

**GENDER ANALYSIS IN THE SUNFLOWER VALUE CHAIN: A CASE OF
MVOMERO DISTRICT, TANZANIA**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
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EXTENDED ABSTRACT

Gender inequalities are said to be a stumbling block to development efforts. Conversely inequalities are reported in many agricultural value chains. Therefore, understanding of gender participation differences within Sunflower Value Chain (SVC) is important in promoting sustainable and equitable opportunities in the agricultural value chain. This study was set to map the sunflower value chain and analyse the levels and determinants of gender participation along the chain. A cross-sectional research design was adopted and the combination of systematic and random sampling techniques was used to select 132 respondents. The questionnaire and checklist of questions for key informants' interviews were the main instruments used for data collection. Descriptive statistical analysis was used to compute the characteristics and distribution of respondents. Conventional mapping was used to map SVC based on flow of products along the chain, and content analysis was used to analyze qualitative data collected from key informants' interviews. The study found that gender inequalities exist in the SVC nodes in Mvomero District. The differences are attributable to differences in power relations with regard to access to and control over resources between women and men. The most lucrative nodes such as processing and marketing were dominated by men while women dominated less paying activities such as bird scaring and winnowing. Ordinal logistic regression was used to establish the determinants of participation in the SVC. Findings revealed more male than female farmers were categorized in the medium level of participation. Furthermore, the ordinal regression model revealed that the smallholder farmers' levels of participation in SVC among males were significant and negatively influenced by land ownership at ($P < 0.05$). Therefore, the study recommends to government, non-governmental organizations and gender activists to continue advocating for the mainstreaming gender along the SVC to ensure more women participation. The intervention such as

strengthening rural women's organizations and networks, increasing women's knowledge of agriculture into programmes and projects to ensure gender equity and equality among the actors in the chain so that women and men benefit equally due to their engagement in the SVC. Furthermore, sunflower stakeholders such as government and non-governmental organizations should assist farmers to overcome factors such as means of land acquisition, farming experience and access to market information which negatively affect their levels of participation and benefit in the sunflower value chain.

DECLARATION

I, Mroto Emmanuel Hongo, do hereby declare to the senate of the Sokoine University of Agriculture that this dissertation is my original work done within the period of registration and that it has neither been submitted nor being concurrently submitted for a degree award in any other institution.

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Date

The above declaration is confirmed by

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Date

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DEDICATION

This work is dedicated to my late parents, Mr. and Mrs. Hongo Kilaka

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LIST OF ABBREVIATION AND ACRONYMS

AATF	African Agricultural Technology Foundation
AFS	Access to Financial Services for female
AM	Access to Market
AMI	Access to Market Information
ASA	Agriculture Seed Agency
ATWA	Men's attitude towards women's agriculture activities
DANIDA	Danish International Development Agency
DSI	Development Studies Institute
EDL	Education Level
EPINAV	Enhancing Pro-poor Innovation in Natural Resources and Agricultural Value Chain
ESAFF	Eastern and Southern Africa small scale farmers' Forum
FAO	Food and Agriculture Organization of the United Nations
FE	Farming Experience
FFS	Farm Field Schools
FG	Sunflower Farmer's Group
GATE	Greater Access to Trade Expansion
GDP	Gross Domestic Product
LO	Land Ownership
MA	Means of Acquisition
MAFC	Ministry of Agriculture Food and Cooperatives
MMA	Match Maker Associates Limited
MUVI	<i>Muunganisho wa Ujasiriamali Vijijini</i> (Village Cooperatives of Entrepreneurs)

OFA	Having non-farm activities for female
RLDC	Rural Livelihoods Development Company
SIDO	Small Industries Development Organisation
SUA	Sokoine University of Agriculture
SVC	Sunflower Value Chain
TOSCI	Tanzania Official Seeds Certification Institute
TS	Time spent in doing household chores for female
UNHABITAT	United Nations Human Settlement Programme
URT	United Republic of Tanzania
USAID	United States Agency for International Development

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

Agriculture is a major sector in the economic development of Tanzania. It employs about 77.5% of the total population and contributes about 35% to the country's Gross Domestic Product (GDP) (MAFC, 2015). The government of Tanzania has adopted a multi-pronged approach in improving its agriculture as articulated in the Agricultural Sector Development Programme (ASDP) which identified value chain approach anticipating to help smallholder farmers gain access to local, regional and global market positions (URT, 2010). However, like in the rest of Sub-Saharan Africa, participation in the agricultural value chain in Tanzania is characterised with gender differentials from production, access, control and ownership of resources to marketing of raw and processed agro-produce (Spence, 2012). Gender is a social construct, it refers to the social meaning of and roles assigned to being biologically male or female, the relationships between them, and the nature of the social and economic hierarchies that these relationships produce (UNHABITAT, 2010).

Njuki *et al.* (2011) defined gender as 'the socially constructed roles and status of women and men, girls and boys. It is a set of culturally specific characteristics defining the social behaviour of women and men, and the relationship between them. Gender roles, opportunities and constraints are as dynamic as are variations in different farming activities (Leavens and Anderson, 2011). According to Aregu *et al.* (2011) gender roles and relationships influence the division of work, the use of resources, and the sharing of the benefits of production between women and men. Women face several constraints in accessing and controlling productive resources due to the inequalities which are

perpetuated by socially constructed norms embracing male dominance (Nkhonjera, 2011). For instance, men are largely responsible for cash crop farming and income generating activities within the household (Sambrook, 2011). Again, the management of crops which traditionally form the household diet is often the primary responsibility of women (Sambrook, 2011; Leavens and Anderson, 2011) Gender inequalities in agriculture is reported among Sub-Saharan African countries in form of farmers' access to adequate productive resources such as land, credit, agricultural inputs, education, extension services, and appropriate technology which results in relative inefficiencies of male and female farmers (Ayoola *et al.*, 2012).

Furthermore, Assan (2014) contends that, men have a tendency of increasing their participation once a crop gains high profitability and economic opportunities while leaving women's roles unrecognised and less valued within a value chain. Though it is generally believed that, gendered participation in value chain helps to link sunflower smallholder farmers to markets, and other value chain actors such as input supplier and extension officers, little evidence exists on how implications differ for individuals within a household (Quisumbing and Roy, 2014).

Moreover, according to the World Bank (2011), women are generally concentrated at the lower levels in the agricultural value chain, while men, link households with the market to obtain input supply and sell the products, in addition to their substantial engagement in production. Therefore, ascertaining gender roles and relations across the sunflower value chain remains critical. This is because discovering how gender roles and relations are within agricultural value chain is one step towards improving equal gender participation (Jeckoniah *et al.*, 2013).

Furthermore, the value chain approach in agriculture is important in Tanzania to enable farmers increase the capacity of adding value to their products, increase productivity and earn more profits (Laven and Verhart, 2011; Liberio, 2012). However, the nature of value chain is market oriented which has a tendency of influencing gender roles and relations due to changes on how production is done and the division of labour among actors along the value chain (USAID, 2010). These changes within the value chain tend to perpetuate gender inequalities leaving women and other vulnerable group's victims of the approach. Therefore, creating a competitive and equitably-oriented sunflower value chain helps small-scale farmers, especially women, to become more empowered socially as well as economically.

Sunflower is the most agricultural edible oil crop produced in Tanzania. It produces one of the most important and valuable vegetable oils on the international market, ranked fourth after soybean, palm, and rapeseed oils (Ugulumu and Inanga, 2013). In addition, sunflower contributes to the household food security of smallholder farmers (RLDC, 2008; Ugulumu, 2008). According to RLDC (2008) the total production of sunflower seeds stood at over 350 000 tons in 2008 and it has been increasing from day to day in Tanzania.

Furthermore, studies conducted by MUVI-SIDO (2012), Tanzania Edible Oilseeds Actors (TEOSA, 2012), and Ndongole (2014) show that production in 2012 was 792 000 MT; with about 8 million sunflower smallholder farmers in the eastern, central, northern and southern highlands of Tanzania. It has been observed that the local market demand for sunflower oil for domestic use and demand for the by-product seed cake for livestock feeding is increasing (Salisali, 2012). In relation to the cooking oil industry, development of the local sunflower oil industry has potential for significant import substitution given

that the 60% of cooking oil consumed in the country is imported (MMA, 2010). Furthermore, sunflower contributes to not only socio-economy of smallholder farmers in rural areas like Mlali Ward but also it contributes to the substantial portion of cooking oil which is of high quality. According to Liberio (2012) sunflower oil has no cholesterol which causes heart failure to human beings, while its animal feed is either used directly by the smallholder farmers or sold to earn cash for household use.

Gender participation is crucial for agricultural development as well as sunflower value chain. However, studies conducted among Sub-Saharan African countries including Tanzania (Lekunze *et al.*, 2011; Ayoola *et al.*, 2012; Towo and Mugisha, 2013; Ugulumu and Inanga, 2014) do not inform the extent of farmers participation, in all spheres of access and control over resources, types of an activity performed by individuals within the household as well as decision making on income use accrued from sunflower. On top of that, the determinants of an individual position and participation in all aspects of access to adequate productive resources such as land, credit, agricultural inputs, education, extension services, and appropriate technology along SVC remain scarce. For example, while post-harvest operations normally fall on the shoulders of women, men market the crop and subsequently dictate how revenues are spent something which results in relative inefficiencies of both male and female farmers (Nkhonjera, 2011; Elepu and Dalipagic, 2014).

In fact, women provide most of the labour force in agricultural production in Tanzania, and the marginalisation of women across agricultural value chain is still evident (Wyrod, 2008; FAO, 2009; Lekunze *et al.*, 2011). Thus, the need for systematic analysis of gender roles as well as participation within sunflower value chain to reveal the gender participation differences along the chain. These gender differences between women and

men in the sunflower value chain cannot be taken as an afterthought, but as a stumbling block which affects productivity and economic development of the community and country at large (Assan, 2014). Therefore, in this study the basic question under examination was to critically examine whether SVC is gender equitable or not.

Gender analysis in the value chain refers to, among others, descriptions of the extent to which men and women participate in the value chain. According to DANIDA (2010 Ragasa *et al.*, 2012 and Reddy, 2013) value chain depict the full range of activities which includes design, production, marketing, distribution and support to the final consumer that firms, farms and workers do to bring a product from its beginning to its end use and beyond. This includes activities such as. Rubin and highlight that, conducting gender analysis aims at identifying and interpreting the consequences of gender differences and relations in the value chain for the purpose of achieving agricultural development objectives as well as the implications of value chain interventions for changing gender relations of power between women and men. However, from production, processing up to disposal, gendered patterns of behavior tend to condition men's and women's jobs and tasks, the distribution of resources and benefits derived from income generating activities in the chain (USAID, 2010).

The government of Tanzania has taken different efforts in implementing a number of laws and policies such as the Constitution of the United Republic of Tanzania (1977), the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) (1979), policy on Women and Gender Development (2000), strategy for gender and development (2008), Village Land Acts of 1999 which endorses gender equality and equity and guarantees the full participation of women and men in social, economic and

political life (URT, 2008). Despite efforts to implement these declarations, conventions, policies and laws, gender imbalances still exist in various aspects.

It was therefore important to understand how participation of women and men are limited in controlling the factors of production such as land, labour, capital and other assets that enable them to participate in, and gain from, functions across sunflower value chains which deeply rooted in socio-cultural traditions.

1.2 Problem Statement

Despite the fact that the production of crops is done by both men and women, the situation of gender participation and access to adequate productive resources within sunflower value chain is still questionable due to the fact that little is known. In Tanzania, regardless of constitutional proclamations and many laws that promote gender equality and equity, yet gender inequalities persist within the agricultural sector and agricultural value chain in all aspects of farmers' access to adequate productive resources such as land, credit, agricultural inputs, and benefits of income, education, extension services, participation and appropriate technology, which results in relative inefficiencies of female and male farmers (Ayoola, 2012). It is the fact that women pray a significant participation in agriculture; but their contribution is often less valued and receives unequal rewards compared to men (Farnworth, 2011). It was anticipated that a similar trend could be prevailing within the SVC in the study area and other similar social settings in Tanzania undermining development efforts through equitable access to resources. This study therefore, aimed at unveiling to what extent there are unequal or equal gender relations and opportunities within SVC in the study area by analysing levels and determinants of gendered participation and differences which is a first step towards creating gender responsive agricultural production and improvement of women's participation.

A number of studies on sunflower production have been conducted in Tanzania (Ugulumu, 2008; MMA, 2010; MUVI-SIDO, 2012; Liberio, 2012). However, little is known about the available opportunities and constraining factors of gender participation across SVC. Few studies in Tanzania have documented participation of women in agriculture and in setting research agenda (Losindilo *et al.*, 2010; ESAFF, 2013; Mmasa, 2013), yet the issues of gender equality or inequalities within SVC have either been overlooked or received little attention. This study therefore was carried out on gender analysis in SVC to map the sunflower value chain, analyse the levels and determinants of gender participation among smallholder farmers in Mvomero District council.

1.3 Justification of the Study

Gender and women emancipation from poverty through equitably-oriented agricultural value chain are currently key components in the global development agenda. Besides, gender equality is an integral part of the development agenda for decades in Tanzania (URT, 2014). Therefore, understanding of levels of participation, enhancing and limiting factors which influence the levels of gendered participation in SVC is important in promoting sustainable and equitable opportunities in the agricultural value chain. The findings from this study will fill the knowledge gap with regard to the existing opportunities roles and responsibilities between women and men and gender inequalities influencing their levels of participation in different activities throughout SVC in Mvomero District.

This study provides an understanding of the challenges influencing equitable levels of participation of the gender groups within the household in the SVC to inform the development of more gender responsive agricultural programmes. Furthermore, results are useful to policy makers, researchers and other development partners in creating gender

responsive programmes and inclusive value chain to achieve gender equity and equality in SVC in the study area.

1.3 Objectives of the Study

1.3.1 General objective

The main objective of this study was to make a gender analysis of farmers' participation differences in Sunflower Value Chain in Mvomero District.

1.3.2 Specific objectives

The specific objectives of the study were:

- i) To map gendered participation in SVC in the study area
- ii) To assess level of women and men's participation in the SVC
- iii) To determine factors that influence gendered participation in the SVC

1.3.3 Research questions

The study was guided by three research questions:

- i) How does gender participation differ among actors in the structure of SVC?
- ii) How does women and men's participation improve the performance of SVC?
- iii) How do socio-economic and institutional factors influence the level of participation among SVC actors?

1.4 Theoretical Framework

This study drew on the Social Relations Framework developed by Kabeer (1994) and then expands on the framework to analyse existing gender inequalities and opportunities in the distribution of resources, responsibilities, and power across sunflower value chain in Mvomero District. The major focus of this framework is on the social relations between women, men, boys and girls and their relationships to resources and activities for the

purpose of increasing human-wellbeing. Human well-being is seen as concerning survival, security, and autonomy, where autonomy means the ability to participate fully in those decisions that shape one's choices and one's life chances, at both personal and collective level (March *et al.*, 1999).

Different aspects of social relations shared by institutions and the relationships between socio-economic factors and gendered participation were analysed basing on the framework to understand how gender inequalities influences rules (how things get done), resources (what is used and what is produced), people (who is in and who is out), activities (what is done) and power (who decides and whose interests are served) embedded in the sunflower value chain. According to Coles and Mitchell (2011) gender dynamics in value chains depicts how individuals interact at the household level through clusters of horizontally linked households and participation related issues versus factors such as land, labour, capital and other factors and assets that govern the levels of gains from participation.

1.5 Conceptual Framework

The conceptual framework in Fig. 1 is built on the Social Relations Framework; it illustrates how different formal and informal institutions tend to influence the relationships, rules, activities, resources distribution and people in the SVC. Kabeer (1994) uses the term social relations to describe the structural relationships that create and produce systemic differences in the positioning of different groups of actors. Therefore, this study adopted the framework to describe how gendered participation is influenced by different socio-economic factors, institutions, factors of participation as well as SVC actors in order to understand whether there are gender inequalities or equality from production, processing and market of sunflower in the study area.

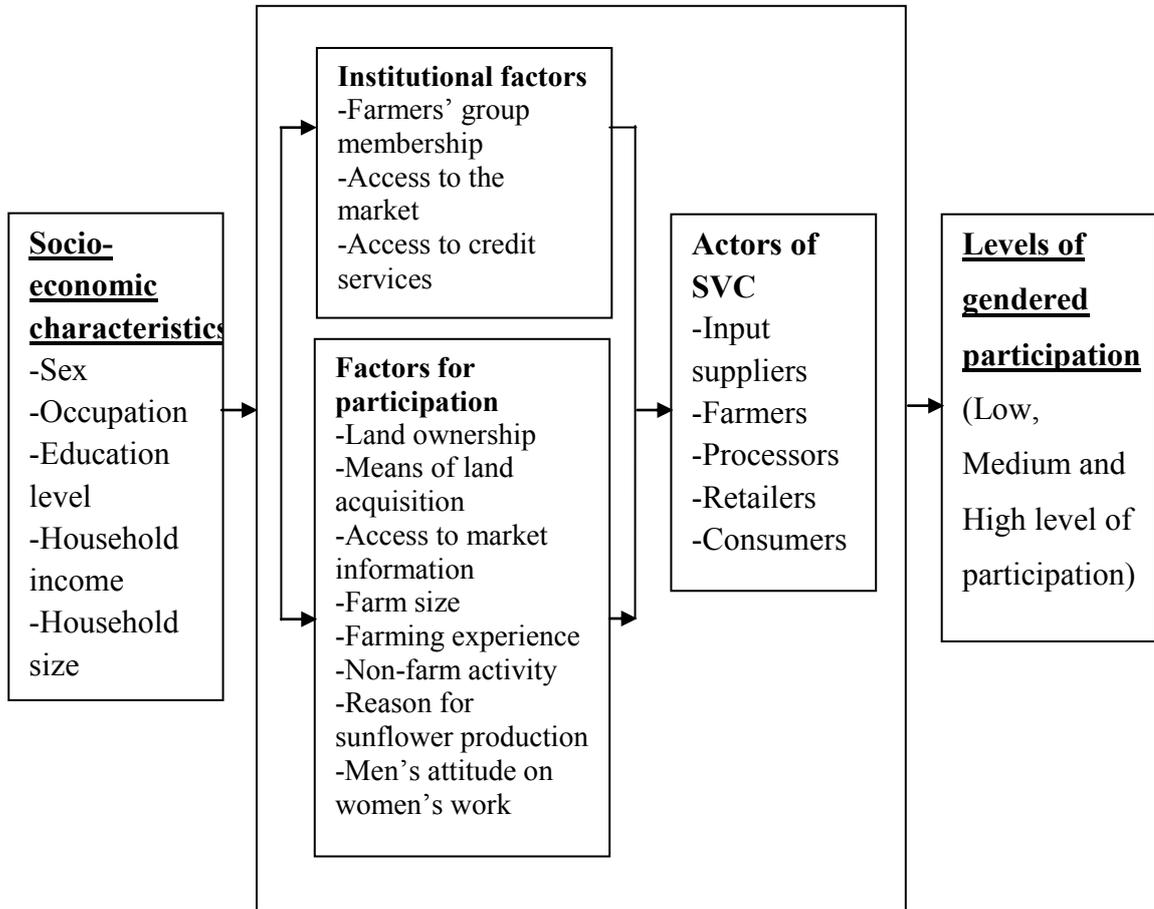


Figure 1: Conceptual framework

1.6 Organization of the Dissertation

This dissertation adopted a publishable manuscript format and it is organised into four chapters. Chapter one consist of the extended abstract and introduction of the overall theme studied. Chapter two comprise paper one while chapter three contains paper two. Chapter four presents the conclusion and recommendations of the entire study's findings.

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CHAPTER TWO

PAPER ONE

Sunflower Value Chain: Engendered Perspective

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Abstract

Gender inequality exists in many agricultural value chains. This study analyzed gender participation along the SVC. A cross-sectional research design was adopted and the combination of systematic and random sampling techniques was used to select 132 respondents. The questionnaire and checklist for key informants were the main methods for data collection. Descriptive statistical analysis was used to compute the characteristics and distribution of respondents, product flow, prices, and products markets. Conventional mapping was used to map SVC based on flow of products along the chain, and content analysis was used to analyze qualitative data collected from key informant's interviews. The study found that gender inequalities exist in the SVC in Mvomero District. The differences are attributable to differences in power relation with regard to access to and control of resources particularly those related to financial implication, decision making on income use and processing. The most lucrative nodes such as processing and marketing are dominated by men while women dominate less paying activities such as bird scaring, winnowing, grading and drying seeds. It is recommended that the government, non-governmental organizations and gender activists to continue advocating and strengthening gender mainstreaming efforts along the SVC to ensure more women participation. The intervention such as strengthening rural women's organizations and networks, increasing women's knowledge of agriculture into programmes and projects to ensure gender equity and equality among the actors in the chain so that women and men benefit equally or equitably due to their engagement in the SVC.

Keywords: Gender, value chain, sunflower, participation

INTRODUCTION

Participation in the agricultural value chain in Tanzania is characterized with gender differentials from production, access, control and ownership of resources to marketing of raw and processed agro-produce (Spence, 2012). Gender inequalities in agriculture are widely reported among Sub-Saharan African countries. The gender inequalities and differences are reported in the areas involving farmers' access to adequate productive resources such as land, credit, agricultural inputs, education, extension services, and appropriate technology which results in relative inefficiencies of male and female farmers (Ayoola *et al.*, 2012). These differences between women and men in agriculture as well as sunflower value chain (SVC) are a stumbling block which affects productivity and economic development of the involved community and country at large.

A number of studies on sunflower production have been conducted (MUVI-SIDO, 2012; Liberio, 2012; MMA, 2010; Ugulumu, 2008). While some empirical evidence explaining gender inequalities and differences in the SVC have been documented; it is also evident that such findings are location specific and therefore difficult to generalize. This paper, analyses the gendered participation and differences among actors in the SVC. The findings may be useful to policy makers, researchers and other development partners espousing for gender equity and equality especially in the SVC in the study area.

The paper draws on social relations framework developed by Kabeer (1994). Different aspects of social relations shared by institutions and the relationships between socio-economic factors and gender participation were analysed basing on the framework to understand how gender inequalities influences rules (how things get done), resources (what is used and what is produced), people (who is in and who is out), activities (what is done) and power (who decides and whose interests are served) embedded in the sunflower

value chain. According to Coles and Mitchell (2011) gender dynamics in value chains depicts how individual interacts at the household level through clusters of horizontally linked households and participation related issues versus factors such as land, labour, capital and other factors and assets that govern levels of gains from participation.

RESEARCH METHODOLOGY

The study was conducted in Mlali ward, Mvomero District in Morogoro Region. The ward was selected purposively because sunflower is among the main cash crops produced in the district and has attracted many smallholder farmers to engage in its production. Mlali is also the second leading in sunflower production at district level (Liberio, 2012; EPINAV, 2012; Kawamala, 2012). Four villages Mlali, Manza, Vitonga and Yowe that are actively involved in sunflower production and processing were purposively selected based on actual production, and potential production from farm expansion. A cross-sectional research design was adopted in this study. A combination of systematic and random sampling techniques was used; and a sample of 132 SVC's actors was selected to participate in the study. The questionnaire, which was the main tool for data collection was used to collect information on socio-demographic characteristics of the respondents, input supply, volumes produced, processing and refining, retailing, prices and sunflower products and by-products. Key informant interviews were conducted with sunflower processors, traders, input suppliers, agricultural extension officers, and village and ward leaders to supplement information collected through questionnaires. Conventional mapping was used to map SVC whereby the key actors and their roles at different identified SVC nodes w. Descriptive statistical analysis was used to show the distribution of respondents, product flow, prices, and products markets and their characteristics.

RESULTS AND DISCUSSION

Socio-economic characteristics of respondents

Findings on the socio-economic characteristics of respondents presented in Table 1 reveal that majority of respondents had lower levels of education. Slightly more than half of the respondents were males and farming was their main economic activity. The family sizes of the surveyed household were in the range of 2 and 13 with the mean family size of 5.6. The study also found that relative older people were engaged in sunflower production. Similar findings have also been reported by other scholars where youth were less likely to be attracted and involved in agricultural production (Lekunze *et al.*, 2011; African Agricultural Technology Foundation (AATF) (2009).

Table 1: Socioeconomic characteristics of the respondents (n=132)

Characteristics	Frequency	Percentage
Sex		
Male	69	52.3
Female	63	47.7
Education level of husband		
Illiterate	10	6.9
Primary	46	66.7
Secondary	11	23.4
Post-secondary	2	3.0
Education level of spouse		
Illiterate	15	23.8
Primary	43	68.3
Secondary	4	6.3
Post-secondary	1	1.6
Primary occupation		
Farming	120	90.9
Civil servant	5	3.8
Business	7	5.3
Total	132	100

Mapping of gendered participation differences in Sunflower Value Chain

Findings on gendered participation and flow of sunflower in the chain are presented in Fig.

1. The sunflower value chain in Mvomero District is characterized by the following nodes: farming, processing, trading and consumption. The upstream flow of goods involves inputs suppliers, farmers, processors, retailers and ultimate consumers, and the downstream flow involves farmers and input suppliers, processors and farmers, consumers and retailers and retailers and processors as well as farmers who sell the refined products to retailers and consumers at local markets. Sunflower products (seeds, sunflower cooking oil and animal cakes) exchange many hands before they reach their final consumers. This study identified two major channels through which the sunflower and its products moved from the point of inputs supply to the final consumers: input suppliers, smallholder farmers, processors and retailers.

Input supply

Through interview the study identified five input suppliers. The main inputs supplied that determined productivity of sunflower in the study area were seeds and pesticides. These were supplied by the programme for Enhancing Pro-poor Innovation in Natural Resources and Agricultural Value Chain project (EPINAV), Agriculture Seed Agency (ASA), agro shops processors and individual farmers. Moreover, extension officers also helped in supplying the inputs or linked the farmers to input suppliers, mostly through established farmer groups. In this node there is less participation of women, because females are less involved in buying and selling cash oriented crops this is due to gender roles and other cultural factors such as men's control on women mobility. Similar trends of gender based constraints particularly in agricultural value chain have also been reported (Wyrod 2008; Sambrook, 2011; Riisgaard *et al.*, 2011; Leavens and Anderson, 2011; Jeckoniah *et al.*, 2013).

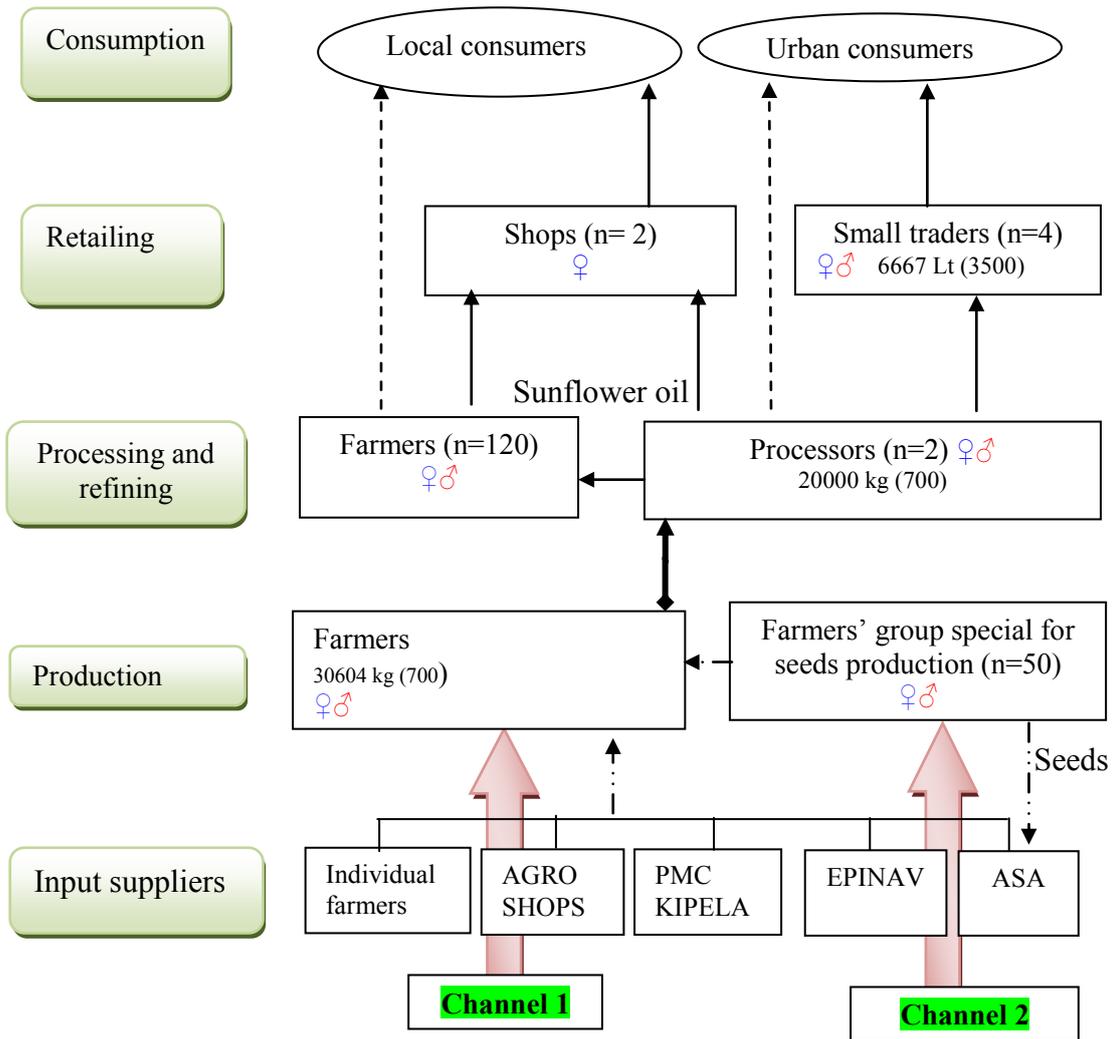


Figure 2: SVC map in the study area

Key: ♀= male, ♂=female dominated areas; Note: Values in brackets are prices (Tshs)

→ Seeds for processing -.-.-→ Seeds for sowing, - - - - -→ Animal cake
 → Sunflower oil
 PMC= Processing and Marketing Cooperative
 EPINAV= Enhancing Pro-poor Innovation in Natural Resources and Agricultural Value Chain
 ASA= Agricultural Seed Agency

Sunflower production

Production is a labour intensive enterprise; it involves a diversity of procedures such as land preparation, ploughing, sowing seeds, weeding, bird scaring, harvesting and transporting before sale. Traditionally, some activities are perceived as men's or women's activities. Findings of this study as presented in Table 2 revealed that land preparation was perceived by many (90.7%) as men's work while only 54.2% perceived it as women's

work. However, other activities are performed by both men and women; for instance land ploughing, sowing seeds, weeding and harvesting of sunflower. This gender division of labour might be due to socio-cultural contexts as perceived in the study area. Similar findings have also been reported in literature (Jeckoniah *et al.*, 2013).

Table 2: Gendered Participation in SVC activities (n=132)

Activity	Gender	Percentage	
		Yes	No
Land preparation	Husband	90.7	9.3
	Wife	54.2	45.8
Land ploughing	Husband	88.2	11.8
	Wife	79.0	21.0
Sowing	Husband	90.0	10.0
	Wife	95.8	4.2
Weeding	Husband	87.5	12.5
	Wife	88.3	11.7
Bird scaring	Husband	30.1	69.9
	Wife	74.3	25.7
Harvesting	Husband	95.0	5.0
	Wife	97.5	2.5
Crashing	Husband	60.8	39.2
	Wife	96.7	3.3
Transportation	Husband	95.8	4.2
	Wife	22.5	77.5

Processing and refining

Participation in sunflower oil processing has a gender dimension. Sex-wise the processing and refining of crude sunflower oil is usually done by men, but at household (individual) level refining of crude oil is done by women. However, the interview with a key informant, and relying on the processors' register revealed that the participation of men

and women in the two areas is influenced with the distance from home to the processing unit. For example, while 20% of women went to the processing unit compared to 80% of men in Kipera which is 8 to 10 km from Manza and 3-4 km from Vitonga, the experience in Yowe which takes 0-0.5 km from home to the processing unit, shows that 70% of customers going to the processing unit are women compared to 30% who are men. Due to other household chores that women are mostly involved, they are less likely to actively participate in processing. Other scholars including Zahoor *et al.* (2013) found that women have barriers that affect their participation in the post-harvest activities particularly processing. In most cases after processing the sunflower seeds, the crude oil is returned to the owner of the produce for refining. However, before sending sunflower seeds to the processing unit, women are responsible for drying, winnowing and grading at the households level. These activities are mainly done by women (Table 3).

Table 3: Participation in sunflower processing and marketing (n=132)

Activity	Sex	Percentage	
		Yes	No
Drying	Male	10.2	89.8
	Female	98.3	1.7
Winnowing and grading	Male	14.2	85.8
	Female	98.3	1.7
Packaging	Male	95.0	5.0
	Female	23.3	76.7
Processing	Male	95.0	5.0
	Female	10.8	89.2
Marketing	Male	93.3	6.7
	Female	21.8	78.2

Marketing of sunflower products

As it has been identified earlier there were three sunflower products seeds, sunflower cooking oil and animal cakes produced by the smallholder farmers. These were sold to

final consumers by retailers, individual farmers and processors. There were two major markets or customers for sunflower products: local and urban consumers. However, the most leading market where the majority of farmers said to be selling their sunflower by-products was the neighbouring village. Marketing of sunflower were also dominated by men due to the fact that men are the ones going to the processing unit, while women were involved in selling cooking oil refined at the household level.

Decision making on income use

The findings on decision making over the use of income are presented in Table 4 where it was revealed that men dominated the household decision on final use of the income accrued from sunflower production. This implies that men in the study area have more power of decision making at the household level compared to their female counterparts.

Table 4: Decision over income use at the household level (n=132)

Activity	Sex	Responses in %	
		Yes	No
Decision making on income use	Male	99.2	0.8
	Female	68.3	31.7

Sunflower products Consumption

The sunflower products that are produced in Mlali ward pass through many hands before they reach the final consumers in both local and urban markets. It was observed that consumers in different markets would have influence on the quality of the sunflower oil produced and sold. According to one small trader; *'customers from Mlali preferred buying oil from Singida to those from Kipera village due to colour and bad test'* (Bahati from Mlali village highlighted on 9th January, 2015). But this information contradicts with the information from one Kipera processing unit staff who says; *'customers coming to Kipera*

from Mgeta, Mzumbe and some from Morogoro urban and Dar es salaam make sure that they do not leave the area without sunflower oil from Mlali, due to assurance of quality of which to him even Tanzania Food and Drugs Authority (TFDA) have already visited them and recommended the quality of oil being good’ (Ally from Kipera village 9th January, 2015).

CONCLUSION AND RECOMMENDATIONS

Basing on the findings presented in this paper, it is concluded that there is gender inequalities due to the fact that there are gender imbalances in some nodes of the sunflower value chain in Mvomero District. The differences are attributable to differences in power relations with regard to access to and control of resources particularly activities that have financial implication, decision making on income use and processing. The most lucrative nodes such processing and marketing are dominated by men while women dominate less paying activities such as bird scaring, winnowing, grading and drying seeds. This study found that women’s participation in some nodes such as processing and marketing are dominated by men because the few processing units are allocated far away from their home stead which requires a long walk distance. Therefore, it is recommended that the government should ensure that processing services and markets are easily accessed by farmers within their areas. Furthermore, non-governmental organizations and gender activists should strengthen gender sensitive interventions and approaches to in order to mainstream gender along the SVC to ensure more women participation. The intervention should also ensure gender equity and equality among the actors in the chain so that women and men benefit equally or equitably due to their engagement in the SVC.

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CHAPTER THREE

PAPER TWO

**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 and women welfare. This study analysed the levels and determinants of gendered participation in Sunflower Value Chain (SVC). A cross-sectional research design was adopted and 120 sunflower smallholder farmers selected and involved in the study. A combination of simple random sampling and systematic sampling techniques were used to select study villages and respondents respectively. Structured questionnaire and checklist for focus group discussion were the main tools for data collection. Descriptive statistical analysis and inferential analysis were computed. Ordinal logistic regression was used to establish the determinants of participation in the SVC. Findings revealed more male than female farmers were categorized in the medium level of participation. The ordinal regression model revealed that smallholder farmers' levels of participation in SVC among males were significant and negatively influenced by land ownership, means of land acquisition and access to market ($P < 0.05$). The paper recommends that, sunflower stakeholders such as government and non-governmental organizations to assist 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 affect women's participation and benefits accrued from SVC.

Keywords: gendered participation, sunflower, ordinal regression, value chain

INTRODUCTION

The importance of agriculture in the economic development of Tanzania can never be overemphasized. It employs about 77.5% of the total population and contributes about 35% to the country's Gross Domestic Product (GDP) (MAFC, 2015). It is also reported that men are more involved in cash crop farming and income generating activities than their female counterparts. (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) contend 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-sector of agriculture in Tanzania, contributing to household food security of smallholder farmers (RLDC, 2008; Ugulumu, 2008). Small holder farmer make a significant contribution in the production and processing of sunflower seeds. For example RLDC (2008) reported that during the year 2008 in Tanzania over 350 000 tons of sunflower seed was produced and about 8 million smallholder farmers were involved in the primary production processes (MUVI-SIDO, 2012; Ndongole, 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 partner), 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 anticipated 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 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 is 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 reveal that mixed and location

specific findings are reported. Thus, it is difficult to generalize; hence, it is 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 in Tanzania.

METHODOLOGY

The study was conducted in Mlali Ward, which is among the 8 wards of Mlali Division in Mvomero District in Morogoro Region. Four villages from the ward were selected purposively basing on the fact that sunflower is among the cash crops produced in those villages. The study adopted a cross-sectional research design that allows data to be collected at a single point in time. Structured questionnaire and a checklist for the focus group discussion were the main tools used for data collection. Systematic sampling technique was used to select the respondents; a list of sunflower producers in the respective villages provided by ward agricultural office was used as a sampling frame and 120 sunflower farmers were selected to participate in the study.

Descriptive statistical analysis was used to compute the levels of gendered participation in the SVC. These levels of participation were established on the basis of the rates of participation in different activities done along the SVC whereby an individual was given 1 score in an activity participated and 0 in an activity not participated. 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 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 into 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 specified as follows:

$$Y_i = \beta_0 + \beta_1 AGE + \beta_2 EDL + \beta_3 LO + \beta_4 MA + \beta_5 FE + \beta_6 RSP + \beta_7 AMI + \beta_8 FG + \beta_9 AM + \beta_{10} ATWA + \beta_{11} OFA + \beta_{12} TS + \beta_{13} AFS + e_i$$

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) also used ordinal regression analysis when the outcome variable assumed a set of discrete ordinal categories.

RESULTS AND DISCUSSION

Level of gender participation in Sunflower Value Chain

Findings presented in Table 1 reveal the level of sunflower smallholder farmers' participation. Majority of the respondents were categorized in the medium level of participation. Sex-wise remarkable differences were also noted whereby 69.2% males and 75% females were 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 male with low level of participation was high compared to female with low level of participation. These results imply that as far as gendered participation is concerned there are gender inequalities at 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 5: Distribution of respondents by level of participation in SVC (n=120)

Levels of participation	Sex	
	Male	Female
Low	14 (11.7%)	10 (8.3%)
Medium	83(69.2%)	90 (75%)
High	23(19.1%)	20 (16.7%)

Factors influencing gender participation in 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 as presented in Table 2 indicate that three variables were statistically significant in 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 of male had significantly and negatively influenced level of participation. An increase in the land ownership of male by one unit decreases the probability of participating in the SVC by 1.184. This is probably due to men's behaviour in mismanaging the land resources. During the focus group discussion 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 saying:

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

Yet another woman complained on laziness of men in participating in crop production that is depended upon as the only means to ensure household food security:

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

The results from ordinal regression further revealed that the means of land acquisition of male was significantly and negatively influenced the level of participation in SVC. An increase in one means of land acquisition among male farmer decreases the probability of participating in the sunflower value addition by 0.246. Access to market information for male significantly and negatively influenced the level of participation in SVC. As male

farmers increase access to market information by one unit, there is a probability of decreasing the level of participating in the sunflower value addition by 0.224.

Furthermore, ordinal regression analysis' findings reveal that female participation was significantly influenced by farming experience, farmer's group, access to market and non-farm activities among women. Findings presented in Table 2 also show that farming experience is negatively correlated to women participation in SVC. As farming experience among female increases by one year, women participation in 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 help them in nurturing 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 make timely weeding, I had to finish maize farm first then after it was too late... I decided to with maize because this will bring food to the family...unlike sunflower which may end up in my husband pocket... ' (Female, FGD participant from Manza village, 9th January, 2015).

Sunflower famer's group was also significant ($P < 0.05$) but positively correlated to women participation in SVC. This 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 significantly influenced women participation in SVC at ($P < 0.05$) but negatively related. This means that an increase of one unit in access for market among female, caused a decrease in level of participation by 0.195. Low women participation 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 have negatively influenced their

participation in SVC ($P < 0.05$). This means that as women increase engagement in other activities different from farming, their participation in SVC decreases by 0.039. This is because much of human resources will be embarked in these non-farm activities. As also reported by 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.

Table 6: Factors influencing levels of gendered 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 agriculture 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 one percent, five percent and ten percent level

CONCLUSION AND RECOMMENDATIONS

Analysis on the levels of gendered participation indicated that majority of the sampled households are in medium level. The ordinal regression model revealed that participation levels (low, medium and high) among male respondents was negatively influenced by land ownership, means of acquisition and access to market. Meanwhile, the female's levels of participation were influenced negatively 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 therefore, recommended that, the government particularly Ministry of Agriculture should assist farmers to overcome factors such as means of land acquisition, access to market information, farming experience which negatively affect farmers' levels of participation and benefit in the sunflower value chain. This can be done through increasing farmer's knowledge of agriculture into programmes and projects, provision of sunflower subsidies and linking farmers with buyers from different regions. Moreover, non-governmental organizations should use gender sensitive approaches and techniques to improve the level of women and men's participation and decision making in various nodes of the sunflower value chain to minimize the impacts of social, cultural, and economic factors that affecting women participation and benefit in the SVC. Well organized and integrated awareness creation strategy and campaign should also be designed by gender sensitive NGOs to improve stakeholders' knowledge on the importance of full participation of all human resources including women and men into development activities such as SVC.

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CHAPTER FOUR

4.0 CONCLUSION AND RECOMMENDATION

4.1 Conclusion

The major theme in this dissertation was to analyse gender participation in the sunflower value chain in Mvomero District council. The focus of the study was on identifying and interpreting the consequences of gender differences and relations in the sunflower value chain for the purpose of achieving agricultural development objectives as well as the implications of value chain interventions so that in the long run gender relations and power between women and men will be changed to achieve gender equality among sunflower value chain actors which is the third goal of Millennium Development. The following are the summary of the major findings of this study which is the basis of the recommendations made.

4.1.1 Mapping gender participation in sunflower value chain in the study area

The first objective of the study was to map the gendered participation in sunflower value chain in order to understand how participation and coordination differ among actors in the structure of SVC. The findings in relation to this objective show that there is gender inequalities in some nodes of the sunflower value chain in Mvomero District. The differences are attributable to differences in power relations with regard to access to and control over resources particularly activities that have financial implication, decision making on income use and processing. The most lucrative nodes such processing and marketing were dominated by men while women dominate less paying activities such as bird scaring, winnowing, grading and drying seeds.

4.1.2 The extent of gendered participation in the sunflower value chain

The second specific objective was to assess the level of gendered participation in the SVC. In this objective the study sought to understand how gendered participation levels improve the performance of sunflower value chain in the study area. As for this objective, it was found that, majority of the respondents were categorized in the medium level of participation. Sex-wise remarkable differences were also noted whereby it was found that more male farmers were more likely to be categorized in high participation compared to their female counterparts. On the other hand, the number of male with low level of participation was high compared to female 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.

4.1.3 Factors influencing levels of gender participation in the sunflower value chain

The third specific objective of this study was to analyze the factors which influence the levels of gender participation in SVC. The ordinal regression revealed that three variables were statistically significant in 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 for male had significantly and negatively influenced level of participation.

Furthermore, ordinal regression analysis' findings reveal that female participation was significantly and negatively influenced by farming experience, access to market and non-farm activities among women except farmer's group which was significant and positively correlated to levels of women participation in the chain.

4.2 Recommendations

On the basis of the empirical findings presented in the two papers as presented in this dissertation, the following policy recommendation can be made:

4.2.1 Gender participation along the sunflower value chain

It is recommended that the government should strengthening rural women's organizations and networks, increasing women's knowledge of agriculture into programmes and projects to ensure gender equity and equality among the actors in the chain so that women and men benefit equally due to their engagement in the SVC. Non-governmental organizations and gender activists should strengthen gender mainstreaming approaches along SVC.

4.2.2 Levels of gendered participation in the sunflower value chain

Different levels of the sunflower value chain are often separated by gender. It was thereby important to consider both the different levels at which men and women participate in the chain and how gains of participation are distributed. These differences are a result of gender-related power disparities which determine gendered division of labour; time budgets, decision-making processes as well as access to chain functions, services and resources. Basing on the findings which show that men were more categorized in high levels of participation than their counter parts women, it is therefore recommended to the Ministry of Community Development Women and Children to strengthen advocacy campaign on gender equality and equity at all levels of employment.

4.2.3 Determinants of the levels of gender participation in the sunflower value chain

Majority farmers were found to be categorized into medium level of participation which is influenced by a number of factors as the result indicated, their participation in the sunflower value chain are constrained. It is recommended therefore that, the government

should assist farmers to overcome factors which negatively affect farmers' levels of participation and benefit in the sunflower value chain by providing necessary assistance such as extension services, education and agricultural inputs. Furthermore, non-governmental organizations should reinforce gender sensitive approaches and techniques through workshops, trainings and lobbying and advocacy 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.

APPENDICES

Appendix 1: Household questionnaire on gender analysis in sunflower value chain in Mvomero District

A. General information

- 1. Village name.....
- 2. Ward name.....
- 3. District.....

B. Demographic characteristic of the respondents

- 4. Age of the household head ----- and the spouse.....
- 5. Who is the head of the household? 1. Male () 2. Female ()
- 6. What is the education level of the household head? (Years spent in schooling)1. Illiterate () 2. Primary () 3. Secondary () 4. Post secondary ()
- 7. What is the education level of the spouse (years spent in schooling) 1. Illiterate () 2. Primary () 3. Secondary () 4. Post secondary ()
- 8. Primary occupation: 1. Farming () 2. Civil servant () 3. Business () 4. Private sector employee ()
- 9. How many are you in your household (including those who are absent living far away).....?
- 10. What is your average income per month.....?
- 11. What is your dairy expenditure.....?
- 12. House quality (*please, indicate the quality of the house by observation*)

Type of roof	Type of wall	Type of floor

C. Mapping Sunflower value chain

13. Where do you get seeds (source)? 1. From own farm () 2. Buy from other farmers () 3. Buy from agro-dealer shops () 4. Buy from processors (cooperative union) ()
14. Who normally buy input in your household? 1. Men () 2. Women () 3. Both men and women ()
15. What is your total annual sunflower production?

Production (kg)	Productivity (kg/acre)	Price per unit (kg)

16. What is your total annual cost of sunflower production? Please specify. Tshs.....
17. What is your total annual income from sunflower production? Tshs-----
18. What means of transport do you use?
1. Head carrying () 2. Bicycle/Motor cycle () 3. Ox-cut () 4. Truck
19. Who are the main buyers of your sunflower products between men and women? 1. Local/household consumer () 2. Small trader/ broker () 3. Lager trader (vehicle) () 4. Institution (school, prison, etc) () 5. Processor ()
20. Are there women who are sunflower traders in your village/ ward?
1. Yes () 2. No () 3.
21. Which are the common markets for selling sunflower from your village? 1. On-farm () 2. Village () 3. Neighbouring village/ location/road/junction () 4. Nearby township () 5. Distant township () 6. Regional market ()
22. What type of crop product do you normally sell? 1. Sunflower seeds () 2. Cooking oil () 3. Animal cake () 4. Both cooking oil and animal cake ()
23. Who participates in marketing sunflower and other sunflower products? 1. Men () 2. Women () 3. Both men and women () 4. Men with little involvement of women () 5. Women with little involvement of men () 6. All household members ()
24. Who sets sunflower and sunflower products prices between the farmer and the buyer? 1. Seller (farmer) () 2. Buyer () 3. Negotiation between seller and buyers ()
25. Do you know who will buy your produce before the crop is harvested/processed?
1. Yes () 2. No ()
26. Who decides when and how much to sell in your household? 1. Men () 2. Women () 3. Both men and women ()
27. Do you usually sell sunflower products to specific buyer or customer? 1=Yes (), 2. No (),

F. Factors which influence the level of gender participation in the sunflower value chain.

32. Do you own any piece of land? 1. Yes () 2.No ()
33. If yes, by what means did you acquire the land? 1. Purchase () 2. Inheritance () 3. Lease () 4. Gift ()
34. What is the size of the farm land under sunflower cultivation you own? _____ (In acres)
35. How many acres were cultivated for the year 2013/2014.....?
36. What is the distance from home to the sunflower farm.....? (In Km)
37. For how long have you been growing sunflower -----? (In years)
38. What do you consider to be the main reasons for you to produce sunflower?
1. Food crop ()
2. Cash crop () 3. Both food and cash crop ()
39. Do you get any information about sunflower markets, market requirements and prices?
1. Yes () 2. No ()
40. Do you have any sunflower farmers' group/Cooperative in your area?
1. Yes ()
2. No ()
41. If yes, are you a member of group/ cooperative 1. Yes () 2. No ()
42. Do you have a market for selling sunflower products in your village or ward?
1. Yes () 2. No ()
43. How far is the market which you usually sell your sunflower product.....?
44. All activities done by a woman in agriculture are given less value by men in your household?
1. Yes () 2. No ()
45. Is your wife having other non-farming activities? 1. Yes () 2. No ()
46. Does the time spent by your wife in doing household chores affect her participation in sunflower farming activities? 1. Yes () 2. No ()
48. Is your wife a member of any micro financial institution? (eg. VICOBA, SACCOS) 1. Yes () 2. No ()

THANK YOU

Appendix 2: Checklist of questions for FGD and key informants' interview.

1. How do you understand about gender participation in SVC?
2. Are both men and women equally involved in all activities of sunflower value chain?
If yes, how and if no, which type of activities are specifically assigned to women and men in your area?
3. What can be done to ensure equal participation between men and women in all activities of sunflower value chain in your community?
4. What activities in which men are more engaged in than women and why? What have been specific challenges that face more women than men in the sunflower production?
5. Are you aware with value chain approach in SVC and what are the challenges facing you?
6. Do men and women face similar problems in production? If not, why do you think that is?
7. Does the government or other international organizations help you with your production/marketing?
8. Could women take on additional activities in the value chain that they are not performing already? If yes, what? If no. Why?
9. What can you say about product certification and what are the challenges?
10. What are the major gendered challenges which face farmers in your area?
11. For your opinion, what do you think could be the enhancing factors which influence farmers to produce sunflower?
12. What are the major limiting factors for farmers to engage in the sunflower production?
13. Who determines which farming activities to pursue, what to purchase, how to spend income, and so on?
14. What policies currently affect women's full participation in productive activities?

THANK YOU