RAPID GENDER ASSESSMENT

OF THE HORTICULTURE AND DAIRY VALUE CHAINS IN UGANDA

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CONTENTS

ACKNOWLEDGEMENTS **2**
CONTENTS **3**
LIST OF FIGURES **5**
LIST OF TABLES **6**
PREFACE **7**
ACRONYMS **8**
DEFINITIONS **9**
1.0 INTRODUCTION **11**
2.0 OBJECTIVES OF THE ASSESSMENT **11**
3.0 METHODOLOGY **12**
4.0 LITERATURE REVIEW **14**
4.1. GENDER IN AGRICULTURE 14
4.1.1 Gender and the legal framework in Uganda 14
4.1.2 Gender and household dynamics and their impact on socio-economic aspects 14
4.1.3 Gender and access to inputs 15
4.1.4 Gender and labour access in agriculture productivity 15
4.1.5 Gender and farm production 15
4.1.6 Gender and climate change 16
4.1.7 Gender and market access in Uganda 16
4.1.8 Gender and financial access in Uganda 17
4.2 LITERATURE REVIEW OF THE TOMATO VALUE CHAIN IN UGANDA 17
4.2.1 Local market 18
4.2.2 Export market 19
4.3 LITERATURE REVIEW OF THE DAIRY VALUE CHAIN IN UGANDA 19
4.3.1 Dairy farming systems in Uganda 20
4.3.2 Local market 21
4.3.3 Dairy imports 21
4.3.4 Gender and dairy production 22
5.0 FINDINGS **23**
5.1 TOMATO VALUE CHAIN 24
5.1.2 Visibility 18
5.1.2.1 Gender mapping in the tomato value chain 25
5.1.3. Inclusive 26
5.1.3.1 Major activities of men and women in the tomato production segment 26
5.1.3.2. Decision making in the household among tomato farmers 27
5.1.3.3. Perception of men and women on benefits from tomato production 28
5.1.4 Empowerment 28
5.1.4.1 Traders to the large-scale tomato buyers that deliver in structured markets 28
5.1.4.2 Market vending 28
5.1.4.3 Value chain processing 29
5.1.4.4 Tomato vendor E- providing extension services 30
5.1.4.5 Input supply shops 31
5.1.5 Average sales 31
5.1.5.1 What favours women to participate in tomato vending 32
5.1.5.1 Benefits women have obtained participating in the tomato value chain 32
5.1.5.2 Constraints and opportunities 33
5.1.5.2 Financial access 35
5.1.6 Transformation processes 36
5.1.6.1 Value chain actors 36

5.1.6.2 Initiatives from other value chain influencers 36
5.2 DAIRY PRODUCTION 38
5.2.1 Demography of FGD respondents 39
5.2.2 Visibility 39
5.2.2.1 Gender mapping in the dairy value chain 39
5.2.3. Inclusive 41
5.2.3.1 Major activities of men and women in dairy production 41
5.2.3.2. Decision-making in the households among Southwestern Uganda dairy farmers 42
5.2.3.3 Benefits women have obtained from participating in the dairy value chain 43
5.2.4.4 Perception of men and women on benefits from dairy production 43
5.2.4 Empowerment 44
5.2.4.1 Gender in dairy cooperatives 44
5.2.4.2 Employment in the cooperative 46
5.2.4.3 Cooperative leadership 47
5.2.4.4 What works for and against women to occupy leadership positions within the cooperative 48
5.2.4.5 Financial access and financial literacy 49
5.2.5 Women group in other value chain segments 50
5.2.5.1 Dairy value chain business A (ghee) 50
5.2.5.2 Small scale production of probiotic yoghurt 50
5.2.5.3 Dairy value chain business C 51
5.2.5.4 Craft items 52
5.2.5.5 Women's group in dairy value chain business B - tractor owner and services provider for increased pasture production 53
5.2.5.6 Other opportunities for women inclusion -women owning dairy farms 54
5.2.5.7 Women SACCO A 54
5.2.6 Factors that favour business and challenges that constrain growth 55
5.2.7 Unexplored opportunities 57
5.2.8 Financial access 58
5.2.9 Transformational processes 58
5.2.9.1 Value chain actors (women in business) 58
5.2.10 Value chain influencers 59
5.2.10.1 Development actors 59
5.3 FINANCIAL SERVICE PROVIDERS 61
5.3.1 Details about Financial Service Providers and credit service offerings 62
5.3.2 Summary of the table 63
5.3.3 Agriculture loan portfolio versus other loan portfolios 63
5.3.4 Loan products provided by seven institutions 64
5.3.2.1 Summary of table above 66
5.3.2.2 Loan amounts by institution 66
5.3.5 Challenges and areas for partnership to improve agricultural lending to small scale farmers 67
5.3.6. A summary of opportunities in agricultural value chains for increased women participation as discussed by Financial Service Providers 69
6.0 LOCAL GOVERNMENT 70
6.1 OPPORTUNITIES FOR INCREASED WOMEN EMPOWERMENT IN BOTH TOMATO AND DAIRY VALUE CHAIN 71
7.0 CONCLUSION 72
8.0 RECOMMENDATIONS 73
10. ANNEXES: 77
Annex 1: Demographic characteristics of FGD respondents in tomato production (N – Land) 77
Annex 2: Demographic characteristics of women in business in tomato value chain 77
Annex 3: Demographic characteristics of FGD respondents from dairy cooperative (N – Land) 78
Annex 4: Demographic characteristics of women in business interviewed in the dairy value chain 79
Annex 5: References 80

LIST OF FIGURES

Figure 1 Men and women plotting the gender value chain map 13
Figure 2 Gender in value chain framework 13
Figure 3 Gender map of men and women in the tomato value chain for FGD respondents in Mpigi 25
Figure 4 Graphical representation of gender on the value chain map 25
Figure 5 Activities done by men and women in tomato production 26
Figure 6 Tomato vending in the local markets 29
Figure 7 Different tomato-processed products 29
Figure 8 Average sales when starting and currently 31
Figure 9 Response on what favours women's participation in market vending 32
Figure 10 Gender in value chain mapping in the dairy value chain 39
Figure 11 Gender represantation of access and control along the value chain 40
Figure 12 Activities done by men and women on a dairy farm 41
Figure 13 Milk deliveries at the cooperative 44
Figure 14 Percentage representation of men and women in the cooperative 45
Figure 15 Woman in dairy value chain business A of Dairy value chain business A 50
Figure 16 Women's group dairy value chain business A 50
Figure 17 Products of Woman in dairy value chain business C, proprietor of Dairy value chain business B 51
Figure 18 Products made by Dairy value chain business C 51
Figure 19 Woman in dairy value chain business E handmade crafts from animal skins 52
Figure 20 Woman in dairy value chain business F in her craft shop of Ankole cultural items 53
Figure 21 Women's group in dairy value chain business B members attending the Focus Group Discussions 53
Figure 22 Unexplored opportunities for women businesses 57
Figure 23 Percentage of agriculture portfolio 63

LIST OF TABLES

Table 1 Number of FGDs and KIIs conducted per value chain (F – Female and M- Male) 12
Table 2 Tomato production in Uganda 18
Table 3 Snapshot of cooperatives in South western Uganda 20
Table 4 Value of milk and milk products from 2015 to 2018 in USD 22
Table 5 Decision-making between men and women 27
Table 6 Perception of men and women on benefits 28
Table 7 The gender constraints and opportunities 33
Table 8 Constraints in other value chain segments 34
Table 9 Details of finance access in tomato production 35
Table 10 Transformative approaches needed 36
Table 11 Development actors in tomato value chain 37
Table 12 Decision making as observed by the FGD respondents 42
Table 13 Perception of benefits from dairy production as discussed by FGD participants from all districts 43
Table 14 Membership and milk collection volumes in five primary cooperatives 44
Table 15 Distribution of cooperative leadership positions by gender 45
Table 16 Average price 46
Table 17 Men and women employment in the cooperative 46
Table 18 Distribution of cooperative leadership positions by gender 47
Table 19 What works for and against women to occupy leadership positions 48
Table 20 How cooperative members access financial resources 49
Table 21 What works for and against women businesses 55
Table 22 Financial access for women in dairy 58
Table 23 Approaches for change for women businesses 58
Table 24 Development actors service provision in dairy 60
Table 25 FSP product offering 62
Table 26 Loan product offering of different FSPs 64
Table 27 Loan amounts by Institution 66
Table 28 Challenges, solutions and support required 67
Table 29 Opportunities for women economic empowerment 71

PREFACE

Financial Sector Deepening (FSD) Uganda is an independent not-for-profit company committed to promoting greater access to and usage of financial services in Uganda. FSD Uganda seeks to develop a more inclusive financial sector with a focus on low- income individuals (particularly women) and Micro, Small, and Medium Enterprises (MSMEs).

FSD Uganda works with both public and private sector players to develop sustainable improvements in the livelihoods of low- income individuals through reduced vulnerability to shocks, increased incomes, and employment creation.

A rapid assessment to obtain insight into women's economic opportunities within the dairy and horticulture value chains was commissioned by the FSD Network Collaborative Gender Programme to support FSD Uganda.

This report presents insightful findings from the literature reviewed and a field study conducted in selected districts across the tomato and dairy value chains in Uganda. The report provides an overview of the transformative potential on rural women's livelihoods per value chain, and further explores interventions supporting women to achieve greater resilience, increase their income and exercise greater decision-making.

ACRONYMS

BoU	Bank of Uganda
CSAF	Council on Smallholder Agricultural Finance
DLG	District Local Government
FAO	Food and Agriculture Organization
F & M	Female and Male
FGD	Focus Group Discussions
FHH	Female Headed Household
FS	Financial Services
FSP	Financial Service Provider
GOU	Government of Uganda
HH	Households
KCCA	Kampala City Council Authority
MCC	Milk Collection Centre
MHH	Male Headed Household
NDP III	National Development Plan III
NAADS	National Agriculture Advisory Development Services
NARO	National Agriculture Research Organisation
ToT	Training of Trainers
UBOS	Uganda Bureau of Statistics
UCCCU	Uganda Crane Creameries Cooperative Union
UNBS	Uganda National Bureau of Standards
WfP	Water for Production

DEFINITIONS

Value chain

A value chain is an analytical and operational model that appreciates that a product is rarely directly consumed at the place of its production. A product is transformed, combined with other products, transported, packaged, displayed, until it reaches the final consumer. The raw materials, intermediate products and final products are owned by various actors linked by trade and services, and each adds value to the product. The value chain model assumes that by understanding interactions between all these actors, it is possible to identify points of intervention to;

i). Increase efficiency and thereby increase total generated value and

ii). Improve the competence of actors to increase their share of the total generated value.[1]

Gender

Gender describes the socially constructed characteristics of women and men in each society or culture. Through interaction, socialisation, work and, family roles, women and men learn to be different in behaviour and attitudes. These characteristics vary greatly within and between cultures and play out differently in different places over time. Gender is learned, dynamic, and changes over time.

Gender norms

Gender norms dictate economic benefits obtained between men and women in society. Norms such as those stipulating that women don't inherit land nor own property limit women's engagement in productive enterprises. The Uganda Social Institutions and Gender Index Country Report shows that 27 per cent of Ugandans do not believe that women should own land or other forms of property (OECD, 2015).

There are also norms around division of labour that stem from the gender roles that women and men play in society. Gender agnostic assessments of agricultural productivity pay little attention to quantifying unpaid work primarily borne by women and the implications of such labour on women's agricultural productivity, for example. There are unspoken societal norms about who makes decisions in households and society, which further determine men and women's participation in political and economic spheres.

These social norms and values create a major imbalance of power in male-female relationships. Not only do women have fewer hours to tend to their farms, they also have limited control over the use of household income. Women having less money means fewer expenditures on household maintenance, seeds, fertilizer, pesticides, and climate-smart agricultural techniques needed by women to grow more crops. Lower income also means less money to spend on goods and services and less investment in personal skills, all of contribute to the growth of the country's economy. social norms and values limit the capacity of women to undertake economic production, which has a direct impact on agricultural productivity, gender equality and women's economic empowerment.

Women's empowerment

Women's empowerment is usually framed in terms of economic advancement and enhanced power and agency, which can enable women to have increased control over their lives. A woman can be considered empowered when she has the ability and power to make and act on economic decisions and is consequently able to succeed and advance socio-economically. The empowerment of women may emerge through improved access to resources; the collective action and political mobilisation of women; training and awareness raising (FAO, 2013).

Gender transformative approach

The gender transformative approach is one category on the chain (continuum) of gender integration approaches. It seeks to actively examine, challenge, and transform the underlying causes of gender inequality rooted in inequitable social structures and institutions. As such the gender transformative approach aims at addressing imbalanced power dynamics and relations, rigid gender norms and roles, harmful practices, unequal formal and informal rules as well as gender-blind or discriminatory legislative and policy frameworks that create and perpetuate gender inequality (MAAIF, 2016).

1.0 INTRODUCTION

A rapid assessment was commissioned by the FSD Network Collaborative Gender Programme to support FSD Uganda's intention of identifying women's economic opportunities in the dairy and horticulture value chains.

The findings provide insights on women's inclusion in value chains through an analysis of women's economic activities, gender constraints, potential of each value chain to function better for women and innovations by several service providers to enhance women's participation. The information documented in this report is intended to support FSD Uganda and its partners to design approaches contributing towards improving rural women's livelihoods in agricultural value chains.

2.0 OBJECTIVES OF THE ASSESSMENT

The assessment sought to:

1. Provide an understanding of the current context of women's participation in the dairy and horticulture value chains, through:
    - Undertaking a review of the relevant existing data and literature relating to women's participation in the agriculture sector in Uganda.
    - Reviewing and analysing previous value chain analysis/ research on the two selected value chains, to provide a gendered understanding of both value chains, specifically:
    - Overall picture of the value chains
    - Engagement of lower income households in the value chains
    - Engagement of women in the value chains

2. Facilitate several FGDs with women and men in both value chains to better understand barriers and opportunities for women's greater participation identified in the literature review. Specifically, it sought to provide insights into the potential of each value chain to function better for women, through:
    - Working with FSD Uganda staff to identify existing or prospective partners (beyond the financial sector) working or able to work with these value chains
    - Presenting available data and analytics to determine prospective opportunities
    - Identifying and analysing the potential drivers of gender change in both value chains by considering:
        - existing key dynamics within the value chain system (increase in demand, productivity improvements etc)
        - prospective significant disrupters (potential causes of transformative rather than incremental change)
        - prospective change agents in the value chain, including market actors, market facilitators/donors and government
    - Carrying out key informant interviews (KIIs) to provide additional insights into opportunities and involvement of women in both value chains.

3. Provide recommendations to FSD Uganda on which value chain offers the greater opportunity for improving rural women's livelihoods (or how interventions relevant to both could be envisaged and sequenced) and identify potential opportunities and entry points for FSD Uganda and its partners.

3.0 METHODOLOGY:

The approach

The approach included designing a gender value chain frame work; compiling and reviewing recent value chain reports on dairy and horticulture; field data collection using qualitative assessment tools and conducting interviews with men and women farmers and several value chain actors; data analysis of information obtained and triangulating this using the gender value chain framework designed for this assessment.

The processes below outline the methodology used to obtain information compiled in this report.

Literature review: A desk study was done to compile a general overview of studies done on gender and agriculture in Uganda. This information was intended to provide a situation analysis of several gender constraints in agriculture production in Uganda and details of tomato and dairy value chains in Uganda.

Assessment tools: Information gathering tools were developed and adapted by both the FSD Network Collaborative Gender Programme and FSD Uganda teams, to support the data collection process with several actors in the value chain. Tools developed included: The gender in value chain map tool, a qualitative FGD check list to be administered with men and women farmers and key informant interviews with; District Local Government, cooperative/group leadership, development actors, women in business, Financial Service Providers.

Primary data collection: The data collection at field level included FGDs and KII. These were administered in the central region districts (Kampala, Mpigi, Mukono and Wakiso) for the tomato value chain, and southwestern region districts (Mbarara, Kiruhura, Kazo, Isingiro and Ibanda) for the dairy value chain.

Survey area

Selection of the assessment area was influenced by different factors. For the tomato value chain, the selection was influenced by information obtained from the desk review of literature that outlined central Uganda as the major market of bulk tomato produce. The assessment was therefore conducted in four proxy districts around Kampala. For the dairy value chain, the literature review showed that south western Uganda milk sheds produce the highest milk quantities in the country. This informed the decision to conduct the assessment in selected districts of the south western region.

Sampling size:

The sample size for primary data collection was intended to provide an insight into the current context of gender in both value chains.

Table 1 Number of FGDs and KIIs conducted per value chain (F – Female and M- Male)

Value chain	FGD (F&M)	Group /Coop Leaders	DLG	Development actors	FSP	Women in business
Tomatoes	4	4	8	7	3	7
Dairy	4	5	10	4	3	10

Identification of FGDs respondents (both women and men) and KIIs for women in business for tomato value chain was supported by the Kampala Capital City Authority (KCCA) and District Local Governments. The Local Government and SNV - TIDE Project supported with the dairy value chain.

Focus Group Discussions (FGD):

A gender in value chain mapping tool was administered with FGD groups, where participants were guided to plot/map women's visibility across the value chain. In some instances the FGDs were composed of both husband and wife from the same household. To overcome the gender barrier where men dominate speaking while women keep silent, participants were given pluck cards to plot their perception of who has access and control over each value chain segment. This process was intended to act as an icebreaker and encourage open discussions on gender issues that constrain women's economic benefit from value chain activities.

Figure 1 The men and women plotting the gender value chain map

Framework for analysis:

The assessment analysed information for both the literature reviewed and the primary data collected using parameters detailed in the gender framework below;

Gender in value chain framework

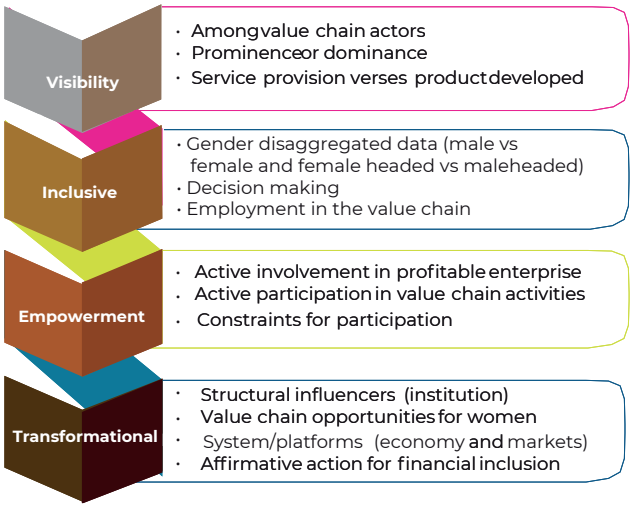

Figure 2 Gender in value chain framework

4.0 LITERATURE REVIEW

This section outlines the literature reviewed from various studies done on gender in the agriculture sector in Uganda with specific focus on tomato and dairy value chains.
Key highlights include;

4.1. GENDER IN AGRICULTURE

The World Bank Uganda Profile 2022, shows that for the last seven years more women (avg 76.4%) are employed in the agricultural sector than men (avg 67%). Although women provide over 70% of the labour force that is engaged in agriculture production, they control less than 20% of the outputs. Women continue to experience challenges in accessing the factors of production (land, credit, and extension services) and produce 17% less per acre than plots managed by men or jointly by other family members.

4.1.1 Gender and the legal framework in Uganda

Within the legal framework, the government of Uganda has demonstrated its commitment to promoting gender equality through measures such as: the promotion of gender equality and women's empowerment in the Uganda Vision 2040 and in its National Development Plan (NDP) III 2020/21 - 2024/25; ratifying regional and international instruments and approving laws related to gender equality and women's rights such as: The National Equal Opportunities Policy (2006); The Uganda National Gender Policy (2007); The Gender Equity Budgeting Policy; The National Employment Policy for Uganda (2011); The Domestic Violence Regulations (2011); The Domestic Violence Act (2010) among others. These frameworks are in existence, though there is limited evidence of their implementation.

4.1.2 Gender and households dynamics and impact on socio-economic aspects

Uganda has diverse household structures, with male headed and female-headed households. The activities with the highest percentage of persons engaged in unpaid care and domestic work include; cleaning utensils (50%), fetching water (50%) and (collecting firewood (32%), depending on the economic status of the household. More females (83%) than males (53%) participated in domestic care work (UBOS, 2019/20). Such work is characteristically uncompensated and draws on the time available for tasks that are economically rewarded. Clearly, unpaid care and domestic work comes at a cost - hours spent in unpaid household labour are hours unavailable for raising food or cash crops.

In Uganda, this work (for reasons tied to gender-based roles and expectations) falls heavily on women. It's estimated that women devote an average of 5.2 hours a day to this unpaid care and domestic work, while men devote 1.6 hours. This differential accounts for a generally heavier workload borne by women. Women in the 35- to 49-year-old age group, work 11 hours a day, compared to 8 hours for men in unpaid work. The UN Women 2018, observed that 57% of males and only 25% of females in Uganda do not engage in unpaid care and domestic work. Of course, these responsibilities result in women having less time to engage in productive activities such as farming, wage labour or enterprise development.

It is estimated that 69% of all women in Uganda don't own land and are only guaranteed access through their spouses or other male family members (CGIAR Research Program on Climate Change, Agriculture and Food Security, 2015). When women do not have effective ownership

over land, their ability to influence decision making about long term investments in the land is negatively affected, as well as their ability to access financial services since they lack collateral (Acosta, Ampaire, Okolo, & Twyman, 2015). Gendered inequalities extend beyond access to financial opportunities, credit, and insurance schemes by also influencing access to technologies, knowledge, and extension services. Studies have found that government extension programs only reach 22% of farmers (often reaching only better off farmers), and regularly do not target women farmers (MAAIF, 2016).

4.1.3 Gender and access to inputs

Farm inputs used may be either self-provided locally or commercially produced and purchased. For example, 92% of households use local seed, and only 31% use improved purchased seed. Among men, 33% use improved seed, compared to 24% of women. While women are less likely to use modern inputs, only a minority of either men or women use such inputs. (UBOS, 2012). Women are disadvantaged in accessing agricultural machinery and production technologies. In addition to this gender mechanisation gap, women also use lower levels of advanced agricultural technologies.

4.1.4 Gender and labour access in agriculture productivity

68% of the population in Uganda is employed in the agricultural sector, with 73% females and 63% males (UBOS, 2019/20). However, few assessments and analysis on agricultural productivity pay attention to the implications and burden of unpaid work that is primarily borne by women. Women spend more labour days than men to perform specific agricultural tasks. For example, they need 45% more labour days for seedbed preparation and sowing, 75% more labour days for weeding or pruning, and 121% more labour days for harvesting (UBOS).

Women and men farmers have very different levels of access to male family labour. This could potentially be linked to several factors including the segregation of tasks, rural women's limited voice and agency, their lack of access to finance to hire male labour and invest in machinery, and limited time-saving infrastructure. A key reason why women farm managers have less access to male family labour is that the majority are widowed, separated, or divorced. In fact, it is quite possible that these women became plot managers entirely because of their head-of household status. These high rates of widowhood, separation, and divorce mean that women have fewer people in the household to draw on for farm labour (UN Women; UNDP–UN Environment PEI, 2018).

4.1.5 Gender and farm production

Though more women than men work on the farm, gender disparities in land tenure rights limit their ownership and/or rights over agricultural land. The Annual Agricultural Survey 2019 indicates that 52% of men and 30% of women are owners or right holders over agricultural land in Uganda. The share of women among landowners /rights holders in 2019 was 39%, a drop from 41% in 2018. 39.6% percent of adults in agricultural households have rights over the agricultural land they cultivate. This proportion is as high as 48.7% among men, while it is only 31.1% among

women.

In some instances, the land is jointly owned by a husband and wife, although most decisions on the land will be made by the husband. Livestock is predominantly owned by men. Four- fifths of two million agricultural households that rear livestock are headed by males. Although there are no laws prohibiting women from owning land, culture and tradition discriminate against women owning land. Land generally belongs to the family or clan and its rights are held by men though women may have the right to live on the land and cultivate it.

Women in Uganda are more likely to be engaged in subsistence production and less likely to undertake market-oriented commercial production, this is because they generally lack control over cash income that might be used to supplement household requirements during periods of scarcity.

4.1.6 Gender and climate change

Women in Uganda are less likely to have knowledge and experience with climate-related hazards to productivity. Men, through land ownership and control of resources, are more likely to adapt to climate variation and natural disasters. Women's limited financial resources prevent purchase of soil- replenishing fertilizers, and their low level of access to extension workers affects their general knowledge of what measures they may take.

4.1.7 Gender and markets access in Uganda

Women and men farm different crops; women farmers are less likely to grow cash or export crops that men sell to the market for higher incomes. The UN Women 2018 assessment further examined whether selling more than 50% of crop output in the market also contributes to the gender gap in agricultural productivity. It is outlined that this factor alone explains 40% of the unconditional gender productivity gap in Uganda, equating to $26 million of potential gross gains in GDP.

A multitude of factors could explain why women sell less of their output to the market.

- First, they may face imperfect markets and thus prioritise their families' food security by cultivating crops for home consumption. Moreover, because women tend to cultivate smaller plots, they may not have enough produce left to sell to the market after fulfilling their families' consumption needs.
- Second, women may lack access to various inputs, such as the intensive labour required for cultivating marketable crops.
- Third, social norms may dictate which type of crops women cultivate. Women's legal rights are not clearly supported. According to the Uganda Social Institutions and Gender Index Country Report 27% of Ugandans do not believe that women should own land or other forms of property (OECD, 2015).

In male headed households, women farmers have little input in marketing; it is the husband who typically makes the marketing decisions and collects the profits. Money earned by husbands is not shared with their wives, nor is the decision on how it is spent. Such control is at times enforced through violence.

More men than women are engaged in agribusiness: 52% versus 18% (UBOS, 2014). While both men and women may obtain off-farm employment, women are paid 34% less than men (UBOS,

2014). All these factors restrict women's access to cash that could be used to purchase key agricultural inputs and ensure household's food security during periods of scarcity.

4.1.8 Gender and financial access in Uganda

Between 2009 and 2013, Uganda registered significant strides towards financial inclusion with 77% of adult women and 78% of adult men reported to be financially included in 2013. This is up from 69% of women and 72% of men in 2009 (FSDU, 2018). 63% of men are formally included compared to 54% of women (FSDU, 2018). The FinScope data shows that while more women (57%) than men (54%) rely primarily on informal financial services (FSDU, 2018) both use informal services somewhat differently. For example, regarding credit, women tend to borrow from savings groups while men prefer to borrow from family and friends.

Financial access for women is mainly tailored to small scale quick win business other than in agricultural sector (ie the grace period and loan amounts are not adapted to agricultural development). Financial service providers shun agriculture due to its heavy risks as a result of: long gestation period of cash flow for farmers, climatic factors that affect production and productivity, lack of proper structures and operational costs for credit access to rural farmers. At the same time, women don't qualify to access financial services to increase their agricultural production due to: lack of productive assets, less knowledge and education about financial products and fear of taking risks in accessing credit services. The majority of women may access financial services through informal structures such as relatives, VSLAs and women groups.

The Aceli Africa report on Blending Global Finance 2020, observed that lenders (formal financial institutions) serving Agri SMEs (farmers structures like cooperatives/groups and private sector entities) have traditionally faced high risk and high transaction costs given challenges at both the enterprise level (e.g weak management capacity) and market level (e.g price volatility, weather, political risk, legal environment, etc.). As a result, small loans are not profitable for most lenders due to high risk and high operating costs relative to low interest income. Even Council on Smallholder Agricultural Finance (CSAF) members, with their explicit impact focus and below-market cost of funds, struggled to serve smaller agri-SMEs.

As detailed in this report, this hinders growth of farmer cooperatives/groups especially women businesses positioned in several segments of agricultural value chains. Formal financing options are less likely to target women given their micro nature. The restricted financial attractiveness of many lenders in agriculture further narrows the limited opportunities of small holder women to participate in higher value chain segments where they would have higher level of control than in the lower value chain segments which are highly men dominant.

4.2 LITERATURE REVIEW ON TOMATO VALUE CHAIN IN UGANDA

Tomato, commonly referred to as "enyanya" in the local Luganda dialect, is a staple vegetable grown all over the country by both genders to support livelihoods. The crop has the potential to increase income, improve living standards and create employment. The dominant variety of tomatoes is the bush tomatoes produced in the open field. There are two seasons of tomatoes a year, however with irrigation, tomatoes can be grown all year- round (up to four harvests).

Tomato is most popularly grown in the Victoria basin areas in Uganda due to the favourable soils and environmental conditions required for its growth. Tomato requires warm days, bright sunshine, and cool nights for optimum yields while the soils should be well drained and fertile. These conditions are found around the Lake Victoria basin in the central region of Uganda. In the figure above we see a progressive trend of tomato production among farmers in Uganda from 2000 -2017, though the yields of tones per acre seems to have declined from 2.7 to 2.4 tones per acre.

Table 2 Tomato production in Uganda

	2000	2010	2010	2016	2016	2017
Area harvested, in hectares	2,100	5,500	5,500	6,424	6,424	6,671
Production, in tonnes	14,000	31,000	31,000	38,650	38,650	40,124
Yield (tonnes per ha)	6.7	6.1	5.6	6.0	6.0	6.0
Yield (tonnes per acre)	2.7	2.5	2.3	2.4	2.4	2.4

Source: FAOSTAT.

Seed suppliers sometimes supply farmers directly, but mostly work with agro-input dealers that supply input retailers located in the villages.

The current farm gate sales price is UGX 1,000-1,500 per kg. Given the reported yields at the farm level and the reported average tomato price per kg at farm gate, the margin is between 40 and 55%.

Bacterial wilt disease is a serious challenge to the horticultural industry. Some farmers who invested in greenhouses infrastructure for tomato production abandoned these due to the tomato bacterial wilt disease. Efforts have been geared towards offering acceptable solutions to the local markets, with the main focus on propagating new breeds from rootstocks that are bacterial wilt resistant and capable of producing bigger tomatoes. Another solution is the grafted tomatoe technology using polypropylene material that is easily accessible by locals. This makes the technology adaptable and within reach for the smallholder farmers who are targeted by the project (UN Women; UNDP–UN Environment PEI, 2018).

4.2.1 Local Market

Tomato farmers access the market in various ways. Most of the farmers sell to middlemen, agents or brokers that travel around the rural areas to buy produce and resell it at the wholesale markets in rural areas, or in urban markets. Some farmers close to the markets sell their produce at small market outlets next to their homes.

Traders

Wholesale traders have a dominant position in linking rural producers to urban consumers. A minority of the farmers take their own produce to the market. Therefore, traders provide an important intermediary service for both farmers and consumers since the main vegetable production fields are in rural areas of Uganda. Exploitative behaviour and high levels of informality are key challenges reported by different stakeholders. Also, the presence of cartels at urban markets is often a barrier for doing business. The main wholesale and retail markets in Uganda can be found in Kampala city. They are St. Balikuddembe market (Owino market), Kalerwe market and Nakasero market. Produce handling at the markets is not optimal and can cause food safety issues for consumers.

Tomatoes are transported in wooden crates and traded in basins and wooden crates. Not much trade is weighed in kilograms; instead, volumes traded are per crate, or per basin. Retailers pay a commission to the market. For example, a small retailer selling from a 230kg box pays about UGX 2,000 commission for a morning sale of tomatoes. Larger traders pay more, and this can go up to UGX 30,000 for a full truck. Most smaller retailers buy produce from middlemen. A common crate has a weight of 230-250kg and has a sourcing value of about UGX 270,000. The farm-gate price equals about UGX 1,200 per kg and the wholesale price adds another 300 per kg, which can be sold for UGX 2,000 per kg at retail (Wageningen Economic Research, 2019) ..

Structured markets

The major markets for tomatoes are Balikuddembe market (Owino market), Kalerwe market and Nakasero market, all in Kampala. Some commercial farmers that irrigate supply supermarkets and regional exporters. There are middlemen in the markets who sell the tomatoes for a commission, usually UGX 10,000 per wooden crate. The middlemen bargain with the buyers and the farmer only gets to know the price after the middlemen have sold.

Supermarkets

These are a well-established segment in the food retail market in urban areas where incomes are higher. Fresh vegetables such as tomatoes are sold in most of these market outlets. The scale of procurement is typically much larger and requires both volume and coordination among suppliers and between suppliers and retailers and their intermediaries. In Kampala, there are various large multinational supermarkets, several locally owned small to medium-sized supermarkets spread out in all the suburbs, as well as different petrol stations that have small supermarkets that are potential clients.

Small groceries

These are likewise numerous in Kampala and in urban centers, including fresh-produce kiosks and roadside vendors specialising in fruits and vegetables in strategic locations. At the lower-class market, roadside stalls and kiosks offer an opportunity. Many of these kiosks operate informally without licenses (Wageningen Economic Research, 2019).

4.2.2 Export market

The regional export market has a big influence on pricing. This includes markets such as South Sudan, Rwanda and Kenya. In the month of May the prices are high due to the volume of tomato export to Kenya. Prices without a significant export demand can be as low as UGX 60,000 per wooden crate. Tomatoes in the market are neither sorted, displayed, nor labelled according to size leading to an unappealing appearance and poor quality in the market display. Customers are usually allowed to select the tomatoes they want to buy. A small number of tomatoes are imported from Kenya in the 'dry season' between December and February. Some supermarkets in Uganda also import tomatoes from Holland and these serve a niche market for upscale restaurants in the country.

4.3 LITERATURE REVIEW ON DAIRY VALUE CHAIN IN UGANDA

The Uganda Government has identified milk as one of the 10 commodities of focus for the accelerated development of the agricultural sector (NDP III). From a livelihoods perspective, the sector provides perhaps the one commodity, 'milk', that is available most of the year as a source of income for the rural poor. The dairy sector is already a specific area of interest for several stakeholders. This sector is growing at an annual rate of 8% to 10% per annum. This growth is faster within the processed milk category, estimated at about 11% per annum. Growth is driven by a robust and unfulfilled demand for milk products in the country, the region, and opportunities in the export market (MAAIF; UNDP, 2017).

The south western milk shed has the highest percentage (78.3%) of milk sold from dairy farms, versus other milk sheds in Uganda (Kasirye & Mubiru, 2018). The dominance of the south western milk shed is attributed to the rate of breed improvement of dairy cattle (exotic and cross-breeds make up 99% of cattle on farms), increased presence of milk processing facilities in their vicinity (over 1 million liters capacity) and the existing cold chain infrastructure that enables farmers get milk to the market (DDA-TIDE,2018).

4.3.1 Dairy farming systems in Uganda

The dominant dairy farming systems in Uganda could be described as (a) high input zero grazing dairy systems in areas with high population pressure and near urban centers such as Eastern Uganda and around Kampala, (b) low input pasture- based free grazing type of dairy farming systems in areas with large, common in the south western part of Uganda, and (c) semi-pasture-based systems that are investing in paddocking and pasture management, water for production/ dams, cow housing, forage crop production and preservation, supplementary feeding, and improved (cross) breeds. Farming systems under (a) and (c) are commercialising and strategies vary according to the market (nearness, raw/processed, domestic/ export, price), agro-ecological conditions and availability and price of agricultural land (SNV, 2021).

Farmers

In south western Uganda, the majority of farmers are organised in cooperatives through their milk collection centers. Rural Milk Collection Centers (MCC) increased from 461 with total installed capacity of 1.7 million liters in 2017/18, to 475 with total estimated capacity of 2.21 million liters in 2020/21 (DDA, 2021). Average national farm gate milk prices increased to 1,072 UGX per liter compared to UGX 984 in the FY 2019/20. Retail prices also bounced back high in FY 2020/21 to UGX 1,603 (DDA, 2020/21).

Cooperative

Post-harvest handling and bulking of raw milk is mainly done at the cooperatives which act as MCCs. The cooling facilities are either owned by the cooperative members, an individual or the government. In south western Uganda under UCCCU, the umbrella body of all cooperative societies, most of the cooperative societies own milk collection equipment that was paid for by members or is still being paid for through monthly deductions of milk sales.

Table 3: Snapshot of cooperatives in south western Uganda

Name of district	No of registered coops	Members supplying milk to the cooperative	Female members in cooperatives	Liters of milk delivered to processors
Bushenyi	9	536	104	20,500
Ibanda	4	295	60	11,300
Isingiro	8	772	178	21,300
Kamwenge	3	421	102	5,500
Kazo	24	1550	347	67,200
Kiruhura	40	2755	559	153,600
Lyantonde	2	480	35	53,500
Mbarara	8	731	57	29,300
Sheema	6	438	86	6050
Ntungamo	1	1724	40	30,000

Source: Agriteera database 2021

The number of female members in cooperatives is still low (between 7%-20%). Most of the females in the cooperatives are from female headed households, who take up dairy farming after their husbands' death or severe illness. Although women play important roles at farm level, such as supervision of animals and workers on farm, washing milk utensils in addition to domestic roles with in the household, they are less involved in economic decisions in dairy production.

4.3.2 Local market

Dairy processing plants: These are the major buyers of milk bulked at the cooperatives. They include large, medium, small scale and cottages.

i. Large scale processors: In 2018, the purchased milk from the MCCs was as follows: Brookside bought 25%, Pearl Dairies 19% and Amos Dairies 13%. Other small scale processing plants account for the remaining 43%, these percentages exclusively considered the milk that moved from MCCs to processors. The majority of the large scale processors sell milk to the export market, with Kenya as one of the main export markets of Ugandan milk.
ii. Small processors/cottage industry: There are numerous small-scale/cottage milk processors but only 35 are registered and licensed by the Dairy Development Authority (DDA). The exact number of these actors is not known as many operate in the 'backyard'.

Domestic milk consumption

Due to rising non-tariff barriers on milk products for exports which the country has little control over, a renewed focus on domestic consumption has grown. The NDP III and the Agro-Industrialisation Programme prioritise prospects for promoting domestic milk consumption to ensure sustainable markets. Milk per capita consumption in Uganda has significantly improved. While the FAO estimate of domestic milk per capita consumption is at 62 liters; the country currently consumes an estimated 2.54 billion liters. Increased milk consumption and awareness campaigns and other initiatives like the School Milk Programme have helped boost per capita consumption. By the end of July 2021, the country had 21 dairy products produced, processed, and consumed locally. This is an increase from 17 registered in 2019.

4.3.3 Dairy imports

Uganda continues to import milk products despite government import substitution and aggressive export promotion policy of agricultural products. In the dairy subsector, milk products imported totaled 12,075,441,167 UGX (DDA, 2020/21). Imports into the country suggest a demand for products that either cannot be obtained locally or can only be obtained in limited quantities. Milk cream constitutes the highest value of milk and milk product imports into Uganda according to BOU data on imports from 2015 – 2018. This is followed by cheese, yoghurt, and butter. The detailed data shows imported milk cream has a variety of percentages of fat. This is a product that local processors could explore for production to harness the business that it can generate locally and possibly regionally.

Table 4 Value of milk and milk products from 2015- 2018 in USD

Imported product	Value USD
Milk cream	2,354,857
Cheese	376,075
Butter	111,334
Cheese and curd	85,975
Whey	21,601
Infant formula	12,305
Blue veined cheese	4,157
Spread	283

(Source: Bank of Uganda Data)

The above (domestic milk market and milk product import statistics) illustrate the opportunity for both men and women in dairy farming, cooperatives and agribusiness to invest in dairy sector to satisfy local demand in milk.

4.3.4 Gender and dairy production

Dairy production is a male dominated value chain and has limited participation of women due to gender norms such as cultural stereotypes over the roles women and men should play in the value chain, male ownership and access to dairy cattle and farmland, and lack of female participation due to decisions being taken by the resource owner, in this case men. In south western Uganda, the majority of women in the dairy sector are engaged in upstream segments like small scale processing (especially ghee or yoghurt making for household use) with a few now entering into yoghurt making for commercial purposes on a small scale.

The next section will explore the results obtained from qualitative interviews done with several actors to further understand the economic opportunities for women in the tomato and dairy value chains.

FINDINGS

The findings presented in this session are a summary of responses obtained from the FGD and KII respondents interviewed in both tomato and dairy value chains.

5.1 TOMATO VALUE CHAIN

Age: Other than Mukono district where most farmers (both men and women) were over the age of 40, the rest of the districts had respondents aged between 18 and 45.

Education background: Other than women in the Mpigi district FGD who had not attended school, the rest of the FGD respondents completed primary and secondary education.

Marital status: The majority of respondents were married. Mpigi, Kampala, and Wakiso FGDs had an even number of single and married respondents (female headed households (fhh) include the single women in this case).

Acreage of land under tomato production: The majority of farmers are cultivating tomatoes on less than one acre.

Land acquisition: The land is mainly rented. Rented land in Uganda is a form of land ownership ie an individual can either pay a lease on that land annually, for a number of years, or pay on agreement per agricultural season..

Management/ownership: It's worth noting that all the women-only FGDs state that the land is solely owned and managed by men, whereas the men only FGDs say it's jointly managed. However, in a typical Ugandan household structure, whoever owns the land manages it, though there may be exceptions, such as an absentee male in a male household head (MHH).

Conclusion: The demographic information will guide FSDU as they develop transformative approaches that address gender constraints to women opportunities in the tomato segment. For example, while discussing financial inclusion aspects, the approach should include product design/product innovations that require no collateral and are able to embed financial literacy training to women given their literacy levels.

5.1.2 Visibility

This section highlights the distribution of men and women in terms of access and control of resources in the tomato value chain.

5.1.2.1 Gender in value chain mapping in the tomato value chain

Figure 3 Gender on the value chain map

Participants of the Mpigi district FGD were taken through the value chain mapping tool. Each was given a piece of pluck card to map out who has access and control at each stage of the value chain in their households, using M to represent the husband and F to represent the wife. Cards above the purple line in the photograph show the gender with access, while below the line is the gender with control.

The gender on the value chain map shows that farmers are densely concentrated around the production segment (for both input supply and production) and the market segment. Fewer farming households especially women participate in the value chain segments of traders and processors.

Gender representation of access and control along the value chain

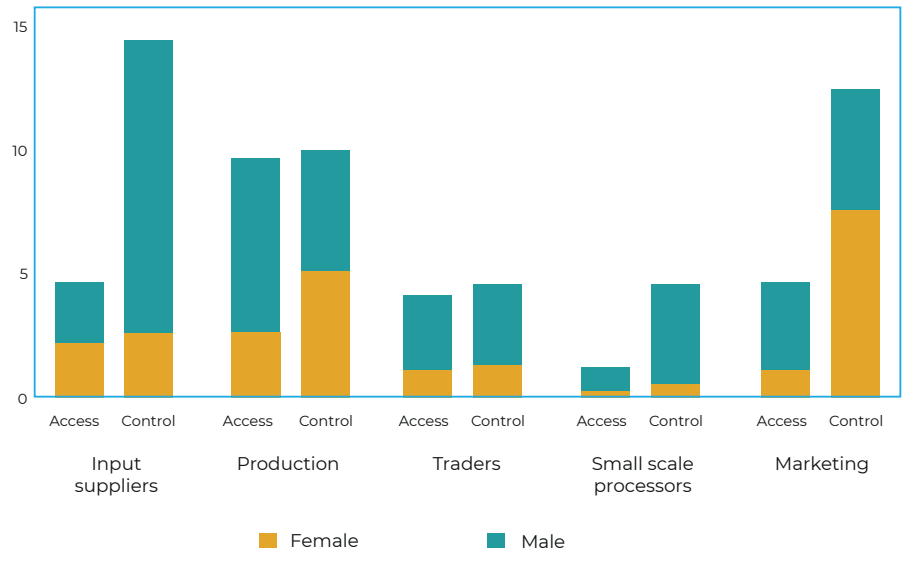

Figure 4 Gender representation of access and control along the value chain

The figure above is a graphical representation of the Gender in value chain mapping exercise showing who has access and control at household level along several segments of the value chain, as plotted by the FGD participants in Mpigi district. It's evident that most segments of the tomato value chain are dominated by men, as seen by the orange bars verses the blue bars. Most women perceived to have control over the different segments of the value chain were in FHHs. According to the literature review, most tomatoes in Uganda are sold raw (farm to market) through a variety of market outlets that include household consumers in the neighbourhood, small market stalls in the neighbourhood, local structured markets, seasonal markets, traders, supermarkets and groceries.

Women are more visible in the production and marketing segments of tomatoes, although men dominate most of the value chain segments (this shows who controls the production on farm). Women's participation is likewise visible within the trading segment. As outlined in the literature, traders are a type of market actor that purchase produce from multiple farmers then sell this to either structured local markets in the district or structured wholesale markets in Kampala.

Conclusion: The value chain mapping exercise revealed areas of the value chain where women are more visible. The map further reveals the household gender dynamics on who has the upper hand in terms of access to and control over resources along the different segments of the value chain. Visibility of women is correlated to their participation along the value chain, however visibility is relative i.e. this can imply women are benefiting along these segments hence (seen as economic opportunities) or that women are mere participants hence an opportunity for men to appreciate women participation and include them in benefits from the income received. Household gender methodology is one of the gender approaches used to address such intra household gender dynamics, through encouraging household joint decision making.

5.1.3. Inclusive

This section outlines key activities done by women and men, and their decision making process in the value chain.

5.1.3.1 Major activities of men and women in the tomato production segment

Men and women were interviewed in separate FGD groups, below are their responses on activities carried out in the tomato production segment.

Hiring land and labour, first and second plough, watering seedlings, spraying seeding, digging holes, putting manure, transplanting.

Transplanting, mulching, staking, weeding, shedding of plants, watering, harvesting

Figure 5 Activities done by men and women in tomato production

The information above shows that tomato production is inclusive of both women and men on farm activities. Labour intensive activities are mainly undertaken by men while the women undertake those activities that do not require a lot of manual effort. This was likewise outlined by officials from the district, attributing labour intensive activities to the existence of male dominancy in the production segment of the value chain.

Gender constraint: The majority of women do not grow tomatoes on large scale (ie 3-5 acres) as they find hiring labour expensive. As outlined in the literature (under Gender and Labour in section - 4.1.4), women spend more labour days than men to perform specific agricultural tasks, as women have limited access to male family labour compared to men.

Solution: This will entail a stakeholder mapping of service providers in the private sector that promote less labour intensive technologies. FSDU can partner with such private sector to improve access of these technologies to women farmers in tomato production, through extending affordable financing solutions.

5.1.3.2. Decision making in household among tomato farmers

Participants were also asked to define who makes decisions at household level in relation to different parameters in tomato production as outlined below;

Table 5 Decision making between men and women

Decisions about activities in the tomato farm	Decisions on the use of income generated from the tomato farm	Decisions on the use of income generated from the tomato farm and the family budget allocation
• Women have to consult their husbands most of the time. • Men take decisions given that they are the landowners and heads of the family	• Men have decision making power over women • Decisions are made without consulting their wives • In some instances, men and women agree	• FHH decisions are made by women • MHH decisions are usually made by men • There are a few instances where men decide with their wives

The majority of decisions are made by men although there are households that highlighted joint decision making on aspects related to income allocation. Decision making and supremacy in the household stems from who owns the land and cultural/gender norms. Although the cultural/gender norms exist, they are not defined. For example, it's expected that women have to adhere to these norms and as a sign of respect to their husbands they have to concede to his decisions. FSD Uganda should consider this gender constraint as they design financial solutions to attract more women to benefit from tomato production.

Conclusion: The household gender methodology is among the gender strategies that FSD Uganda should review and contextualise in their programme strategy. IFAD in the report, "Household Methodologies, Harnessing the Family's Potential for Change", outlines that household methodologies are not about empowering women and disempowering men. Rather, both women and men see that they benefit economically and personally from a more equal relationship with each other and with their children. The transformation in household dynamics enables household members to move beyond the traditional roles and relations assigned by societal norms.

5.1.3.3. Perception of men and women on benefits from tomato production

The information below shows a summary of feedback obtained during the FGDs on benefits from the tomato value chain.

Table 6 Perception of men and women on benefits

FGD responses	Perspectives of women and men on benefits from tomatoes at household level
	• Men take the larger share of the income/profit as the investment in production is mainly by men • For those households where there is cooperation, there is an equal benefit (especially in household financial responsibilities)
	• Given the high investment by the male farmers, the larger share of income and profits typically go to them.

5.1.4 Empowerment

This session outlines case studies of women's participation in economic activities within the tomato value chain and the constraints and opportunities for growth of their businesses. Annex 2 provides details of demographic characteristics of the women business owners interviewed.

5.1.4.1 Traders to the large scale tomato buyers that deliver to structured markets

Some women interviewed participated in the market segment, selling tomatoes as traders. As detailed in the literature review, this market segment is lucrative and is in most instances dominated by men as it involves a lot of informal transactions and significant cash flow. However, women, through social clubs and farmer groups, participate in the value chain as traders, taking advantage of their networks.

Despite the informality in this market segment, and few women exploring benefits in this segment, it would be an opportunity for FSDU to further research on more details of the percentage of women in this market segment. During the field interviews it was not easy to obtain this information as the sample size was too small to draw significant conclusions. However, from the WUR Report 2018, it was evident that the traders segment is more profitable than production

.

5.1.4.2 Market Vending

Conclusion: Given the quick business transactions involved in the trading process, appropriate financial products for women, especially during the harvest seasons, would be useful. The research suggested that women participating in this market segment are more empowered and able to influence or act as role models for other women to explore opportunities within the value chain.

Figure 6 Tomato vending in the local markets

The majority of women in central Uganda participate in market vending as a key income source to cater for their household needs. They run small stalls in both informal markets and structured markets[7] in and around urban centers. The market vendors usually buy their tomatoes from traders or large-scale farmers that sell in the structured markets.

5.1.4.3 Value chain processing

Tomato sauce

Tomato sauce and chili paste

Figure 7 tomato vending in the local markets

- As shown in Annex 2, some women are exploring opportunities in processing tomatoes into products such as tomato sauce paste, tomato paste, tomato powder, sweet pepper, tomatoes and strawberries, dried tomatoes and tomato ketchup. Most of the women interviewed within this segment were from Kampala. With appropriate partnerships to extend this knowledge, this economic opportunity can spread across all districts.

- The women interviewed had common characteristics such as their businesses are at their homes and still operate informally. From Figure 4 we see that the packaging is not well labeled as products are not certified by the regulators to operate in the wider markets. This therefore limits market penetration of such products, a constrain to the growth of the economic enterprise.

- Therefore, the key constraint is inability to operate in the wider domestic market. The majority of these women access the market through vending their products or selling in the outskirts of Kampala where their products cannot be confiscated by regulators.

The assessment was not able to triangulate the gap in the market of tomato sauce and available supply of formal companies/businesses in the central region. However, value addition is a key opportunity that was outlined by majority of the actors for women's economic engagement. Value addition is likewise one of the focus areas outlined in the NDP III as a key country priority.

Conclusion: This is an entry point that FSD Uganda could consider to increase women's participation in the value chain. Areas for engagement in value addition include partnerships with capacity development entities that train women in tomato value addition; supporting the certification of women's products; addressing the financial needs and knowledge gap that hinders their products from being certified; supporting product branding for women's businesses.

5.1.4.4 Tomato Vendor E

Providing extension services; tomatoes in Uganda are currently a key commercial agricultural commodity trading in the urban centers (as detailed in the literature review section). This has attracted many farmers in central region to diversify into production of the crop. All farmers interviewed attested to the availability of market for their produce, in comparison with other agricultural commodities. Most traders purchase tomatoes from the farms, removing the farmers' worry about transportation to the central market.

The increase of farmers in tomato production (due to the market availability) increases the demand for extension services for increased productivity. All KIIs interviewed affirmed that there is a gap in offering extension services to farmers. Institutions like Holland Greentech that provide high end inputs in tomato production have trained trainers to provide extension services to farmers. Women like Tomato Vendor E have been trained and hence use the knowledge obtained as an economic opportunity to earn income by providing extension services. Tomato Vendor E has set up a model farm as a learning centre to enable the community obtain good agricultural practices in tomato production at a cost. Through her learning centre she has trained farmer groups interested in starting tomato production as a business.

5.1.4.5 Input supply shops

Input supply shops trade in several agricultural commodities and provide services to farmers such as advice on the use of appropriate farm inputs, access to improved seeds to farmers, feedback to seed multipliers/breeders on performance of seeds etc.

From the information obtained during the FGDs, it was outlined that most of the input shops are owned by men. However, in most instances a man will allow his wife to take the lead in managing the input shop business, so that he concentrates on other activities. This was evident among literate women in Mukono and Mpigi district, as the input supply shop business is highly technical.

5.1.5 Average sales

Each of the women in business interviewed was asked to share their initial sales while starting in comparison with the current sales at the time of this gender assessment. Some women avoided this question. Information obtained from those that were responsive is demonstrated in the figure below. It was observed that there is evidence of increase in sales of women's products since business start (see details of business start in annex 2). However, volumes traded by women in value addition are much lower than the rest, due to the constraints discussed in 5.1.4.7 below.

Average sales start versus current

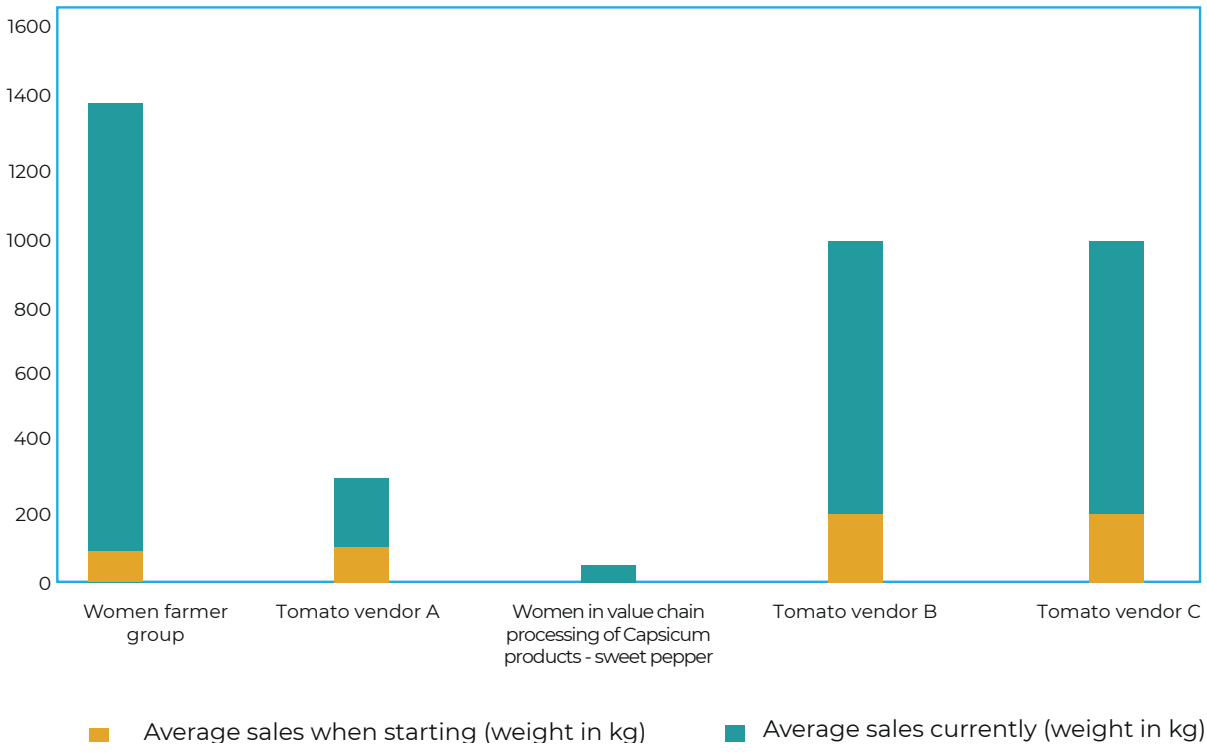

Figure 8 Average sales when starting and currently

5.1.5.1 What favours women to participate in tomato vending

The assessment sought to understand factors that favoured women's participation in tomato vending, given that it was the segment with fewest gender constraints for women.

The highlights below are discussions shared by the FGDs participants.

Figure 9 Response on what favours women's participation in market vending

5.1.5.1 Benefits women have obtained participating in the tomato value chain

As this report discusses possible entry points for FSD Uganda, it is relevant to appreciate factors that compel women to engage in male dominated value chains despite gender constraints. These include:

- Being able to pay school fees for their children
- Being able to meet personal needs
- Those trading as a group benefit from the social networks obtained
- Profits obtained act as startup funds to diversify into other income generation activities
- To obtain funds to increase their production, for example by buying improved seeds

5.1.5.2 Constraints and opportunities

i. Gender constraints and opportunities for women in tomato production

Table 7 Gender constraints and opportunities

Gender constraints	Solutions
• Decision making on use of income from produce at household level which sometimes leads to domestic violence • Balancing women's gender roles versus business • Access to affordable financing (to own their own farmlands while for those in vending business to expand their volumes of trade) • Highly labour intensive, competing labour demands on women's time	• Promote household gender approaches such as training in joint decision making • Promote men's sensitisation approaches such as training on women and men's roles using visual images that support family division of labour so that women can have productive time in their businesses • Bridging the gap between FSP and smallholder women through access to financial products that address gender constraints in the production segment • Promote access and availability of affordable agricultural technologies for women, as well as solutions for paid labour. For example WfP technologies such as irrigation systems to address the dry season planting, green house technology etc
Economic opportunities in tomato production	
• Available market for tomatoes (for example: local clientele, restaurants – especially for organic production, local markets) • Diversify into processing tomatoes targeting the local market • Easy access to supply of tomatoes	

Other than the specific gender constraints experienced by the women as discussed in the table above, there exist general constraints that affect tomato production by farmers, such as: high cost of inputs hence increasing the cost of production, duplicated inputs on the market, perishability versus the market price fluctuations, seasonality factors that affect price, affordability of land to expand production, low productivity due to low extension services, increased costs of transport etc.

Conclusion: It's imperative to address gender constraints with a holistic perspective. For example, FSD Uganda can partner with development actors and private sector entities that specialise in availing solutions in tomato production. The major barrier such entities face is increased outreach to farmers due to limited financial ability and good business acumen. FSD Uganda can explore designing business models for such actors, so that they can increase their service provision to small holder women in tomato production.

ii. Constraints experienced by women participating in other value chain segments

Table 8 Constraints in other value chain segments

Category of value chain actor	Constraint	Solution
Value addition: tomato paste/chilli sauce/tomato powder (tomato group)	• UNBS certification is difficult to obtain, due to limited financing to adhere to required standards. Therefore, cannot explore structured market segments • Group dynamics i.e. some members are not aligned to the group's objectives	• Support women's access to affordable finances to accredit their business premises to the UNBS standards • Capacity building in group dynamics and exchange learning visits to progressive farmer groups
Extension services and raw tomato production	• Farmers' perception of extension service providers i.e. majority of the population, prefer older male and yet this can be done by the young women as well	• Capacity building services availed to the community • Support the business entity into product profiling such as the use of social media platforms to advertise their learning center.
Value addition: dry tomatoes and tomato ketchup	• Market share is small as majority of the customers are foreigners (for the spiced tomato ketchup) • Sales price versus the customer segment they serve (they mainly focus on organic production)	• Support entity in business profiling to other market segments • Support product packaging and branding • Offer incentives to support the business entry into other market segments
Small scale value addition of sweet pepper, strawberries capsicum chilies	• Labour intensive on farm • Inconsistence of labour availability	• Promote access to less labour intensive technologies
Tomatoes vendor	• Inconsistencies in supply of tomatoes in some seasons • Price fluctuations in the market prices • Limited capital • Poor quality of tomatoes • Perishability of tomatoes • Women are exploited especially by transporters from farm to market	• Promote agricultural technologies that address dry season planting of tomatoes • Reduce the gap of financial access to small holder women business and product offering by FSP • Promote affordable cold chain facilities • Build women negotiation skills through capacity building

5.1.5.2 Financial access

The discussions below are responses that were provided by the FGD participants on most used financing mechanisms in their localities among male and female farmers.

Table 9 Details of finance access in tomato production

How majority of households access financial services	Dominance of financial service source	Women's financial needs	Constraints for women to access financial services
· Friends · Merry go rounds · SACCOs · VSLA · Financial Institutions	**Women:** informal financial institutions **Men:** formal Financial Institutions	· Financing to buy agriculture mechanised equipment · Land ownership for cultivation · Funds to hire/rent land seasonally · Finances to hire labour · Ready cash to buy produce especially for those in trading · Access to affordable financing to engage in market vending in local markets · Finances to cater for school requirements for their children and household needs · Access to affordable finances to diversify into other profitable commodities	· Lack of security to access finances from formal financial institutions · Do not have property hence cannot meet requirements such as anyone to guarantee them · Lack of clear information on formal financing hence fear to obtain credit · Lack storage and preservation centers for warehouse receipting · Informal financial services are too limited to address the financial needs of women outlined

Conclusion: The tomato value chain has several opportunities for women's inclusion in profitable businesses, such as: input supply provision, participating in the value chain as traders, bridging the gap in extension service provision, value addition and market vending. Women will however require capacity building and financial services to take advantage of the economic opportunities discussed. Some of the solutions suggested by the persons interviewed during the field assessment on addressing affordable and sustainable financial solutions to improve women's economic opportunities include: the need to promote active groups/ cooperatives to support the bulking of tomatoes (this will support warehouse receipt financing mechanisms), capacity building in financial products offered by FSP, offering grants for business startups and other women initiatives in value addition (especially those seeking to accredit their products with UNBS and those seeking support in improving their packaging), provide subsidies in financial products for small holder farmers, promote initiatives that buy down interest and risk so as to ease access to financial products for small holder farmers, designing women centered financial products to encourage small holder women access financial services.

5.1.6 Transformation processes

This section explores the different structural and systemic engagements that support the tomato value chain to work better for women. This will outline suggestions from the different value chain actors ie women in production and women in business and value chain influencers such as development actors.

5.1.6.1 Value chain actors

Table 10 Transformative approaches needed

Product	What needs to change
Tomato production on farm	• Improved access to technology that is less labour intensive • Improved gender relations in the intra household ie decision making, access and control of resources • Access to quality and affordable inputs • Capacity building in: - tomato production, - business development in tomato production - access to technology to recycle wastes on farm - value addition - digitalisation for inland market access - Financial literacy • Encourage strong cooperatives/groups or associations in tomato production
Tomato vendors	• Access to business development service trainings on managing businesses • Access to affordable finance at low interest • Maintain good leadership in the market. • Reduce the market taxes in the central market

5.1.6.2 Initiatives from other value chain influencers

The figure below shows different initiatives that development actors are undertaking in tomato production and further suggests areas for increased participation of women in the value chain.

Table 11 Development actors in the tomato value chain

Name of Institution	Service/product offering	Opportunities for increased women engagement in value chain activities
Holland Greentech Uganda	• High breed vegetable seeds • Provide other inputs to farmers (irrigation pumps) • Support the construction of greenhouses • Support the backyard gardening of tomatoes	• Construction of green houses • Value addition in several products • Women can develop their own market outlet i.e.; startups of grocery shop or stalls in their locality
Avail Group Innovation through Agriculture	• Partner with Holland Greentech to avail agricultural inputs to farmers • Provide extension services: train in integrated pest management, demo plots and have a demonstration learning site • Market linkages especially in structured local markets like Nakawa	• Availability of improved planting materials • Tomato is a product that can easily be translated into cash flow • Available domestic market
Sitoowa	• Market access (of farm produce to restaurants in Kampala) • Train farmers in GAP of tomatoes	• Extension service provision • Explore value addition of waste in markets • Explore the export market
Bringo Fresh	• Digital market platform • Digital record keeping system • Partner with Holland Greentech to avail improved inputs to farmers • Have instituted model farmers for extension services provision to farmers	• Local market vendors • Trading among different actors • Digital marketing of produce
Rikolto	• Urban farming technology • Vertical gardening. • Installation of biogas systems on farm	• Women can diversify to more vegetable production ie alternate tomato growing with chili growing. Chilies are grown at every quarter • Women to take advantage of extension service providers to increase output. Once men see the output women produce, they give more land to women for cultivation
Horti Fresh Association Uganda	• Agronomy training in chemicals and feeds • Market linkage and training • Lobbying and advocacy support on compliance issues	• Government programs targeting small scale production through access to finance – PDM


DAIRY
PRODUCTION

5.2.1 Demography of FGD respondents:

Age: The majority of respondents interviewed were 30 and above 50 years of age, with men above 50 years and women above 40 years.

Education background: The majority of men and women had completed primary and secondary education.

Marital status: The majority of the FGD male participants were married while the female were either married or single.

Acreage of land: Dairy production in south western Uganda as outlined in the literature review is practiced under extensive farming. The majority of farmers own more than 30 acres of land.

Land acquisition: Land is mainly acquired through inheritance.

Once a man marries, he will obtain some land from his parents as a cultural gift for him to start his family. The respondents bought more land to maximise these benefits.

Management/ownership: Most of the land and cattle is owned by males. In instances where the male is not present, the wife takes over management of the farm.

Conclusion: As outlined under section 5.1.1, the demographic information will guide FSD Uganda as they develop transformative approaches that address gender constraints to women's opportunities in the dairy segment. For example, while discussing financial inclusion aspects, the approach should include product design/ innovations that require no collateral and embed financial literacy training to women given their low literacy levels.

5.2.2 Visibility

This section shares insight into the dominance of men and women along the dairy value chain and who has access and control within the household along the chain.

5.2.2.1 Gender in value chain mapping in the dairy value chain

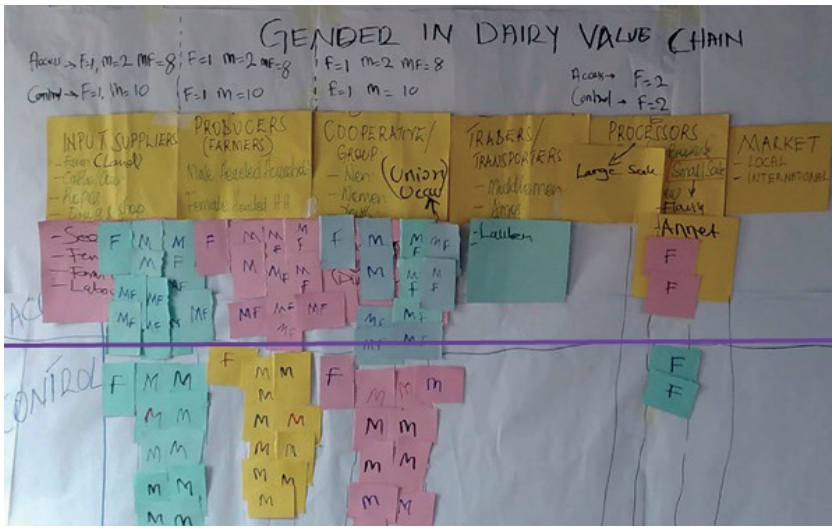

Figure 10 Representation of access and control along the value chain

M=Male and F= Female

The purple line differentiates between who has access (upper part of the line) and control (lower part of line) along the value chain.

Participants of the FGDs were given pluck cards to map out who has access and control at each stage of the value chain in their households, using M to represent the husband and F to represent the wife.

Gender representation of access and control along the value chain

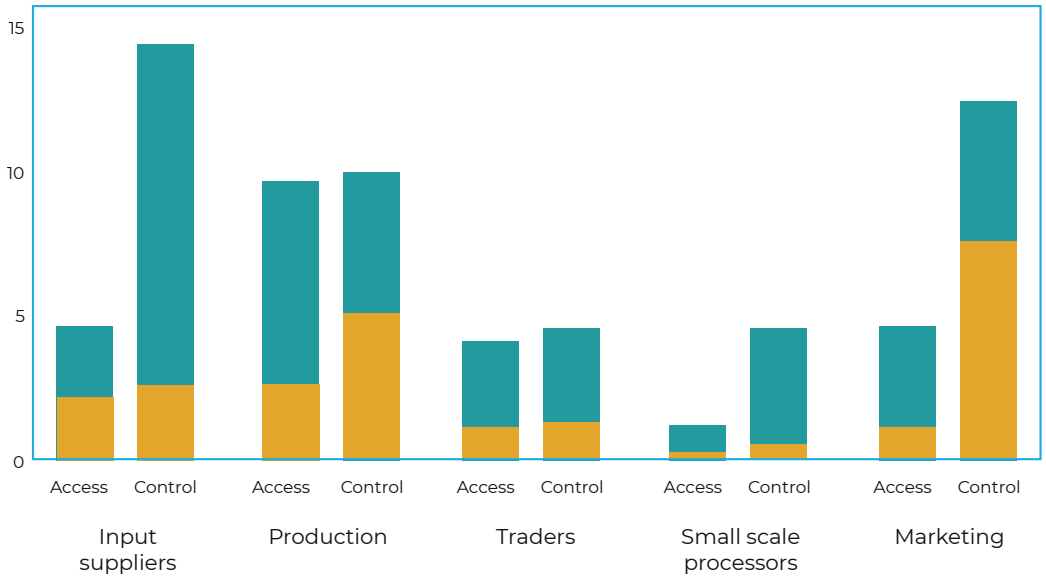

Figure 11 Gender on the value chain map

The dairy value chain as demonstrated in the figure above is heavily male dominated along most value chain segments. Dairy production in south western Uganda is structured with well streamlined roles for women and men on the farm based on the socio-cultural norms ie only men inherit land and cattle, land solely belongs to the men and hence women engage in other segments which don't require possession of either cattle or land.

In the production and cooperative segments, FHH women have both access and control. As will be observed in other sections of this report, at cooperative level, some husbands buy shares for their wives in the cooperative although milk delivery is recorded under the husband's name.

Conclusion: Given the social norms that eliminate women's control in dairy production, the majority of women have diversified into economic opportunities that avoid coming up against these norms. These include:

- Women's visibility along the production and cooperative segments due to their supervision role on the farm.
- Women are more prominent in small scale processing of products like ghee, yoghurt and other dairy related products. Ghee and yoghurt making is a cultural commodity traditionally made by Ankole women. With increased demand of these products from other areas in Uganda, there is an increase in commercialisation of the traditional ankole products made by women as will be described in sections of this report.

Note in south western Uganda:
Yoghurt production: Average price of 1 litre of milk = UGX 1,000. 1.3 litres of milk = 1litre of yoghurt. The price of 1litre of probiotic yoghurt = UGX 4,00O.
Ghee production: Average price of 1 litre of milk = UGX 1,000. 10 litres – 20 litres of milk (depending on milk quality) = 1 litre of ghee.
Price of 1kg of ghee = UGX 20,000-30,000 (depending on the season).

- The assessment revealed that women in the south western region engage in production of other agricultural commodities. The type of agricultural commodity women engage in depends on allocation of land provided by the husbands (this ranges between 10-20% of the total land owned by the husband).

Gender constraint: Multiple engagements of women in various activities such as household labour and labour in other agricultural activities limits women's efficiency in dairy farming. (more details on activities performed by men and women on the dairy farm in section 5.2.3. below)

5.2.3. Inclusive

This section outlines key activities undertaken by women and men on the farm, and further details the decision making process at household level over several parameters.

5.2.3.1 Major activities of men and women in dairy production

Through separate FGD groups of men and women, the roles of men and women on a dairy farm were identified:

- Hiring labour
- Supervision of milking
- Ensuring all necessary inputs are in place
- Liaise with the veterinary officers for animal health aspects
- Paddocking and fencing
- Periodic spraying
- Establishment of pastures

Supervision of

- Cow shed, kraal and calf pen cleaning
- Delivery of milk to the cooperative
- Timely feeding/grazing and access to water
- Washing utensils
- Calf management
- Evening return of animals from grazing and double check numbers returning
- Double check on heifer feeding and health of cattle

Figure 12 Activities done by men and women on a dairy farm

In south western Uganda men's roles are generally centered around periodic activities that require some level of financial investment. Most of the work on farm is done by hired labourers/ workers. The role women undertake is to supervise the daily activities undertaken on farm by the hired labours/workers.

Conclusion: Given that women undertake a supervision role they should be involved in dairy production training given to farmers. Unfortunately, the majority of the training carried out at the farmer cooperatives are attended by men, who on rare occasion will transfer knowledge to their wives. Men rarely allow their wives to attend capacity building training due to traditional gender norms that promote policing women's behaviour outside the domestic sphere. Such gender norms are best addressed using gender approaches to social inclusion such as the household gender methodology earlier discussed.

5.2.3.2. Decision making in the household among south western Uganda dairy farmers

Table 12 Decision making as observed by the FGD respondents

Decisions about activities in the dairy farm	Decisions on the use of income generated from the dairy farm	Who decides on the family budget allocation
• Women have to consult their husbands most of the time • Men take decisions given that they are the landowners, own the cattle and are family heads	• Men decide without consultation given that dairy farms belong to men/ husbands. Some men will consult their wives although the man's decision takes priority • In some households when the men are absent, the women make the decisions	• Men • In some households there is joint decision making **Note:** In the majority of the homes family budgeting is not done Expenditure is as the man decides

- During the FGDs, women asserted that all farm- related decisions are made solely by men, without their participation. There are a few instances in which women make decisions, such as when the husband is absent. Some men reported consulting with their wives before making decisions regarding income.

- As was observed in the tomato value chain, household dominance in decision-making is determined by ownership of productive resources such as land and livestock, due to the existing gender cultural norms. It's expected that women must adhere to the traditional norms without any discussion. For example, as a sign of respect to their husbands, women have to concede to their decisions without questioning, and raising an inquiry about a particular decision can lead to domestic violence.

- The above gender constraint of excluding women from key decision-making in dairy production negatively affects the continuity of the dairy farm activities in instances of absence of the household head. For example, when the household head dies, wives of dairy farmers often struggle to maintain farm activities, which usually leads to death of the cattle and hence reduced milk production from the farm.

- Despite the participation of women in several activities on the farm, income from the milk is received by the men as it's the men that are registered at the cooperative in a MHH.

5.2.3.3 Benefits women have obtained from participating in the dairy value chain

The highlights below describe aspects that support women's engagement despite the strong cultural norms in dairy production in south western Uganda. Due to the benefits, women strive to break the barriers that limit their participation. The benefits are:

- Milk and milk products provide food security for their households
- Have managed to pay school fees for their children
- Women earn income from milk products
- Women from FHH who have attended trainings attest to knowing improved dairy farming practices from the traditional farming they grew up.
- Improved self-confidence for women who earn income of their own

5.2.4.4 Perception of men and women on benefits from dairy production

Table 13 Perception of benefits from dairy production as discussed by FGD participants from all districts

FGD responses	Do women and men benefit equally at the household level
Women	No. The man is the household head hence benefits go to him
Men	Yes. Men support the family household needs which women benefit from

Conclusion: Given that the roles women play on farm are quite crucial as demonstrated under section 5.2.3.1, there is need for more inclusive approaches that should streamline the challenges identified in decision making above. As outlined, keeping women's role in dairy farming limited negatively affects continuity of the farm in instances where the husband absent or dead. Using the cooperatives that are key convergence points for dairy farmers, development initiatives such as household gender methodology training approaches for joint decision making should be promoted.

5.2.4 Empowerment

This session outlines women's participation and inclusion in different economic ventures

5.2.4.1 Gender in dairy cooperatives:

Bulking and marketing of milk in the dairy sector in south western is done through cooperatives.

Figure 13 Milk deliveries at the cooperative

The assessment was conducted in five primary cooperatives in five districts of south western Uganda. FGDs were conducted with members of the cooperative and their wives. The cooperative key informant interviews were held with a representative of the chairperson and manager of each cooperative.

Basic information on membership, milk volumes, average price per litre and gender composition of a cooperative is analysed below:

Table 14 Membership and milk collection volumes in five primary cooperatives

Cooperative Society	District	No. of total members in the cooperative	Members supplying milk to the cooperative	Female members in cooperatives	Female members as %	Litre of milk delivered to processors	Average litre delivered per month
Dairy Cooperative A	Ibanda	137	120	10	7%	6,000	180,000
Dairy Cooperative B	Isingiro	60	55	12	20%	2,000	60,000
Dairy Cooperative C	Kiruhura	130	120	18	13%	4,500	135,000
Dairy Cooperative D	Kazo	81	76	17	20%	3,500	105,000
Dairy Cooperative E	Mbarara	215	207	12	5%	4,000	120,000

% representation of men vs women membership in cooperatives

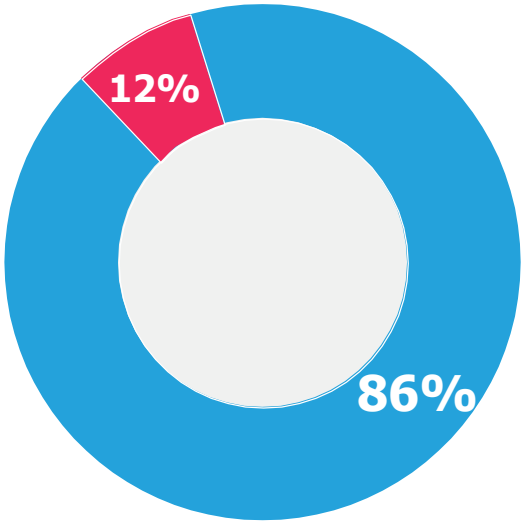

Figure 14 Percentage representation of men and women in the cooperative

Table 15 Distribution of cooperative leadership positions by gender

Cooperative	2019		2020		2021	
	Male	Female	Male	Female	Male	Female
Dairy Cooperative B	9	-	9	-	9	-
Dairy Cooperative A	8	1	8	1	8	1
Dairy Cooperative E	9	-	9	-	9	-
Dairy Cooperative D	8	1	8	1	8	1
Dairy Cooperative C	20	30	20	30	20	30

The figure demonstrates that since 2019 there is a constant number of men and women membership in the cooperatives. Female membership is far below that of male members, which is attributed to the criteria for becoming a member of a cooperative. This criterion includes buying share capital, delivering milk on a daily basis and payment of fees determined by the cooperative. These criteria are gender constrainted given that women don't own cattle, have limited milk to deliver to the cooperative and cannot afford the share capital/fees levied by the cooperative.

Conclusion: Despite increased investment in the dairy sector especially with the emergence of farmer-owned cooling equipment in the last six years that revolutionised the commercialisation of the dairy sector in south western Uganda, women's participation in farmer cooperatives is still a major gap (as demonstrated in the figure above), this needs urgent attention.

Table 16 Average price

Cooperative	2019	2020	2021
Dairy Cooperative B	2000	2000	2000
Dairy Cooperative A	500	550	1500
Dairy Cooperative E	800	1000	550
Dairy Cooperative D	500	580	1000
Dairy Cooperative C	1000	580	1000

The milk price offered per cooperative depends on many factors which include volumes delivered, ability of cooperative to negotiate etc. Other than Dairy Cooperative A in Ibanda district, the rest show a positive trend in the milk price from 2019 – 2021. In the last three years the milk price ranges from UGX 500 – UGX 1,200 per litre.

Culturally, men are expected to delegate evening milk management solely to women.This is used for household consumption and the production of milk products such as ghee and skimmed milk, etc.

5.2.4.2 Employment in the Cooperative

Table 17 Men and women employment in the cooperative

Position	Male	Female	Total
Drug shop attendant	-	1	1
Milk assistant	13	-	13
Extension Service Provider	8	-	8
Secretary	-	2	2
Accountant	1	6	7
Assistant manager	1	3	4
Manager	4	1	5

Employment is evenly distributed as we see women (youth) take up more managerial positions in the cooperatives. There are opportunities for female youth to be engaged as milk assistants and extension service providers at the cooperative. This is as a result of initiatives from different development partners that have been supporting gender inclusion in dairy cooperatives.

5.2.4.3 Cooperative leadership

Table 18 Distribution of cooperative leadership positions by gender

Position	Male	Female	Total
Chairman	9	-	10
Vice Chairman	8	1	9
Secretary	9	-	9
Treasurer	8	1	9
Board Members	20	30	50

As per the Cooperative Act, a cooperative should have a board composition of 9 members of which at least 3 should be women. The board is composed of the Chairperson, Vice Chair Person, Secretary, Treasurer and five other representatives as board members. In the five primary cooperatives interviewed, we see a higher number of women included as board members despite them not taking up key board representation positions. During the assessment, it was observed that men no longer give their wives sufficient

Participation of women in cooperative leadership positions from MHH households is higher than the women from FHHs. This would be due to the burden of work that a woman from a FHH has to undertake versus that of a woman who is from a MHH. Women from FHH households have to do their work and what would culturally be done by males.

5.2.4.4 What works for and against women to occupy leadership positions within the cooperative

What works for and against women to occupy leadership positions within the cooperative

Table 19 What works for and against women to occupy leadership positions

What favours women to occupy leadership positions in the cooperative	What holds women back from having more leadership roles within the cooperative?
• Requirement by the Cooperative Act of Government of Uganda – (three women in leadership on the board) • Capacity building efforts from development actors in gender inclusion e.g East African Dairy Project which supported yoghurt production as a women's business in dairy. It should be observed that yoghurt production supports women with finances to acquire membership in the cooperative • Good leadership record and ability to serve, loyalty to the cooperative • Background of handling/managing their homes and businesses • Ability to work and perform the assigned responsibilities	• Family problems, lack of time, cultural barriers, failure of access to milk to supply to the cooperative • Illiteracy, rigidity of their husbands, most women are occupied with other work • Decision making on the dairy farm is done by the men hence all the milk supply is registered under men • Some husbands don't allow their wives to participate • Lack of freedom to make decisions in dairy management • Lack of support from their partners/ husbands, most women don't own milk (milk is owned by men in most households) • Women are discouraged from being members since they don't benefit a lot from the proceeds

Solution: One of the solutions used to address some of the limiting cultural norms is role model profiling. This profiles a successful woman to other women, (in this case wives of the farmers). It's assumed that people learn better when they see evidence of someone in the same situation. Role models should be identified from women living in MHH in the cooperative and profiled, so other women are encouraged to take up leadership positions.

5.2.4.5 Financial Access and Financial Literacy

The cooperative management provided response on how their cooperative members access financial services as detailed in table below.

Table 20 How cooperative members access financial resources

Cooperative	How do members access financial services to improve their production?	Have all members of your cooperative/ group/association attended financial literacy training
Dairy Cooperative B	· Advance payment · In house cooperative SACCO that was started by the farmers · Partnership with SACCO to provide credit to members through a check off system	No
Dairy Cooperative A	· The cooperative has partnered with Tier 4 Financial Institution C to give farmers loans · Partnership with banks to avail credit to their members.	No
Dairy Cooperative E	· Milk payment through banks and formal SACCOs · Advance payment · Collaboration of cooperatives and financial institutions like Tier 4 Financial Institution C to give farmers credit	No
Dairy Cooperative D	· Cooperative SACCO · Advance payment · Partnership with Tier 4 Financial Institution C	No
Dairy Cooperative C	· Cooperative SACCO · Advance payment · Partnership with Tier 4 Financial Institution C	No

There seems to be diversity of options within the cooperative regarding access to financial services. The key challenge identified was capitalisation of the cooperative internal SACCOs. These SACCOs are internal entities usually informally operated. The funds available for lending are mostly for immediate household needs such as school fees, personal health, cattle health management etc. The same applies to advance payment, amounts provided by the SACCO are to support immediate household needs of cooperative members and not for investment. None of the cooperatives have attended financial literacy training. The assessment further observed that there was no deliberate effort to reach out to female members in the cooperative to provide financial literacy.

Conclusion: Most women are not members of cooperatives (as already outlined above) hence are not able to access financing within the cooperative. Transformative approaches that FSD Uganda would engage to address this gender challenge includes supporting conditional capitalisation of cooperative SACCOs through advocating for affirmative action for women involvement such as women buying shares in the dairy cooperative. Further to this is financial literacy as outlined by all cooperatives above.

5.2.5 Women in other value chain segments

Ten women in different categories of businesses in dairy value chain were interviewed during the assessment. This section will outline the case studies of these women, detailing their economic activities within the dairy value chain and constraints that challenge the growth of their businesses.

Profile of each of the women businesses:

5.2.5.1 Dairy value chain business A (ghee)

Figure 15 Products of woman in dairy value chain business A of dairy value chain business A (ghee).

Dairy value chain business A (ghee) lives in Nyakahita subcounty, Kiruhura district and started a small business that processes Dairy value chain business A (ghee). With support from Uganda Crane Creameries Cooperative Union (UCCCU) and other development partners, she managed to brand her ghee. Dairy value chain business A (ghee) has been certified by UNBS and is sold in major urban centers including supermarkets. Dairy value chain business A (ghee) targets two market segments, the local market in Kiruhura - Lyantonde district and urban market in Kampala and Mbarara districts. For the local market she packages her products using white polythene bags while to the urban market she packages this in containers as shown in the photo above. While she is the major shareholder in this business, she has allowed other women to buy shares in the business. Currently, she employs about 10 other women who support the day to day operations of the business.

5.2.5.2 Small scale production of probiotic yoghurt

Figure 16 Women's group in dairy value chain business A

a. Women's group dairy value chain business A

Women's group dairy value chain business A group is located in the district of Ibanda in the Ishongororo town council. Woman in dairy value chain business B established the organisation (dressed in pink at the centre, in the image above). Yoba for Life provided woman in dairy value chain business B's with training in probiotic yoghurt production, there after she interested six other women to start Women's group dairy value chain business A (yoghurt) group. The group packages yoghurt in various sizes ranging from 200ml to 20liters which they sell in Ibanda town and at woman in dairy value chain business B's retail local shop. In partnership with SNV TIDE School Feeding Programme, the group supplies yoghurt packs to primary schools within Ibanda district.

Currently the group is constructing a micro cottage premise so as to meet UNBS certification, which will enable them place their yoghurt on shelves in different urban center supermarkets.

b. Dairy value chain business B (yoghurt)

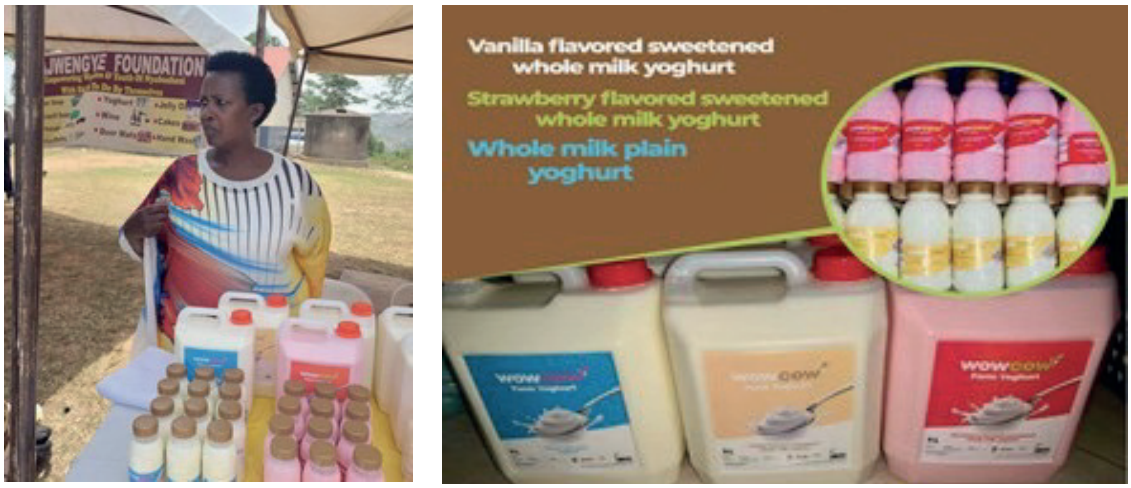

Figure 17 Products of woman in dairy value chain business C proprietor of dairy value chain business B (yoghurt)

Woman in dairy value chain business C is the sole owner of dairy value chain business B (yoghurt), which she founded to generate her own income, given the cultural constraints on resource ownership in dairy farming. The company was launched with assistance from Yoba for Life, where she obtained training in probiotic yoghurt production and was thereafter assisted to obtain UNBS certification. She sells her products in Lyantonde town. Yoba for Life has also assisted her attend various exhibitions to showcase her yoghurt products as seen in the image above.

5.2.5.3 Dairy value chain business C

Figure 18 Products made by dairy value chain business C

Dairy value chain business C is a women's initiative started by women in dairy value chain business D (in photo above) and other women in Kiruhura district. Their main aim was to sensitise dairy farmer's wives to start income generating activities through exploring economic opportunities in dairy production. The association leaders attended a food science workshop at Makerere University that trained them in agro processing opportunities in various agricultural commodities. After this training, the leaders profiled their entity to NARO and obtained processing equipment under a World Bank women's initiative, through a matching grant arrangement. The equipment has capacity to process ghee, jelly, butter and yoghurt.

Each woman registered under this entity contributed funds to buying land, constructing the premises, partial installation of the equipment and payment of a few workers to start processing of products.

One of the products processed is the dairy value chain business C jelly and dairy value chain business C yoghurt, which they sell to the local community. They are currently working on certification of all their products and full installation of the equipment.

5.2.5.4 Craft items

a. Handmade animal skins craft

Figure 19 Woman in dairy value chain business E who makes handmade crafts from animal skins

Woman in dairy value chain business E trades in crafts made from animal skins of cattle. Her business is located at her home in Kiruhura district. She buys animal skins from Bushenyi district and makes several products such as mats, chairs and other traditional items that are used during the traditional weddings of ankole women.

She started this business before the death of her husband, obtain an income to support her personal needs. This business has enabled her educate all her six children, single handedly. Though she is the face figure of this initiative, she works with other women who support her when she gets over whelming orders.

Her major market are traders that come from other districts in search of traditional items such as those that sell in Kampala at the Buganda road craft market and those selling traditional function items within the region.

b. A crafts shop selling traditional Ankole culture items;

Figure 20 Woman in dairy value chain business F in her craft shop of Ankole cultural items

Woman in dairy value chain business F of Rwetirabo village, Kazo district deals in traditional Ankole items. She started this business after her husband fell ill and she had to supplement the household income beyond the dairy farm. Each of the items is used by or as a result of a product from dairy farming. Her business has a niche in products that are used for traditional ankole functions and traditional utensils used in an Ankole household.

5.2.5.5 Women's group in dairy value chain business B - tractor owner and services provider for increased pasture production

Figure 21 Women's group in dairy value chain business B members attending the Focus Group Discussions

Women's group in dairy value chain business B in Nyakahita sub county, Kiruhura district, was started as a social group to support women to engage in economic activities given the cultural constraints of the Bahima ethnicity in Ankole, that keeps women in the household under male control. The women's group in dairy value chain business B women inclusion model uses elderly educated women that have attained social status in the community to coach, mentor and train young married women to explore value chain economic opportunities without compromising their reproductive roles and domestic obligations at home. This is an example of the gender approach of role model profiling earlier discussed in this report.

All the members of this group have their husbands bulking milk at Nyakahita cooperative. These women bought shares in the cooperative so as to take advantage of opportunities within the cooperative. During one of the cooperative meetings, one of the gaps discussed was the need for tractor services to support farmers in pasture production. In partnership with the NAADs programme working through the Nyakahita Cooperative, the group obtained a tractor in 2018. Women's group in dairy value chain business B group through the NAADS Programme, took advantage of a credit facility and has currently completed the loan obtained through proceeds of cultivating farmers' farmlands.

5.2.5.6 Other opportunities for women inclusion - women who own dairy farms

a. Woman in dairy value chain business G in Isingiro district, aged 61 years old, took over management of her husband's farm in 2000. However, the farmland belongs to her male children, so she manages the farm on behalf of her children (as earlier mentioned, land is obtained through inheritance, hence it cannot be transferred to the wife once the husband dies). Woman in dairy value chain business G has currently transformed the farm from traditional practice of herding to improved extensive farming practices. She likewise has stocked improved cattle varieties on the farm to increase milk production. She is a member of Nyamitsindo Cooperative in Isingiro district and bulks 90 liters daily to the cooperative.

b. Woman in dairy value chain business H in Rwampara district (originally under Mbarara district) aged 55 years, is a zero-grazing farmer. Given her limited land size, she owns only one cow. However, she is largely a crop farmer though her zero grazing unit supports her to supplement income at household level. She receives 11 liters per day from her cow and sells this within the community of her residence.

5.2.5.7 Women SACCO A

This institution is an initiative by the woman Member of Parliament in Kazo to support women to access affordable financing through savings of farmers and taking advantage of government programs in KAZO district. The institution is still in an early stage ie has just been registered and launched. Currently it has over UGX 60 Million savings, however it still lacks a clear approach of how to undertake micro credit lending and lacks proper financial management systems. They also lack a clear record system of membership and how many shares members have so far bought in the SACCO. There is room to build capacity of these women to run this SACCO as a micro credit institution.

5.2.6 Factors that favour the business and challenges that constrain growth

The information below was gathered from the discussions with each of the women businesses profiled above.

Table 21 What works for and against women businesses

Product	Factors that favour the business	Challenges that constrain business growth
Women's group in diary value chain business A (ghee)	• Access to markets (within the district and in Kampala) • Increased income from sales • Access to milk from farmers • Working in a group which enables women collect money together • Offering training services to others.	• Fluctuation of milk production and prices due to the seasonality factor. This leads to reduced milk supply making it difficult to meet market demand • Businesses are not connected to electricity Energy costs are high for generators or electricity especially during cream separation • High costs of transportation to explore markets beyond current markets, for example in Kampala and Mbarara districts. • Lack of a clear delivery mechanism to have her products reach target customers in time
Women's group in dairy value chain business B (yoghurt)	• Support from their husbands who allow them time for the group activities. • Some husbands avail their wives evening milk – at a cost • Capacity building provided by Yoba for Life Uganda in probiotic yoghurt production. • Matching grant from SNV-TIDE. • Group savings and support from members of the group	• Fluctuation of milk prices due to the seasonality factor, yet the yoghurt price remains constant. • Few government initiatives to support small scale producers to compete with large scale producers and imports. • Lack of affordable financial solutions to invest in the business and expand to large scale • Lack of enough water to use in the yoghurt processing premises • UNBS certification requirements are too expensive to meet • High costs of transportation of yoghurt to the market segment • DDA and district health team may confiscate their products as they are not certified
Dairy value chain business B (yoghurt)	• Milk from her farm. • Availability of market for her products • Price of milk verse price of yoghurt. • I.e. 1l milk =1000UGX 1.3l = 1l of yoghurt. • 1l = 4000UGX	• Locality where processing takes place has no electricity. With increased fuel prices the use of a generator is rather expensive • Lacks transportation equipment with cooling facility to deliver the products to market outlets. Note: Yoghurt has to be transported under cold conditions to maintain quality and shelf life
Dairy value chain business C	• Processing equipment with capacity to process; butter, ghee, yoghurt and cosmetics (jelly) • Available market for these products • Capital investment (equipment available) has potential to attract business partnerships • Good location of processing equipment (along Rushere - Kiruhura road) • Majority of group members are wives to dairy farmers who are seeking for economic opportunities to earn income • The entity focuses on social inclusion in economic opportunities for women and youth	• Not yet UNBS certified • Affordable financing to offset batch pasteurization. The equipment has only been partially installed . • Group members' mindset i.e. they don't appreciate long term investment. • Culture and gender responsiveness - men are against the idea of woman-owned businesses • Access to affordable finances to support their business case

Crafts in hides and skins	• The market demand for her crafts is high. She sells one hide between UGX150,000 and UGX200,000. • This is the only income source hence working at it deligently	• Location of the business. The clientele has to travel long distances to access products. • Has less finances to increase production and meet the demand • Crafts are still done manually (hand making) hence does not meet the market demand when she receives many orders of her items
Crafts: Traditional Ankole items	• Market availability; due to the diverse ethnicities of the Ankole culture • Traditional marriage functions • Self-motivated as she has to provide for the household	• Lack of enough capital to increase production of high demand products • Lack of proper marketing strategies to advertise her business in other districts
Women's group in dairy value chain business B	• Membership in the cooperative • Available demand for tractor ploughing services • Demand for the chuff cutter equipment was high but it broke down	• Gender constraints prevent more women from joining their group. Most men don't allow their wives to join social groups • Seasonality of tractor services • Chuff cutter broke down and they have not yet replaced it • Affordable financing options to build their business model. For example, given the high demand of pasture production services, they would like to buy better equipment that don't easily break down however the cost of such equipment needs high financial investment.
Extensive airy farming	• Access to financial services from the Nyamitsindo cooperative where she bulks her milk, which she uses to support farm improvement • Available land for dairy production • Availability of water for dairy production though still on local supply.	• Death of dairy cattle due to tick borne diseases • Unregulated duplicate animal drugs on the market that likewise lead to animal death • Price fluctuation of milk verse the high investment on farm • Lack of affordable credit to increase water for production systems
Zero grazing	• Land is available to grow enough feeds for her cow on zero grazing • Enough feeds for her cow. • Available labour force to support her on grazing • Knowledge attained from practical dairy training farm (PDTF) on dairy farming	• Inadequate water supply for zero grazing, she has to fetch water from a long distance • Tick related diseases that are brought about by buying pastures cut from roadsides and neighbouring farm • High costs of animal drugs verse the price of milk
Women's SACCO A	• The need for affordable financial services, to invest in dairy farms. • Local government initiatives to work with women in groups	• The institution is still in its initial stages, majority of the members have not benefited from the services • The entity still lacks clear business focus on how to manage their finances and further lack clear financial management systems. • Members are dairy farmers who succumb to changes in climatic conditions. This negatively affects their income and hence regularity of SACCO savings. • Inadequate record keeping system for clear decision making • The members want to first benefit from the financial services before increasing their share capital

5.2.7 Opportunities unexplored

The following are opportunities that women interviewed feel need to be explored to enhance their businesses

Figure 22 Unexplored opportunities for women businesses

5.2.8 Financial access:

This section discusses feedback obtained through the FGDs on the most used financing mechanisms among male and female farmers.

Table 22 Financial access for women in dairy

How majority of households access financial services (FS)	Dominance of FS source	Women's financial needs	Constraints for women to access FS
• Friends/relatives • Cooperative advance • SACCOs • VSLA • Formal financial institutions (banks and micro finance	• Women: Informal institutions and formal financial institutions • Men: Cooperative advance and SACCOs	• Ownership of land and cattle • School fees for their children • Funds for household requirements	• Lack of security to access finance from formal financial institutions • Lack of property hence cannot meet requirements such as obtaining guarantees • Lack of clear information on formal financing hence they fear to obtain credit • Most of the business are at micro level which financial institutions do not service

5.2.9 Transformational processes

This section explores the different structural and systemic engagements that support the dairy value chain to work better for women. Information outlined shares views of; women in business in dairy (as value chain actors) and initiatives by different value chain influencers (development partners and FSPs) in the dairy value chain.

5.2.9.1 Value chain actors (women in business)

Table 23 Approaches for change for women businesses

Product	What needs to change to increase profits
Diary value chain business A (ghee)	• Cooperative development in governance, business development, extension services and financial management • Capacity building of cooperative in increased women leadership in the cooperative, Joint planning among members of cooperative – to address intra household gender dynamics • The Cooperative Act encourages women participation in leadership positions • Exploring small scale production of dairy products • Offering services as professionals in the value chain (for the educated youth women). i.e.; veterinary services, cooperative managers, account assistants, milk assistants etc.

Product	What needs to change to increase profits
SNV - TIDE	• Pasture and forage production • Zero grazing • Subsidies on farm structures and WfP • Extension and advisory • Subsidies and incentives for women in the value addition businesses • Exchange learning events to Nairobi/Kenya • Women in business profiling and awards by DFCU Bank • Role model profiling to address stereotypes among women • Incentives at cooperatives for women participation in leadership positions • Matching grants • Buying down interest in partnership with FSPs • Creation of jobs at the MCC e.g. managers, milk assistants. • Joint planning by men and women within the household. • Yoghurt and ghee production. For example participating in trainings about probiotic yoghurt production done by Yoba for life grants • Buying down interest in partnership with FSPs
SACC	• Customised computerise accounting software • Matching grant for cooperatives that uptake product • Transparency of milk volumes traded in cooperative • Taking advantage of other value chain segment activities other than on farm due to the cultural constraints of ownership and decision making on dairy farms
• Yoba for Life	• Support production of probiotic yoghurt among women • Target wives of cooperative members to form groups under the cooperative • In partnership with SNV, provide grants to support progressive women businesses • Support application for UNBS certification for those that meet the requirements • Market linkages to schools through the school feeding program (support women to design supply agreements and MOUs with schools) • Support distribution chain through market campaign messaging • Participate in value addition like yoghurt production • Participate in cooperative leadership positions • Solving challenges of transportation from farm to cooperative – explore this as a business initiative. • Obtain UNBS certification to explore market outlets in other districts such as small outlet shops, supermarkets, trade shows and schools • Explore other opportunities like ice cream making in trading centers, school canteens

5.2.10 Value chain influencers

5.2.10.1 Development actors

The main development actor in south western Uganda that support sector growth of the entire value chain is SNV Netherlands Development Organisation under: “The Inclusive Dairy Enterprise” (TIDE) project. SNV uses a partnership model where they partner with several institutions that provide adaptable products and services to farmers such as INGOs, local NGOs, digital platform providers, financial institutions and knowledge institutions. All institutions interviewed below are partners of SNV implementing the TIDE project. As will be observed, each offers different services relevant to the dairy sector. Details of services they offer and opportunities they see for women inclusion in the dairy value chain are outlined below.

Table 24 Development actors service provision in dairy

Institution	Service provision	Opportunities for women
AGRITERA	· Cooperative development in governance, business development, extension services and financial management · Capacity building of cooperative in increased women leadership in the cooperative, Joint planning among members of cooperative – to address intra household gender dynamics	· The Cooperative Act encourages women participation in leadership positions · Exploring small scale production of dairy products · Offering services as professionals in the value chain (for the educated youth women). i.e.; veterinary services, cooperative managers, account assistants, milk assistants etc.
SNV - TIDE	· Pasture and forage production · Zero grazing · Subsidies on farm structures and WfP · Extension and advisory · Subsidies and incentives for women in the value addition businesses · Exchange learning events to Nairobi/Kenya · Women in business profiling and awards by DFCU Bank · Role model profiling to address stereotypes among women · Incentives at cooperatives for women participation in leadership positions · Matching grants · Buying down interest in partnership with FSPs	· Creation of jobs at the MCC e.g. managers, milk assistants. · Joint planning by men and women within the household. · Yoghurt and ghee production. For example participating in trainings about probiotic yoghurt production done by Yoba for life.
SACC	· Customised computerized accounting software · Matching grant for cooperatives that uptake product · Transparency of milk volumes traded in cooperative	· Taking advantage of other value chain segment activities other than on farm due to the cultural constraints of ownership and decision making on dairy farms
Yoba for Life	· Support production of probiotic yoghurt among women · Target wives of cooperative members to form groups under the cooperative · In partnership with SNV, provide grants to support progressive women businesses · Support application for UNBS certification for those that meet the requirements · Market linkages to schools through the school feeding program (support women to design supply agreements and MOUs with schools) · Support distribution chain through market campaign messaging	· Participate in value addition like yoghurt production · Participate in cooperative leadership positions · Solving challenges of transportation from farm to cooperative – explore this as a business initiative. · Obtain UNBS certification to explore market outlets in other districts such as small outlet shops, supermarkets, trade shows and schools · Explore other opportunities like ice cream making in trading centers, school canteens

Conclusion: There exists a diversity of existing solutions for women to participate in economic opportunities along other value chain segments other than the production segment, whose barriers are quite constraining to women. Details outlined in each case story above are aspects that FSDU should further analyze, to enhance gender change in the dairy value chain. Each case store offers an entry point as "food for thought" to FSDU, however there is need for detailed business case development per case story to assess where the greater profit margin lies. This assessment has only provided an insight into the value chain potential to function better for women, and did not go detailed in assessing business profitability per case story.

The assessment also observed that majority of the women business owners interviewed employ other rural women. The "Gender Inclusive Learning for Agriculture in Africa" report confirms this, specifying that women-owned businesses are more gender-balanced in inclusive employment of women. Compared to male-owned businesses, women-owned businesses hire a slightly higher percentage of women employees (41% v. 33%) and are significantly more gender-balanced in senior leadership (57% of leadership roles held by women v. 23%) and in their boards (62% v. 16%) (Aceli Africa, 2022).

This implies that addressing the financial needs of micro level women owned businesses can impact other women through employment opportunities in the dairy sector.

5.3 FINANCIAL SERVICE PROVIDERS

The "Gender Inclusive Learning for Agriculture in Africa" report compared Interest rates of financial institutions to Agri- SMEs across four East African countries. It was observed that Uganda has the highest interest rates for women-owned SMEs compared to the other countries. The report outlines that collateral requirements are similar irrespective of ownership.
In order to appreciate the gap in formal financing to agriculture, the assessment contacted seven FSPs to understand their product offerings in relation to agricultural development and small-holder women in agriculture food systems. Among those contacted were three commercial banks, three microfinance institutions, and one development bank.

In order to appreciate the gap in formal financing to agriculture, the assessment contacted seven FSPs to understand their product offerings in relation to agricultural development and small-holder women in agriculture food systems. Among those contacted were three commercial banks, three microfinance institutions, and one development bank.

5.3.1 Details about Financial Service Providers and credit service offerings

Table 25 FSP product offering

Institutions	Partnership	Financial products to small holder farmers
Tier 1 Financial Institution A	• Master Card Foundation • BOU- GOU • SNV • Mercy Corps	• Young Africa Works • Tier 1 Financial Institution A • Dairy Farmers Loan • Agri- Micro Smallholder Farmers • Eco Loan – Green financing • Women Agri-prenuership
Tier 1 Financial Institution B	• BOU - GOU • AGRA • Abi • UNCDF • IFC	• SACCO Loan • Contract farming • Fintech to extend digitalisation • Ware house receipt/invoice financing to the SACCO • Eco systems • Capacity building to micro credit institutions • On farm (piloting)
Tier 1 Financial Institution C	• BOU – GOU • UDB • Abi	• Agriculture Youth Product • Super Woman • Cooperative • Agro Dealers • Value Chain Financing • Market Vendors • Weather Insurance
Developmental Financial Institution A	• ADB • EU • GOU • FAO	• SME Business Acceleration • SME Asset Financing • SME Business Expansion • Women Swift Facility • Women Acceleration • Women Asset Acquisition • Youth Quick Facility • Youth Agro Facility • Youth Acceleration Facility • Youth Kick Start Facility • Apex Lending
Tier 4 Financial Institution A	• Micro Finance Support Centre • SNV	• Dairy Products • General Agriculture
Tier 4 Financial Institution B	• Micro Finance Support Centre • SNV • Conserve Nature Uganda	• Banana Improvement • Tier 4 Financial Institution B • General Agriculture • UECCC – Biogas & Solar
Tier 4 Financial Institution C	• FSD Uganda • SNV	• Digital loans to cooperative societies

5.3.2 Summary of the table

- All financial institutions contacted offer agricultural credit services as a result of partnership with other development actors who either provide FSPs with low-interest loans or mitigate agricultural risk.
- Three out of seven interviewed financial institutions have designed financial products for women in small-holder farming households. I.e., i. Tier 1 Financial Institution A - Equi Mama, ii. Tier 1 Financial Institution C - Super woman, and iii. Developmental Financial Institution A with a variety of products. Each of these products is still in the product pilot phase, implying they have not existed for more than two years and currently benefit a small segment of women. The products piloted don't require collateral for women- oriented loans. ForTier 1 Financial Institution A and Tier 1 Financial Institution C, the loans targeting small holder women have a minimum loan amount as low as UGX 100.000 compared to other Agricultural Financial products within these banks.
- Two of the three institutions that have financial products for women in agriculture were able to share the percentage of their agricultural loan portfolio assigned to women- Developmental Financial Institution A at 20% and Tier 1 Financial Institution C at 39.4%.
- Five of the institutions have designed financial products that target dairy farmers. These include Tier 1 Financial Institution A, B, C, Developmental Financial Institution A and Tier 4 Financial Institution A, B and C.
- None of the institutions had a structured financial product that targets tomato value chain although actors in tomato value chain can access financing under the general agricultural products.
- For districts like Mpigi that have partnerships between the DLG and Tier 1 Financial Institution B, access to credit is availed to youth groups in tomato production through this partnership. The DLGs Parish Develoment Model funds will also be channeled through Tier 1 Financial Institution B which will be supporting small holder farming communities to access affordable credit.
- All institutions stated that credit given to women has less chances of falling into the nonperformance category than that given to men. ie women were better paying clients than their male counterparts. This is the same for the agriculture portfolio and all other portfolios.

5.3.3 Agriculture loan portfolio verses other loan portfolios

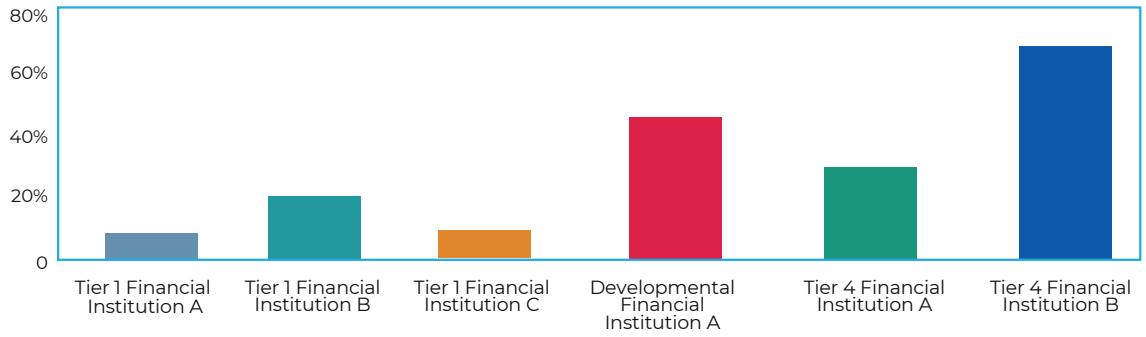

Figure 23 Percentage of agriculture portfolio

The figure shows that Tier 4 Financial Institution B has the highest loan portfolio for agriculture. This would be due to the fact that it is one of the fastest growing farmer SACCOs in south western Uganda.

The above figure suggests a gap in credit services offered in the agricultural sector. Increased engagement of policy makers to increase the credit portfolio in agriculture would be positive, given that the agricultural sector in Uganda is said to employ over 70% of the population. A lack of agricultural financial products that support farmers keeps majority of the population in the country below the poverty line. There is an urgent need to develop more micro credit products that support farm investments in agriculture and women centered economic opportunities in agriculture.

5.3.4 Loan products provided by the seven institutions

The table below shows details of conditionality for loan products provided by the different institutions interviewed.

Table 26 Loan product offering of different FSPs

Institution	Qualification for loan product	Terms and conditions for credit
Tier 1 Financial Institution A	Equi mama Small holder (group lending) • Have to be in a group/cooperative • The group should have savings • Availability of an off taker contract • Group member guarantee • Is for both on farm and off farm businesses and agriculture value chain development (smallholder) • Should have the matching grant required	Agri- Micro Small holder (for individual lending) • 24%- 36% interest on reducing balance • Security is required • Maximum loan amount: 40,000,000 • Grace period depends on agriculture commodity **Agribusiness loan** Specifically to cooperatives • 18%-24% interest on reducing balance (this depends on type of investment the cooperative is receiving loan for) **Dairy product** • Application should be through the cooperative • Minimum: 5,000,000 • One-month grace period
Tier 1 Financial Institution B	• All regular financial procedures • Key requirements depend on the donor of the loan and terms of agreement with the donor	10- 12% interest for the agriculture loan 12 months – grace period
Tier 1 Financial Institution C	• Customer of bank • Deposit on saving/current account • Trading license • Existence for at least 1 year • Should have a financial card	• Should be a small holder farmer • Must be in a group • The group should have savings • Should have an off taker partnership/ contract • The group guarantees its members

Developmental Financial Institution A	• Farmer group with minimum of 40 members • Collect/bulk and market together • MoU and contract with buyers • Bank account • Bank statement • Clear financial records and audited book of accounts • Proof of governance structure • Collateral security	• 10-12% interest on reducing balance • 1-15 years loan repayment period • Collateral: Equipment/land/ animal insurance/ guarantors from executive team of farmer institution • 3-12 years as grace period • Group guarantee
Tier 4 Financial Institution A	• Security; land and building • Guarantors	• 24% interest per annum on reducing balance – Interest rate (Dairy Loan) • Three years loan repayment period • Six months – grace period • Partnership with SNV for the dairy Loan (partnership has phased out) • 12% interest on reducing balancethis was possible as SNV was buying down the interest • SNV likewise offered subsidies on specific dairy products to farmers • Contract of cooperative with Pearl Group of companies (dairy processor
Tier 4 Financial Institution B	• Applicant should be in a cooperative • Governance structure • Consistence of accounts for the last 6 months • Volumes of milk • Have to open up a bank account with the SACCO)	• 19.5% interest per annum on reducing balance • 1-month loan repayment period • No collateral for the cooperative • Contract with supplier • Partnership with SNV for the dairy loan (partnership has phased out) • 12% interest on reducing balancethis was possible as SNV was buying down the interest • SNV likewise offered subsidies on specific dairy products to farmers • Contract of cooperative with Pearl Group of companies (dairy processor)
Tier 4 Financial Institution C	• Should be in a cooperative • MIS in place • Farmer should supply 50 – 200 liters daily to the cooperative • The cooperative should have clear records of individual farmers for at least six months	• 36% interest • Three months grace period

5.3.2.1 Summary of table above

- The interest rates charged by the above financial institutions are still priced too high for the agricultural sector (as observed in the Aceli Africa 2022 report). While we see some FSP indicating 10-12% interest per annum, the minimum loans amounts (as demonstrated in the figure below) can only be obtained by SMEs and not small holder farmers. This probably explains why despite the existence of some of loan products, farmers do not take these up, as shown above.

- There likewise seems to be a mismatch between products available to farmers and farmers' knowledge of these products. For example apart from Tier 4 Financial Institution C whose products were known in some dairy cooperatives visited, no other FSP products were known by the farmers.

5.3.2.2 Loan amounts by institution

Table 27 Loan amounts by Institution

	Min Amount (*1000000)	Min Amount (*1000000)
Tier 1 Financial Institution A	20	250
Tier 1 Financial Institution B	100	2000
Tier 1 Financial Institution C	1	20
Developmental Financial Institution A	500	1,000000
Tier 1 Financial Institution B	1	2000
EBO SACCO	0.5	3500

Developmental Financial Institution A has the highest minimum and maximum loan amount while Tier 4 Financial Institution B has the lowest minimum loan amount.Note: Each of these FSP are at different levels of operation (tiers) as per BOU regulations, hence the differences in their financial product offering.

5.3.5 Challenges and areas for partnership to improve agricultural lending to small scale farmers

The assessment sought to understand the challenges experienced in the agriculture lending space of each institution and suggestions of how these challenges can be addressed.

Table 28 Challenges, solutions and support required

Institution	Challenges	Solutions	Support required to provide appropriate financing in agriculture
Tier 1 Financial Institution A	• The Equi mama comes with unique challenges of startup projects • Socio – cultural barriers in the community for women to access the FPs • Financial illiteracy • Distances of farmers increases the cost of lending • Limited and unavailable information about the farmers • Too many traders in the value chain implying price given to farmer will be low • Limited extension services to improve production • Off taker agreements are a challenge to obtain	• Gender sensitisation should be integrated in the product offering • Increase provision of extension services to farmers • Capacity building to build bankability of farmers • Onboarding more women products • Facilitating offline banking to support areas	• Partnerships that support training of farmers and their SMEs to make them credit worth • More partnerships as is with Mercy corps that supports Women Agri-prenuership trainings • Increased access to digital loans • Women loans to be included in agency banking product
Tier 1 Financial Institution B	• Price fluctuations • Unstructured markets for agricultural commodities • Governance and financial management is poor in most farmer institutions • Diversion of credit • Gender and cultural norms	• Contract financing • Capacity building in governance and financial management for farmer institutions • More farmers to attend the Tier 1 Financial Institution B Incubator • Adapting the gender approaches in financial product design	• Partnerships that support to pilot and scale out financial products to small holder agricultural farmers • Partnerships in digitalisation to roll out the Flexi pay wallet where farmers can access credit services
Tier 1 Financial Institution C	• High risks due to natural hazards • High lending rates by central bank • Majority of households are micro which comes with high risks • Fake agricultural inputs which affect products of farmers • Price fluctuations	• Cheap financing for agriculture lending • Value chain financing approach • Weather insurance should be streamlined in all commodities • Designing better products for cooperative institutions	• Partnerships that offer cheap financing • More partners to guarantee the loans ie sharing the risk of lending to small holder institutions • Support to reach women farmers • Partnerships in digitalisation of client profiling to know details of unique features of women in agriculture • Training women businesses for credit readiness ie going through business incubation • Partnerships that provide cheap financing with limited restrictions • Training in FM, BDS and bookkeeping
Developmental Financial Institution A	• Capitalisation of Agri - SME • Climate change leading to natural disasters and hazards • Fluctuation of agricultural prices • Having one branch in the country makes it difficult to reach most farmers	• To reach women farmers, the interest rate of loan products should be reduced to 5% • Institutions should expand to have regional offices	• Diversify product offering as majority of farmers are still at take off stage ie partnerships that provide: - Grants and debt financing - Strengthen the business advisory services • Expand into digital financing • Partnership for example with FAO to support digitalisation in data collection for client profiles (especially for the small holder households) for Women • Development of more products that don't require collateral

Institution	Challenges	Solutions	Support required to provide appropriate financing in agriculture
Tier 4 Financial Institution A	• Capitalisation of the SACCO • Women clients are not easy to find • Too many FSPs targeting the same client hence multiple borrowing • Animal related diseases that lead to death of cattle • Inappropriate drugs on the market causing tick resistance hence death of cattle • Fluctuation of prices of milk • Seasonal variation of milk volumes • Artificial Insemination(AI) services sometimes don't match as expected	• Low cost financing • Build a revolving fund from which they can easily access financing • Need for regulation on multiple borrowing • Need for regulation of AI service provision, drugs on the market • Promote more zero grazing given that land is not expanding • Improve on AI storage facilities	• Partnerships for interest free loans given that lending to high risk clients as is in agriculture is very high. • Extension service providers that support the agriculture knowledge aspects to farmers • Collaboration with research institutions • Partnership with Telecom service providers for loans
Tier 4 Financial Institution B	• Lack of enough money to lend verses the demand • Capacity building required for farmers on product offering • Capacity building required for staff to appreciate agriculture • Multiple borrowing by farmers	• Transform into an MDI to increase on capitalisation of funds in the SACCO • A Regulation should be put in place on information sharing among SACCOs so as to know who has multiple loans	• Access wholesale financing with lower interest ie Rabbo Bank – 8% per annum • Partnership with inter-switch to develop digital services of ATM services • Partnership with telecom companies to develop digital solutions for clientele to withdraw and deposit • Partnership with agent banking to support access of financial solutions to farmers that are distant
Tier 4 Financial Institution C	• Computer Literacy is still low • Connectivity to electricity is inadequate • Female farmers hardly attend meetings • Lack of transparency on records at the milk collection centre • Digitalisation is ineffective computers • Online platform is challenged by internet connectivity	• Asset financing • Voice Interaction • Incentives for adoption of concept given the competitive interest rates by other FSPs	• Partnerships to solve access to energy solutions e.g solar equipment at cooperatives • Access to affordable computers for MIS installation

5.3.6. A summary of opportunities in agricultural value chains for increased women participation as discussed by financial service providers.

- Population increase, and urbanisation, increase demand for processed products such as dairy products; ghee, cheese, yoghurt, ice cream, skimmed milk.
- Customising products for specific market segments e.g. small yoghurt packages for schools
- Government policy on women emancipation e.g. Cooperative Act that requires at least 30% of farmers on the board to be women
- Land ownership is not restricted, women should focus on obtaining land of their own for example by buying it for agricultural production
- Retail selling of milk products in nearby trading centers
- Women can buy land and use it to grow pastures and make silage which is currently highly demanded among dairy farmers. They can focus on this as a business so as not to compete in-house with their husbands on dairy farming.
- Business incubations to support women businesses to become competitive
- Value chain financing - this designs products as per different value chain actors so as to support sector growth

Conclusion: Most institutions acknowledge that they need more partnerships to provide and design appropriate financial products targeting the agricultural sector and specifically to reach women in agriculture. Such partnerships should take the form of providing cheaper financing, documentation of client data through digitalisation, buying down interest rates, and bringing in subject matter experts such as extension service providers, gender specialists in agriculture and agricultural research institutions to address the gaps in technology enhancement among farmers.

FSD Uganda should take a detailed look at the solutions suggested by FSPs to enable them extend their products to women in agriculture. FSD Uganda should also look at the support required to provide appropriate financing to women, so as to structure financial inclusion strategies to address these aspects. For example, using Tier 4 Financial Institution C (one of FSD Uganda's clients) one of the solutions they suggest is asset financing and incentives to adopt this. However, before any entity qualifies for this type of financing, there should be a criterion that Tier 4 Financial Institution C has outlined. FSD Uganda would support Tier 4 Financial Institution C in making this criterion more gender responsive and adaptable to women businesses in the dairy sector. Further still FSD Uganda would support Tier 4 Financial Institution C to profile women businesses understanding each of their profit margins and what form of assets acquisition would enhance competitiveness of their business entity.

As outlined, there is a gap between the products developed by financial institutions targeting woman economic empowerment and small holder farmers and knowledge about these products by the target groups. This could be attributed to the fact that majority of these products are still at pilot stage, hence reaching a small number of the target group. The reason could also be that the products are profiled in English language with complex financial terminologies, not easily understood by the rural population. (This was the case for all brochures that FSPs shared with the assessment team. None of these were written in the local language to ease understanding by rural communities).

FSD Uganda should further engage with FSPs like Tier 1 Financial Institution A and Tier 1 Financial Institution C in detailed discussions on how they can upscale some of their current innovations to target women economic opportunities outlined in this report for both tomato and dairy value chains.
Further FSD Uganda could likewise support business development of women micro enterprises, to support their investment readiness.

6.0 LOCAL GOVERNMENT

The assessment interviewed nine District Local Governments (DLG). KII interviews were conducted with district production officers, commercial officers and in some instances gender officers in both tomato and dairy production. Despite the challenge that the majority of DLGs face in terms of outreach ie inability to address the prevailing challenges in agriculture due to limited financing verses population they serve, all government programmes go through the DLG.

Below are the government programmes implemented by districts that support gender inclusion among small holder agriculture in the country:

- Group model for extension provision. The community is encouraged to join groups to access local government services. For each of these groups a third of the membership should be women.
- Parish Development Model (PDM) initiative for financial inclusion of small holder farmers emphasises a minimum of 30% women,
  Youth 30%, PWD 10%, Elderly 10%, Men 20%
- NAADS programme; 50% of beneficiaries should be women.
- Uganda women empowerment programme, UWEP works with organised groups of women to access financial services at 8% per annum
- Emwoga SACCOs provide cheap financial services at a lower interest rate of 12% per annum.

Government programs are always designed with interesting theories of change (ToC) for transformation of communities, however along the way several factors undermine these theories. It is therefore imperative that FSD Uganda explores how to actualise most of the ToC of these programs and seek for areas of synergy that can create gender change within the value chain. For example, the NAADs Programme offers tractors periodically on a matching grant arrangement to cooperatives, farmer groups or private sector SMEs that show a critical farmer supply chain. It's through this that the women's group in dairy value chain business B Group of women in Kiruhura district (case story earlier profiled) were able to obtain a tractor. The condition to obtain these tractors is availability of funds to match the grant offered by the government. In most cases most farmer groups/ cooperative can only access these funds through credit from formal financing.

As outlined in the report, the demand for tractor services is growing in south western Uganda. During the interviews, the women's group in dairy value chain business B women group informed the assessment that the main cooperative where majority of their household milk is bulked likewise owns a tractor, however during the rainy season both these tractors cannot meet demand of cooperative members for tractor services. FSD Uganda could therefore further study the demand of tractor services per cooperative and build a business case for women participation in this economic opportunity, and further design strategies for access to affordable financial solutions to partner with the NAADs Programme to facilitate women's asset ownership. Such solutions would include engaging with Developmental Financial Institution

A to understand the requirements for their asset acquisition loans (given that these had the lowest interest rate for asset acquisition among FSPs interviewed) then support the women under cooperatives to qualify for this financing option.

6.1 Opportunities for increased women empowerment in both tomato and dairy value chain

Table 29 Opportunities for women economic empowerment

Summary of opportunities discussed by Local Government officials in central districts and south western districts to improve women participation	
Tomato value chain	**Dairy value chain**
• **Digitisation:** Women need to take advantage of digital platforms commonly used in the central districts. Majority of these support market access to different segments of the population in central districts • High demand within the domestic markets • Availability of regional markets like South Sudan, Congo, Rwanda and Kenya. • High end markets such as hotels with international presence require organically produced tomato. This is a niche that women can focus on to access markets instead of crowding in the local markets • Supplying to the supermarket/grocery shops in several urban centers around the central districts. Such markets require good quality produce at a better price. • Explore value addition opportunities with Makerere University Food Science Institute	• Setting up women initiatives under the cooperative for easy access to financial solutions and other resources. • Cottage industry in value addition of milk products • Retail trading of milk products and milk in trading centers • Engage in zero grazing • Transportation of milk from farms to milk centres (using motorcycles and hiring youth) • Selling of improved pasture seeds and animal feeds • Expand into other dairy products such as; cheese, butter and ice-cream making and explore the urban population

7.0 CONCLUSION

From the information compiled, we see that both tomato and dairy value chains offer diverse areas for engagement for rural women to economically benefit along the value chain. Below are a few conclusions to the findings of this assessment.

Both tomato and dairy are male dominated value chains as shown in the gender in value chain mapping done during the FGDs. The majority of men exercise control over resources in the production segment. Both value chains showed women's active engagement through their labour in production activities although the majority don't participate in decision making on the use of household income.

The assessment found a few organised women groups in the tomato value chain that sell their products together, although the value chain does not seem to have an organised structure when it comes to bulking together of farmer produce. In dairy, despite the existence of the cooperative structure, many women have not taken advantage of this to sell their processed products or explore other opportunities by joining the cooperative.

The tomato value chain seems to have limited options for women's economic opportunities beyond selling raw tomatoes, which is further challenged with the limitations of cold chain facilities. There exists room for value addition development which still exists on small scale as the products need to be certified. However, women lack the financial capacity to have this in place. In the dairy value chain, despite the strong barriers that limit women benefiting from dairy production, there are opportunities for women to further explore other milk products ie ghee, yoghurt, ice cream, skimmed milk, etc. These face the same challenge of access to affordable financing to meet the UNBS certification requirements in their micro small businesses.

The challenge of lack of cold chain facilities outlined by majority of the actors in tomato production should be seen as an opportunity, through exploring machinery that can process most of the raw tomatoes that go to waste in local markets. This therefore calls for exploring low cost equipment that can process tomatoes into other durable products. Such innovations will reduce waste of women's produce, especially those trading in the local markets.

Other value chain actors such as development organisations, financial service providers and the DLGs have designed inclusive innovations that address increase of women participation in economic activities along both value chains. The majority of these have embraced a partnership model to be able to extend services to women in the community.

8.0 RECOMMENDATIONS

The report provides recommendations on almost every section under "opportunities for women". The consultant has further summarised every section as per the gender framework adapted to this assessment, suggesting areas that FSD Uganda should explore as entry points for financial inclusion to women per value chain. It should be noted that addressing gender constraints "is not a one size fits all approach". Transformative gender change in agricultural value chains needs a multi faced approach that will focus on the holistic ecosystems of the social, economic and political systems that women operate in i.e. from household gender dynamics to market gender dynamics, business environment gender dynamics, institutional rules and norms etc; As we review the recommendations, the consultant will discuss possible entry points that FSD Uganda could explore in each value chain to improve rural women's livelihoods.

Below is an extract of the summaries for each value chain.

1. The key starting point for FSD Uganda is to design and adapt a gender responsive strategy that will inform how women and gender issues will be addressed with in the FSD Uganda strategic plan. From the initial discussions with the FSD Uganda team, this was not in place, however the institution needs to have a well laid out framework that will guide activities in providing financial solutions that enhance gender equity among low income households.
2. Limited access to affordable financing runs across the value chain segments where women were more dominant, this was a key constraint among women in both tomato and dairy value chains. This could be an area that FSD Uganda supports.

TOMATO VALUE CHAIN:

Production: The key constraints of women in production was the challenge of the labouriousness of most of the activities in this segment. Aspects of access, control ,and decision making on the land and income from the produce from the farm were likewise key gender constraints to women's economic benefits in tomato production. To address this challenge, FSD Uganda should explore partnerships with development actors such as HollandGreentech to extend the greenhouse technology that does not require a of lot cultivation space but is expensive to install. The discussion in this partnership should include how to extend financial solutions to women to install small scale green household technologies. (note: a small green house technology can cost UGX 3.5M to construct.) An analysis should be done on whether this would in the long run add productive hours for women, how easy it is for women to adopt the technology, is this a sustainable approach to address the gender constraints vs the open field, and how long it takes for the return on investment for this technology. One of the advantages of the technology is that it doesn't require a lot of space and the farmer is able to produce during the off season months (therefore taking advantage of increased market prices) compared to the open field production.

Other technologies that reduce the laboriousness in tomato production is the access to irrigation systems that likewise assure the farmer of off season supply of produce. Access to quality inputs will likewise support women farmers to enhance their production. Addressing the financial gap that women face in accessing less labour intensive technologies will increase women's economic gains in tomato production.

Marketing: The assessment showed that women are visible in the trading and market segments (market stalls). Traders are market actors that require immediate cash for daily transactions especially during the harvest season. Despite their informality, it's been observed that this market segment has higher profit margins than the other actors. The value chain mapping revealed that some women are participating in this market segment. Therefore, designing solutions for these women traders is a possible entry point. Women in formal structured market stalls are likewise an entry point to focus attention to their market associations. A detailed analysis should be done to understand the type of financial needs of these women so as to customise financial solutions aligned to their needs. For example, given the fact that majority operate in structured markets which have saving and credit groups, a further analysis should be done to understand the key financial challenges for each of these groups, so FSD Uganda can tailor financial solutions that address these challenges.

There exists an unmet demand for supermarket sold tomatoes and high end restaurants in central Kampala among high end customers. According to the literature reviewed during this assessment, some of these are currently importing tomatoes from Holland and Kenya. There is therefore potential to support women to access greenhouse technology to be able to supply

the current demand or further streamlining the open field tomatoes with organic standard certification to supply the high-end restaurants. These are still potential entry points to enhance women participation in the tomato value chain, through providing financial solutions to these opportunities.

Financial literacy: This was one area identified as a major challenge along the value chain. None of the FGD respondents had obtained financial literacy in the last one year. Majority of the FGD interviewed in the tomato value chain don't access formal financing for their tomato production or marketing which probably explains the gap in financial literacy. On the other hand, none of the FSP had tailor made products that address the needs of tomato production for women in tomato value chain. FSD Uganda should hence explore solutions that can bridge the above gap in financial literacy and formal financing solutions in tomato production.

Value addition: Access to finance to construct premises that meet the UNBS certification was a major challenge for women in production. Women SME development is a key systemic approach that is able to increasel inclusivity of women's economic opportunities. This is through employment of women, buying produce from women farmers and profiling role model women FSD Uganda should emphatically explore solutions that can address this challenge. For example; advocate and provide low interest loans to FSPs to be able to extend financial services to women that are challenged with accreditation of UNBS certification. It should be observed that majority of these micro businesses have not broken even, they still operate at startup phase. Therefore, taking up formal credit without support would risk the continuity of the business.

FSD Uganda should consider partnerships that support value addition initiatives in the tomato value chain such as with Makerere University Faculty of Food Science, to offer capacity building to women, in processing of the tomato vegetable to several products adaptable to the Uganda consumer market. Makerere University Faculty of Food Science has developed several innovations in value addition of several agricultural commodities in the country but is challenged with how to upscale these innovations. A training programme can be the key focus of this partnership, where a 50% matching grant is offered to willing business women to match the grant and attend such trainings. There after, FSD Uganda should negotiate affordable financing with FSPs blended to the required investment to start value addition in tomatoes. This initiative calls for a detailed market assessment and design of a business case in tomato value addition.

DAIRY PRODUCTION:

Production: The majority of women visible in dairy cooperatives are FHH, while those in MHH were more visible in supervision of dairy farm activities. Increasing women participation in dairy production requires capacity building of all women and men, so that in case the male is absent, women don't struggle to manage the farm. Women from FHH and MHH should participate in trainings that support increased dairy production and productivity. These trainings should incooperate household gender dynamics so men appreciate the joint management of the farm (using the household gender methodology) FHH are challenged with availability of time due to the multiple roles they play at household level, while women in MHH are restrained by their husbands from attending training. FSD Uganda should explore increased access to time saving technologies for women in MHH and FHH that will reduce their burden in productive roles and increase their time for productive activities. This implies designing financial solutions that address the constraints women have in accessing these technologies.

Another segment of farmers are women in zero grazing. This segment practices intensive dairy farming. For women in this segment to economically benefit, they need improved farm structures such as regular WfP, improved breeds, all year round pasture production etc. All this will need a good level of financial investment. FSD Uganda should further understand this segment of farmers and support their dairy farms to increase their milk production. Most of the women practicing zero grazing have a sizeable cow population (usually not more than three), these therefore will need insurance for their animals. FSD Uganda could likewise consider this among her financial solutions that support small holder women farmers in zero grazing.

Cooperative: The cooperative is a convergence place for all dairy farmers in south western Uganda. Women need to take advantage of this structure to access a variety of services and market their products. Capacity building services should be extended to all cooperative members. Further discussion is required in reviewing the criteria of cooperative membership, and cooperative leadership to encourage increased numbers of women in key executive membership positions. The men bulking at these cooperatives likewise need to be trained on the importance of women inclusion in decision making and planning for both the dairy farm and income from the farm. FSD Uganda should therefore include gender sensitisation methodologies as one entry points to extend financial solutions to encourage women in cooperatives.

Other strategies for entry would include FSD Uganda focusing on increased women participation in dairy cooperative through affirmative action, for example, providing conditional financing to cooperative SACCOs. However, the funds should be able to reach a large number of women in the cooperative. This will probably convince many cooperatives to promote women's membership in the cooperative.

Financial literacy: As outlined in the tomato value chain above, dairy farmers need financial literacy trainings. No cooperatives interviewed had attended training in financial management in the last year.

Value addition: The literature review outlined a gap in dairy products, observing that majority are imported in large quantities in the country (BOU data table 4). Women's small cottage industries should be financially supported to address this inland market demand. A detailed market analysis of each of the dairy products outlined in table 4 needs to be commissioned, to interest FSP in products they are assured have a quick sales turn over.

Increased production of dairy products demanded in the domestic market calls for accreditation of processing cottage premises by UNBS. As was outlined by majority of women in business, these is need for financial support to meet certification standards. FSD Uganda should therefore consider this entry point, as widely discussed under the tomato value chain.

Another entry point in the dairy value chain is focusing on structural transformation using the critical mass concept i.e. support women initiatives like Women SACCO A in proper system governance, business development and financial systems to run a micro credit entity. This entity is able to reach many women in the district, however lacks proper structures to operate as a micro credit entity. In the past, FSD Uganda supported many such micro credit entities hence should be in position to support Women SACCO A.

General recommendations:

1. Exploring digital solutions: UNCDF has been steering the design of several affordable digital and financial products that address the needs and challenges of diverse segments of women and leverage technology to increase access to finance and formalisation of women-owned and managed SMEs. The assessment provides a wide range of limitations that women in businesses both in the tomato and dairy value chain face in accessing affordable financing and increasing sales due to lack of transportation from rural places to the urban centres. However, such challenges can be solved by adopting digital solutions that are contextualised to the women micro enterprises.

2. Appreciate the barriers to reaching women in tomato and dairy value chains outlined by FSPs and design initiatives that address these barriers. All the FSPs reached did not have structured products in the tomato value chain like they do in the dairy value chain. FSPs that developed products in the dairy value chain had a development actor to bridge the gap and hence reduce barriers that hindered availing their services to farmers.

   An example of a development actor bridging the gap to reduce barriers of both farmers and FSPs in gender inclusion along the value chain is the SNV-TIDE Project. This project has attracted FSPs in the dairy sector through provision of incentives at various levels. In the case of women economic inclusion in the dairy value chain, the institution worked with FSPs to develop products that are specific to value addition (the segment that was seen to have more women engagement in the value chain) promoting women owned businesses such as yoghurt production and cheese production in south western Uganda. The project sought to introduce school feeding in selected schools to address malnutrition among children and further increase retention of children in school. In partnership with Yoba for Life, the project trained women groups and individuals in the production of probiotic yoghurt and availed matching grants to these women to produce yoghurt for sale in schools. As a result, women owned businesses obtained contracts to supply yoghurt daily to the schools. The project further designed financial products in partnership with FSPs, that focus on key essential items that a rural woman will need to make and store yoghurt. Subsidies and interest buy down were some of the incentives offered to women in yoghurt business. FSD Uganda should explore such initiatives in both dairy and tomato value chain to increase women's participation in the economic opportunities in value chain processing.

3. The majority of the financial institutions included in this study spoke to the need for client data collection so they understand better the diversity and profitability of women. None of the FSPs is ready to invest in profiling clients as they assume this is quite expensive in comparison with other sectors. Some of the FSPs like Tier 1 Financial Institution A and Tier 1 Financial Institution B acknowledged the need to understand the agricultural sector better, especially how they can address women inclusivity aspects with their financial products to small holder farmers. FSD Uganda could support this process through collecting digital profiles on women businesses with profitable return on financial investment in both value chains. The profiling exercise could likewise focus on offering capacity building services to women businesses to make them investment attractive to FSPs, support in designing business plans, explore blended financing etc.

4. Support initiatives promoting time or labour-saving and sustainable technologies. For example working with private sector initiatives that address time investment of women both for their reproductive and productive roles. When women are able to save time from reproductive roles, they will have more productive time to support their value chain activities from which they earn income.

10. ANNEXES:

Annex 1: Demographic characteristics of FGD respondents in tomato production (N – Land)

Category	Mukono women	Mukono men	Mpigi women	Mpigi men	Kampala women	Kampala men	Wakiso women	Wakiso men
Age	40-50	Above 50	18-45	18-40	18-25	18-25	18 -50	18-40
Education Background	Secondary	Primary & secondary	Never went to school	Primary & secondary	Primary & secondary	Secondary	Primary	Primary & secondary
Marital Status	Married	Married	Single/ Married	Married	Single/ Married	Single	Single/ Married	Married
Acreage of N	<1acre	1acre>	<1acre	<1acre + 5<	<1acre	<1acre	<1acre	<1acre + 5<
N rights	Rented	Rented	Inherited	Rented	By marriage	Rented	Rented+ Inherited	By marriage
Management	Sole	Joint	Sole	Joint	Sole	Joint	Sole	Sole+Joint

Annex 2: Demographic characteristics of women in business in tomato value chain

Name of Women Business Owner	Product offering	Location:	Household type	Age (Years)	Education level	Year of business start	What motivated start of business
Tomato vendor D of Women's Group B	Tomato paste,chilli sauce,,tomato powder.	Kiwatule/ Kampala	Female headed household	31-40	Secondary school level	2016 - 2020	Capital investment required was small compared to other business
Tomato vendor E of Business A	Extension services and raw tomato production	Nabingo/ wakiso	Female headed household	18 - 30	University level and above	2016 - 2020	She is a single mother hence she needed money for her family's livelihood needs
Change to Business B	Dry tomatoes and Tomato ketchup	Kawempe/ Kampala	Female headed household	18 - 30	University level and above	2010-2015	To tap into fresh produce.
Tomato vendor A	Tomato vendor.	Nakawa market/ Kampala	Male headed household	41-50	Primary level	2010-2015	To obtain income for her livelihood needs
Women in value chain processing of capsicum products - sweet pepper	Sweet pepper, strawberries capscum chilli	Near Bahai Temple/ Kampala	Female headed household	61 and above	University level and above	2010-2015	In her elderly years, the key activity she can engage in is farming
Tomato vendor B	Tomato vendor.	Nakawa market/ Kampala	Female headed household	51-60	Primary level	2000 – 2004	Her Family size increased in number.
Tomato vendor C	Tomato vendor.	Nakawa market/ Kampala	Female headed household	41-50	None	2005 - 2009	She had no other job to obtain income from

Annex 3: Demographic characteristics of FGD respondents from Dairy Cooperative (N – Land)

Category	Dairy Cooperative A	Dairy Cooperative A	Dairy Cooperative E	Dairy Cooperative E	Dairy Cooperative C	Dairy Cooperative C	Dairy Cooperative B	Dairy Cooperative B
	Women		Women	Men	Women	men	Women	Men
Age	40-50	Above 50						
Education Background	Primary level	Primary and Secondary	Above 50	36 – above 50	41-45	30-55	41-45	31- above50
Marital Status	Married/ single		Diploma	Never went to school, primary, and secondary	Primary and secondary	primary and secondary	Never went to school, primary, secondary and university	primary and secondary
Acreage of N	<30 acres	married	Married/ single	married	Married/ single	married	Married/ single	married
N rights	Bought, marriage and inherited	<100 acres	<60 acres	<60 acres	30> acres	<100> acres		<100> acres
Management	sole	Bought, marriage and inherited	Bought, marriage and inherited	Bought, marriage and inherited	Bought, inherited	Bought, marriage and inherited	Bought, inherited	Inherited and marriage
		Sole	Sole	sole	Sole	sole	Sole	sole

Annex 4: Demographic characteristics of women in business interviewed in the dairy value chain

Name Of Women Interviewed	Product/ Service Offering	Household type	Age	Education eackground	Year Of business start	What led to business start
Woman in dairy value chain business A	Dairy value chain business A (ghee)	MHH	61 and above	Secondary school level	2000 – 2004	• She needed money separate from her husband's • She studied food processing course
Woman group dairy value chain business A	Yoghurt Group	Yoghurt Group in Ibanda	MHH	41-50	Secondary school level	To obtain income of their own with less interference from their husbands
Woman in dairy value chain business C	Dairy value chain business B (yoghurt)	FHH	51-60	Secondary school level	2016 - 2020	Need for external income, given that the dairy farm belongs to the man
Woman in dairy value chain business D	Woman in dairy value chain business D	MHH	31-40	University level and above	2010-2015	They had a solidarity group revolving funds
Woman in dairy value chain business E	Crafts In Hides And Skins	FHH	51-60	Secondary school level	2010-2015	The death of her husband as she had six children to take of
Woman in dairy value chain business F	Traditional Ankole Items Kazo District	FHH	41-50	Primary level	2016 - 2020	To obtain a daily source of income after her husband became bed ridden
Woman in dairy value chain business B	Tractor Services	MHH	41-60	Secondary school level	2016 - 2020	The group was started to support other women to take advantage of economic activities that a woman can earn an income from
Woman in dairy value chain business G	Large scale farmer	FHH	61 and Above	Primary level	2000 – 2004	• To change her farming practices from traditional cattle keeping to dairy farming • Increasing prices in dairy milk production
Woman in dairy value chain business H	Zero Grazing Farmer		51-60	Primary level	2010-2015	• Limited land • She wanted to get an alternative source of income • By selling milk and manure for her crops
Women SACCO A	Kazo Town.	MHH	51-60	Tertiary level	2022 (the initiative is still in infant stages)	Financial access for women to invest in opportunities in the dairy sector

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