Determinants of Gender Participation in the Sunflower Value Chain in Mlali Ward, Mvomero District-Tanzania

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Abstract: Inequalities in participation and benefits accrued from agricultural value chains are widely reported. Such inequalities are believed to affect men's and women's welfare. This paper analyzes the levels and determinants of gender participation in Sunflower Value Chain (SVC). A cross-sectional research design was adopted and 120 sunflower smallholder farmers were selected for the study. A combination of simple random sampling and systematic sampling techniques were used to select study villages and respondents respectively. A Structured questionnaire and Focus Group Discussion (FGD) guide were the main tools for data collection. Index scales were constructed to gauge the level of women empowerment. Ordinal logistic regression was used to establish the determinants of participation in the SVC. Findings show that more males than female farmers were categorized in the medium level of participation. Farmers' levels of participation, land ownership, means of land acquisition and access to markets were the detriments of participation in the SVC (P<0.05). It is recommended that, sunflower stakeholders such as government and non-governmental organizations need to empower farmers to overcome factors which negatively affect their levels of participation and benefit in the SVC. Gender sensitive approaches and techniques should be used to improve the level of participation and decision making in the various nodes of the SVC as well as to minimize the social, cultural, and economic factors that affect women's participation and benefit in the SVC.

Keywords: *Gendered participation, sunflower, ordinal regression, value chain*

1.0 INTRODUCTION

The importance of agriculture in the economic development of Tanzania can never be overemphasized. It employs about 66% of the total population and contributes about 35% to the country's Gross Domestic Product (GDP) (MAFC, 2015), while in rural areas current data show that agriculture employs about 66% of 30 million rural population (NBS, 2013). It is also reported that men are usually largely involved in cash crop farming and income generating (Sambrook, 2011). On the other hand, management of crops which traditionally form the household diet often is the primary responsibility of women (Sambrook, 2011; Leavens and Anderson, 2011). This suggests that in most of the Sub-Saharan African countries, participation in the agricultural value chains is characterised with gender differentials from production, access, control and ownership of resources to marketing of raw and processed agro-produce (Spence, 2012). In addition, Assan (2014) argued that, men have a tendency of increasing their participation once a crop gain high profitability and economic opportunities while leaving women's roles unrecognized and less valued within a value chain. It is generally believed that, gender participation in value chain helps to link smallholder farmers to markets, and other value chain actors such as input supplier and extension officers, but little evidence exists on how implications differ for individuals within a household (Quisumbing and Roy, 2014).

Sunflower production is among the key sub-sectors of Tanzanian's agricultural sector, contributing to household food security of smallholder farmers (RLDC, 2008; Ugulumu, 2008). Smallholder farmers make a significant contribution in the production and processing of sunflower seeds. For example, RLDC (2008) reported that in 2008 over 350 000 tons of sunflower seed were produced in Tanzania and about 8 million smallholder farmers were involved in the primary production processes (MUVI-SIDO, 2012; Ndondole, 2014). Differences between women and men in the Sunflower Value

Chain (SVC) are among the challenges which affect productivity and economic development of the community and country at large (Assan, 2014). It is generally known that, production of many crops involve both sexes, nevertheless the situation of gender participation and access to adequate productive resources especially in the SVC is still faced with many challenges that affect their levels of participation and benefit.

Gender based constraints are restrictions on men's or women's access to resources that are based on their gender roles or responsibilities (Riisgaard *et al*., 2011). Women are in most cases more disadvantaged than men in the context of value chain operations; this is due to limited mobility (usually imposed by male partners), lack of access to assets and market as well as lack of linkages to other value chain actors. Gender participation differences are influenced by various factors such as opportunities and constraints in different farming activities (Leavens and Anderson, 2011). It is argued that, women face several constraints from participation access to and control over productive resources such as land. The inequalities are perpetuated by socially constructed norms embracing male dominance. It is therefore important to understand how participation of women and men are limited by controlling the factors of production such as land, labour, capital and other assets that enable them to participate in, and gain from, functions across the sunflower value chains which are deeply rooted in socio-cultural traditions.

Gender equality is an integral part of the development agenda for decades in Tanzania (URT, 1998; 2014) yet gender inequalities in agricultural value chain are reported by many studies among Sub-Saharan African countries including Tanzania (Lekunze *et al.,* 2011; Ayoola *et al*., 2012; Towo and Mugisha, 2013). Various studies on sunflower production in Tanzania have been conducted (Ugulumu, 2008; MMA, 2010; Losindilo *et al*., 2010; MUVI-SIDO, 2012; Liberio, 2012; ESAFF, 2013; Mmasa, 2013 and Ugulumu and Inanga,

2014). Analysis of these empirical evidence show mixed and location specific findings. Thus, it is difficult to generalize. Therefore the main objective of this study was to determine factors that influence gendered participation in the SVC. Hence, it was important to have as many empirical findings as possible and from many different locations. This paper underscores the determinants of gender participation in Sunflower Value Chain (SVC) in Mvomero District, Tanzania.

2.0 METHODOLOGY

The study was conducted in Mlali ward, which is among the 8 wards of Mlali division, Mvomero district, Morogoro Region. Four villages from the ward were selected purposively based on sunflower being among the cash crops they produced. The study adopted a cross-sectional research design that allows data to be collected at a single point in time. A structured questionnaire and a guide for the Focus Group Discussion were the main tools used for data collection. Systematic sampling technique was used to select the respondents whereby a list of sunflower producers in the respective villages as provided by the ward agricultural offices was used as a sampling frame and 120 sunflower farmers were selected to participate in the study.

By using Statistical Package for Social Science (SPSS) descriptive statistical analysis was used to compute the levels of gendered participation in the SVC. Index scales were constructed to gauge the levels of participation along the SVC whereby an individual was given a score of 1for an activity he/she participated and 0 if otherwise. Rates beyond one standard deviation below the mean were labeled low. Similarly, rates beyond one standard deviation above the mean were labeled as high. Rates in the range of one standard deviation below, or above the mean were labeled as medium) such levels have also been used by other scholars (Al-Rimawi, 2002).

The determinants of gendered participation in the sunflower value chain were analysed using ordinal logistic regression. The dependent

variable (Y) was categorized into three levels of participation (1= Low, 2=Medium and 3= High level and the explanatory variables were 15. The independent variables included a mixture of socio-demographic variables, institutional variables and variables of participation in the SVC such as age of the respondents, education level of the respondents, land ownership, means of land acquisition, farming experience, reason for sunflower production, and access to the market information, sunflower farmer's group, group membership and access! to"#the $market&#"to mention'((few(.(Thus,((the))empirical$& ordinal

regression model is Th specifiedTh as follows:

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$$P(y) =$$

Where:

AGE = Age of the respondents in years,

EDL = Education level in number of years spent in schooling, LO = Land ownership coded as 1=yes, 0=no,

MA = Means of acquisition coded as 1=yes, 0=no, FE = Farming experience in years,

RSP = Main reason for sunflower production coded as 1=yes, 0=otherwise,

AMI = Access to market information coded as 1=yes, 0=no, FG = Sunflower farmer's group coded as 1=yes, 0=no, AM = Access to market coded as 1=yes, 0=no,

ATWA =Men's attitude towards women's agriculture activities coded as 1=positive, 0=negative

OFA = Having non-farm activities for female coded as 1=yes, 0=no,

TS = Time spent in doing household chores for female coded as 1=yes, 0=no, and

AFS = Access to financial services for female coded as 1=yes, 0=no.

Other scholars (Agresti and Finlay, 1997 and Agresti, 1996) have used ordinal regression analysis when the outcome variable assumed a set of discrete ordinal categories.

3.0 RESULTS AND DISCUSSION Socio-Economic Characteristics of the Respondents

The socio-economic characteristics of the sampled population were age, sex, level of education for household head and spouse, primary occupation and household size. Table 1 shows that 51% of the respondents were males while 49% were females implying that there was almost equal gender distribution among respondents. Furthermore, results indicate that 81% of the males sampled population had attained and obtained certificate of primary education, 9% of them were secondary education leavers. On the other hand, 86% of females sampled had primary education while 10% were illiterate.

Table 1: Distribution of respondents according to their socioeconomic variables (n=120)

Characteristics		Frequency	Percentage
Sex	Male	61	50.8
	Female	59	49.2
Education level of hh head	Illiterate	10	8.3
	Primary	98	81.7
	Secondary	11	9.2
	Post-secondary	1	0.8
Education level of spouse	Illiterate	12	10
	Primary	103	85.8
	Secondary	4	3.3
	Post-secondary	1	0.9
Primary occupation	Farming	114	95
	Civil servant	5	4.2
	Business	1	0.8

Level of gender participation in the Sunflower Value Chain

Findings presented in Table 2 show the level of sunflower smallholder farmers' participation. Majority (75%) of the respondents were categorized in the medium level of participation. Sex-wise remarkable differences were also noted whereby 69.2% were males and 75% were females categorized in the medium level of participation. However, more male farmers were more likely to be categorized in high participation compared to their female counterparts. On the other hand, the number of males with low level of participation was high compared to females with low level of participation. These results imply that as far as gendered participation is concerned there are gender inequalities between men and women at their different levels of participation. These results compare with those found in a report by the Food and Agriculture Organization (FAO, 2011) who found that there are differences between women's and men's levels of participation in all aspects of access to the productive resources in agricultural value chains.

Table 2: Levels of gender participation in SVC (n=120)

Levels of participation		Sex	
		Male	Female
Low		7 (11.7)	5(8.3)
Medium		42(69.2)	44 (75)
High		12(19.1)	10(16.7)

Note: Number in brackets represent percentages

Factors influencing gender participation in the Sunflower Value Chain

To determine the factors influencing level of participation in SVC in Mlali ward, two ordinal regression models were estimated. That is one regression model for male and the other for female sunflower farmers. Results presented in Table 3 show that three variables were statistically significantly influencing the levels of male participation

in SVC. These were land ownership, means of land acquisition and access to market information. However, all these variables were negatively correlated to the levels of male participation. Land ownership by male was significantly and negatively influenced their level of participation whereby a one unit increases in the land ownership by male decreases the probability of their participating in the SVC by 1.184. This is probably due to men's behaviour in mismanaging the land resource which was revealed during the focus group discussions as it was reported that men sometimes sell land to get money that they use for their own interests including drinking local brew. One woman lamented said:

"…When my husband doesn't have money he can sell even a piece of land just to go and enjoy drinks with his male friends…." (FGD participant from Vitonga village 20th January, 2015)

Yet another woman complained on laziness of men in participating in crop production which many rural households depend on as the only means of ensuring household food security:

"…Look, my husband always goes to drink alcohol since morning to evening, so if I don't work hard my children will not get food to eat…" (FGD participant, Vitonga village. 20th January, 2015).

The results from the ordinal regression further revealed that the means of land acquisition by male was significantly and negatively influenced their level of participation in SVC. This result implies that an increase in one unit means of land acquisition among males farmer, decreases the probability of participating in the sunflower value addition by 0.246. Access to market information by male was significantly and negatively influenced their level of participation in SVC, whereby a one-unit increase in access to market information males led decreasing their level of participation in the SVC by 0.224.

Furthermore, ordinal regression analysis' results show that females' participation was significantly influenced by farming experience, farmer's group membership, access to market and women's involvement in non-farm activities. Table 3 also shows that farming experience is negatively correlated to women participation in SVC. As farming experience among women increases by one year, their participation in the SVC decreases by 0.020. This may be due to the fact that most farmers in the study area especially women opt for maize production which they readily use for food especially for their children compared to sunflower which does not contribute so much in the food security especially due to lack of control over use of income accrued from sunflower. For example, one woman during focus group discussion reported:

"...in the last season I cultivated one acre of sunflower but I did not harvest anything because I failed to weed on time. I had to finish the maize farm first after which it was too late... I decided to concentrate on maize because this will bring food to the family...unlike sunflower which may end up in my husband's pocket" (Female FGD participant, Manza village, 9th January, 2015).

Sunflower famer's group was also significant (*P<0.05*) but positively correlated to women participation in the SVC. The above signifies that as one female member joins the sunflower farmers group, the group level of participation increases by 0.246. Also, access to market has significant at (*P<0.05*) and influencing women's participation in the SVC. However, it was negatively related to their. This means that a one unit in access to markets among women caused a decrease in their level of participation by 0.195. Generally, low women's participation in agriculture value chain has been reported to result from gender inequality and constraints imposed by men in many African societies (Njuki *et al.,* 2012). Non-farm activities among women significant at (P<0.05) and negatively influencing their participation in the SVC.

Table 2: Factors influencing levels of gender participation in the SVC

Predictor variables	Male			Female		
	Coef.	Std err	p>[t]	Coef.	Std err	p>[t]
Age of the respondent	0.005	0.078	0.351	0.005	0.100	0.786
Education level of the respondent	0.031	0.149	0.134	0.071	0.271	0.707
Land ownership	-1.184**	0.589	0.047	-0.476	0.486	0.329
Means of acquisition	-0.246*	0.013	0.095	-0.128	0.121	0.290
Farming experience	0.009	0.135	0.495	-0.020*	0.011	0.071
Reason for sunflower production	0.112	0.115	0.408	0.009	0.112	0.932
Access to market information	-0.224*	0.121	0.055	-0.099	0.095	0.300
Sunflower farmer's group	0.147	0.153	0.227	0.246*	0.126	0.054
Access to market	-0.104	0.140	0.549	-0.195*	0.100	0.095
Men's attitude towards women's agric. Activities	0.179	0.121	0.460	0.054	0.115	0.584
Having non-farm activities (wife)	-0.079	0.126	0.142	-0.039***	0.099	0.006
Time spent in doing household chores (by wife)	-0.067	0.151	0.533	-0.352	0.124	0.598
Access to financial services (wife)	-0.069	0.121	0.569	0.145	0.099	0.527
Constant	3.424	0.660	0.000	2.948	0.545	0.000

Note: ***, **, * denote significance at 1%, 5% and 10% respectively.

This means that as women increases engagement in other activities different from farming, their participation in SVC decreases by 0.039. Engagement in the other activities demands much of human resources hence a possibility of imbalance in between. According to Tologbonse *et al.* (2013) most experienced farmers tend to invest their resources and incomes into other ventures instead of increasing their

participation in agricultural programmes. Therefore, what the women are experiencing comes as no surprise.

CONCLUSION AND RECOMMENDATION

Analysis on the levels of gendered participation in the SVC has shown that the majority of the sampled households were categorized in the medium level. The ordinal logistic regression results have shown that participation levels (low, medium and high) among male respondents were influenced by land ownership means of acquisition and access to market. Meanwhile, the female's levels of participation were influenced by farming experience, except sunflower farmers group which was significant and positively correlated to women participation which means as more women joins the group, participation is likely to increase, access to market and off-farm activities among women. It is generally conclude that there is gender inequalities existing in the SVC which is likely to affect the level of sunflower production hence lower income of farmers in the study area.

The study recommends that, sunflower stakeholders such as government and non-governmental organizations should empower farmers to overcome factors which negatively affect farmers' levels of participation and benefit in the sunflower value chain. Gender sensitive approaches and techniques should be used to improve the level of participation and decision making in various nodes of the sunflower value chain as well as to minimize the social, cultural, and economic factors that affecting women participation and benefit in the SVC. The NGOs and government should continue the awareness creation campaigns to improve stakeholders' knowledge and participation in SVC to increase their profit.

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