides. The validity and reliability of the instruments were ascertained using content validity and Cronbach's coefficient alpha respectively. Data was analyzed using both descriptive and inferential statistics. Results of the study indicated that most of the women were highly influenced by property ownership, membership in advocacy bodies, and representation in investment institutions with a significance of 0.000, 0.000 and 0.000 respectively. The study recommends that sound policies and mechanisms by sugar Industry management and government be adopted. This would serve to ensure that the energy of women that is directed into contract sugarcane farming to upscale Industry production indeed benefits the women's livelihoods at household level.

Keywords: Women, contract sugarcane farming, households, livelihoods, participation

1.0 Introduction

Contract sugarcane farming within Mumias Division in Western Kenya, has been practiced for over four decades with key players being rural women in the households who form the majority. Eaton and Shepherd (2001); Luhombo (2010); Makhandia (2010) and Kidula (2007) have argued 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 and mutually benefiting relationship. This is because it is hoped that each party earns a right to income thereof through product sales and compensation for labour provided on the farm besides having an enabling access and control on the factors of production (land and contract) and other aspects of technology transfer that links research & extension services and input supply.

Women in rural areas 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 structures that discriminate them in many forms (Oniango, 1999; 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; Chitere & Mutiso, 1991; Mmasaaba, 2012). Yet women and girls face discrimination in agriculture and its market labour related benefits with negative repercussions for their freedom and participation (UNDP, 2010).

In countries like Kenya, the Caribbean and Tanzania, rural women perform important tasks in food production, income generating activities, nutrition and the management of natural resources. However, their limited access to productive resources such as land, labour, capital and technology, all serving as collateral for credit compromises 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 Millennium Development Goals One and Three of eradication of extreme poverty and hunger and promotion of gender equality through empowerment of women (Kamara, 2012).

Although research findings reveal that people participate in activities that address their various felt needs, goals and benefits (Luhombo, 2010; Chitere & Mutiso, 1991 and Mulwa, 2004), this study observed that this was not the case in women's experience in contract farming in Mumias Division hence eroding motivation. Women in the households in Mumias were found to bear the greatest responsibility of managing the crop on contract farming model while men benefitted the most from the profits. One of the reasons was that majority of the men household members own and control both the land and farming contract. The farming

contract forms the basis for payment and subsequent utilization of the funds. The majority of men as compared to women were also found to have membership in advocacy bodies and representation in investment bodies. Jakku and Bellamy (2008) and Oniango (1999) have observed that women suffer exclusion from male dominated networks.

Motivation is driven by both internal factors such as co-values referred to as 'intrinsic' and external factors such as rewards or benefits, referred to as 'extrinsic'. However, findings by Deci (1975) established that though the former is stronger than the latter, the latter can easily act to displace the former. To sustain participation, contemporary society has evolved a variety of terminologies to elicit and maintain motivation such as the use of loyalty cards and discounts in first-food malls, bonuses and commissions in companies and promotions in institutions (Jakku & Bellamy, 2006; Mwangi, 2004; Wafula & Marete, 2005).

1.1 Statement of the Problem

Contract sugarcane farming is a major income earner in the Kenyan economy generating an estimated 12 billion shillings, supporting about 6 million people. Mumias Sugarcane zone alone contributes well over 60% to the total national production of 450,000 metric tons, but presently, this has been seriously declining. The sugar zone is centrally hosted in Mumias Division 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. Majority of the later own both the land and farming contracts which form the criteria for sugarcane payments, representation in both membership and investment bodies as well as subsequent utilization of the proceeds. 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 Division.

1.2 Study Purpose and Objectives

The purpose of the study was to examine the influence of selected factors affecting women's participation in contract sugarcane farming in Mumias Division of Kakamega County, Western Kenya. The specific objectives were to determine how the factors of land and contract ownership affect women's participation in contract sugarcane farming; to evaluate the effect of membership and representation in advocacy and investment bodies respectively on women's participation in contract sugarcane farming.

1.3 Research Hypotheses

The following research hypotheses directed the study, tested at a significance level of 5%, (0.05).

H0₁: There is no statistically significant influence of property ownership at household level on women's participation in contract sugar cane farming.

H0₂: There is no statistically significant influence of women membership in sugarcane bodies on women's participation in contract sugar cane farming

H0₃: There is no statistically significant influence of representation in investment institutions on women's participation in contract sugar cane farming

2.0 Empirical Evidence

2.1 Property Ownership and Control

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 (Gallaway *et al.*, 2008). This notwithstanding, World Bank (1994) legitimized 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.

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). Oniango (1999), similarly attests that 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.

It has been 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 (Oniang'o, 1999). This is because whatever came out from it was mostly for home use. It has been however noted, that with the advent of land registration, household ownership is not key, but individual ownership. In this way, land became masculinized as agriculture continued to remain feminized. The more resource ownership diminishes, the more

control is imposed on it. This way 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 programmes. In this respect Makhandia (2010) as well as Saito & Splurling (1992) observed that most sugar cane farming contracts are held by men with only few being women.

As pointed out by Mwangi (2004) and Chitere (1991) 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 Women's Representation in advocacy and Investment bodies

The criteria in agricultural cooperatives for membership emphasize land ownership, which more often than not is held by men (Were, 1990; 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. Yet to be a registered member of any advocacy or investment body in contract sugarcane farming one must be a contracted sugarcane farmer.

Participation represents a means for people to advocate for themselves and transform their situations. As advanced by Luhombo (2010) and further reiterated in the United Nations General Assembly conference dubbed "International Youth Year in 1985" participation is defined 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.

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 is on this basis that the researcher undertook 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 Theoretical and Conceptual framework

This study was informed by the Expectancy Theory postulated by Vroom (1964). This theory looks at the way ownership, perceptions and expectancy patterns among women in households can shape the super structure end result, creating influence on their participation and in the case of this study, contract sugar cane farming. One group in society is able to own, look down upon 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 (Chitere, 1991; Mwangi, 2004 & Mulwa, 2004). The theory was chosen because women participation in contract sugar cane farming is viewed as interplay between social relations and power dynamics in the households. In this theory, Vroom (1964) has specified that motivation is the result of three different types of beliefs that people have. Namely expectancy, instrumentality and valence.

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 was in this context influenced by the expectation that their effort in participating in contract sugar cane farming would 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 that 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 would be adversely influenced by the results they get by engaging themselves in the business if the efforts they put in are not recognized. This could result in apathy. Vroom also 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.

The independent variables for this study included access to and ownership of land and the farming contract, membership in sugar cane bodies and representation in investment bodies. The dependent variable was the

participation of women engaged in contract sugar cane farming. This was measured in terms of the women's contribution in labour provision, contribution of cash funds towards cane maintenance, planning and management of contract sugar cane farming, and their participation in consultation on cane husbandry from Mumias sugar extension officers.

1.0 Methodology

1.1 Research Design

The study used cross sectional survey design in order to explore and describe the characteristics of the women engaged in contract sugarcane farming, the characteristics of contract farming in households and the constraints these women face in sugarcane production in Mumias Division. This kind of research design is appropriate in describing the real situation as it exists and therefore more likely to give accurate information (Kathuri and Pals, 1993).

3.2 Study Population and Sampling Procedure

The study was conducted in Mumias Division of Kakamega County. The Division covers 3,879.22 hectares with sugarcane farming as the main economic activity. Rainfall is bimodal with long and short rains coming in March-May and August-September periods respectively. Annual rainfall ranges from 1500-2000mm, with temperatures of 24-33^o C and very deep friable loam soils favourable for agricultural production (KESREF, 2010).

The accessible population consisted of 3,305 women members of contracted households in Mumias Division (Kenya Sugar Board (KSB), 2007 and Agricultural Management System (AMS), 2007). This formed the sampling frame for the study. The study population was chosen because they are the main care takers of the contract sugarcane farming in the area. Mumias Division was chosen because it is the epicenter of the entire sugarcane scheme reliably servicing the sugar factory crushing requirements at close proximity. Systematic sampling was used to select 118 women respondents from the sampling frame. In addition, two focus group discussions were purposively selected each comprising eight women: four contracted and four non-contracted by the company.

The sample size was arrived at using the following formula by Nasiurma (2000):

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

which yielded 118 after adding an attrition of 20%

(Note: n=sample size; N=population size (took 3,305); C_v= coefficient of variation (took 0.5); e= tolerance or margin of error at desired level of confidence - took 0.05 at 95% confidence level). 0.5 coefficient of variation was used. The study sample is shown in Table 1 below:

Table 1: Sample distribution of women in contracted households by sub-location in Mumias Division of Kakamega County, Kenya.

| Sub location | Area Total | Frequency | Percent | Cumulative % |
|--------------|------------|-----------|---------|--------------|
| Ekeru | 1389 | 58 | 49.2 | 49.2 |
| Lureko | 1916 | 60 | 50.8 | 100 |
| Totals | 3305 | 118 | 100 | |

Source: Field Data, 2015

The first respondent (kth) was selected by picking one of the folded numbers corresponding to the first ten respondents on the register, and then obtained the remaining 117 respondents by systematically picking the 28th member on the farmers register for the two sub locations. Each of the two focus group discussions (FGDs) comprised of four contracted women farmers and four women whose husbands are contract farmers.

3.3 Instrumentation

An interview schedule containing both open and closed-ended items was administered to the women and was pretested in East Wanga Division (Lubinu sub location), Kakamega County, which had similar characteristics with Mumias Division in order to determine its validity. The pre-testing exercise also helped to establish clarity of meaning and comprehensibility of each item in the research instrument, and also to determine the time needed to complete the interviews. The reliability for interview schedule was calculated using Cronbach's alpha coefficient, which yielded a significance of 0.709.

3.4 Data Collection

A research permit was obtained from the National Commission for Science, Technology and Innovation (NACOSTI) and further Permission was sought from the County Commissioner and County Director within Kakamega County. Women respondents were interviewed using the interview schedule. The focus group discussion groups constituting a total of eight contracted and eight non contracted women in the households were interviewed at two strategic points in Ekeru and Lureko sub locations using an interview guide.

3.5 Data Analysis

Data was analysed using the Statistical Package for Social Sciences (SPSS) version 17.0 software. Analysis was performed for the following: Descriptive statistics to compute frequency distributions and percentages. Simple multiple regression to determine the influence of selected factors (ownership of land / contract, membership in sugarcane bodies and representation in investment bodies). In addition, qualitative data was accessed from the Focus Group Discussions and thematic phrases carefully triangulated with established findings of the study.

4.0 Results and Interpretation

4.1 Property Ownership and Control

Most respondents (43.2%) were involved in other forms of agricultural farming as horticulture, food crops and dairy. The reason given for involvement in other forms of agriculture was that the women felt they did not benefit significantly from the sugarcane income with their spouses.

4.1.1 Contract ownership

Similarly, 39.8% of respondents stated that they were absolutely uninvolved in contract sugarcane farming as they were not contracted. One woman in a focus group discussion spoke passionately thus, "...you work but 'others' eat the benefits of your sweat!" 'Others' referred to here meant their husbands (FGD, 28 March 2015, Lureko). However, the women who were on contract as farmers especially the widowed women (20.3%) were either 'often involved' or 'always involved' in cane farming as well as in controlling benefits of their labour. This confirms findings by Mueller (2000), who reported that single mothers had a greater economic need but have more autonomy to utilize the household resources. This also corroborates with findings by Luhombo (2010) and Chitere and Mutiso (1991) that people always take part in projects that deliver or are likely to deliver direct or immediate benefits to them. About 98.3% of the respondents indicated a strong desire to be always involved in contract sugarcane farming if factors that prevent them from benefitting from their contribution could be addressed. This agrees with studies by Mbilinyi (1997), who reported that women experience serious production constraints with respect to factors of production in households.

4.1.2 Land ownership

A significant 21.2% of the respondents did not have any idea what area of household land was contracted to sugarcane farming. Some of the women did not recall the period their household has been involved in contract sugarcane farming as a revenue stream as they were often sidelined on ownership of the contract as well as the land. A significant number of the respondents (61%) revealed that they lacked sufficient information on contract sugarcane farming. They did not know the crop age, number of stacks / yield and income the family farm earned from sugarcane. This was because farm records for the households were kept by the husband as a cultural norm. In addition, 67.8% of the contract holding was found to be in the names of husbands (see Table 1 below), with only a few owned by women respondents, who were mostly widowed. One woman in a focus group discussion session quipped "A wife to access the farm records that reveal the value of the sugarcane benefit for the husband's farm... would be viewed as gross misconduct that could even cost one's marriage" (FGD, 28 March 2015, Lureko).

Table 2: Sugarcane Contract Ownership by sampled respondents

| | Frequency | Percent | Cumulative Percent |
|-------|-----------|---------|--------------------|
| Women | 38 | 32.2 | 32.2 |
| Men | 80 | 67.8 | 100.0 |
| Total | 118 | 100.0 | |

Source: Field data, 2015

Majority of the respondents (63.6%) stated that they did not get a chance to attend farmer extension meetings; instead their husbands did as they were contracted yet when it came to working on the sugarcane farms, they left it to the women. Similar notion was expressed by findings by Saito and Splurling (1992) who observed that sugarcane contracts are largely held by men with very few being in women's names. Most of the land (68.6%) in the study area was inherited, and therefore traditionally owned by the husbands (86.4%) as seen in Table 3 below:

Table 3: Land Ownership among the selected respondents

| | Frequency | Percent | Cumulative Percent |
|-------|-----------|---------|--------------------|
| Women | 16 | 13.6 | 13.6 |
| Men | 102 | 86.4 | 100.0 |
| Total | 118 | 100.0 | |

Source: Field data, 2015

One woman respondent declared "A husband to allow a wife to own a title deed...will be sufficient

ground to send you back to your aged and helpless parents”(FGD, 22 March 2015, Ekero). Research by Mmasaaba (2013), reported that uncertain access to land and a 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. When land tenure became institutionalized, the practice was to register land in men’s names. Although most respondents acknowledged that their husbands expected them to own property within the household, the rating for such ownership ranged from medium to indifferent for 80.4% of respondents.

4.2 Membership in advocacy bodies

The majority of the respondents were not members of sugarcane union advocacy bodies (69.5%), like Kenya Sugar Grower Association (KESGA) and Mumias Out growers Company (MOCO). The reason being that membership is linked to contract ownership. The consequence was that majority of respondents could not access credit facilities that are tied to proof of collateral such as the sugarcane farming contract or land title deeds. This finding corroborates with a finding by Were (1990) that representation and membership in agricultural cooperatives is hinged on land and other forms of property ownership.

Table 4: Membership in Sugarcane advocacy bodies by sampled women respondents

| | Frequency | Percent | Cumulative Percent |
|-------|-----------|---------|--------------------|
| Yes | 36 | 30.5 | 30.5 |
| No | 82 | 69.5 | 100.0 |
| Total | 118 | 100.0 | |

Source: Field data, 2015

4.3 Representation in Investment Organizations

Majority of the respondents (65.3%) were not represented in investment organizations like Mumias Out growers Savings Society Cooperative (MOSACCO) and Sukari Sacco society which offer credit facility to eligible members as qualified by a collateral like a farming contract or a land title deed. This corroborates similar findings by Were (1990) that representation in agricultural cooperatives is hinged on land and other forms of property ownership such as sugarcane farming contract.

Table 5: Representation in Investment Organizations by sampled women respondents

| | Frequency | Percent | Cumulative Percent |
|----------------------|-----------|---------|--------------------|
| MOCO | 3 | 2.5 | 2.5 |
| MOSACCO | 20 | 16.9 | 19.5 |
| Sukari SACCO | 6 | 5.1 | 24.6 |
| Valid Not applicable | 77 | 65.3 | 89.8 |
| Others (KESGA) | 12 | 10.2 | 100.0 |
| Total | 118 | 100.0 | |

Source: Field data, 2015

Further, referential statistics was performed using regression analysis against the selected factors as they relate to women participation and results are presented in Table 6 below:

Table 6: Model of fit table (Model Summary^b)

| Model | R | R ² | Adjusted R ² | Std Error of the Estimate | Change statistics | | | | | Durbin-Watson |
|-------|--------------------|----------------|-------------------------|---------------------------|-------------------|--------|-----|-----|--------|---------------|
| | | | | | R ² | F | df1 | df2 | Sig. F | |
| 1 | 0.819 ^a | 0.671 | 0.659 | 0.45895 | 0.671 | 57.538 | 4 | 113 | 0.000 | 1.855 |

Source: Field data, 2015; significant level at ≤ 0.05

From Table 6 above, the results showed that the selected structures which include: property ownership-land and farming contract; membership in sugarcane bodies and representation in investment organizations, did account for 67.1 % variability to 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. 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.

Table 7: Influence of selected factors on women's participation in contract sugar cane farming

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|-----------------------|-----|-------------|---------|--------------------|
| 1 | Regression | 734.349 | 1 | 734.349 | 221.069 | .000 ^{b*} |
| | Residual | 388.651 | 117 | 3.322 | | |
| | Total | 1123.000 ^d | 118 | | | |
| 2 | Regression | 802.211 | 2 | 401.106 | 145.043 | .000 ^{b*} |
| | Residual | 320.789 | 116 | 2.765 | | |
| | Total | 1123.000 ^d | 118 | | | |
| 3 | Regression | 854.364 | 3 | 284.788 | 121.914 | .000 ^{b*} |
| | Residual | 268.636 | 115 | 2.336 | | |
| | Total | 1123.000 ^d | 118 | | | |

Source: Field data, 2015; significant level at ≤ 0.05

From Table 7, 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) has a better prediction than that of membership organization (145.043) and representation in investment bodies (121.914) 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 contributes to women's discouragement in long term investments or improvements on their own land where majority resides. This argument is supported by Mmasaaba (2012), Mulwa (2004) and FAO (2003) among other researchers.

In order to establish the influence these factors have on women's participation the study ran the coefficients and the results are presented in Table 8 below:

Table 8: Coefficients on the Selected Factors

| No | Model | Unstandardized Coefficients | | Standardized Coefficients | | t | Sig. |
|----|---------------------------|-----------------------------|-----------|---------------------------|-------|-------|------|
| | | B | Std Error | Beta | t | | |
| 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 | -6.85 | .000* | |

Source: Field data, 2015; significant level at ≤ 0.05

From Table 8, the study revealed that ownership of property, $\beta_0 = 2.79$, implies that when ownership of land and contract by women increases by a unit then their participation increases by 2.79 units. Similarly, respondents' membership in sugarcane organizations, $\beta_1=0.750$ was that when women join membership organizations by one unit, their participation increases by 0.750 units. However, representation in investment bodies, $\beta_2 = -0.760$ indicates that when a unit of women are represented in investment bodies, their participation in contract sugarcane farming decreases by 0.76 units.

The standardized beta coefficients 1.714, 0.914 and -0.491 indicate the number of standard deviations on the outcome caused by the predictor variables. When there is an increase of one standard deviation on 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 (0.000). This implies that women's ownership of land / contract and membership in sugarcane organizations increases their participation. However, their participation decreases when they get involved into investment bodies.

The likely reason why 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. Studies by Kidula (2007), Chitere and Mutiso (1991) and Luhombo (2010) support this findings. This study also found that low women farmer morale has contributed to a steady decline in yields and a high ratio of voluntary sugar cane farmer dropout in the study area.

5.0 Conclusion and Recommendations

Sugarcane production per unit area in the study area has steadily been declining with a corresponding unsustainable income for the households. This has resulted in continued reduction of the surface area under sugarcane farming. This trend threatens the survival of the sugar industry if a strategy of reviewing the existing policies and practices for women as key players in contract sugar cane farming model is not urgently addressed.

The national government in Kenya as well as Mumias Sugar Company management need to design appropriate policies and mechanisms, free from gender bias that can ensure that women's participation as key actors in contract sugarcane farming are adequately compensated. This is important in order to upscale sugarcane production in the area of study in Kenya. Contract farming need not be a catalyst for antagonisms between men and women in households as this affects both productivity and farmer morale. For, instance enabling policies should be put in place to allow women in households have significant membership and representation in advocacy and investment bodies respectively so as to afford them a voice to articulate their concerns, while carrying out their development activities in the region. This shall guarantee sustainability of contract sugarcane model in the sugar sector.

There is an urgent need to effect change on policy which stipulates that the sugar cane contract be registered in the names of actual workers and not necessarily in land owner's name. This would improve women morale and ensure an increase in crop yields. This will enable credit facilities in the sugar belt to extend and benefit the women engaged in contract sugarcane farming. The women will then invest their energies into contract sugarcane farming without reservations in the area of study. Men in the study area, on the other hand need to be encouraged to plough back part of the proceeds from cane sales into contract sugarcane farming, in order to revitalize the ailing sugar industry. Overallly, strategies need to be put in place by both the national government and households to ensure a win-win situation exists between female and male household members with respect to contract and land ownership.

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