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Social and economic dimensions
of smallholder based agriculture
and food security

Women farmers in Uganda: Constraints and ways forward

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Today more than 800 million people around the world suffer from chronic hunger and about 2 billion from under-nutrition.

This failure by humanity is challenged in UN Sustainable Development Goal (SDG) 2: "End hunger, achieve food security and improve nutrition and promote sustainable agriculture".

The AgriFoSe2030 program directly targets SDG 2 in low-income countries by translating state-of-the-art science into clear, relevant insights that can be used to inform better practices and policies for smallholders.

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Summary

This study is the result of a review of a large body of literature discussing the situation of women farmers in Uganda. The disadvantage of smallholder women farmers is principally due to their limited access to and control over important resources, labor force participation and gender-based decisions in production. There are also challenges associated with gendered participation in the markets. Salient drivers to gender differences in production participation and market access point to women's time constraints due to their roles in the complex intra household labor division, limited participation in value chains, inadequate access to financial resources, control of revenue from cash crops by men, lack of ownership of land, limited access to agricultural inputs and mobility difficulties. These inequalities do not only severely curtail women farmers from achieving their full productive potentials and market participation, but also have negative repercussions for overall agricultural output and growth.

The Government of Uganda (GOU) has, through different agricultural strategies, programs and plans, tried to promote women farmers through provision of critical agricultural inputs, improved access to credit, increased access to information through extension services, and by provision of technology and support of the commercialization of agriculture. Nevertheless, there remain many challenges to overcome in these and other areas in order to improve the conditions for women farmers. However, there are important lessons to be learnt from these initiatives, which are vital for redirecting policies and programs towards empowering women participation in agriculture and markets effectively.

- Micro-credit institutions have not fulfilled expectations of improved credit availability for women farmers due to gender-biased decisions.
- Cooperatives provide important marketing possibilities for women but are only successful when interaction between agents and farmers work and tend to fail to respond to local problems when men participate.
- NGOs participation encourages market participation of female farmers. However, viability to participate in value chains is more likely to be successful with support of land resource and the promotion of input suppliers and model farmers with demonstration farms.
- Farmer groups do not encourage effective participation of women in leadership structure when men are part of the groups.
- It is more viable for women to engage in cash crop production within the framework of gender action learning systems that involve men and when certification of products enhances competitiveness in the local and regional markets.
- As policies and interventions introduced to enhance the situation of women farmers so far have only had limited if any positive results, a strong political commitment at all levels is necessary to overcome remaining constraints and barriers.

Key words: Agriculture Market systems, Women farmers, Uganda

List of Abbreviations

ASSP	-	Agriculture Sector Strategic Plan
DFID	-	Department for International Development
EPRC	-	Economic Policy Research Centre
EU	-	European Union
FAO	-	Food and Agricultural Organization
GDP	-	Gross Domestic Product
MAAIF	-	Ministry of Agricultural, Animal Industries and Fisheries
MFPED	-	Ministry of Finance, Planning and Economic Development
MGLSD	-	Ministry of Gender, Labour and Social Development
MTIC	-	Ministry of Trade, Industry and Cooperatives
NAADS	-	National Agricultural Advisory Services
NDP	-	National Development Plan
NEMA	-	National Development Plan
NGO	-	Non Government Organization
NSS	-	National Statistical System
PEAP	-	Poverty Eradication Action Plan
FAO	-	Food and Agricultural Organization
GOU	-	Government of Uganda
MAFAP	-	Monitoring Food and Agricultural Policies
NDP	-	National Development Plan
DSIP	-	Development Strategy and Investment Plan
PMA	-	Plan for Modernization of Agriculture
UBOS	-	Uganda Bureau of Statistics
PMA	-	Plan for Modernization for Agriculture
UBOS	-	Uganda Bureau of Statistics
UCA	-	Uganda Census of Agriculture
UNDP	-	United Nations Development Programme
UNHS	-	Uganda National Household Survey
USAID	-	United States Agency for International Development
WFP	-	World Food Programme
UDHS	-	Uganda Demographic and Healthy Survey
UN	-	United Nations
UNPA	-	Uganda National Planning Authority
SACCO	-	Savings and Credit Cooperative Organizations
SDG	-	Sustainable Development Goals

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1. Introduction

Implementing the Sustainable Development Goals (SDG) of the United Nations (UN) requires gender sensitive actions to facilitate women's gainful participation in agriculture value chains, including their involvement in farming and processing at national and regional markets (UN Women 2015). All women working in agriculture can, if not discriminated, contribute to a better global food security. This is especially the case in Sub Saharan Africa where women play a particularly important role in agricultural production (FAO 2011). Supporting the role of African women in food production is thus a cornerstone of agricultural development and improved food security. The key gender issues in agriculture and food security in general, include women's access to and control of productive resources, access to extension services and markets.

The theme of this study is the social, economic and gender dimensions of smallholder agriculture in Uganda. More specifically, to identify issues that negatively affects the situation of women in smallholder agriculture in Uganda. A focus on women in agriculture production and the factors that limit their equal participation is of crucial importance for the country's agricultural and socioeconomic development and form a part of great concern in the journey to equality between men and women. This review will specifically focus on the obstacles to women's full participation in the agriculture systems, i.e. to the factors that limit them from participating equally with men in the market.

1.1 Objectives

The objectives of this study are as follows:

- a) To examine how men and women are differentially able to participate in existent market systems.
- b) To examine the main factors of gender-based exclusion in output markets of smallholder farmers in Uganda.
- c) To establish the impacts of policies, programs and strategies (regional, national or otherwise) targeting the empowerment of women in agriculture and promoting gender neutral markets.
- d) To discuss what remains to be done to improve the situation of women farmers, to make it possible for them to participate on equal terms in agricultural production and markets.

1.2 Method and sources

This report is based on a desk study, which involved a comprehensive review of literature on social, economic and gender dimensions of smallholder agriculture in Uganda, and the situation of women farmers in Uganda including their access to agricultural markets. The literature consulted include policy documents, report from project activities, research reports, and articles in journals and magazines. These were obtained from online sources (e.g. websites of ministries and agencies) and government depositories (such as libraries and resource centers). The literature in the key areas of this review has been published in a variety of formats including both scientific and grey literature. Although, grey literature is not easy to assess in terms of scientific quality it may, however, add important perspectives on the situation of women farmers.

The main limitation of the literature reviewed include, the paucity of literature concerning gendered markets, especially up to date information on market participation by women. Most recent studies look at the situation of smallholder farmers in general and the literature generally focuses on how women are excluded in the production and their lack of resources. There is scant literature explaining in detail how the lack of access to productive resources limits women participation in markets. Another limitation is the lack of up to date statistical information on many important aspects of the situation of women farmers. This means that the references in some cases are a bit old. When relevant the information provided will be commented on in the text. No more recent information is available, but there are no indications that things have changed significantly.

1.3 Structure of report

Section 1 contains this Introduction, while section 2 provides a short general background to Uganda. Section 3 gives information on the agricultural sector and on the social and economic dimensions of smallholder agriculture in Uganda. Section 4 describes Uganda's agricultural markets. The fifth section discusses the participation of women in the agricultural system. These include unequal access by women farmers to markets, which is largely a result of their unequal access to land, credits, inputs, time restrictions imposed by unequal distribution of household work and the subordination in decision-making supported by tradition and male control of land and other resources. Section 6 presents legislations, policies, plans and agriculture strategic programs intended to improve the situation of women farmers and their results. The final section (7) gives the way forward in the key areas where changes have to be made to improve the situation of women farmers.

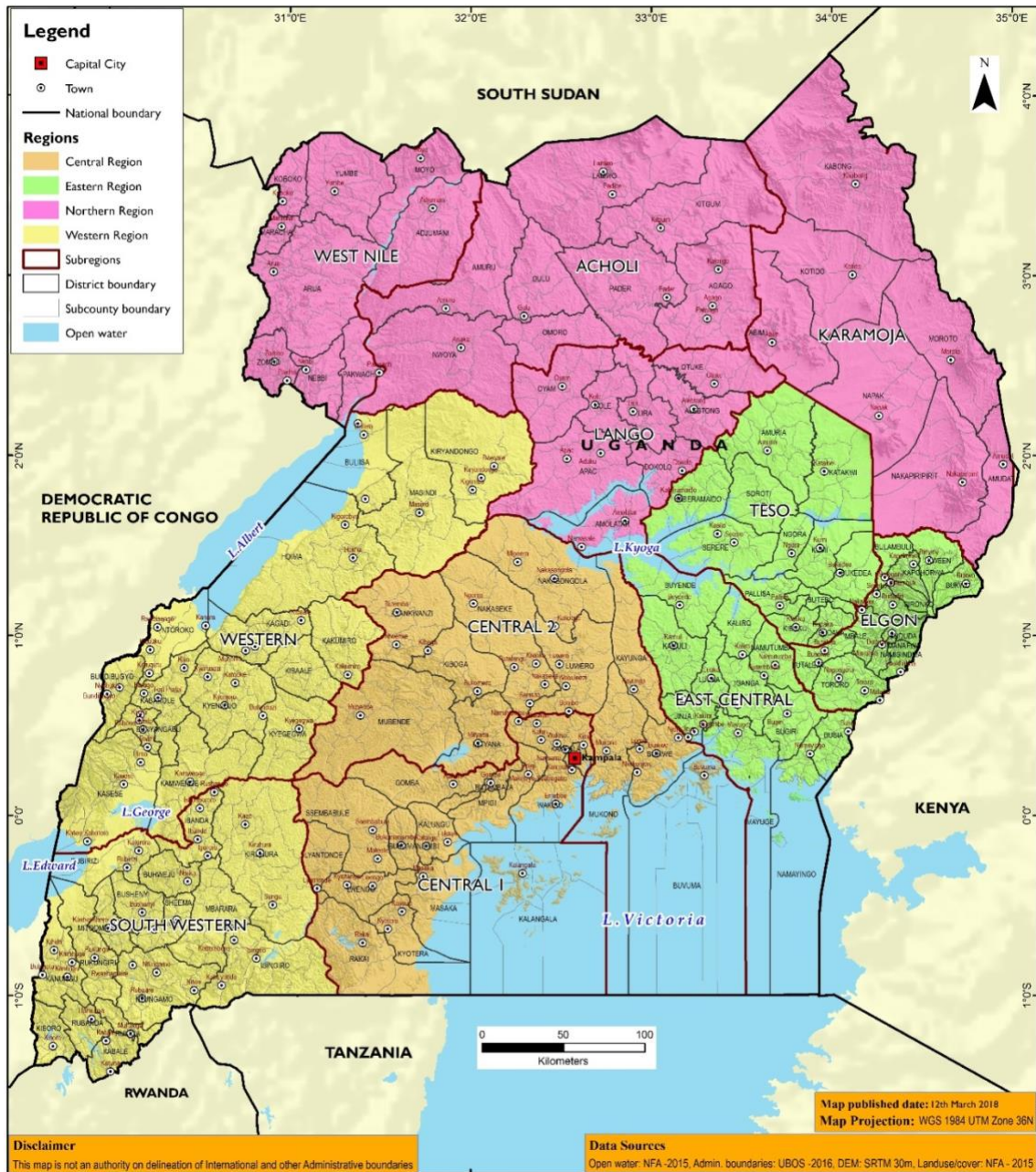
2. Overview of Uganda

The Republic of Uganda is located in the heart of Africa. The country is often referred to as the Pearl of Africa due to its spectacular natural scenery, diversity of wildlife, cultures and fertile soils. The country is landlocked, but has access to the Indian Ocean through Kenya and Tanzania for her major exports and imports (UBOS 2017). Uganda is situated on the Equator between 04°N and 01°S and extending from 29°12'W to 35°00'W with Kenya to the East, Tanzania to the South, Rwanda to the South West, Democratic Republic of Congo (DRC) to the West and South Sudan to the North (Figure 1), (NEMA 2016). Topographically, Uganda lies on the African Plateau and comprises mountains, volcanic plugs, and hills. The altitude above sea level ranges from 620 meters (Albert Nile) to 5,111 meters (Mt. Rwenzori). The soils in Uganda are very old and deeply weathered with inadequate supply of the major plant nutrients, very low nutrient holding capacity and deficiency or toxicity of trace elements (UBOS 2017). The total area of Uganda is 240 000 km² of which 80 percent is land and 20 percent water. According to 2016 estimates 71.9 percent of the total land area is agricultural land, 34.41 percent arable land, 11 percent permanent crops and 26 percent permanent pasture (World Data Atlas). The population of Uganda has increased considerably during the past decades and more than doubled from 17,4 million 1990 to the most recent estimate in 2019 of 44,2 million, of which three quarters (76%) live in rural areas (UN Population Division 2018, 2019¹).

Although Uganda has a history of political upheavals and conflicts, the country has enjoyed relative peace and stability since 2006, with reinstatement of multi-party democracy, a strong constitution that protects human rights and an end to two decades of conflict in Northern Uganda (GOU 2015). The average annual Gross Domestic Product (GDP) between 2010/11 and 2013/14 was 5.5 percent, which was below the 7.2 percent target set in the First National Development Plan 2010/11-2014/15 (GOU 2015). The share of the population living on US dollar 1.90 Purchasing Power Parity (PPP) per day or less fell from 56 percent in 1992 to 24.5 percent in 2011, and further to 19.7 percent in 2013 (World Bank 2016). However, the latest available data shows a rise of the poverty to 21.7 percent in 2016/2017 (State of Uganda Population 2018). There are also still considerable regional differences in poverty rates as well as between rural than urban areas. The poorest and most vulnerable Ugandans live in rural areas and are located in the Northern and Eastern Sub-regions of Uganda. The Eastern and Northern regions are poorer than Western and Central parts of Uganda (World Bank 2016).

¹ World Population Prospects 2019 <https://population.un.org/wpp/> and World Urbanization Prospects 2018 <https://population.un.org/wup/>.

Figure 1: Administrative Regions of Uganda



3. Uganda's Agricultural Sector

Agriculture is considered a key economic sector in Uganda that in 2011/12 made up 23.9 percent of the Gross Domestic Product (GDP) and 24.5 percent in 2017 (UBOS 2017; CIA World Fact Book 2017). The annual growth of the agricultural sector has, however, declined from 7.9 percent in 2001 to 2.9 percent in

2010/2016 (UBOS 2016). Agricultural exports still hold the key to the health of the balance of payments and made up 43 percent of total export earnings in 2017 (CIA World Fact Book 2019). Three quarters of the population lived in rural areas in 2018, with 70 percent employed in agricultural sector (World Bank 2018). This means that agricultural development and increased food crop production not only holds the key to improving food security and nutritional status of the population, but that it is also crucial for national socio-economic development. However, there are many obstacles to the agricultural development in Uganda as the sector is characterized by low productivity, mainly as a result of poor inputs, undeveloped value chains, and low public and private investment in the sector (World Bank 2018 b, Ssewanyana et al 2011).

Most of the agricultural production is done by smallholder farmers with 73 percent of women providing labour in agriculture (State of Uganda Population Report 2017). However, despite their effort in agriculture, rural women have not benefited as much as men from the decline in absolute poverty noted in recent years. Women have limited opportunities for social and economic advancement, particularly those living in the rural areas (Peterman et al., 2010). The large majority of women are marginalized from policymaking and unable to effectively participate in decision making that affects their welfare (Nansubuga 2015). They are also particularly vulnerable to market abuses such as cartels and monopolies, and tend to bear the greatest risks in market relationships, despite being least well placed to shoulder them. A growing body of literature shows that marginalization of women in agricultural production impedes poverty reduction efforts, and halts increase of productivity resulting in reduced economic growth (see e.g. DFID 2014; Ali et al 2016; Sell & Minot 2018). To change the situation, it is necessary to tilt the focus to small holder farmers, especially the women farmers. (Lecoutere 2017; Acosta et al 2019). More still, empowering women farmers means strengthening the voice and participation of small-scale producers, in policymaking and inclusive markets, while stopping market abuses by the powerful (Nakazi et al 2017).



Plate 1: Smallholder farmer in Ishaka town council in Western Uganda (Photo by author).

3.1 Social and Economic Dimensions of Smallholder Agriculture in Uganda

African smallholder farmers can be categorized on the basis of: (i) the agro ecological zones in which they operate; (ii) the type and composition of their farm portfolio and size of landholding; or (iii) on the basis of annual revenue they generate from farming activities. In areas with favorable agro ecological conditions and high population densities, smallholder farmers in Uganda usually cultivate less than one hectare of land, which may increase up to ten hectares or more in sparsely populated semi-arid areas, sometimes in combination with livestock of up to ten animals (Salami et al 2010).

3.1.1 Economic Dimensions

The economic dimension of smallholder agriculture refers to the ability of farms to generate sufficient funds to sustain their production potential in the long run, including the efficient use of resources and the competitiveness.

a) Household Income

The majority of Ugandan smallholder households generate most of their income from agriculture, and most of it comes from growing and selling crops. It is likely that most household also undertakes other activities

to supplement income. However, the households do not report income from these activities at any rate that comes close to the income from farming (Agol et al 2017). A very small proportion of smallholder farmers are involved in the processing of agricultural products and in reselling or renting land to other farmers for growing crops (Ssonko & Muranga 2017).

b) Financial Situation

Most smallholder farmers in Uganda do not have savings, no access to funds in the event of an emergency, no access to credits and do not have insurance (Addison & Schnurr 2016). In case of any savings, informal saving dominates, with more than one-third of households saving with friends and family. The limited savings leave most smallholder households in a very risky position, especially because there are not many other options for liquidity (Chiputwa & Qaim 2016).

c) Agriculture Revolves around Family

Smallholder farmers in Uganda view their households' agricultural activities as a household business (Berman et al. 2015). They also tend to rely primarily on themselves and their families for labor and use their family and friends as sources of information. They first turn to relatives and friends for help when they need it (Sekabira & Qaim 2017). Apart from family and friends, both male and female farmers get their information on agricultural activities via the radio. This suggests that there are a limited number of information sources, and many farming households might share the same information passed around the village, person to person (Sekabira & Qaim 2017).

d) Transactions are entirely Cash-based and without Contracts

Approximately three-quarters of smallholder farmers in Uganda are purchasing agricultural inputs (fertilizer, seed, etc.), and buy them largely from retailers and to a lesser extent from wholesalers and middlemen (Sebatta et al 2014). Purchasing inputs from processors and cooperatives is less common. Transactions tend to be in cash, paid at the point of purchase. Very few farmers have an option to pay later, which without access to credits can be a source of strain for their budgeting and planning (Ouma et al 2014). This also limits their possibilities to buy the quantity of inputs necessary or hire the labor needed.

e) Marketing Characteristics

Most smallholder farmers in Uganda sell directly to the public, usually at a local market or in the home village. Only approximately half of smallholder farmers in Uganda believe that they get the best price at the location where they sell their crops and livestock, and just over half actually get the current market price for their goods (Chiputwa et al 2015). Smallholders report that the most common reason for not getting the current market price is that they are taken advantage of by customers, followed closely by having too few customers. Transportation, however, seems to be less of a problem for the group studied (Omotilewa et al 2016).

3.1.2 Social dimensions

Whereas the economic dimension focuses on the effects that the viability of the farms has on the wellbeing of smallholder farmers, the social dimension relates here to questions of labor opportunities and the access of agricultural households to resources and services. The issues of equal opportunities for women and men regarding agricultural production methods can also be considered as belonging to the social dimension of sustainable agriculture (European Commission, 2001).

a) Tenancy

Ugandan smallholder farmers individually either lease their plots or, in most cases, hold them under customary law which means that they usually do not have official documentation of ownership (Djido & Shiferaw 2018). State and communally owned farms are few and mostly concentrated in the Northern region. Roughly two-thirds of Ugandan smallholder households farm less than two hectares of land, and another one-sixth of the households have between two and five hectares, in both cases holdings are normally made up of small plots (Anderson et al 2016).

b) Crops

Smallholders in Uganda primarily grow food staple crops, and the most commonly grown crops are maize and beans followed by cassava, sweet potatoes and groundnuts (UBOS 2014). The median number of crops grown by households is seven, but over one-quarter (27 %) grow more than eight different crops (Chiputwa et al 2015). Only a small percentage of smallholders grow cash crops, which tend to be coffee or sugar cane. Households use their crops in multiple ways, most commonly for their own consumption, in particular food staple crops. An estimated nine out of ten smallholder farmer households consume at least a portion of their crops (De Haas 2017). However, a large number of rural households (>60%) are net buyers of food crops (Benson et al 2008).



Plate 2: Coffee garden in Bushenyi District (Photo by author)

4. Uganda's Agricultural Markets

This section gives a view of the segments of the internal agricultural markets in Uganda. The aim is to provide basic information on the types of markets commonly used by small holder farmers and how they function. The development of output markets in Uganda has been influenced by the market reforms that the government has introduced since the 1990s (MAFAP 2013). These reforms created opportunities to develop an efficient private and competitive agricultural market in Uganda (MAAIF 2013). However, policy constraints, inability to link markets and weak value chains have limited the possibilities for smallholder farmers to participate more in commercial agriculture (NPA 2013). Policy constraints include issues related to land tenure, land distribution, marketing of agricultural commodities and to access to inputs. Over the years, these obstacles have been identified to constrain production in agriculture in general and in smallholder farming in particular. Smallholder farmers, including women farmers, need to be able to benefit from efficient markets and local-level value addition, and be exposed to competition. Women farmers need to engage with either local, regional, national or international markets to obtain a fair value for their labor or produce. The segments of agricultural markets in Uganda are: Village markets, Roadside retail markets, Assembly Markets, Wholesale Markets and Direct Trading (see Table 1).

4.1 Segments in Uganda's Agricultural Markets

It is well documented that in Uganda marketing of food and cash crops by small holder farmers in general, and by women farmers in particular, continues to take place at the local markets in both villages and urban

centers (Quisumbing et al (2015). A summary of segments in Uganda's agricultural markets is given in Table 1 below. Plate 3 below shows a typical roadside market in Uganda.



Plate 3: Road side market (Mbarara District in Western Uganda) (Photo by the author)

Table 1: Segments in Uganda's Agricultural Markets

Types of Market	Location (where the market is based)	Functioning of the Market
Village market	Rural trade centers	-Functions as outlets for local farmers -Retail market for local consumers -Serves intermediary traders who buy produce destined for urban or even export markets
Roadside retail markets	A common feature of major roads in rural areas	-Outlet for local farmers -Complement to village markets
Assembly markets	Based in towns or villages on trunk roads	-Functions as retail markets Assembly points for lorry loads to be transported to the main urban centers
Whole sale markets	Based in largest urban centers	-Produce from smaller markets is properly weighed and graded and sold to large scale consumers, processors and for export -Trading process involves farmers in the countryside selling the wholesale dealers who transport their goods to urban centers
Direct trading	Based in rural and urban centers	-Takes place where largest traders and processors employ agents to products from farmers or village markets to deliver to buyers' warehouses and silos

Sources: FEWS NET 2017, Robbins & Ferris 2000, Ouma et al 2014, Bold et al 2017, Ssekibule et al 2013, Sekabira and Qaim 2017

5. The participation of women in the agricultural system

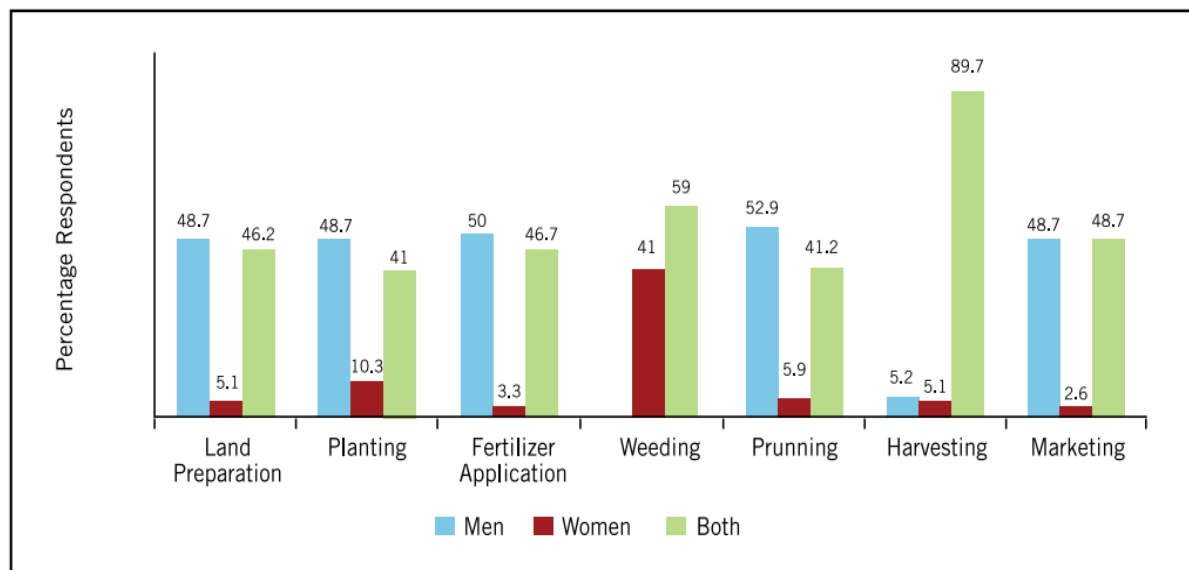
This section describes the situation of women farmers in Uganda. The unequal access by women farmers to markets is to a very large extent the result of their unequal access to productive resources. Okonya & Kroschel (2014) assert that differences in access to some productive resources between male and female farmers in Uganda result in gender-based differences in agriculture production and market opportunities. In Uganda, both women and men traditionally play important but different roles in the agriculture sector (Peterman et al 2011). Analysis and exploration of gender roles in farm households will help us to understand the factors known to drive gender inequalities (Quisumbing et al 2014).

5.1 Labor Force Participation in Agriculture

UBOS (2016) and LANDac factsheet indicate that in Uganda women supply 70 to 80 percent of agricultural labour as well as over 90 percent to farm-level primary processing operations. However, women have remained underrepresented in cash crop value chains in agriculture.

Due to lack of financial resources, female farmers in Uganda face challenges in hiring farm labor, both in general and at the appropriate times in the production cycle (Fletshner & Kenney 2014). As a consequence, women farmers use fewer hired laborers per hectare on their plots than men, and this imbalance contribute to widening the gender gap in production and yield (Andrews et al 2014). Women may be able to mobilize household labor, but they still do not receive the same returns from it as male farmers. These lower returns are due to women's time constraints, as principal care-givers, which affect their ability to supervise their household farm laborers, and to cultural norms, that make laborers work harder for male supervisors.

Rice farming in Eastern Uganda produces a crop with high market value and Lusiba et al (2017) shows that the labor-intensive post harvesting activities are managed by men and boys. The study also shows that men and boys performed most of the harvesting work than women and girls. Even where labor was hired, most of the supervision was done by men. When men harvested, they also engaged in marketing the products. Thus, the gains in increased production benefited men and encouraged exclusion of women from the markets because men dominated the market decisions.



Source: UBOS Gender Statistics Profile 2012

Figure 2: Division of labor in All Ugandan agriculture.

It is difficult to know the time spent on different activities by men and women respectively. Numerous studies tried to show how agricultural labour is distributed in households (Ali et al 2015, Amparo et al 2017). Thus it is not easy to derive time spent by different individuals because details of time are not always indicated. Again, literature on division of labour looks more on socially determined division of roles, responsibilities and the proportion of work done (Lusiba et al 2017).

5.2 Gender Based Decision Making

Men and women have complex roles in smallholder households, which affect the decision making on agricultural production and marketing (Quisumbing & Pandolfelli 2010). Overall, women are disadvantaged when it comes to decision making power (Hill & Vigneri 2014) and there is consensus that women have little authority over marketing, sales and income spending (see e.g. Asiimwe 2010; Peterman et al 2011; Ali et al 2015). Women can normally not decide when and how much farm produce should be sold and how the income should be used (Asiimwe, 2010). About 70 percent of the decisions regarding the market are made by men, 15 percent by women and 15 percent jointly (FOWODE 2012). This is confirmed in the 2018 FAO Gender Assessment Report, which shows that in the ten Ugandan districts studied, selling and control of farm proceeds was managed by men (FAO 2018). Both men (87%) and women (91%) reported that the responsibility for selling the produce from the farmland lay with the man. Furthermore, the money was not shared because the decision of how to use the income was in most cases taken by the man as heads of households.

Gender differentials in decision making are mainly observed in relation to certain cash crops that traditionally are considered to be male crops e.g. coffee, while food crops such as plantains (bananas) are typical female crops (Kasekende et al 2001). According to Alinyo & Leahy (2012) women typically grow and make decisions for crops like sweet potatoes, sorghum, millet, and vegetables, which are mainly for household consumption, while maize, coffee, barley, and wheat are crops predominantly controlled by men and sold in the market for cash. The link between gender control of crops and market relevance has also been noted in Mukadasi's and Nabalegwa's (2007) study of tree-cropping in Uganda. Fruit tree species with a high market potential are the most preferred by men, while women preferred tree species with a lesser market potential but offered products for domestic use like firewood and medicine.

In their study Alinyo & Leahy (2012) show that husbands had final power to make any major decision of marketing the coffee crop to the cooperatives and also had control over the revenue from coffee. This is confirmed by Asiimwe (2010) who found that in parts of Mukono and central Buganda men traditionally control cash crops like coffee, cotton, vanilla and tobacco and thus automatically control the proceeds from these cash crops. When the sales of food crops by women at roadside markets, gained prominence for

household incomes, men would still have substantial power over this income and women had to tactfully protect their income from husbands. Anderson et al (2016) attributes this difference in decision-making to the fact that decisions are typically taken by the household head and that men head over three-quarters of smallholder farmer households.

A survey of 302 NERICA (New Rice for Africa) growing households in Hoima district in Uganda, carried out by Bergman (2012), showed that 90 percent of sales of NERICA were made by men in male-headed household. Even when the wife managed the farm on a daily basis, the husband would market the rice in almost one-third of the cases. One of the farmers in Nyamaroby village confirmed domination of men in marketing by saying the following, “Even if the woman is planting the rice, the man is selling it” (Bergman2012:266). The study shows that men’s control over marketing decisions and transactions was particularly strong when the spouses grew rice on a joint household plot and they even exert considerable control when the wife tilled her own plot. In these cases, it is commonplace for the husband to undertake the marketing and then give the money to his wife. This is true of female-headed households as well, where farmers report the involvement of other male relatives, such as father, brother, or son, in the marketing of rice. The control by men over market decisions and proceeds leads to less participating by women in the market, and limits the possibilities of women to buy inputs and re-invest in order to increase production.

5.3 Time Constrains of Women Farmers

Time allocation studies in different parts of Uganda show that, if household work is included, women work significantly more hours than men (Ilahi 2000). This is confirmed in a study by Kasente et al (2002), which show that women allocate their time not only to paid work or subsistence agriculture, but also to domestic responsibilities such as childcare, cooking, and cleaning. Fuel and water collection are particularly time-consuming activities that can occupy a substantial portion of a woman’s working hours. Uganda Demographic and Health Survey (UDHS) data indicate that being married reduces the time men in Uganda spend on unpaid domestic work, while the opposite is the case for women (UBOS/ICF 2012). Furthermore, the same data shows that in 2012/13, married women spent, on average, seven times more time per day (5.9 hours) doing unpaid care work than married men (0.8 hours). Women’s “burden” of unpaid work, in the form of household work, child care, provision of food, fuel and water, and its impact on both individual and household poverty are also documented in a study by MFPED (2002). Similar results are reported in a WDR-paper by Bernielle and Sanchez-Paramo (2011), which indicated that women do the majority of housework and care, and spend less time in market work. This study also shows that women spend 30 percent more of their time on housework than men, and 70 percent more on child care.

The implication is that married women are considerably more time constrained than married men and may face important trade-offs in their time use in ways that affect their ability to participate effectively in economic

activities. Indeed, several studies in Uganda specifically point out that the domestic or care work burdens of women are having a direct and negative impact on their productivity. For example, Ali et al (2015) attribute women's lower agricultural productivity to what they term the "dependency gap" and explain that the overall work burdens of women, including domestic tasks, have a direct and negative effect on women's economic opportunity and productivity. Time allocation for unpaid care work also means that women have less time to rest and take care of themselves (Budlender & Moussié 2013). Ellis et al (2006) report that women, when asked about the causes of labour constraints, cited the time they spent looking after their families, working in their husbands' gardens and producing food for their households as reasons for their inability to expand production in the market, while men, simply noted that they had no money to hire labour.

5.4 Women's Farmers Access to Land and Markets

Land is the most important resource in farming but in Uganda women's access to land is to large extent limited due to the separation of property within marriage and male biased inheritance practices in the customary domains (Doss 2010). The opportunities for women and men to claim their rights and benefit from the land laws and rights are thus, according to Doss et al (2012), not just determined by the ways in which rights are defined, but also by how they are actually interpreted and implemented. Cultural perceptions and norms tend to widen disparities in control, ownership and benefits from land rights. For instance, there is a belief that women should access land through their fathers, brothers, husbands and sons, thus keeping a woman's rights to land in the private domain and dependent on a good relationship with her male relatives, whereas men's rights to land are in the public domain and defined by law and customs (LANDac 2016 Fact Sheet Uganda). Furthermore, women are traditionally not entitled to inherit land on the death of her husband, but land is shared among male relatives and most of it goes to a brother of the deceased husband. This is based on the tradition that a widow automatically becomes the wife to the deceased's brother, and that this brother thus also becomes the owner of the land that belonged to the deceased. This kind of practice leaves widows without property and in a vulnerable position (MGLSD2014). According to the patriarchal system of inheritance that is in place in most in most of the indigenous communities, the male kin of the deceased will take care of the survived wife and children. Other ethnic groups like Acholi, Lango, Alur in Northern Uganda and those in Western Uganda like Kigezi practice matrilineal land inheritance (FAO 2019).

According to tradition there is also no obligation to give the daughters a share of the land when their father dies since girls are expected to marry and leave their home (Kafumbe 2010). Sons on other hand are valued for expanding the clan when they marry and are supposed to inherit their father's land. The mother can continue to farm it until the sons are grown-up and can claim their shares. Men in Uganda thus generally have a clear advantage over women in access to and control over land and other resources with a direct impact on agricultural production (Kasente et al 2000).

The unequal landownership is clearly reflected in the existing statistics. According to FAO (2018) land apportioned to agriculture for men is 2.4 acres while for women it is 1.9 hectares respectively. Mukasa et al (2015) shows that 16 percent of females own land compared to 84 percent of men. The Food and Agricultural Organization (FAO) Gender and Land Rights Data Base (GLRD) show the distribution of agricultural land area in Uganda by sex 2009/10 (for those households that reported ownership of land): 18 percent was owned by women, 34 percent by men and 46 percent jointly. This shows that women own a small portion of the total household agricultural land and that women's plots often are significantly smaller. Again, 18 percent females reported ownership of land while 48 percent females reported jointly owned land with husbands. According to the same source the distribution of land ownership by sex in 2011, i.e. the share of female and male landowners out of all landowners, shows the following: female sole or joint 39 percent, male sole or joint 60 percent, female sole 14 percent, male sole 46 percent.² There is no indication that this situation has changed significantly over the past decade.

Unequal access to land by women impacts market access. For instance, Sebatta et al (2014) found that in the districts of Kabale and Mbale gender inequality in access to and ownership of land limits the possibilities women to access the cash crop markets. Furthermore, a study in Uganda by Vigneri (2014), on smallholder participation in coffee marketing, showed that female headed households (FHH) were less engaged in value addition and market participation than male headed households (MHH), because they owned only small pieces of land and were poorer. They therefore had fewer coffee trees and produced less coffee than men. Mukasa et al (2015) highlights gender inequality in farming conditions in Uganda and show that, due to small plot sizes and poor land quality, average female-managed agricultural lands are 30.6 percent less productive than male managed farm. However, when the conditions are more equal the results are different. Zu Selhausen (2016) found that in Western Uganda, the mutual sharing of land increased the likelihood of women trading in the Bukonzo joint micro finance and coffee marketing society, as well as the opportunities for women to get incomes from agriculture production.

Apart from contributing to the unequal access to land, gender norms in Uganda, particularly patrilineal and patriarchal family structures, place strict restrictions on women's freedom to access public spaces including markets. Studies by Katungi and Smale (2006) and by Meinzen-Dick et al (2010) indicate that social norms restricting women's interactions outside of socially acceptable networks limit their access to information about inputs and markets. Furthermore, these norms exclude women from negotiations and contacts in the markets. Sebatta et al (2014) found that this was the case in Kabale and Mbale districts where males dominated the potato market, while female farmers due to traditional norms, had difficulties to establish the necessary contacts with buyers. Consequently, the men sold higher volumes at the market than the women.

² As have been indicated there are probably differences in the distribution of landownership between different parts of the country, but this information is unfortunately not easily available



Plate 4: Banana market in Bushenyi district, Uganda

5.5 Transportation of Agriculture Commodities to Markets

Lack of access to and the cost of transport often limit the mobility of women and their possibility to transport crops to market centers. Gender differences in marketing are thus to some extent explained by the fact that women do not own means of transport and/or cannot pay transport costs to market places. An example of this is given in a study by on smallholder participation in coffee marketing in Uganda (Hill & Vigneri 2014). The study shows that accessibility to the market by male and female farmers differs with ownership of bicycles. Traditional norms make women less likely to own a bicycle than men and this had negative implications for the travelling time to markets, which was much longer for women than men and thus limited the possibilities for women to participate in the markets.

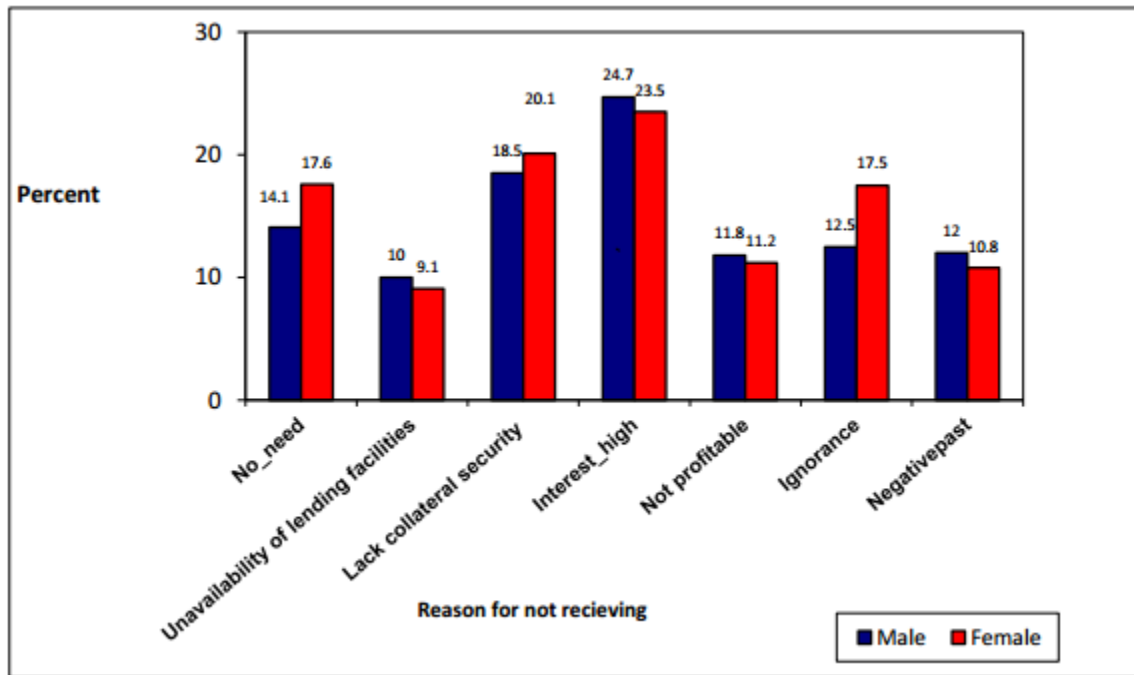
A report on gender mainstreaming in rural transport shows that women farmers tend to be the most affected by bad transport systems (Tanzarn 2017). The study gives the reasons why transport is so important for women engaged in agriculture production and marketing. The inadequacy of road infrastructure disadvantages women because they have considerably less time to engage in agriculture markets than men. Investments in road infrastructure development are thus a precursor for women farmers to improvement in access to markets, trading opportunities and farm inputs, Hill and Vigneri (2014) show that improved roads encourage integration of women into the cash crop market supply chains. Improvements in road infrastructure are also closely linked to increased opportunities for income generation through roadside markets. Women have for a long time used the roads as ready markets for produce from their own gardens, including bananas, cucumbers, green peppers, pumpkins, sugarcane, and green vegetables.

5.6 Unequal Access to Credit

Nearly all Female Headed Households in Uganda reported a desire to expand agricultural activities but lacked the money to purchase land and inputs such as seeds, fertilizer and pesticides, and to hire labor (Ellis et al 2006). They expressed that the lack of access to credit was one of the most prominent barriers to livelihood diversification.

Mpuga (2010) found that the main reasons for the difficulties to get credit, especially for poor rural smallholder women farmers, are the requirements from financial institutions to acquire credit. Okonya (2014) compared male and female sweet potato farmers' access to credit in regions of Northern, South western, Western, Eastern and Central Uganda in 2011 and found that 62 percent of female sweet potato farmers did not have access to credit from financial institutions to purchase planting material and pesticides due to lack of assets for collateral. These conditions limit the possibilities for women farmers to get the credits necessary to undertake profitable investments and thus further contribute to their disadvantage in the market place. In addition, some Savings and Credit Cooperatives (SACCOs) have conditions attached that discourage poor small farmers. These include paying a specific deposit amount, purchase of application forms, passbooks and, in most instances, purchase of the first share (Bategeka et al. 2013). Furthermore, the interest rates charged on loans are normally too high for the smallholder women farmers. Findings from the Uganda National Household Survey of 2009/10 (UBOS 2012) give reasons why a majority of small rural households (90 %) didn't receive credit, the most common being, high interest rates and lack of collateral, and there is no indication that conditions have changed significantly during the past decade (see Figure 3).

Figure 3: Reasons for not receiving credits given by Ugandan smallholder households



Source: UBOS, UCA 2008/9

Even if the

lender may not discriminate, between female and male borrower's, collateral is in most cases not readily available to female smallholders (UBOS 2012). According to Mpuga (2010) the asset-poor households are also limited to considerably smaller loans than richer farmers and at much higher rates because they have to turn to lenders who must substitute costly monitoring for collateral. Poor farmers may in these circumstances turn down loans even if they qualify because they are unwilling to bear the risk of losing collateral. Furthermore, formal lending institutions often view women as risky clients because women have lower levels of education and skills, which increases the perception that they cannot be "banked" (Corsi & De Angellis 2016; FIN Scope 2007; UBOS 2012).

6. Legislation, Policies, Plans, Programs and Women Farmers

Uganda subscribes to the international, regional and sub-regional treaties, frameworks and instruments on gender equality and women's empowerment, and has developed national policies and legislation to improve gender equality. The 1995 constitution was a turning point in this respect by recognizing the equality of women and men, and promoting women's participation in decision making at all levels (Ministry of Lands, Housing and Urban Development 2013). The Sub-Article 33(6) of the 1995 Constitution "...prohibits laws, customs or traditions which are against the dignity, welfare or interest of women" (Kanak 2007:343). It is also a constitutional requirement that all Ugandans, irrespective of sex, gender, age, status and location

enjoy equal rights, opportunities and access to basic services (National Objectives Article XIV and Chapter Four Article 32 (1) as stipulated in the 1995 constitution). The state is further required to take affirmative action in favor of groups marginalized on the basis of gender, age and disability to address imbalances (The Constitution of Uganda 1995). Sector specific legal reforms, especially in the context of access to justice and protection of the rights of women and girls, have also been put in place, including the 2010 Law on domestic violence and the Equal Opportunities Commission Act of 2007 (UNDP 2015).

However, both the Beijing +20 review and the Progress of Worlds Women Report (2015-2016), acknowledge that gender sensitive legal reform has not sufficiently made rights and economic transformation real for women and girls (UNDP 2015). In the case of Uganda some of the important bills presented have never become law (Kanak 2007). The most important is the Marriage and Divorce Bill (formerly the Domestic Relations Bill) that has remained stalled in Parliament since the 1960s. The main purpose of the Marriage and Divorce Bill is to bring existing legislation relating to marriage, separation and divorce into compliance with Article 31 (1) of the Constitution of Uganda, which articulates that men and women are entitled to equal rights in matters relating to marriage and its dissolution, and with Uganda's international obligations (Burgess & Campbell 2016). If passed into law, the Bill would contribute to securing women's property rights during and after marriage with important implication for women's right to land.

According to UNDPs-2015 Uganda Country Gender Assessment, an effective implementation and enforcement of existing gender positive laws and regulations is largely missing (UNDP 2015). Consequently, much of the achievements in Uganda in this arena is on formal equality, i.e. adoption of laws and policies for treating women and men equally, and not substantive equality, focusing on effective implementation that would reduce women's and girls' disadvantage relative to men and boys.

6.1 Institutional Framework

Uganda has a Ministry of Gender, Labor and Social Development (MGLSD) established in 1989. MGLSD is the lead agency in coordinating implementation of the country's gender focused policies and provides support to other sectors to mainstream gender. Under MGLSD, the National Gender Policy (UGP) was formulated in 2007 to provide guidance for nationwide gender mainstreaming across key sectors. At the Local Government level, the MGLSD has Community Based Services and Gender Departments whose role is to spearhead gender mainstreaming in districts development plans and budgets (Buyana 2009). The numerical presence of women on these decision-making bodies has facilitated for development partners and Community Service Organizations to support the mainstreaming of gender into the design and implementation of service delivery programs at both district and local government level. However, both the national and decentralized structures have limited staffing and funding (DFID 2014). The number of technical staff working on gender at the MGLSD fell for instance from 33 in 1995 to 10 in 2014 as a result

of civil service reforms. MGLSD has consistently been allocated less than 1 percent of the national budget to cover its entire portfolio.

Efforts to create equal conditions for male and female farmers were introduced within the Ministry of Agriculture Animal Industry and Fisheries (MAAIF) in the Financial Year 2010/11. MAAIF then started to focus on increasing incomes and promoting equity among farmers in line with the Agriculture Sector Development Strategy and Investment Plan (ASDSIP) 2010/11 – 2014/15. MAAIF and its affiliated institutions also incorporated gender issues in their policy statements for 2010/11 and 2011/12 as required in the Budget Call Circular by the Ministry of Finance, Planning and Economic Development (MFPED). Despite these guidelines, the achievements have to date been limited due to the lack of expertise for gender analysis of projects and programs; inadequate gender disaggregated data and a weak monitoring and evaluation framework (UNDP 2015). In addition, there has been limited guidance by the Ministry of Agriculture, Animal Industry and Fisheries on the nature of programs that could lead to lasting transformation in gender relations and in the lives of women and girls, and not least, there has been a considerable lack of political commitment to these and other pro-women reforms.

6.2 Sector Policies and Plans

While the government's interventions for embracing gender mainstreaming in most of its development policies and plans are generally appreciated, there still exist a large gap between policy and program intentions and implementation. As already mentioned, this is also to a large extent the case in the agricultural sector. Example of gaps include translating gender mainstreaming norms into national policies because prescriptions remain at a generic level and efforts to promote decentralization at district level have not had profound impacts. Furthermore, the limited amount of money allocated to gender issues within district budgets, constrain the outreach of activities. The gap also exists because attitudes, beliefs and practices that serve to exclude women are still deeply entrenched throughout the country (UNDP 2015). This means that unbalanced power relations between men and women continue to have a negative impact on women's ability to contribute equitably to Uganda's growth and prosperity. These gaps can be identified in some of the agriculture strategic sector programs discussed below.

Table 2: The current agricultural sector policies and plans related to improving the situation of women farmers

Plan/Policy	Gender issues identified	Strategies	Implementing agency or organization
Uganda National Cooperative Policy (UCP)2011	Women are disadvantaged in issues of access to and control of resources and benefits as well as in equal participation in the cooperative movement.	-Cooperative movement shall promote gender equality with a view of enabling women to participate equally in the cooperative movement -Cooperative movement shall promote awareness and transformation through sensitization on gender issues	Ministry of Trade, Industry and Cooperatives
National Agricultural Policy (NAP) 2013	Vulnerable households headed by women are less productive and suffer food insecurity.	-Gender equity and affirmative action in provision of agricultural services -Agricultural interventions should be balanced across regions and between gender	Ministry of Agriculture, Animal Industry and Fisheries
National Development Plan (NDP 1) 2010/11-2014/15	-Higher proportion of women in agriculture than men. -Women's participation in commercial agriculture is constrained by uncertain relations to land and limited returns. -Women lack incentive to undertake long term agricultural investment. -Women have low access to inputs and extension.	-Promoting labor saving technologies to reduce the time burden of women -Increase access to improved technology -Sensitize men on importance of women partners in commercial agriculture	Ministry of Labor, gender and social development (MGLSD)
National Development Plan (NDP) 11 (2015/16-2019/20)	-Women face constraints related to access to, control over and ownership of businesses and productive resources such as land and credit. - Women are marginalized in skills development and inheritance rights.	-Up scaling the transfer and utilization of food production and labor-saving technologies for women farmers. -Strengthening capacity of women for increased competitive entrepreneurship.	-Ministry of Agriculture, Animal Industry and Fisheries

			-Civil Society Organizations, academia and Research institutions.
Agricultural Sector strategic plan (ASSP)2015/16-2019/20	-Women face challenges in accessing the factors of production such as land, credit and extension services.	-Promoting time and labor-saving technologies targeting women farmers. -Promoting gender equity in ownership, access and control over production resources such as land livestock, agricultural equipment, labor and capital/credit. -Facilitating training in joint decision making and planning of the household agro-enterprises.	Ministry of Agriculture, Animal Industry and Fisheries
National Agriculture Extension Policy (UNEP) 2016	-Women have unequal access to extension services.	- Empower women to efficiently participate in agricultural extension processes and build their capacity to demand for services. -Ministry of Agriculture Animal and Fisheries will develop operational guidelines, procedures and monitoring and evaluation of the extension system on gender responsiveness.	-Ministry of Agriculture, Animal Industry and Fisheries -Directorate of Agricultural extension services (DAES)

6.2.1 Agriculture strategic sector programs and projects

This section discusses how the government of Uganda has addressed gender inequalities through different strategies and projects, the results of these interventions and lessons to be learned.

Although many agricultural development programs in Uganda have been designed and implemented, few effectively address women's access to markets and production (Wellard et al 2012; Pan et al 2018). These issues need to be addressed to further foster the growth of agricultural output, improve market efficiency, and reduce the disincentives

a) Savings and Credit Cooperative Societies (SACCOs)

In a bid to finance agricultural development, the government of Uganda has encouraged and promoted cooperative societies as an engine to accelerate the accessibility of loans to small farmers. Savings and Credit Co-operatives (SACCOs) are community membership-based micro financial institutions that are formed and owned by their members in promotion of their economic interests. The SACCOs primarily serve rural markets that formal financial institutions do not find financially viable. These institutions mobilize and intermediate savings exclusively among their members under the co-operative statute. The SACCOs offer an alternative to improve the access to credit for their members, in most cases farmers. All SACCOs operate as public institutions, serving the wider community but have preferential benefits for members, such as reduced interest rates. However, access to finances is based on the amount of savings one has with the SACCO.

In a SACCO in Soroti District in Eastern Uganda, Alio (2017) found that there was male dominance in credit utilization where women participated less in accessing credit from the SACCO. Women believed in their husbands to control cash because they are the heads of households. A few women who got credit from the SACCO gave it to their husbands and allowed them to use it because they supported them in repayment of the credit. This is an indication that household dynamics negatively affect productive use of credit among members of Savings and Credit Cooperatives (SACCOs) Uganda.

b) Agriculture Extension Services

According to Kwapong & Nkonya (2015), the Government's drive to transform agriculture to a more market oriented and increasingly commercialized sector requires improved technical and management information, knowledge and skills. This in turn requires a well-functioning agricultural extension service as a knowledge base and principal driver of the sector's transformation.

When assessing the methods of recruitment and participation in agriculture extension projects, Alinyo & Leahy (2012), observed that the projects principally rely on the existing power structure to distribute leadership positions. Farmers selected for the leadership position thus usually belong to wealthy local elites, who own resources like land, which in practice exclude women. This indicates that men have

access to significantly more agriculture-related information than women. Extension services are also often targeting farmers who are more likely to adopt modern innovations, for example farmers with sufficient resources in well-established areas. In such circumstances, women farmers who are less likely to have access to resources may therefore be bypassed by extension service providers (FAO 2011). Additionally, recruitment criteria for extension projects including membership fee, residency or land ownership, disqualify or discourage those farmers in most need of information, including women farmers (Alinyo & Leahy 2012). The marginalization of women in many extension projects reduces their access to agriculture information and hence their possibilities to improve their productivity.

There are, however, some recent examples of a more positive development. An analysis of the benefits for women farmers from extension programs describes a process of empowerment for Women headed households including a greater control over the kind of information disseminated (Fishman et al 2017). A successful example reflects on quality interactions between extension agents and the farmers as well as to the subsequent interaction between trained and untrained farmers (Visilaky & Kenneth 2015). Women cotton farmers, as a part of an extension program, opted to pair up with a peer to set goals and share information, which resulted in higher cotton yields. This kind of social support is particularly beneficial to the women subsistence farmers who otherwise may not have access to information sharing. Women also tend to have lower levels of education than men, which often limit their active participation in training that includes much written information (Meinzen-Dick et al 2010).

Several new and participatory extension approaches have been developed and tested during the past decade in an effort to move away from a top-down model of extension service to a more farmer driven service (Behrman 2011). Any dissemination of information or inputs needs to take into account the gendered nature of social networks, especially in interactions with other households as a key channel. When information is shared through farmer groups, where women are encouraged to participate on equal terms as men, this creates mutual trust and disposition to assist each other as well as improves the groups marketing possibilities.

Behrman (2011) insist on that training for improving crop planting and production is important in order to facilitate for women farmers to adapt new methods. However, this requires caution as targeting of women may still be problematic given the important roles men play in determining which crops to plant and sell. Additionally, when men dominated most discussions and activities, implementation generally failed and the extension system did not succeed to respond to local problems.

Market information is essential in order to integrate local markets of different commodities at regional level and for integrating these regional markets into national, East African and World markets (Kanyamurwa et al 2013). Yet women farmers are constrained by having limited access to this kind of information and other market services (Combaz 2013). They are also mostly absent from professional and service networks, which are important channels for a quick diffusion of information. Additionally, socio-cultural norms are an obstacle in this respect limiting the mobility and social interaction of women.

Thuo et al (2014) emphasize that weak ties with extension agents influenced information acquisition, but that this to some extent is compensated for by social interactions among women farmers. Social interactions among women can be encouraged to network with extension agents who can help them with information acquisition. Small local groups of rural women can enhance effective information networks.

c) Income Related Strategies to Promote Food Security

The irony about food security in Uganda is that most of the food-insecure live in rural areas where food is produced. To improve food and nutrition security households must therefore pursue strategies to increase incomes through on-farm and off-farm activities. This is, however, not always easy especially for women farmers. In their study Kanyamurwa et al (2013) show that women, involved in commercialization of coffee specifically produced for export, did not achieve food security. The women's income was simply not sufficient to buy the necessary food and yet they spent more time on cash crop production than on food crop production.

There is also a growing concern among researchers that access to finance by rural women in order to improve their incomes, may not necessarily reduce food insecurity, but may instead be a cause of declining food security due to difficulties for households to repay the loans (see e.g. Undersson & Gabrielsson 2012; Okonya & Kroschel 2014). This means that, when the credit does not result in an income increase the need to repay the loan exacerbates food insecurity (Namayengo et al 2018). In addition, Adong et al (2013) found that although participation in farmer organizations is vital in increasing incomes, participation of women is very low, which limit their possibilities to improve their food security. Women farmers in particular are thus deprived of support to develop a sustainable agriculture production, which is very important for food security and participation in the markets.

d) Value Chain Addition in Agriculture

The Rural Development Plan of 2005 emphasized the need to improve value chains for agricultural commodities. The assumption was that a high-value agriculture production and a more developed market sector would present a large number of advantages and, if capitalized on by farmers, could result in increased productivity and increased sales for the small farmers (GOU2010a). Initially productivity and sales from high value agriculture production of small holder farmers was limited by processing constraints and minimal added value to the products. Commercial value chains for high-value products such as fresh fruit, vegetables, flowers and livestock products have been developing rapidly to supply urban supermarkets and export markets (GOU, 2010a). The growth of modern value chains and the broader structural transformation of the agricultural sector in developing countries have major implications for women, but the impact of this development on women farmers has received relatively little analytical attention (Maertens & Swinnen 2009). While export-oriented value chains offer important employment opportunities for women, female farmers are largely excluded from contracting with agro-industrial firms for the delivery of high-value produce. In the case of Uganda, it is almost impossible for

small-scale farmers in general and women farmers in particular, to get linked to supermarkets and involved in contract farming (Elepu & Nalukenge 2009; National Planning authority 2013).

However, there are also positive outcomes reported from Kapchorwa and Kween districts and these were due to women's collective acquisition of land encouraged by an Action Aid project. This resulted in an increased participation of women farmers in vegetable value chains (Morioka & Nicholas, 2014). They produced vegetables including tomatoes, onions, cabbage, carrots, potatoes, beans, cauliflower, lettuce and greens. This production was originally small-scale but the women expanded their collective production on land that had been bought in their name. The women involved in the project, which started in 2014, operated across the value chain, growing, processing, packaging and trading vegetables in the rural and urban markets. Some of the women are involved in a number of different stages of the value chain while conducting activities at a higher standard than they did before the project. The women have received training in record keeping, and in savings and credit management. They have experienced positive changes in terms of increased knowledge and skills, and access to information. In addition, the women have developed their capacity and started using new skills in marketing and business. The economic empowerment is thus an important tool that gives women a possibility to strengthen their positions within the household, and this not necessarily just mean more money but also growth of knowledge and confidence.

Smallholder production systems in rapidly developing rural areas face increasing pressure to engage in cash crop production, diversify and expand (AGRA-Africa Agriculture Status Report 2017; Ainembabazi & Mugisha 2014). Female participation in the cultivation and sale of cash crops is particularly important given the significant positive welfare benefits this type of farming is thought to bring compared to subsistence agriculture (Uganda National Planning Authority 2013). However, when crops traditionally grown by women become commercialized gender conflict sometimes appears, principally due to increased cash income from such crops (Nakazi et al 2017). Findings on the patterns of male and female participation in bean production in male headed households in Uganda show that even when a major part of the bean crop was owned by women, men were very active in site selection and harvesting of the beans (Nakazi et al.2017). Men's site selection implied that they were the land owners who gave permission before women could plant beans. The women owned the beans while the men owned the land. The findings have implications for opportunities to enhance gender mainstreaming in value added bean production, and reflects unequal land ownership that still pose to commercialization of crops that ought to benefit women. Programs that seek to increase women's participation in marketing activities, related to the principal household economic activity, must involve men if they are to be successful. For example, by applying the Gender Action Learning System, which is a structured community-led empowerment methodology, with the aim to help both women and men to gain more control over their lives and to develop skills in life and livelihood planning as the basis for cooperation within households, community collective action and gender advocacy. Simple encouragement can also be an effective tool to nudge men to include their wives in household commercial activities (Mayoux 2012).

e) *Farmer Groups Approach in Agriculture Production and Marketing*

Farmers' groups are independent membership-based rural organizations of smallholder farmers with an element of collective action on any agricultural activity along the value chain. These collective actions through farmer groups can be an important strategy for women members to strengthen their political influence. Under the Agriculture Sector Development Strategy and Investment Plan (DSIP) formulated in 2010 Farmer Groups are envisioned to play a key role in improving produce marketing, increasing access to financing and value addition and ultimately leading to agricultural transformation (MAAIF 2010). The objective is to get both women and men to embrace collective action and to encourage women to take up leadership responsibilities to compete with men in mixed groups. Encouraging the leadership potential of Farmer Groups is considered important in addressing biases and in empowering rural women with the purpose of getting increased economic gains from agriculture.

Ugen et al (2017) carried out a farmer group profiling exercise in seven districts of Central Uganda in 2015 and investigated the farmer group leadership structure that participated in the Pre-cooked bean project. Among these farmer groups 70 percent of treasurer positions were held by women, an indication that women were keen in handling accountability issues, but that they also were trusted to keep the money. Women being in positions of social accountability processes increased their voice and influence over group decision making, which increased their confidence and skills. However, apart from treasurer positions, females were underrepresented in the remaining leadership positions. This was determined by cultural norms within the household and the dominating community belief that men were better in making decisions and organizing group activities as well as maintain discipline. The women in the project also shared the idea that men were better in establishing contacts with external institutions to express their concerns.

Basing on the 2015 survey, one can say that farmer groups where women and men are mixed is not the best avenue for women to gain confidence and not a good platform for women members to negotiate with the rest of the farmer group and to get support from external partners and institutions. When acting in a woman only group, they are more comfortable in asserting their rights and challenging social norms that discriminate against them.

Adong et al (2013) points out that community farmer groups, like any collective action process, face challenges with regards to equality and representativity. Membership fees may exclude resource-poor women from joining, and membership criteria such as land ownership can bar landless farmers, especially women, from becoming members (Zu Selhausen 2015). Furthermore, gender inequalities at the household level have a considerable influence on women's possibility to participate in collective action. Timing and length of meetings may interfere with women's daily tasks. Women whose time often is monopolized by domestic demands or hindered by cultural norms are discouraged from joining. Adong et al (2013) reports that group processes and decision making often remain controlled by men, even in supposedly women-only groups, and that elderly women in groups have not been able to influence decisions, and very few are in leadership positions. When the momentum in these groups is externally

driven by men, women's interests, such as physical distance of members, diversity of culture and ambition, and poverty levels may not be taken into consideration hereby undermining their participation in groups (Robbins et al 2004).

f) Formation of Cooperatives for Value Chain Addition and Market

One of the focuses of the Rural Development Strategy of 2005 was to support farmers through formation of cooperative societies. Through the Uganda National Co-operative policy, the government actively promoted Cooperatives as a means to help farmers to operate more effectively in the market place (Adong et al 2013). At the same time, the government prioritized existing farmer organizations with the objective of increasing their capacity to effectively engage in value chain activities, especially collective marketing through cooperatives (MAAIF 2010).

Participation in collective action through cooperatives has also, according to Zu Selhausen (2015), been promoted as a promising strategy for women smallholders to overcome market imperfections and increase productivity and farm incomes. The cooperatives also represent entry points for strategic programs to strengthen women's voice in the market and at home. However, the cooperatives have often targeted women without a clear understanding of the gendered power relations with regard to the agricultural value chain, and therefore been unable to set the right conditions for women's active participation in the market. There are, however, successful examples including one related to the certification of coffee producers, which is frequently suggested as a promising strategy for improving the position of smallholder farmers in the market through membership in Cooperatives (Ferguson & Kepe 2011).

UTZ is an organization certifying the production of sustainable coffee (tea and cacao), which gives a guarantee for quality coffee from production to processing. UTZ also promotes non-discrimination against women in group membership for smallholder farmers who are part of cooperatives. A study conducted in Central Uganda on 271 household members of UTZ certified coffee cooperatives and 148 non-certified coffee producing households revealed that in certified households, women had significantly more control of coffee production and revenues than in non-certified households (Chiputwa & Qaim 2016). In 56 percent of the certified households, woman-controlled coffee revenues, either alone or together with a male household member.

Another successful example is the Nyakyera Rukoni Co-operative enterprise in South Western Uganda where women have been able to access products and services, and also to improve their business and entrepreneurial skills and knowledge (Thangata 2016). The success is attributed to the cooperative having a package of services that range from financial services and extension services to value addition and marketing. Some of the women involved in cooperatives have assumed management and leadership positions. This has provided a platform for advocacy, leadership training, management and skills development. The promotion of women-dominated activities has also increased the number of women participating in cooperatives. Additionally, the technologies used on a co-operative basis like

tractors and ox-ploughs have eased labor burdens for women. This has led to accelerated improvement in social aspects such as employment, and enabled women to venture into other economic and social activities.

The Munyakabi area Co-operative enterprise in South Western Uganda also represents an example of how gendered power structures have been changing and how to achieve an increased involvement of women in negotiation of prices for their products on the local markets (Ferguson & Kepe 2011). The women gained control over their household's agricultural produce because they managed to be in charge of planting and harvesting their maize and bean cash crops. Having gained confidence in marketing of their products on the local market, the women were able to take responsibility of their agricultural products and decide what should be kept for household use and what could be sold at the market.

6.2.2 Implementing gender mainstreaming at national and subnational levels

Gender mainstreaming as a strategy has not yet yielded the desired results, as evidenced by the levels of gender inequality in agriculture. Examining the role of sub national level government policies in translating internationally agreed gender norms, and the processes by which these norms are translated into policy action, gives a clue to why these inequalities persist, as well as the possibilities to tackle the situation.

Mariola et al (2019) examines what happens to gender issues in agriculture when they are mainstreamed and domesticated at different governance levels (i.e. national, district and sub-county) and investigates the processes through which global gender mainstreaming norms are translated into policy programs by national governments and decentralized administrations. The findings show that, at national and subnational level, gender equality policies and programs operate within a frame of firmly established patriarchal cultural norms. These cultural norms were institutionalized through formal clan statutory regulations, exposing cases in which multiple legal systems coexist. For example, in Nwoya District in Northern Uganda, inhabited mostly by Acholi people, land tenure was regulated through the "Principles and Practices of Customary Tenure in Acholi land" of the year 2008 (Ocan 2017). These regulations establish that a married woman's land rights are lost when she leaves the clan by divorce or death of spouse. This implies that widows lose all rights (including access to land) that were previously granted to them by marriage. This is in contradiction to Uganda's Constitution (The Republic of Uganda, 1995), the National Land Policy (The Republic of Uganda 2013a) and other national laws such as the 1972 Succession Amendment Decree, which acknowledges women's right to inherit from their husbands, allowing them to remain in their marital homesteads after the passing of their spouses (The Republic of Uganda 1972).

These contradictions between formal national legislation and established customary laws exemplify the different normative environments in which policy actors often operate, i.e. one in which gender equality

is framed within international norms of gender mainstreaming codified in national legislation and one in which gender inequalities are naturalized by cultural norms and written statutes.

According to Uganda Bureau of Statistics and Ministry of Gender, Labour and Social Development (2019), sub-national policies that target gender equality are problematic. In targeting gender issues in the agriculture sector, there are varied prescriptions in sub-counties. Mariola et al. (2019) further emphasizes that the focus on unequal access to productive resources is unclear without clear pathways for implementation. Proposed strategies are phrased in very generic terms. Nyowa district in Northern Uganda proposed promotion of equal ownership of assets between men and women. However, this proposition did not translate into actions and the loss of land rights by death of the spouse and after divorce, according to Acholi tradition, was not even considering. In Rakai district in Central Uganda, the issues of equal access to credit and decision making were raised, but proposed actions remained abstract and did not directly address problems. For example, in Bufumbo sub-county (Rakai district) the low participation of women in fish farming was mainly caused by men's ownership of fishponds, but the proposed 'sensitization' activities were directed to women in order to improve their 'morale'. This mismatch between problematizations and prescriptions and the emphasis on 'sensitization' activities were also found in Namanyonyi, Bufumbo, Busoba and Lwanda sub-counties. Gender in-equalities were problematized as an issue of ownership and access to productive resources, while the prescription framed the issue as an education problem, with sensitization activities implicitly assumed to trigger attitude change within the communities.

6.2.2 Improve Agronomic Practices for Women Farmers

Smith et al (2017) found that improved agronomic practices in Uganda are necessary to ensure productivity gains for smallholder farmers, in particular women farmers. A successful example is an extension program run by the Non-government Organization BRAC, focused on improving the cultivation methods of smallholder women farmers in Uganda. The target group increased their adoption of good agronomic practices, such as line sowing, row spacing, weeding and intercropping, as well as the use of improved inputs (e.g., seeds, pesticides, and fertilizers) (Smith et al 2017). The extension program by BRAC was successful because it triggered changes in agronomic practices that persisted even after the program was terminated. A number of factors contributed to success. First, the program was available only to women. Secondly, BRAC created local semi informal networks within the villages. These included the community agriculture promoter, who also served as supplier of advanced agriculture input to the villages (e.g. HYV seeds) and the model farmer, who provided training in agricultural practices to other farmers in the villages. The two were selected on the basis that they were willing to attend training sessions and meetings and also provide one acre (0.4 ha) of land to be used for demonstration. This requirement would ensure their role to set up a demonstration plot using learned techniques. They would receive training (and travel allowances) for a week from BRAC staff members, who would also monitor program implementation. The training was in crop production technologies, adoption of new seeds and pest control and follow-up refresher courses. The model farmers were given ten kilograms of HYV seeds to be used for demonstration purposes and they were able to train ten to twelve farmers in the villages each season. The Community agriculture promoters were able to buy improved seeds from BRAC at a discount and then sell it to farmers in the villages. Realizing profits on seed sales created incentives for entrepreneurship based on market principles, thus increasing the potential for longer-term sustainability.

Another efficient extension projects, studied by Ochago (2017) on Mount Elgon, include Integrated Pest Management (IPM) strategies that targeted both men and women to help them participate in production of crops that promote commercial enterprises. One example is interventions among Arabic Coffee producers in the districts of Sironko, Manafwa and Mbale. These interventions were carried out by the National Agricultural Research Organization and Coffee Research Program in collaboration with Integrated Pest Management Collaborative Research Support. Learning methods were experiential, participatory and learner-centered. The results from on-farm trial where farmers practiced IPM showed that men and women farmers effectively followed the Coffee Integrated Pest Management activities the entire year. The group members would meet twice a month at a coffee demonstration field.

At the same time, a study by Zizinga et al (2017) shows that extension services need to put increased emphasis on good soil and water management in agriculture. In Uganda these practices are often compromised by natural resource challenges, such as land degradation, low soil fertility, and water shortages associated with drier seasons compounded by the effects of climate change. These conditions often exacerbate constraints to increased agricultural production, particularly for the more vulnerable women farmers. Recent analysis of climate change trends in Uganda suggest that

smallholders are being, and will continue to be, impacted by increased temperatures, higher frequencies of extreme weather events, and greater inter-annual variability in rainfall (Zizinga et al 2017). These challenges tend to create secondary impacts such as increases in crop-harming pests and diseases. Current data suggests nominal shifts in average annual rainfall, yet farmers report changing patterns, and scientists note that more research is needed to better understand the trajectory of climate change effects in Uganda (Caffrey et al 2013). Against this background there is a need for “climate-smart agriculture”, which should include good soil management and the use of inputs such as drought tolerant seeds, not least for women farmers.

6.3 What can we learn?

A comprehensive discussion of the strategies reflects on the why they have succeeded or not and gives insights into lessons learned with a few concrete examples of interventions showing both successes and failures. There are important lessons to be learned from the different initiatives reviewed in this section, which are vital for the redirection of policies and programs to improve the situation of women farmers and in turn secure a positive development of Ugandan agricultural production.

- Micro-credit institutions have not fulfilled expectations to improve credit availability for women farmers due to gender-biased decisions.
- Cooperatives do provide important marketing possibilities for women but are only successful when interaction between agents and farmers work and tend to fail to respond to local problems when men participate.
- NGOs participation encourages market participation of female farmers. However, viability to participate in value chains is more likely to be successful with support of land resource and the promotion of input suppliers and model farmers with demonstration farms.
- Farmer groups tend not encourage effective participation of women in leadership structures when men are part of the groups.
- It seems to be more viable for women to engage in cash crop production within the framework of gender action learning systems that involve men, and when certification of products enhances competitiveness in local and regional markets.
- As policies and interventions introduced to enhance the situation of women farmers so far have only had limited positive results, a strong political commitment at all levels seems necessary to overcome remaining constraints and barriers.

7. Way forward

This section highlights the key areas to prioritize in order to improve the situation of women farmers, with emphasis on changes that have to be made to facilitate their access to productive resources. The views expressed in this section are the author's suggestions drawing on the existing conditions that constrain women participation in agricultural production and thus limited participation in the market.

7.1 Cooperatives an opportunity for women farmers

The institutional dimension of strengthening cooperative performance represents an important element in improving markets for women farmers through value addition. Cooperatives and other farmers' organizations should be the key to increase the scale of production, to maintain the quality standards, and to empower smallholder women farmers with income. It is also critical to strengthen the role of women as decision makers in household level production, and thus reducing the gap in market involvement between men and women. To address gender inequalities at the household level it is vital to adopt family-based methodologies and approaches that seek to change relations between men and women.

Participation of women must translate into effective representation and empowerment where women become suppliers in the value chains without interference by men. The Uganda National Cooperative Policy 2011 only indicates sensitization and enabling women to participate equally in cooperative movements. Emphasis should also be put on issues of effective representation of women in value chains as suppliers and on family-based approaches. Specific measures can be adopted to create more gender equitable organizational governance and structures. These include the establishments of quotas to promote the necessary critical mass of women as members and leaders in order to enhance their voice in producer organizations. Increasing access to assets such as land, which is critical for participating in producer organizations, can enhance women's participation. Changing entrance requirements to correspond to assets and resources that women can actually control may also increase participation.

7.2 Credits and women farmers

While agricultural finance is not directly within the mandate of Ministry of Agriculture Animal Industry and Fisheries, the ministry can contribute to reducing many of the related concerns and problems affecting small farmers including women farmers, and hence encourage investment e.g. by advocating lower interest rates (MAAIF, 2010). The MAAIF and agencies should integrate affirmative action in all the sector interventions to address constraints that limit access by women to productive resources including land and credit.

There is thus an urgent need for financial innovations that can place smallholder farmers on a ladder of ascending financial market access as well as for innovations that can complement financial services by managing the systemic risks that undercut their supply (USAID 2017).

Access to flexible finance through use of micro savings groups can empower women, and give them self-determination to support each other and address their financial problems. This should be done through mobilizing women and increasing their participation in micro savings groups. Socio cohesion can be emphasized together with behavioral change programmes that promote building trust among members and create a sense of belonging and purpose among the members. Behavioral change programs can help women to be more responsive, transparent and accountable in order to maintain viable micro savings groups.

7.3 Micro Credit Institutions and Gender Based Decisions

Women's weak economic position cause them to be perceived as unprofitable borrowers by micro finance institutions as evidenced in the prevailing rural micro finance lending methodology where analysis of local agricultural production to identify those with low risks especially cash crop growers and those with steady cash flows who are in most cases the men and then focus on providing loans to such farmers. Rural women should be viewed as crucial economic actors in rural economies, and as strong potential farmers. Increasing outreach to women should involve micro finance institutions encouraging women ownership of assets. Micro finance institutions can offer loans to women in order to encourage them to own assets.

Furthermore, they should insist that assets are registered in the women's names as security for the loan. This can increase women's control of assets and empower them to become profitable borrowers. However creating a positive effect for the women is necessary especially at household level where men can become hostile when women amass such resources.

7.4 Access to land

Women's access to and ownership of land, and the related issues of inheritance and tenure security are key aspects to consider. Inequality and lack of power over land make it difficult for women to engage in productive investments and market participation. Helping women to participate in markets, for instance by learning new agricultural and processing skills, without considering issues of power may not bring real benefits because husbands still control land and household income. Therefore, women should be empowered not only by adding value to their products but also by increasing their control over land and income. Land is a key input in agricultural production and enterprise development, and can be used as a source of income from rental or sale, as well as providing collateral for credit. Increases in land tenure security will also contribute to increase investments and improved food security.

To address issues of gender-sensitive laws on land rights, it is important for the responsible authorities to realize that secure rights to land go beyond mere access and including the right to manage it and control the income from it. Effective interventions must thus focus on women's rights to access land, as

well as on the cultural and social factors that prevent women from obtaining secure rights to that land. Women also need to understand and to be informed about the policy issues that affect them as farmers. It is important to promote knowledge generation; information sharing and networking at all levels in order to promote land policies that are sensitive to the specific needs of women farmers.

7.5 Economic inequalities

Persistent economic inequalities between men and women also have to be addressed. In this respect, policies to support women's involvement in non-farm income generating activities may be relevant as an alternative, or in addition, to supporting their active involvement in market-oriented agriculture and their key role in food crop production. Women should be encouraged to engage in off-farm activities like food processing and trading activities. This can come with training of women and upgrading their skills in operating machines for processing and improve their knowledge in marketing in order for them to benefit from participation in agricultural value chains. Thus, lifting women from lower skilled activities at household level where they are less able to access markets can open opportunities to participate equally in agricultural production and marketing. As men play important roles in deciding which crops to grow and sell, men should therefore also be included in gender training in order allow their wives to take charge of household monetary issues and participate equally in production and market. To help poor women who do not have productive resources like land, district initiative poverty projects can be initiated using women self-help groups as a starting point to empower these women. Such projects can focus on women engaging in farm related economic activities or help women to create new forms of income generating activities like non-farm businesses. The women groups can then practice production more efficiently and consequently gain income that can be used to purchase land on which agriculture production can be carried out.

7.6 Implementation

The success of strategies to integrate women farmers into value chains depends largely on implementation arrangements by the government. The government should e.g. introduce grants to integrate women smallholders into value chains by forging partnerships between smallholders and commercial growers and by promoting competitiveness of agribusiness. This would also encourage progression of women farmers from subsistence and lower initial level of market orientation to commercialization of their farming activities. In the case of existing legislation, effective implementation and enforcement of gender positive laws and regulations is largely missing, which is an indication of the limited political commitment to gender issues.

7.7 Information and extension

It is further important that dissemination of information concerning market and inputs should focus properly on women farmers. This can give them opportunities to increase productivity when given opportunities to access resources. Extension service programs need to be committed to continuous improvement in distributing agricultural inputs. Women groups should be prioritized and their concerns taken into consideration. It is important that women have access to leadership positions in the extension delivery systems. To ensure gender equity, women leaders can play a role in supervising women groups and assess the critical factors that further constrain them in agricultural production. Women need access to the latest technological information regarding agriculture, production and coping with market demands. They need to acquire entrepreneurial and marketing skills, build their confidence, develop leadership skills and the ability to negotiate and discuss with authorities.

Furthermore, reducing discrimination between men and women requires gender quotas in order to increase female participation in extension projects. Gender representation through appointing women extension officers and agents will bring a positive impact because the presence of women is important in increasing women participation extension services. Women-to-women extension is vital in transfer of information to women farmers than men-to women extension.

7.8 Climate Smart Agricultural Strategies

If women are to better adapt to climate change through sustainable land management practices, commitments regarding environmental protection should put into consideration the levels of vulnerability of women. For example for women to adopt to climate smart agriculture strategies, consideration should be put on their limited rights than men, limited mobility and less access than men to information, and inequalities in decision-making because these factors make them have fewer capacities to adapt to climate and diversify their livelihood options. In addition, certain factors like literacy and access to economic capital and access to technology influence their capacity to adapt to climate change consequences.

There is a need for a better understanding of how these factors determine the differences in the specific constraints men and women smallholder farmers face when making choices concerning climate change adaptation and the adoption of climate-smart agriculture practices. A meaningful consideration of women's differences in climate-smart agriculture interventions is likely to make these interventions more effective in helping them to cope with the impacts of climate change.

7.9 Government Recognize Care Work

The government of Uganda and relevant authorities should address issues of unpaid care and domestic work load which are bore by women. Issues of care should be recognized at policy and household levels. Government should target to raise awareness in men and involve them in care responsibilities. Care roles should be shared equally between men and women. This can be achieved through training of men

in order to promote positive attitudes towards sharing roles. Training can change the mindsets of the men within the households.

7.10 Final words

Overcoming constraints that limit the participation of women farmers in markets in Uganda is a challenge of big importance for the future agricultural and socioeconomic development of the country. As shown in this study, we already know which are the principal constraints facing women farmers. However, the corresponding policies and interventions introduced have so far only had limited if any positive effects. The gap between the intentions and results of policies and legal reforms remains large as effective implementation and enforcement of existing gender positive laws and regulations is largely missing. A refocus on pro-women laws and regulations is essential not least to enforce and protect women's right to land. To overcome existing barriers a serious political commitment to address the situation of women farmers is necessary.

8. References

Addison, L., and Schnurr, M. 2016. Growing burdens? Disease-resistant genetically modified bananas and the potential gendered implications for labor in Uganda. *Agriculture and Human Values*, 33 (4), 967-978.

Adong, A., Mwaura, F. and Akoboi, G. 2013. What Factors Determine Membership Farmer Groups in Uganda? Evidence from the Uganda Census of Agriculture 2008/2009. *Journal of Sustainable Development*, 6 (4), 37-55.

Agol, D., Newton, R., Bukonya, D., Asiki, G., Ssembajja, F., Tumwekwase, G., and Seeley, J. 2017. Complex Agricultural Livelihoods and Aflatoxin Exposure in Rural Uganda. *African Journal of Food, Agriculture, Nutrition and Development*, 17(1), 11726-11742.

Ainembabazi, J. H. and Mugisha, J. 2014. The Role of Farming Experience on the Adoption of Agricultural Technologies: Evidence from Smallholder Farmers in Uganda. *The Journal of Development Studies*, 5(50) 666-679.

Alliance for Green Revolution in Africa (AGRA). 2017. Africa Agriculture Status Report: The Business of Small holder Agriculture in Sub-Saharan Africa. Issue No. 5. Nairobi, Kenya.

Ali, D., Bowen, D., Deininger, K. and Duponchel, M. 2015. Investigating the Gender Gap in Agricultural Productivity: Evidence from Uganda. Policy Research Working Paper No. 7262. World Bank, Washington, D.C.

Alinyo, F., and Leahy, T. 2012. Designing Food Security Projects: Kapchorwa and Bukwo, Uganda. *Development in Practice*, 22 (3) 334-336.

Amanda, E., Clare M. and Mark, C. 2006. Gender and Economic Growth in Uganda: Unleashing the Power of Women. *Directions in Development*, Washington, D.C. World Bank.

Amparo, P., Christiaen Sen, L. and Kilic, T. 2017. How much of the Labour in African Agriculture is provided by Women Food Policy, 67, 52-63.

Andersson, E. (2015). Turning waste into value: using human urine to enrich soils for sustainable food production in Uganda. *Journal of Cleaner Production*, 96, 290-298.

Anderson, J., Learch, C.E., and Gardner, S.T. 2016. National Survey and Segmentation of Smallholder Households in Uganda. Understanding their Demand for Financial, Agricultural and Digital Solutions. CGAP Working Paper.

Andrews, M. J., Golan, J., and Lay, J. 2014. Inefficiency of Male and Female Labour Supply in Agricultural Households: Evidence from Uganda. *American Journal of Agricultural Economics*, 97(3) 998-1019.

Asiimwe, B.G. 2010. Household Gender and Resource Relations: Women in the Marketing Arena of Income Generating Crops in Uganda. *Eastern Africa Social Science Research Review*, 26(2) 1-30.

Bantebya, G., Kyohairwe, F.M and Watson, C. (2015). "This is not the work of a day." Communications for Social Norm Change Around Early Marriage and Education for Adolescent Girls in Uganda. Kampala.

Barungi, M. and Odokonyero, T. 2016. Rice Value Chain in Uganda: Opportunities and Challenges to Increased Productivity. Research Report No. 15. Economic Policy Research Centre (EPRC).

Bategeka, L., Kiiza, J. and Kasirye, I. 2013. Institutional Constraints to Agriculture Development in Uganda. Paper No. 101. Economic Policy Research Centre. Kampala, Uganda.

Behrman, J. 2011. Harvest plus Reaching End Users (REU) Orange-fleshed Sweet Potato Project. Report of Qualitative Findings from Uganda. Washington D.C. International Food Policy Research Institute (IFPRI).

Benson, T., Mugarura, S. and Wanda, K 2008. An Assessment of the Likely Impact on Ugandan Households of Rising Global Food Prices, Paper No.1. International Food Policy, Kampala Uganda.

Berman, R. J., Quinn, C. H., and Paavola, J. 2015. Identifying Drivers of Household Coping Strategies to Multiple Climatic Hazards in Western Uganda: Implications for Adapting to future Climate Change. *Climate and Development*, 7(1), 71-84.

Berniell, M.I. and Sánchez-Páramo, C. 2011. "Overview of Time-use data Used for the Analysis of Gender Differences in Time Use Patterns". Background paper for the WDR 2012

Bold, T., Kaizzi, K. C., Svensson, J., and Yanagizawa-Drott, D. 2017. Lemon Technologies and Adoption: Measurement, Theory and Evidence from Agricultural Markets in Uganda. *The Quarterly Journal of Economics*, 132(3), 1055-1100.

Bonabana, W., Ayo, S., Mugonola, B., Taylor, D.B., Kirinya, J. and Tenywa, M. 2013. The Performance of Potato Markets in South Western Uganda. *Journal of Development and Agricultural Economics*, 5(6) 225-235.

Budlender, D. and Moussié, R. 2013. Making Care Visible: Women's Unpaid Care Work in Nepal, Nigeria, Uganda, and Kenya. Action Aid, Johannesburg. www.actionaid.org/sites/files/actionaid/making_care_visible.pdf

Buyana, K. 2009. Delivering on a Gendered Definition of Health Needs in Local Government Budgeting: Experiences and Concepts. African Health Sciences, Volume 9, Kampala.

Byamugisha, F.F.K. 2013. Securing Africa's Land for Shared Prosperity: A Program to Scale up Reforms and Investments. Washington, D.C. The World Bank.

Burgess, R and Campbell, C. 2016. Creating Social Policy to Support Women's Agency in Coercive Settings: A Case Study from Uganda. Global Public Health, 11(12) 48-64.

Caffrey, P., Finan, T., Trzaska, S., Miller, D., Laker-Ojok, R. and Huston, S. 2013. Uganda Climate Change Vulnerability Assessment Report. Washington, D.C. USAID.

Chamala, S. and Shingi, P.M. 1997. Establishing and strengthening farmer organizations. In: Swanson, B.E., Bentz, R.P. and Sofranko, A.J (Eds.), Improving Agricultural Extension. A Reference Manual Rome: FAO.

Cheryl, D., Truong, M., Nabanoga, G. and Namalwa, J. 2012. Women, Marriage and Asset Inheritance in Uganda. Development Policy Review 30(5) 597-616.

Chiputwa, B. and Qaim, M. 2016. Sustainability Standards, Gender, and Nutrition among Smallholder Farmers in Uganda. The Journal of Development Studies, 52 (9), 1241-1257.

Chiputwa, B., Spielman, D. J., and Qaim, M. 2015. Food Standards, Certification, and Poverty among Coffee Farmers in Uganda. World Development, 66, 400-412.

Combaz, E. 2013. Women's and Girls' Benefits from Market-Oriented Agriculture in Uganda. Governance, Social Development Humanitarian, Conflict (GSDHC).

Constitution of Uganda 1995.

Corsi, M and De Angellis, M. 2016. Gender Discrimination in Microfinance? Some Evidence from Uganda. Journal of Development Studies, 53(5) 723-740.

De Haas, M. 2017. Measuring Rural Welfare in Colonial Africa: Did Uganda's Smallholders Thrive? The Economic History Review, 70(2), 605-631.

Deininger, K. and Ali, D. A. 2008. Do Overlapping Land Rights Reduce Agricultural Investment? Evidence from Uganda. *American Journal of Agricultural Economics*, 90 (4), 869-882.

Department for International Development (DFID). 2014. Institutional Capacity Assessment of the Ministry of Gender, Labour and Social Development. Kampala, DFID.

Djido, A. I. and Shiferaw, B. A. 2018. Patterns of Labor Productivity and Income Diversification. Empirical Evidence from Uganda and Nigeria. *World Development*, 105, 416-427.

Dolan, C.S. 2004. I Sell My Labour Now: Gender and Livelihood Diversification in Uganda. *Canadian Journal of Development Studies*, XXV (4), 643-661.

Doss, C. 2010. Women, Marriage and Asset Inheritance in Uganda. Paper Presented at the CRPC/ODI Roundtable "Inheritance and the Intergenerational Transmission of Poverty". ODI, Chronic Research Center, London.

Doss, C., Truong, M., Nabanoga G. and Namaalwa, J. 2012. Women, Marriage and Asset Inheritance in Uganda. *Policy Review*, 30 (5) 597-616.

Elepu, G. and Nalukenge, I. 2009. Contract Farming, Small holders and Commercialization of Agriculture in Uganda: The Case of Sorghum, Sunflower and Rice Contract Farming Schemes. CEGA Working Paper No. 0907.

European Commission 2001. A Framework for Indicators for the Economic and Social Dimensions of Sustainable Agriculture and Rural Development. Washington D.C.

Eyakuze, A and Salim, A. 2012. The State of East Africa. Society for International Development (SID). Nairobi.

Food and Agricultural Organization (FAO) 2011. The State of Food and Agriculture 2010-2011: Women in Agriculture. Closing the Gender Gap for Development. Rome, FAO.

Famine Early Warning Systems Network (FEWS NET) 2017. Uganda Staple Food Market Fundamentals. USAID.

FIN Scope 2007. Results of a National Survey on Access to Financial Services in Uganda. DFID's Financial Sector Deepening Project Uganda. Kampala, Uganda.

Fishman, R., Smith, S.C. and Sulaiman, M.Z. 2017. How Sustainable are Benefits from Extension for Small holder farmers? Evidence from a Randomised Phase-Out of the BRAC Programme in Uganda. Kampala, Uganda.

Food and Agriculture Organization (FAO). 2011. Gender Differences in Assets. ESA Working Paper No.11-12. United Nations.

Food and Agriculture Organization (FAO). 2018. National Gender Profile of Agriculture and Rural Livelihoods. Uganda Country Assessment Series, Kampala.

FAO 2018. National Gender Profile of Agriculture and Rural Livelihoods, Kampala.

Food and Agriculture Organization (FAO) 2019. Gender and Land Rights Database www.fao.org.

Forum for Women and Democracy (FOWODE) 2012. Gender Policy Brief for Uganda's Agriculture Sector. United Nations.

Gibson, S., Kabuchu, H. and Watkins, F. 2014. A situation Analysis to Strengthen the Engagement of Gender Development Partners in Promoting Gender Equality and Women and Girls Empowerment in Uganda. Coffey International Development Ltd.

Government of Uganda. 2010. Agricultural Sector Development Strategy and Investment Plan: 2010/11–2014/15, Kampala, Uganda: Government of Uganda.

Government of Uganda. 2015. Second National Development Plan NDP II (2015/16-2019/20), National Planning Authority, Kampala.

Hill, R.V. and Vigneri, M. 2014. Mainstreaming Gender Sensitivity in Cash Crop Market Supply Chains In: Quisumbing, A., Meinzen-Dick, R., Raney, T., Crop Penstedt, A., Behrman J., and Peterman, A (Eds). Gender in Agriculture, Springer Dordrecht.

Jeliffe, J. L., Bravo-Ureta, E. B., Deom, C. M. and Okello, D.K., 2018. Adoption of High-Yielding Groundnut Varieties: The Sustainability of a Farmer-Led Multiplication- Dissemination Program in Eastern Uganda. Sustainability, 10 (5) 1-21.

Kafumbe, L. A. 2010. Women's Rights to Property in Marriage, Divorce and Widowhood in Uganda: The Problematic Aspects. Human Rights Review, 11, (2) 199-221.

Kanak.A. 2007. Women's Right to Equality and Non-Discrimination: Discriminatory Family Legislation in Uganda and the Role of Ugandas Constitutional Court. *International Journal of Law, Policy and Family* ,21, 341-372.

Kanyamurwa, J.M., Wamala, S., Baryamutuma, R., Kabwama, E. and Loewenson, R. 2013. Differential Returns from Globalization to Women Small holder Coffee and Food Producers in Rural Uganda. *African Health Science*, 13, (3) 829-841.

Kasekende, L., Ndikumana, L. and Rajhi T. 2001. Impact of the Global Financial and Economic Crisis on Africa. African Development Bank, Working Paper, Number No. 96.

Kasente, D., Lockwood, M., Vivian, J. and Whitehead. A. 2000. Gender and the Expansion of Non-traditional Agricultural Exports in Uganda. In Shattra Razavi (ed.) *Shifting Burdens: Gender and Agrarian Change under Neoliberalism*. USA, Kumarian Press Inc. USA.

Kassie, M., Shireraw, B and Muricho, G. 2011. Agricultural Technology, Crop Income, and Poverty Alleviation in Uganda. *World Development*, 39 (10), 1784-1795.

Katungi, E. and Smale, M. 2006. Gender, Social Capital and Information Exchange in Rural Uganda. CAPRI Working Paper No.59. International Food Policy Research Institute. Washington D.C.

Kijima, Y., Otsuka, K. and Sserunkuuma, D. 2011. An Inquiry into Constraints on a Green Revolution in Sub-Saharan Africa: The Case of NERICA Rice in Uganda. *World Development* 39(1), 77-86.

LANDac 2016 Fact Sheet Uganda. Food Security and Land Governance. www.landgovernance.org/assets/20160627-Fctsheets-Uganda.pdf

Leung, L. and Glenn, P. J. 2013. A Cost Benefit Analysis of Maize Production and Marketing in Uganda. USAID (LEAP). Development Discussion Papers 2012-04.

Lodin, J. B. 2012. Intra-household Bargaining and Distributional Outcomes Regarding NERICA Upland Rice Proceeds in Hoima District, Uganda. *Gender, Technology and Development*, 16(3), 253-278.

Lourenco, F., Natalie, S., Akosua, D., Gerald, M., Ranis, C., David, W, T. 2014. "Experience of Entrepreneurial Training for Female Farmers to Stimulate Entrepreneurship in Uganda." *Gender in Management, An International Journal*, 29(7) 382-401.

Lusiba, S. G., Kibwika, P and Kyazze, B, F. 2017. Intra-household Gender Division of Labour and

Decision Making on Rice Postharvest Handling Practices: A case of Eastern Uganda. *Conget Social Sciences* (3) 1.

Maertens, M. and Swinnen, J, F, M. 2009. Are Modern Supply Chains Bearers of Gender Inequality? Paper Presented at the Workshop on “Gaps, Trends and Current Research in Gender Dimensions of Agricultural and Rural Employment: Differentiated Pathways Out of Poverty” ILO-FAO, March 30-April 3, Rome.

Mayoux, L 2012. Gender Mainstreaming in Value Chain Development: Experience with Gender Action Learning System in Uganda. *Enterprise Development and Microfinance*, 23 (4).

Acosta, M., Bommel, S.V., Wessel, M.V., Ampaire, E.L., Jassogne,L., and Hfeindt, P. 2019. Discussive Translations of Gender Mainstreaming Norms. The Case of Agricultural and Climate Change Policies in Uganda. *Women Studies International Forum* (74) 9-19.

Meinzen-Dick, R., Quisumbing, A., Behrman, J., Biermayr-Jenzano, O., Wilde, V., Noordeloos, M., Ragasa.C. and Beintema. N. 2010. Engendering Agricultural Research. IFPRI Discussion Paper 973, International Food Policy Research Institute (IFPRI).

Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) 2010. Agriculture Sector Development Strategic and Investment Plan, (2010/11-2014/15). Kampala, Uganda.

Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). 2013. Local Government Budget Framework Paper FY 2014/2015 “Implementation of the Commodity Approach. Promotion of Research and Advisory interface (ATTA’S) and Framework Implementation Plans for Non-ATTAS.”

Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). 2015. “Agriculture for Food and Income Security: Agriculture Sector Development Strategy and Investment Plan 2010/11-2014/15.” Kampala, Uganda.

Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). 2016. National Agricultural Extension Policy of Uganda. National Agricultural Extension Strategy. 1-65.

Ministry of Agriculture Animal Industry and Fisheries (MAAIF) 2016. Policy Statement for the Financial Year 2016/2017. Kampala, Uganda.

Ministry of Finance, Planning, and Economic Development (MFPED). 2002. Uganda Participatory Poverty Assessment Report: Deepening the Understanding of Poverty, Kampala.

Ministry of Gender, Labour and Social Development (MGLSD). 2014. Assessment of Affirmative Action Strategies and Policies in the Promotion of Gender Equality and Women's Empowerment in Uganda, Kampala.

Ministry of Lands, Housing and Urban Development (MLHUD). 2013. "The Uganda National Land Policy", Kampala: Republic of Uganda.

Ministry of Trade Industry and Cooperatives (MTIC). 2011. National Cooperative Policy, Kampala, Uganda.

Monitoring African Food and Agricultural Policies (MAFAP). 2013. Review of Food and Agricultural Policies in Uganda. Country Report Series, FAO, Rome, Italy.

Minot, N. and Daniels, L. 2005. Impact of Declining Global Cotton Prices on Rural Poverty in Benin. *Agricultural Economics*, 33, 453-466.

Montalbano, P., Pietrelli, R. and Salvatic, L. 2018. Participation in the Market Chain and Food Security: The Case of Ugandan Maize Farmers. *Food Policy*, 76, 81-98.

Morioka, K. and Nicholas, G. 2014. Women's Empowerment and Value Chains: Experiences of Women in Cambodia, Palestine and Uganda. Australia. Action Aid.

Mpuga, P. 2010. Constraints in Access to and Demand for Rural Credit: Evidence from Uganda. *African Development Review* 22, (1) 115-148.

Mukadasi, B. and Nabalegwa, M. 2007. Gender Mainstreaming and Community Participation in Plant Resource Conservation in Buzaya County, Kamuli District, Uganda. *African Journal of Ecology*, 45(1), 7-12.

Mukasa, A., Salami, A., Kayizzi, M., Mugerwa, J. 2015. Gender Productivity Differentials among Smallholder Farmers in Africa: A Cross Country Comparison. African Development Research Group Working Paper Series 231, 45.

Nakazi, F., Aseete, P., Katungi, E and Adrogu, M, U.2017. The Potential and Limits of Farmers' Groups as Catalysts of Women Leaders, *Cogent Economics & Finance*, 5, (1).

Nakazi, F., Njuki, J., Ugen, M.A., Aseete, P., Katungi, E., Birachi, E., Muggaga, I.J. and Nanyonjo, G. 2017. Is Bean Really a Women's Crop? Men and Women's Participation in Bean Production in Uganda. *Agriculture and Food Security*,6(22) 1-11.

Namayengo, F., M., Antonides, G. and Ceccllic, F. 2018. Micro credit and Food Security: Evidence from Rural Households in Uganda. *Journal of African Economies* 27, (4), 457-482.

National Planning Authority (NPA). 2013. Policy Paper on Transforming Smallholder Farming to Modern Agriculture in Uganda. Kampala.

National Environment Management Authority (NEMA) 2016. State of Environment Report for Uganda 2014. NEMA, Uganda.

Nkonya, E. 2002. Uganda Crop Market Characteristics, Constraints and Opportunities. Strategic Criteria for Rural Investment in Productivity. IFPRI, Washington DC.

Ochago, R. 2017. Barriers to Women's Participation in Coffee Paste Management Learning Groups in Mount Elgon Region, Uganda. *Cogent Food and Agriculture* 4(1).

Ocan, R. 2017. Institutional Hybridity: An Analysis of Land Tenure Systems and Land Wrangles in Acholi Land. *Journal of African Democracy and Development*, 1(2), 17-32.

Okoboi, G., Kuteesa, A. and Barungi, M. 2013. Impact of National Agricultural Advisory Services Program on household Production and Welfare in Uganda. Africa Growth Initiative Working Paper 7, Economic and Policy Research Centre.

Okonya, J.S. and Kroschel, J. 2014. Gender Differences in Access and Use of Selected Productive Resources among Sweet Potato Farmers in Uganda. *Agriculture and Food Security*, 3(1).

Omotilewa, J.O., Ricker-Gilbert, J., Ainembabazi, H. and Shively, G. 2016. Impacts of Improved Storage Technology among Small Holder Farm Households in Uganda. Paper Presented at the 5th International Conference of the African Association of Agricultural Economists September 23-26. Addis Ababa, Ethiopia.

Ouma, E., Dione, M., Lule, P., Roesel, K., and Pezo, D. 2014. Characterization of Smallholder Pig Production Systems in Uganda: Constraints and Opportunities for Engaging with Market Systems. *Livestock Research for Rural Development*, 26(3), 56.

Pan, Y., Smith, S.C., and Sulaiman, M. 2018. Agricultural Extension and Technology Adoption for Food Security: Evidence from Uganda. *American Journal of Agricultural Economics*, 100(4) 1012-1031.

Peterman, A., Behrman, J. A., and Quisumbing, A. R. 2010. A review of Empirical Evidence on Gender Differences in Non-land Agricultural Inputs, Technology, and Services in Developing countries. In *Gender in agriculture* (pp. 145-186). Springer, Dordrecht.

Quisumbing, A. R., and Pandolfelli, L. 2010. Promising Approaches to Address the Needs of Poor Female Farmers: Resources, Constraints, and Interventions. *World Development*, 38(4), 581–592.

Salami, A., Kamara, A.B. and Brixiova, Z. 2010. Smallholder Agriculture in East Africa: Trends, Constraints and Opportunities. Paper No. 105. African Development Bank Group.

Sebatta, C., Mugisha, J., Katungi, E., Kashaaru, A. and Kyomugisha, H. 2014. Smallholder Farmers' Decision and Level of Participation in the Potato Market in Uganda. *Modern Economy*, 5(08), 895.

Sekabira, H., and Qaim, M. 2017. Mobile Money, Agricultural Marketing, and off-farm Income in Uganda. *Agricultural Economics*, 48(5), 597-611.

Sell, M., Bäckman, S., Anang, B.T and Niemi, J.K. 2018. The unequal efficiency gap: Key factors influencing women farmer's efficiency in Uganda. *Cogent Food and Agriculture* 4(1).

Robbins, P. and Ferris, S. 2000. Design of a Market Information System for Small-scale Producers and Traders in Three Districts of Uganda. Paper No. 8019. Ibadan. International Institute of Tropical Agriculture (IITA).

Rwamigisa, P. B., Birner, R., Mangheni, M.N. and Semana, A 2016. How to Promote Institutional Reforms in Agricultural Sector: A Case Study of Uganda's National Agricultural Advisory Services (NAADS). *Development Policy Review*, 36, 607-627.

Ssewanyana, S., Matovu, J. M., Twimukye, E. 2011. Building on Growth in Uganda. In: Punam, C. and Manka, A (eds.) *Yes Africa Can: Success Stories from a Dynamic Continent*. Washington, D.C. The World Bank.

Schneider, K. and Gugerty, 2010. Gender and Contract Farming in Sub-Saharan Africa. Evans School Policy Analysis and Research (EPAR).

Sheahan, M. and Barrett, C.B. 2017. Ten Striking Facts about Agricultural Input Use in Sub-Saharan Africa, 67, 12-25.

Smith, C. S., Bobic, V., Fishman, R. and Sulaiman, M. 2017. How Sustainable are the Benefits from Extension for Small holder Farmers? Evidence from a Randomised Phase-out of the BRAC Program in Uganda. Working Paper 1. Institute for International Economic Policy (IIEP).

Smith, L. C., Ramakrishnan, U., Ndiaye, A., Haddad, L. and Martorell, R. 2003. The importance of Women's Status for Child Nutrition in Developing Countries. Research Report No. 131. International Food Policy Research Institute (IFPRI). Washington D.C. World Bank.

Ssekibuule, R., Quinn, J.K and Brown, L. 2013. A Mobile Market for Agricultural Trade in Uganda: ACM DEV-4 Conference Proceedings of the 4th Annual Symposium on Computing for Development. Cape Town, South Africa.

Society for International Development (SID). 2012. The State of East Africa: Deepening Integration, Intensifying Challenges. Nairobi.

Ssonko, U. L. and Muranga, F. I. 2017. Partial Characterization of Starches from Major Banana (Matooke) Cultivars Grown in Uganda. Food Science and Nutrition, 5(6), 1145-1153.

State of Uganda Population Report 2017

Tanzarn, N. 2017. Scaling up Gender Mainstreaming in Rural Transport: Uganda Case Study Report. International Forum for Rural Transport and Development. UK.

Thangata, P. 2016. Cooperative Business Models in Uganda: The Case of Nyakyera-Rukoni Area Cooperative Cooperative Enterprise (NRACE).

Thuo, M., Bell, A.A., Bravu-Ureta, B. E., Lachaud, M, A., Okello, D K., Okoko, E. N., Kidula, N, L., Deom, C, M. and Puppala, N. 2014. Effects of Social Network Factors on Information Acquisition and Adoption of Improved Groundnut Varieties: the case of Uganda and Kenya. Agriculture and Human Values, 31(3)339-353.

Uganda Bureau of Statistics (UBOS). 2007. Uganda National Household Survey 2005-2006: Social Economic Report, Kampala: Uganda Bureau of Statistics.

Uganda Bureau of Statistics (UBOS), 2012. Agricultural Sector, Gender Statistics Profile, Kampala, Uganda.

Uganda Bureau of Statistics (UBOS) and ICF. 2012. Uganda Demographic and Health Survey 2011. Calverton, Kampala, ICF International Inc., Maryland.

Uganda Bureau of Statistics and Ministry of Gender, Labour and Social Development: An Analysis of Gender Based Violence, Asset Ownership and Employment. Economic Policy Research Centre/UN Women. Kampala, Uganda.

Uganda Bureau of Statistics (UBOS) 2013. Uganda National Panel Survey 2010/2011. Kampala, Uganda.

Uganda Bureau of Statistics (UBOS) 2016. National Population and Housing Census 2014, Main Report, Kampala, Uganda

Uganda Bureau of Statistics (UBOS) 2017. Statistical Abstract. Kampala, Uganda Uganda National Planning Authority. 2013. Transforming Small holder farming to Modern Agriculture in Uganda. Kampala.

Ugen, M., Karanja, D., Birach, E., Katabalwa, C., Ouma, J., Mukutu, R. 2017. Precooked Beans for Improving Food and Nutrition Security and Income Generation in Kenya and Uganda. International Development Research Centre, Canada.

United Nations Development Programs (UNDP) 2014. Human Development Report 2014. Sustaining Human Progress: Reducing Vulnerabilities and Building Resilience, UNDP, New York.

United Nations Development Programs (UNDP) 2015 Uganda Country Gender Assessment New York, United Nations.

United Nations Women, 2015. The Cost of the Gender Gap in Agricultural Productivity in Malawi, Tanzania, and Uganda. UN Women, the UN Environment Program, UNDP, and the World Bank.

Vasilaky, K and Leonard, K.L. 2015. As Good as the Networks they keep? Improving farmers' social Social Networks via Randomized Information Exchange in Rural Uganda. University of Maryland, College Pak.

Wellard, K., Rafanomezana, J., Mahara, N., Okotel, M. and Subbey,V. 2012. A Review of Community Extension Approaches to Innovation for Improved Livelihoods in Ghana, Uganda and Malawi. The journal of Agricultural Education and Education, 19 (1) 21-35.

World Bank 2007. World Development Report 2008: Agriculture for Development. Washington, DC. World Bank.

World Bank 2016. The Uganda Poverty Assessment Report 2016: Farms, Cities and Good Fortune; Assessing Poverty Reduction in Uganda. Washington D.C. The World Bank.

World Bank 2018. Closing the Potential Performance Divide in Ugandan Agriculture. Washington D.C. The World Bank.

World Bank 2018b. Making Farming more Productive and Profitable for Uganda Farmers. Washington D.C. The World Bank.

World Data Atlas <https://knoema.com/atlas/Uganda/topics/Land-Use/Permanent-crops-meadows-and-pastures/Permanent-crops>.

World Food Programme (WFP). 2015. Zero Loss for Zero Hunger: World Food Programme's Work to Prevent Post Harvest Food Losses WFP.

World Population Prospects 2019 <https://population.un.org/wpp/> and World Urbanization Prospects 2018 <https://population.un.org/wup/>

Zizinga, A., Kangalawe, R.Y.M., Ainslie, A., Tenya, M, M.,Majaliwa, J., Saronga, N.J. and Amoako, E.E. 2017. Analysis of Farmer's Climate Change Adaptation Practices in South-Western Uganda, 1980-2009. *Climate*, 5 89.

Zu Selhausen, F.M. 2015. What Determines Women's Participation in Collective Action? Evidence from a Western Ugandan Coffee Cooperative. *Feminist Economics* 1-28.