

Collective agency: A case of common-bean smallholder farmers in Uganda.

Cosmas Kweyu Lutomia¹, Eileen Nchanji¹, Grace Nanyonjo², Isaac Mugagga²,

¹ International Center for Tropical Agriculture (CIAT), Nairobi, Kenya

² National Agricultural Research Organization (NARO), Kampala, Uganda



Table of Contents

ABSTRACT	iv
INTRODUCTION	1
CONTEXT: THE MASTERCARD FARMER NETWORK PROGRAM	4
METHODOLOGY	6
Study area	6
Sampling Design and Data Collection	7
Data Analysis	9
RESULTS AND DISCUSSION	10
Sociodemographic Results and Insights	10
Group memberships details by gender	11
Individual women and men farmers voices in groups	15
Individual and Collective Agency	18
Intersection of socioeconomic and group characteristics with farmers' voices and collective agency	22
CONCLUSION	27
ACKNOWLEDGEMENT	28
REFERENCES	30



List of Tables

Table 1. Sample size	7
Table 2. Sociodemographic characteristics of farmers by gender	10
Table 3. Group memberships details by gender	11
Table 4. Group memberships details by group type and gender	14
Table 5. Leadership by gender and individual and group characteristics	15
Table 6. Proportions of respondents exercising voice in groups.	16
Table 7. Reasons for respondents feeling comfortable speaking in groups among respondents who affirmed they felt comfortable speaking.	16
Table 8. Reasons for not having opportunities to speak in groups among respondents who felt uncomfortable speaking.	17
Table 9. Percentages of men and women with individual and collective agency level and reasons for perceptions of their perceptions	18
Table 10: Preferences and reasons for preferring to work with men alone to change lives.	20
Table 11: Preferences and reasons for preferring to work with women alone to change lives.	20
Table 12: Preferences and reasons for preferring to work with both men and women to change lives.	21
Table 13: Exercise of agency and voice by gender and group type	21
Table 14: Intersection of socioeconomic and group characteristics with individual level collective agency	23
Table 15: Intersection of socioeconomic and group characteristics with freedom to participate in group decisions freely and actively.	25
Table 16: Intersection of socioeconomic and group characteristics with individual agency and individual community Capacity	26

List of Figures

Figure 1: Percentages of reasons for freely and actively participating in group decisions among farmers who had freedom to participate in group decisions.	19
---	----

Abstract

Uganda is committed to addressing gender inequalities and inequities in the agricultural sector. However, systematic differences in outcomes between men and women persist. This study analyzed the role of women's and men's agricultural groups operating within the Mastercard Farmer Network (MFN) and non-MFN operators in influencing voice and agency among men and women farmers in 13 districts of Uganda. Descriptive analysis of data collected from 653 respondents showed that educational attainment, marital status, main occupation, household headship, mode of membership, leadership in groups, and group type all shaped the voices and agency of farmers, especially women, in these groups. The results also indicate that although MFN effectively narrowed gender differences in voice and agency, representation of women in leadership positions in groups is still low. The findings highlight the need for interventions that address the intersectionality of these factors to enhance women's voices and agency beyond the household. Understanding the root causes and discrimination associated with women's leadership, voice and agency needs to be understood, and solutions integrated during the formation of farmer associations, which in turn could be critical in enhancing women's representation in group leadership.

Introduction

Unlike their male counterparts in sub-Saharan Africa, women face persistent constraints that limit their inclusion and benefits from agriculture and entrepreneurship (Meinzen-Dick et al., 2011). Specifically, women face greater barriers than men to increasing agricultural productivity and accessing agricultural markets, information, and capital (Peterman et al., 2014; Selhausen, 2016). In addition, women have weak(er) bargaining power, exposing them to exploitative trading practices and preventing them from emerging from subsistence agriculture to more profitable value chains (World Bank & FAO, 2009; Peterman et al., 2014). In literature, joining farmer groups is promoted by development agencies as a strategy for enabling women smallholder farmers to increase productivity and overcome market impediments that prevent them from benefiting equally from their participation in agricultural value chains (Quisumbing & Pandolfelli, 2010; Majurin, 2012). The argument for women's collectiveness is founded on the role of farmer associations in mobilizing farmers, aggregating produce, and linking them to local and external markets (Selhausen, 2016). Farmer groups are also identified as platforms for enhancing farmers' power to negotiate and access markets, inputs, shared equipment and infrastructure, credit, and technical assistance that raise member's productivity, social inclusion, and benefits (Shiferaw et al., 2011; Majurin, 2012; Poole et al., 2013).

The successes of cooperatives in different contexts have been used to advocate for interventions that advance women's interests in collective action. As stated by Selhausen (2016), membership in farmer groups is a strategic life choice for women. Several factors influence the decision and the level of women's participation, such as socioeconomic and group characteristics, access to resources, intrahousehold relationships and gender inequalities shaped by deep-rooted sociocultural norms (Selhausen, 2016; Lecoutere, 2017; Qanti et al., 2021). For instance, previous studies have shown that the following affect the membership of rural groups: education (Bernard & Spielman, 2009), length of membership, gender, and household decision-making patterns (Sanginga et al., 2006; Ingutia & Sumelius, 2022), and land access, ownership, and tenure security (Fischer & Qaim, 2012; Mujawamriya et al., 2013). However, these studies do not distinguish the decision to become a member of the group and the participation levels of men and women members in farmers groups. Thus, Selhausen (2016) argued that the influence of these factors on both the decision to join groups and the level of women's participation in terms of women's voices and agency needs to be studied.

Collective agency has both individual and collective aspects. At the individual level, this is the capacity to pursue the individual's own perception of "good" (both self- and other-regarding goals, values, and rights) as a result of membership in a collective (Delea et al., 2022). At the collective level, this is the capacity to pursue the collective's perception of "good" (e.g., other-regarding goals, values, rights). At the core of agency, both individual and collective lies the aspect of "voice". Voice is the ability to express practical needs and strategic interests individually and collectively, in both private and public domains (Gammage et al., 2016). However, for meaningful change to occur, women's exercise of voice must go beyond the mere ability to speak, to be listened to and their concerns acted upon (Goetz & Jenkins, 2016). They should have the capacity to speak up and be heard, and to shape and share in discussions, discourses, and decisions that affect them individually or as a group (Klugman et al., 2014). However, exercising voice and agency may be disproportionately lower for women than men because of social and cultural factors (Roncoli et al., 2011; Evans & Nambiar, 2013).

The government of Uganda and development agencies have recently demonstrated their commitment to addressing gender inequalities in the agricultural sector (Diro, 2017). The efforts acknowledge the economic contribution of women to Uganda's economy, especially in the agricultural sector, where they make up to 73% of the labour force (Willman & Arnold, 2022). Uganda also ranks high in the concentration of women's entrepreneurship, especially in agriculture, in sub-Saharan Africa despite the sociocultural barriers (MasterCard, 2022). These indicate that governments and development actors should create opportunities for women to enable them to become pathways for agricultural development. By providing training opportunities for women and increasing their access to resources, the government of Uganda can improve women's economic status, financial independence, and participation in decision-making processes beyond the household. Making women pathways of change in the agricultural sector requires addressing challenges they face, including marginalization in terms of financial services, information, education, and markets (MasterCard, 2022). Nonetheless, the gender equality agenda requires progress in expanding agency because the lack of it prevents women from accessing a range of services and opportunities that are pertinent to achieving equal benefits (like men). Thus, participation in groups beyond just membership could play a significant role in enhancing women's ability to challenge the deep-rooted norms within and beyond households and act in their best interest to achieve the desired outcomes (Lecoutere, 2017).

Collective action has been used in Uganda to enable women to take advantage of existing and emerging opportunities in agricultural value chains. The approaches to collective action have aimed to expand women's voice and agency and achieve gender equality (Acosta et al., 2021). Specifically, the gender interventions in agriculture in Uganda are designed to ensure that women's voices are heard in local-level decision-making spaces. Available studies in Uganda indicate that collective action has increased women's decision-making power at the household level and beyond households (Andersson & Gabrielsson, 2012; Lecoutere, 2017). However, Acosta et al. (2021) note that although policy has identified unbalanced gender norms as a factor that precipitates gender inequalities in Uganda, employed interventions have achieved little to address the underlying causes of gender inequalities. In addition, Lecoutere (2017) noted that collective action did not adequately alter other aspects, such as the intra-household division of labour, which impedes women's agency within and beyond households.

Thus, Acosta et al. (2021) suggested effective capacity building, media, and education programs, and awareness creation as alternative strategies for shifting gender norms to ensure a more transformative gender agenda. Implementation of these recommendations is feasible with advancements in digital technologies. Information and communication technologies, or digital technologies, are powerful tools for enabling women to exercise voice and agency within and beyond households. According to Klugman et al. (2014), digital technology does not only enable women to access knowledge and information, but also creates new ways for women's opinions to be heard; eliminates social exclusion and lack of mobility that undermine women's empowerment and provides spaces for collective action. Digital technology also shapes economic opportunities, aspirations, leadership abilities, and expectations of gender roles (Klugman et al., 2014). For instance, about 89% of Ugandan women own mobile phones and sim cards, providing opportunities to enhance their agency (Nchanji et al., 2023, pending). Thus, the unprecedented increase in digital technology use (Taylor, 2023) and collective action, could effectively enhance women's voices and agency.

Even so, a digital divide persists in Uganda, with women being less likely to have access to the internet and mobile phones use than men. This is reflected in the lower numbers of women ICT users compared to men, with only 19% of Ugandan women being online compared to 27% of men (Paradigm

Initiative, 2020). Although 69% of women own phones, only 44% of them have access to phones at all times compared to 62% of men (African Internet Rights, 2020; Paradigm Initiative, 2020). Gender norms, such as family or friends disapproving use, husbands regulating the use, and women requiring permission from their husbands to use mobile phones, together with the affordability of digital technologies are responsible for lack of inclusive ICT services in Uganda (African Internet Rights, 2020; Paradigm Initiative, 2020). To bridge this gap, initiatives should be implemented to mainstream gender in digital services and access (UN Capital Development Fund, 2021). One such initiative is the Mastercard Farmer Network (MFN) which works with farmer groups to digitize provision of several services to farmers in Eastern Africa.

Digital platforms like MFN can play a crucial role in overcoming social norms that impede women from exercising agency at the individual and collective level. Digitizing transactions and creating market linkages can empower women farmers to have greater control over their produce and income. Furthermore, financial services provided by MFN to members of farmer groups via mobile and bank payments can help women overcome traditional barriers, such as collateral and high transaction fees, to accessing financial services and controlling benefits, thereby increasing their voice and agency within and beyond households. Reducing barriers to meaningful participation in such farmer groups is key to enabling women to exercise their voices beyond the household and to benefit from collective agency. This paper examines women's participation in MFN groups to determine what factors enable women to exercise voice and agency within different types of groups.

Context: The Mastercard Farmer Network Program

The Mastercard Lab for Financial Inclusion was established in Nairobi in 2015 to focus on developing and expanding practical, cost-effective, inclusive financial solutions that would impact millions of people globally. With the support of the Bill & Melinda Gates Foundation, the Mastercard Lab developed the Mastercard Farmer Network (MFN) to deliver digital financial solutions to marginalized smallholder farmers in Africa. MFN works towards digitizing agricultural value chains, payments, and workflows by enabling a digital rural ecosystem of agriculture supply chains. In 2019, Mastercard, the Alliance of Bioversity International and CIAT, the Ugandan National Agricultural Research Organization (NARO) and the United States African Development Foundation (USADF) partnered to extend the reach of MFN in Uganda. This provided innovative platforms that could connect smallholder farmers and farmer groups with potential buyers, integrate payment systems, and catalyze empowerment through digital inclusion.

The rollout of MFN in Uganda focused on enrolling 10,000 farmers on the MFN platform to connect with agribusiness buyers and facilitate their access to financial services through digital payments (USADF, 2021) based on accumulated transactions. Specifically, MFN aimed to address challenges facing smallholder farmers, especially women and youth, including limited access to resources, markets, and information by providing ICT-based solutions. The targeted outputs were to improve farmers' skills and knowledge, decision-making, control over income, and bargaining power.

Mastercard engaged the Uganda National Farmers Federation (UNFFE), Community Enterprises Development Organization (CEDO), and Eastern Agricultural Development Company Ltd (EADC) to effectively reach farmers. Firstly, researchers from the National Agricultural Research Organization (NARO) and the Alliance of Bioversity International and CIAT worked with the above private-sector partners to digitalize their systems by moving farmers' information from hard copy to a digital format. The researchers used a UNFFE database to develop a framework linking farmers' groups to the MFN platform. We also

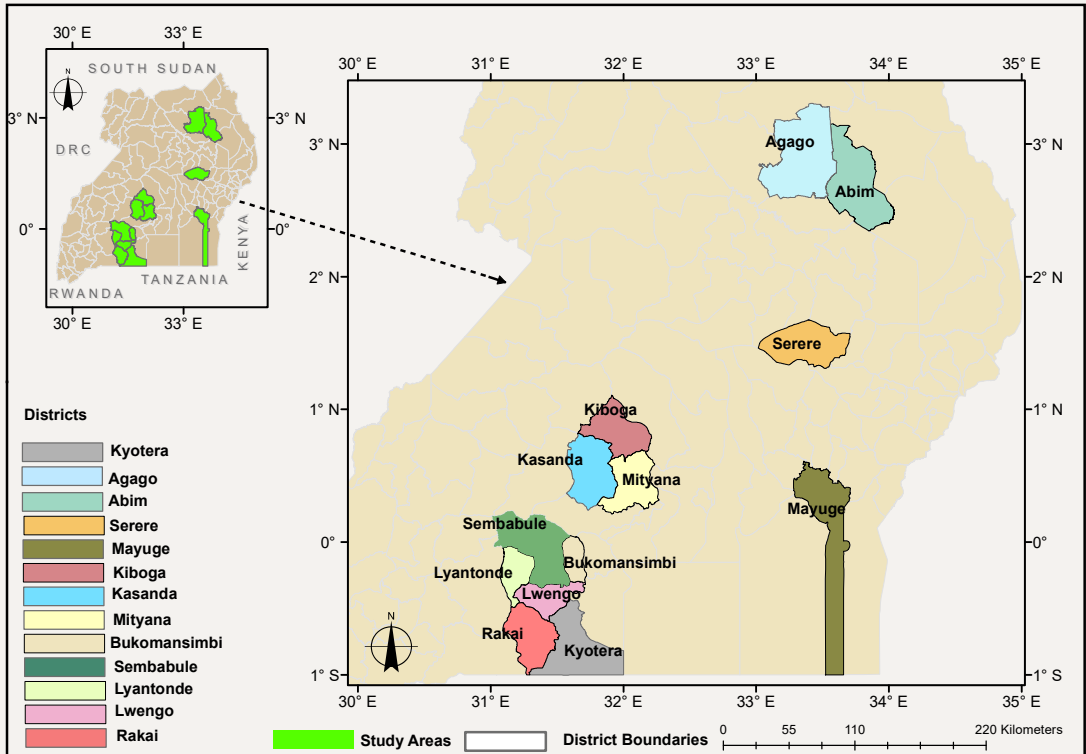
worked with the District Farmers' Association (DFA) to enhance the value proposition to members and support the Federation's work in providing ecosystem linkages for its members. The second area of collaboration between Mastercard, CEDO, EADC and UNFFE focused on digitization for scoping and planning how different digitization initiatives could be integrated into the MFN app (UNFFE Information Desk, 2022). Finally, we explored how UNFFE would leverage MasterCard's Community Pass (CP) platform to enhance and increase service delivery to members in farmer groups. This included exploring digital identity, multi-wallet, and CP point of interaction (POI) components. The acquisition of DFAs onto the MFN platform provided critical knowledge on selecting farmer groups participating in the initiative.

The DFA consisted of existing farmer associations receiving several services, including gender and agronomy training. Training was mostly delivered by NARO and the Alliance (of Bioversity International and CIAT). Through collaborations between NARO, the Alliance, USADF, and MasterCard, some of these groups (referred to as MFN groups) received additional training in good agricultural practices (GAPs) to enable farmers to access high value markets. The group had to meet at least two of the following selection criteria: a) are in bean production, marketing, and consumption corridors, b) bean production is either the main or second most important crop for the group, c) received or benefited from several national bean breeding, production, or marketing programs, and d) participated in an MFN program. Regarding the last selection criteria, farmer groups in Agago (Northern region), Mayuge (Eastern region), and Mityana (Central region) districts did not benefit from MFN and were therefore considered as control districts from a collective agency perspective.

Th MFN groups and members received training in digital bookkeeping and financial management. Furthermore, farmers were trained in uploading data on harvested quantities to a digital application linked to aggregators for monitoring the availability of adequate volumes of produce for collection. In addition, the MFN digital platform linked farmers' production and sales transactions and groups' financial systems, providing a comprehensive and integrated approach to managing agricultural value chains and linking farmers to credit facilities. The digital platforms were also designed to replace cash-based payments with digital payment systems to enhance women's control over income from increased participation in high-value markets. Thus, MFN groups and farmers received training that went beyond GAP and gender training to foster effective and inclusive collective action.

Collectivizing digital technology enables farmers, especially women, to receive support in terms of accessing quality seed on credit and accessing better markets, thereby enabling them challenge traditional gender roles and expectations. As outlined in the collaboration between UNFFE and Mastercard, piloting MFN through farmers' groups can also help overcome social norms by providing a supportive community for women farmers. Additionally, by working with farmer groups, MFN can help women farmers access information and develop new skills and knowledge, further empowering them to exercise their voice and agency beyond households. However, these expectations need to be validated and supported by appropriate evidence to determine whether digitization and collective action are effective for addressing gender inequality in agriculture by enhancing women's voice and agency beyond households. Therefore, it is important to approach these initiatives with a nuanced understanding of the complex socio-economic and cultural factors and group characteristics that may influence gender outcomes for women's participation in MFN groups. There is a need to understand how gender issues have been addressed by MFN and the influence on women's voice and agency. Thus, this study answers this research question: What types of women (or men) are able to exercise voice and agency within different types of groups?

Methodology



Study area

The study was conducted in 13 districts of Uganda: distributed as follows; six in the Central region (Bukomansimbi, Lwengo, Sembabule, Mityana, Kiboga and Kasanda), two in the Eastern region (Serere and Mayuge), three in the Southern-western region (Lyantonde, Rakai, and Kyotera), and two in the Northern region (Agago and Abim). Agago in the Northern region, Mayuge district in the Eastern region, and Mityana in the Central region did not benefit from MFN that was deployed in the other districts included in the study. The MFN districts are bean-growing districts; besides receiving support related to MFN, they have also been focusing of bean production led by NARO of Uganda in collaboration with the Pan-Africa Bean Research Alliance (PABRA). PABRA's intervention programs in MFN districts also focus on deploying the bean-corridor approach to unlock production bottlenecks, strengthen bean trade, and increase bean consumption in the selected districts.

Sampling Design and Data Collection

The study collected extensive and well-documented survey data on men's and women's collective agency at the individual and group level. A multistage sampling procedure was used to sample producer groups and individual farmers participating in the study. Multistage sampling allows extrapolating the study results to the overall population of bean producers who were members of bean-producer groups.

Sampling involved four stages. In the first stage, the primary sampling unit was five bean-producing regions in Uganda (Western, Central, Southern, Eastern, and Northern). The five regions were purposively selected. These five bean-producing regions were selected to ensure the inclusion of major bean-producing areas: PABRA project sites and bean corridors. The secondary sampling unit consisted of districts in selected regions classified as either MFN-implementing districts or non-MFN districts. The second stage involved random selection of ten MFN districts and three non-MFN districts in the selected regions. Tertiary sampling units (stage three) were bean-producer groups from MFN and non-MFN districts. Fifteen bean-producer groups from MFN districts and eight bean-producer groups from non-MFN districts were randomly chosen. Despite being randomly selected, the groups were similar regarding group activities and membership profiles.

The ultimate sampling units (stage four) were individual group members from membership registers provided by producer groups. Design-based inference survey sampling was then applied to obtain representative samples of farmers from MFN and non-MFN groups. The probability proportional to size (PPS) sampling method was then applied to assign the number of farmers that were sampled from the selected farmer groups.

The sampling procedure resulted in a sample size of 653 farmers, 529 from MFN groups and 124 from non-MFN groups. The table below shows the distribution of the sample by district.

Table 1. Sample size

REGION	DISTRICT	NUMBER OF RESPONDENTS	PERCENT
Northern Uganda	Abim	165	25.27
Eastern Uganda	Mayuge	72	11.03
Eastern Uganda	Serere	69	10.57
Southern-Western	Kyotera	46	7.04
Central Uganda	Kiboga	45	6.89
Central Uganda	Bukomansimbi	42	6.43
Southern-Western	Rakai	37	5.67
Southern-Western	Lyantonde	35	5.36
Northern Uganda	Agago	35	5.36
Central Uganda	Kasanda	33	5.05
Central Uganda	Sembabule	29	4.44
Central Uganda	Lwengo	28	4.29
Central Uganda	Mityana	17	2.6
TOTAL		653	100

Data were collected using quantitative and qualitative methods involving surveys of members of MFN and non-MFN farmer groups, focus group discussions (FGDs) in communities where the groups operated, and key informant interviews (KII) with group leaders. Quantitative data collection involved a survey conducted between December 2022 and January 2023 in thirteen districts of Uganda. A semi-structured questionnaire was prepared jointly by researchers from NARO and the Alliance of Bioversity International and CIAT. A team of well-experienced data collection associates assembled, trained, and pre-tested the tool before actual data collection. The survey tool collected socio-demographic characteristics, including sex, education, marital status, occupation of respondent, household size, farming experience, and land ownership. Information on membership to farmer organizations, modes and length of membership, and leadership, was also collected. The survey also asked respondents about their voices in groups, men's and women's participation in decision-making, and individual and collective achievements.

The following three questions were asked to measure women and men voices in the groups: "Do you have an opportunity to speak in a group? Can you without fear raise a grievance and expect a fair hearing? Do you feel comfortable speaking in the group?" Where the responses were no, open and closed follow-up probe questions to the responses were asked as to why they did not have an opportunity to speak in a group or why they felt uncomfortable speaking in the group.

Three questions were asked to obtain information about women's and men's agency: "As an individual, do you make decisions that matter to you or identify your goals?" This question gauged individual level collective agency. Respondents that affirmed that they made decisions that mattered or identified goals were further asked to provide reasons why they made decisions that matter to themselves or met their goals. Farmers that said no were asked to explain why they did not make decisions that mattered or met their goals. Other questions for measuring individual level collective agency were follow-up to the first question: "why do you make decisions that matter to you or identify your goals? In the group, are you satisfied with the way final decisions on your interests are taken?" The second question was: "In your various activities, with whom would you prefer to work to change your life?" Possible responses to these questions were men, women or both men and women. So, participants were asked what their reasons for the choices were. Even though this is not a collective-agency indicator, it is important to understand, as we promote single and mixed groups to increase agency. The last question that measured agency was: "Do you think as a woman/man, you have the freedom to participate in group decisions freely and actively?"

For qualitative data, sex-disaggregated KIIs and FGDs were conducted with men's and women's group leaders in six of ten MFN districts – Abim, Bukomansimbi, Kasanda, Kyotera, Mayuge and Serere. A total of 9 KII (5 men and 4 women) with groups' chairpersons, vice chairpersons, and secretaries were conducted. FGDs involved between 6 and 8 participants. The researchers conducted a total of 7 FGDs (4 women and 3 men).

The respective dates for each category of participants were agreed upon by the participants. The discussions and interviews were scheduled in central places that were convenient for most of the participants. The exercises lasted up to two hours. Participants in FGDs had equal opportunity to participate in the discussions.

The key informants were identified and interviewed to get different perspectives for an in-depth understanding of how agricultural groups influence women's voice and agency. Six to twelve

participant FGDs were also conducted to get a deeper understanding on how participation in farmers' groups and access to MFN, influences their participation in decision-making, access to finance, and markets, public speaking, and agency, among others. In general, qualitative data was used for triangulation and validation of trends obtained from survey data.

Qualitative data collected included group rules and policies; group vision, mission and leadership structure; alignment of group objectives; gender equity; women's agency and collectiveness; and access to finance, MFN, and digital payment facilities. In addition, data on access to markets, information, and collective marketing among others were collected. These data were useful in providing multiple lines of evidence that supported triangulating data and developing a holistic picture on how group participation influences women's voices and agency.

Data Analysis

The survey aimed to identify what types of women (and men) could exercise voice and agency in different types of groups. We collected data primarily from agricultural groups and thus group characteristics were used instead of type in the analysis. Thus, the analysis considered socio-demographic information (household headship, age, gender, marital status, education level, and occupation of the respondents); group membership information (type of group (MFN and Non-MFN); mode and length of membership, and leadership status). Measurements of voice and agency (ability of respondents to speak out and raise grievances, comfort of speaking in groups, preference for working with both men and women, and freedom to participate in group decisions freely and actively). Analysis of these data was performed using proportion analysis (frequencies and percentages), central tendency measures (mean), and significance tests (independent samples t-test, chi-square test of independence, and Fischer's exact). The significance tests assessed whether the variables of interest differed by gender and group characteristics.

Data from FGDs and KIs were analyzed using thematic content analysis to identify emerging themes and subthemes, based on their level of recurrence within the data collected, and in line with the key research questions. Data were transcribed from the tapes (recorded during the individual interviews). All the transcripts were read to get a sense of the whole data set. One transcript was taken and critically analyzed to identify categories and themes emerging from the whole set. Using colour coding, categories, and themes were grouped. The codebook developed was exported to Atlas.ti software. An organizing system was developed, based on the research questions and the data collected. Using the framework as a guideline, the findings were interpreted and discussed.

Results And Discussion

Sociodemographic Results and Insights

Table 2 shows the the demographic characteristics of surveyed farmers. The sampled men and women farmers were of similar age, but there were significant gender differences in primary occupation, marital status, educational attainment, and household headship. A significantly higher proportion of men (89%) than women (72%) were married, while a higher percentage (15%) of women than men (0.4%) were widowed. Most respondents (94%) had agriculture as their primary occupation. However, significantly more women (96%) than men (91%) reported farming as their main activity. Men were more likely to participate in off-farm activities (9%) than women (4%). More men (91%) than women (33%) were household heads. Furthermore, men had higher educational attainment than women – 39% had secondary education or higher than 19% of women. On the other hand, the average household sizes and bean farming experience reported by men and women were not significantly different. These findings suggest possible gender-based differences in bean production and may have implications for women's empowerment and agricultural policies and programs.

Table 2. Sociodemographic characteristics of farmers by gender

VARIABLE	TOTAL (N=653)	WOMEN (N=408)	MEN (N=245)	P-VALUE
Age of respondent	42.48	42.96	41.67	0.160
Marital status of respondent (%)				0.000
Married	78.41	72.06	88.98	
Never married	5.36	4.17	7.35	
Widowed	9.49	14.95	0.41	
Separated	5.21	6.62	2.86	
Divorced	1.53	2.21	0.41	
Main occupation of respondent (%)				0.031
Farming	94.33	96.32	91.02	
Salaried employment	1.68	1.23	2.45	
Business	1.99	0.98	3.67	
Other specify	1.99	1.47	2.86	
Education level of respondent (%)				0.000
No formal education	9.34	13.48	2.45	
Primary	64.17	67.40	58.78	
Lower secondary	19.14	16.42	23.67	
Upper secondary	3.22	0.74	7.35	
Certificate	2.30	1.72	3.27	
Diploma	1.23	0.25	2.86	
University	0.46	0.00	1.22	
Post-graduate	0.15	0.00	0.41	
Household head (%)	54.98	33.33	91.02	0.000
Household size	7.46	7.39	7.58	0.595
Average bean farming experience (years)	14.24	14.94	13.18	0.114

The results presented in Table 2 also show possible intersectionality because of social factors that may affect women's participation in and benefitting from agriculture and activities beyond households. The intersection of gender with other social factors has implications for both individual and collective participation in, and benefit from activities beyond the household. Factors such as household headship, marital status, and main occupation could affect women's access to resources and decision-making power in households and beyond households (Rodgers & Akram-Lodhi, 2019). Additionally, women's educational attainment has implications on access to information and training opportunities and their ability to participate in economic, social, and political activities beyond their households (Williams et al., 2022).

Group memberships details by gender

The youth in both women's and men's FGDs were very active and informed about the subject matter of discussions. The study collected data exclusively from bean farmers who were members of farmer associations. The results about length and mode of membership, nature of group, and leadership roles are shown in table 3. The results showed no significant difference in the duration (years) of membership in producer groups. About 61% of men and women farmers were members of farmer groups for less than five years, while less than one-third (32% for women and 31% for men) were members for 5–10 years. Only a small proportion (less than 10%) of men and women reported membership length of more than 10 years. No gender-based differences existed in the length of membership in farmers' associations. However, these may vary depending on the type of group (see table 4).

Table 3. Group memberships details by gender

VARIABLE	WOMEN	MEN	P-VALUE
Length of membership to group (%)			0.790
< 5 years	61.27	60.82	
5-10 years	32.11	31.43	
> 10 years	6.62	7.76	
Nature of group (%)			0.000
Mixed group (Men & women)	94.36	100.00	
Women group	5.64	0.00	
Mode of membership (%)			0.012
Voluntary	69.12	68.16	
Invitation	30.15	4.08	
Other (inheritance and compulsion)	0.74	5.71	
Position in the group (%)			0.000
Chairperson	2.45	8.57	
Vice chairperson	2.45	3.67	
Secretary	3.43	10.20	
Treasurer	8.09	4.08	
Mobilizer/publicity	5.39	5.71	
Defense	1.23	1.22	
Other position	4.41	7.76	
Ordinary member	72.55	58.78	

The data in Table 3 also indicate that while all male respondents belonged to mixed gender groups, 94% and 6% of women were members of mixed gender groups and women-only groups respectively. This result indicates that women-only groups are less common in the study area possibly due to contextual or broader societal and cultural factors. Farmer association membership modes were the same for men and women respondents, with most of them reporting they joined voluntarily and by invitation.

However, significant intermodal differences were observed, where 69% of women and 67% of men joined the associations voluntarily compared to 30% and 28% who joined by invitation, respectively. Male respondents (4 %) also joined through inheritance, compulsion, or application compared to women (1%). Voluntary membership as the main mode of membership suggests great potential for promoting women's empowerment because it indicates a willingness among women to participate in agricultural groups actively. Membership by invitation in the context of study groups may suggest shared interests in bean production or alignment with group goals. Membership was compulsory for some farmers interested in group activities, as they were required to join groups to benefit from the activities. Inheritance as a mode of membership occurred when male farmers joined groups due to their parents being former members. Membership by inheritance among men respondents suggests a possible gender bias in this practice, which resonates with certain cultural or traditional norms in Uganda.

Men's and women's representation in group leadership positions can vary widely depending on contextual factors, such as economic and sociocultural norms. In sub-Saharan Africa, women's representation in leadership is often low due to a combination of factors, gender-based and social biases, socioeconomic disparities, and biological differences (McFerson, 2010; Errico, 2021). This is evidenced by the significant difference in the representation of women and men in leadership positions in groups. In the study, 27% of women held leadership positions in groups compared to 41% of men. Childbearing as a biological responsibility for women and caregiving as a traditional role assigned mostly to women constrain their time and mobility, providing a possible explanation for low women's participation in leadership roles at the group level. More so, there were significant differences in leadership positions held by men and women. The proportions of women and men respondents in various positions within farmer organizations in the study area, including leadership roles and ordinary memberships, are also shown in table 3. The results indicate that while more women hold treasurer positions (8%), more men hold chairperson (9%) and secretarial (10%) positions. The representation of women in leadership positions is much lower, considering that some are leaders within women-only groups. This finding could be attributed to societal expectations that create gender-based biases that promote women's representation in leadership positions associated with financial management and responsibility while creating barriers to their representation in executive-level leadership positions.

Results from FGDs revealed that almost all MFN groups have implemented gender-sensitive policies, such as gender quotas or targets, to ensure women's representation in leadership positions. Many farmer organizations have implemented policies that require gender inclusiveness at an executive level. Some groups have reserved mobilizer and treasurer positions only for women, explaining the reason for higher women representation in committee and treasurer position as shown by survey data. The position of money counters is also strictly reserved for women in every saving group. Such positions are reserved for women, and men do not contest for them because women are believed to be more trustworthy, active, and easier to access than men. Some groups ensure that out of the seven executive committee positions, four of the leaders are women, irrespective of the position. In the worst scenario, where no woman has shown up, the group knows of talented women who can take up leadership roles. However, because of fear of competing with men for executive roles with high responsibility, most women do not contest. Therefore, in some cases, women are compelled to compete against men for executive positions or positions in committees as revealed by a woman participant:

“For me, I was forced to be the treasurer, and they said if I refused, they would fine me 100,000 UGX and chase me out of the group” (Woman FGD participant Abim district)

Ticking boxes of gender inclusion at the expense of women who may not want a leadership role for various reason cannot be defined as empowerment. The FGD result reveals that groups are attempting to challenge gender-related barriers to women leadership in collective actions, but we have to be careful and make sure this is by choice as well. The findings also suggest the need for continued efforts by groups to eliminate structural and cultural barriers that frame the suitability of women for certain positions within organizations. This will help in promoting gender balance by enabling women overcome fear of contesting leadership positions against men and to participate in organizational management effectively and freely without undue influence.

Table 4 shows that there were no significant differences in length of membership between men and women respondents in both MFN and non-MFN groups, but the length of membership of respondents from MFN groups was longer than that non-MFN members. There was no significant difference in the proportion of male and female MFN members belonging to mixed-gender groups. In contrast, a significantly higher portion (100%) of men members than women members (78%) belonged to mixed-gender groups. The remaining 22% of women in non-MFN groups were members of women only groups compared to only 1% of those in MFN. Regardless of group type, mode of membership to farmer groups differed by gender, with significantly higher proportions of women than men members of MFN and more men than women members of non-MFN joining by recruitment.

The results in table 4 provide further details on gender representation in leadership in MFN and non-MFN groups. There was a higher representation of men in chairperson and secretarial positions among MFN groups and chairperson and mobilizer positions in non-MFN groups. In addition, there was a higher women's representation in treasurer positions in both types of groups. These granular details are a further indication of possible differences in gender roles and responsibilities at the collective level.

Table 4. Group memberships details by group type and gender

VARIABLE	MFN			NON-M		
	WOMEN	MEN	P-VALUE	WOMEN	MEN	P-VALUE
Length of membership to group (%)			0.514			0.271
< 5 years	53.42	57.00		90.70	81.58	
5-10 years	39.82	34.30		6.98	15.79	
> 10 years	7.76	8.70		2.33	2.63	
Nature of group (%)			0.159			0.002
Mixed group (Men & women)	98.76	100		77.91	100	
Women group	1.24	0.00		22.09	0	
Mode of membership (%)			0.090			0.009
Voluntary	72.36	68.12		56.98	21.05	
Invitation	27.02	28.99		41.86	63.16	
Other*	0.62	2.90		1.16	15.79	
Position in group			0.000			0.084
Chairperson	2.17	8.7		3.49	7.89	
Vice chairperson	2.48	2.9		2.33	7.89	
Secretary	3.73	11.11		2.33	5.26	
Treasurer	9.01	4.35		4.65	2.63	
Mobilizer/publicity	4.97	4.83		6.98	10.53	
Defense	1.24	1.45		1.16	0.00	
Other	5.28	7.25		1.16	10.53	
Ordinary member	71.12	59.42		77.91	55.26	

* Compulsion and inheritance

Results provided in Table 5 show that men's representation in leadership positions is higher than that of women across several factors of comparison. Higher percentages of both men (87%) and women (75%) in leadership positions are married compared to those in other marital statuses. However, the percentage for women is notably lower than that of men. This finding could reflect that being married is considered as a credential for leadership in groups. The gender difference between men and women in leadership positions based on marital status could be attributed to higher percentage of men being married and more unmarried women than men (Table 2). The finding also might suggest societal or gender biases that associate marital status with leadership attributes based on either being man or woman. Most men and women in leadership positions were members of farmer groups for shorter to moderate lengths of time (< 5 years and 5-10 years), compared to those with memberships longer than 10 years. No significant gender difference was reported, suggesting that duration of membership does not have a gender-biased effect on leadership. Higher representation on men and women with shorter membership duration may be due to fresh ideas and enthusiasm to a group or group's strategy to avoid stagnation and promotion of innovation.

Table 5. Leadership by gender and individual and group characteristics

VARIABLE	WOMEN	MEN	P-VALUE
Length of membership (%)			0.176
< 5 years	50.00	52.48	
5-10 years	41.96	32.67	
> 10 years	8.04	14.85	
Mode of membership (%)			0.058
Invitation	20.54	18.81	
Voluntary	79.46	76.24	
Other*	0.00	4.95	
Age of respondent (%)			0.753
Youth (18-35 years)	37.50	39.60	
Adult (> 35 years)	62.50	60.40	
Marital status (%)			0.008
Married	75.00	87.13	
Never married	2.68	5.94	
Widowed	13.39	0.99	
Separated/divorced	8.93	5.94	
Education level of respondent (%)			0.000
No formal education	10.71	0.99	
Primary	65.18	53.47	
Lower secondary	21.43	29.7	
Upper secondary	0.00	8.91	
Certificate	2.68	1.98	
Diploma	0.00	3.96	
Post-graduate	0.00	0.99	

* Application, compulsion, and inheritance

Table 5 reveals that individuals aged 18–35 years constituted 40% of men and 38% of women in leadership positions, while in the adult category, women accounted for 63% and men accounted for 60%. Representation in leadership positions increased with higher educational attainment. However, representation of respondents with equal educational attainment in leadership positions was higher among men than women. These results suggest that men are more likely than women to hold leadership positions in groups based on their demographic characteristics.

Individual women and men farmers voices in groups

Respondents were asked to indicate whether they had opportunities to speak in a group. The results showed that high percentages of both men and women felt that they had the opportunity to speak in their respective groups (table 6). Overall, 96% of respondents (98% of women and 96% of men) felt that they had the opportunity to speak in the group, revealing a relatively high level of freedom of expression within the groups. This suggests that members in farmers' groups have a voice in group decision-making processes, regardless of gender. Furthermore, there was high percentage of men (97%) and women (95%) that reported having ability to raise grievances and expect fair hearing and another 95% for women and 97% men were comfortable speaking. Gender did not emerge as a statistically significant factor in the exercise of voice as shown by the p-values.

Table 6. Proportions of respondents exercising voice in groups.

INDICATOR	TOTAL	WOMEN	MEN	P-VALUE
Opportunity to speak in a group (%)	95.83	97.55	96.48	0.249
Comfort speaking in the group (%)	96.03	95.14	97.49	0.143
Ability to raise a grievance and expect a fair hearing (%)	95.71	95.14	96.65	0.363

The results are a positive indication of the levelled voice that men and women enjoy within groups, as they have the opportunity to speak and feel comfortable and confident in expressing their concerns and seeking resolutions. Having the opportunity and ability to speak or raise grievances and expect a fair hearing is important for ensuring members have a sense of empowerment and fully participate in group decisions. In addition, it demonstrates that the groups are functioning in an inclusive and equitable manner, as both men and women feel that their voices are listened to, and concerns are valued and addressed.

Farmers who affirmed that they had opportunity to speak in a group were asked to state reasons that enabled them to feel comfortable speaking (table 7). Having respect for each other and a sense of community and shared identity as farmers (we are colleagues/fellow farmers) were the two most reported reasons for both men and women feeling comfortable speaking in groups. Additionally, being in leadership position was also an important reason for women feeling comfortable when speaking in the group. This result highlights leadership as an important factor for women to be able to freely express themselves in collective settings. Education and being married also enabled both men and women to feel comfortable speaking in groups.

Table 7. Reasons for respondents feeling comfortable speaking in groups among respondents who affirmed they felt comfortable speaking.

REASON (%)	WOMAN	MEN	P-VALUE
Respect for each other	53.49	48.93	0.274
We are colleagues/fellow farmers	49.19	42.49	0.108
My good conduct in the community	32.26	38.20	0.135
Because am a leader	17.47	34.76	0.00
Because am an elder	12.63	14.16	0.589
Because am educated	3.23	11.59	0.00
Because am wealthy	0.81	0.00	0.288
Because I accomplished my cultural obligations	0.81	0.86	0.945
Because am a married man	0.00	3.00	0.001
Other (specify)	23.92	20.17	0.282

About 24% of women and 20% of men cited other reasons for their comfort when speaking in meetings. For example, some women felt comfortable speaking in groups because they are good communicators, confident, trustworthy, knowledgeable, and experienced, while others indicated that they are religious and have the belief that their contributions are invaluable and development oriented. In addition, some women reported that they felt comfortable speaking because the contributions they make are listened to and put in action, while others believed that they have a right to speak because they are *bona fide* group members. Similarly, women also noted that they were confident and provided constructive ideas, thereby enabling them to speak comfortably. Some men respondents reported that they feel comfortable speaking because they produce and supply crop produce to groups on a large scale, are accountable, were ex-leaders in groups, are experienced, get a fair hearing, their grievances are addressed, and they do not want to be reprimanded for not speaking because group by-laws developed by the groups encourage them to speak and make contribution that would benefit them as individuals and the group. Although the reasons vary by gender, the results indicate that men and women feel confident to exercise their voices.

These results were corroborated during FGDs where participants acknowledged that groups encourage both men and women to feel comfortable speaking during meetings in order to contribute to a group cause. This was further reinforced by KII with group leaders as suggested by these quotes from the interviews:

“We always tell them we do not have wrong views or good views; they are all collected views; we need each one to participate. Say it out, whatever you want to say. We shall see where to put it. That is why they are able to participate.” (KII Abim district)

“Both women and men have the opportunity to represent the group.” (KII Serere district)

The overall 4% of men and 2% of women that were unable to exercise their voice in groups cited several reasons for not having opportunities to speak or feel comfortable speaking. The reasons for not feeling comfortable speaking in groups, as reported by respondents who expressed discomfort, are presented in Table 8. Women and men mentioned different reasons for not having opportunities to speak. While some women did not speak because of age-related issues, an inferiority complex, or because only their spouses are allowed to speak, no men respondent mentioned these reasons. Other reasons men respondents cited for having no opportunity to speak in a group are absenteeism, discomfort with leadership (with respondent demanding accountability), not being in leadership, and language barriers. The results suggest that there are different reasons for women and men not having the opportunity to speak in groups.

Table 8. Reasons for not having opportunities to speak in groups among respondents who felt uncomfortable speaking.

REASON	WOMEN		MEN	
	FREQ.	PERCENT	FREQ.	PERCENT
No opportunity to speak (17 women; 6 men)				
My age is not allowed to speak	1	5.88	0	
Only my spouse is allowed to speak	2	11.76	0	
Inferiority complex	6	35.29	0	
Other (absenteeism, irregular meetings, etc.)	8	47.06	6	100
Not being comfortable speaking in groups (19 women; 6 men)				
The group does not listen to me because am poor	1	5.26	0	
They do not listen to me because am not educated	5	26.32	1	16.67
They do not listen to me because am not an elder	1	5.26	1	16.67
They do not listen to me because am not married	1	5.26	1	16.67
Social norms	1	5.26	0	
Other	12	63.16	3	50.00

Not being educated, an elder, and married were reasons provided by both men and women for not being comfortable speaking in groups (table 8). Reasons provided by women only for not feeling comfortable speaking were because they were poor and due to prevailing social norms. About 63% of women provided other reasons for not being comfortable speaking in groups. These reasons included being younger than other members within the group, fear of being laughed at when ideas and contributions are not developmental, fear of speaking in front of many people, inferiority complex, lack of confidence, and low self-esteem. Some men felt uncomfortable because there is no freedom of speech, especially on matters regarding conflicts within the group, and fear of not getting a fair hearing when views are about issues that affect the group. These results reveal that, whereas women without voice face barriers related to self-esteem and confidence and their contributions not being taken seriously, men's voicelessness in groups relate to group dynamics. In addition, socio-economic status, age, and cultural norms appear to constrain women farmers voices in group settings.

Individual and Collective Agency

The results in table 9 show a significant difference between the percentage of men (95%) and women (90%) who made decisions that mattered to them or identified with their goals. This finding indicates that men had higher levels of collective agency at individual level, and higher for women in making decisions that affected their lives at group level. The difference in number of women's and men's individual agency could be attributed to power imbalance and lower representation of women in leadership. Power imbalances due to women's low representation in leadership positions possibly limited the ability for women (compared to men) to influence group decisions and activities in a manner that is important to and benefits them. Stereotyping, bias, and low representation in leadership may have made women to feel overlooked or may have silenced their contribution to group decision-making.

Table 9. Percentages of men and women with individual and collective agency level and reasons for perceptions of their perceptions

	WOMEN	MEN	P-VALUE
Decisions that matter to self (individual agency) - %	90.20	94.69	0.042
Collective agency (%)			
Freedom to freely and actively participate in group decisions	94.12	94.29	0.929
Prefer working with both men and women	69.61	74.69	0.019

Conversely, FGDs provided contrary findings with respect to individual decision-making regarding issues that matter to themselves. Discussions revealed that most women and men could make decisions that transformed their lives. However, more women than men could account for tangible and meaningful outcomes from their decisions, such as daily income-generating activities. This was attributed to women not misusing financial credit and support received from MFN intervention compared to men, as indicated by statement made by one of the male participants:

“Men are very accommodating and caring, so in the process they end up spending the loaned money, especially on women...For us men, we feel bad if we do not assist someone, and we think we are not men...Men are considered strong-hearted, so it's okay if they default a loan repayment.” (Male FGD participant, Serre)

The 35% of the women participants in FGDs who could not participate in decisions that transform their lives cited cultural norms for their lack of individual agency. They stated that men assume that after paying dowry, they own the wives as property and that women must be submissive and cannot make decisions in the homes. Furthermore, some men continue to believe that women with money and power are arrogant. In addition, some married women who are not educated must seek permission from their husbands or parents-in-law to make their decisions. This is demonstrated by this statement provided during KII:

“At one time, after sharing out, I told them this is a chance for you to save all this money in the Village Savings and Loan Association (VSLA) and just borrow it. One lady stood up and said, “You people, for me, I have to take this money to the other man to see it.” If I don't take it there, I might not sleep there today,” implying that the man now decides how to spend the money and what to save.” (KII Serere district)

Notwithstanding the significant differences in individual agency at group level, 94% of respondents indicated that they had the freedom to participate in group decisions freely and actively, regardless of gender (table 9). These farmers provided several reasons for having freedom to participate in group decisions as shown in Figure 1. Both men and women cited group policy, constitution, and social networking with group members as reasons for having freedom to participate in group decisions. However, being in leadership position as a reason for freely and actively participating in group decisions was reported more by men (32%) than women (16%) farmers.. It is noteworthy that group policy is the most-cited reason for men and women. . These results reveal that men are more likely to attribute their participation to their own characteristics (as being a leader, being informed), whereas women are more likely to attribute this to group policy

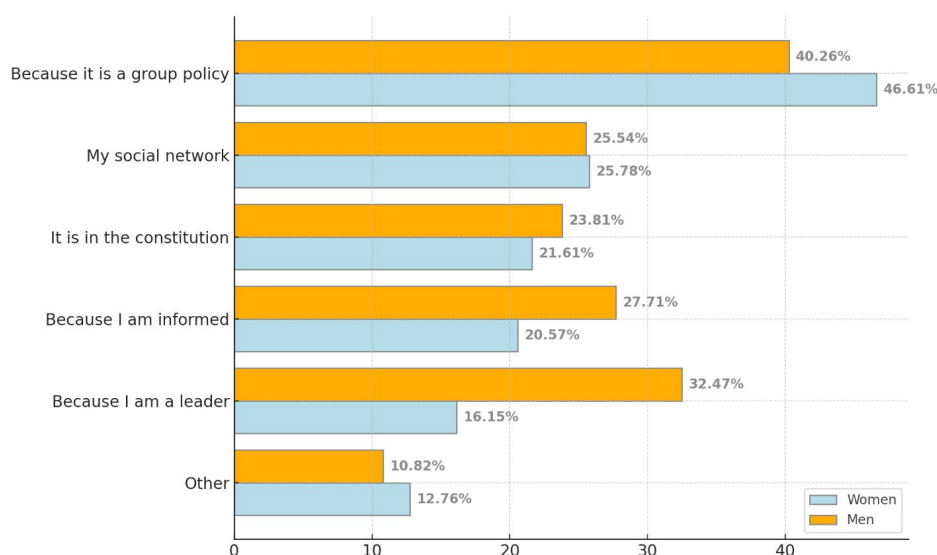


Figure 1: Percentages of reasons for freely and actively participating in group decisions among farmers who had freedom to participate in group decisions.

The results for individual preferences and reasons for working with men are presented in table 10. A minority of men (14%) and women (12%) farmers expressed a preference for working exclusively with men to change their lives. The most cited reason for their preference of working with only men to change their lives is the perception that men are more hardworking/energetic. Women (43%) were more likely to mention that “men gossip less” compared to women (34%) as reason for them working exclusively with men to change their lives. Other reasons for preferring working with men only were that men are more enterprising/resourceful and approachable and have more networking opportunities and resources. However, there were no significant differences for these reasons by gender. Nonetheless, while the results show low preferences for both men and women working with men only to change their lives, the reasons that depict men as being more hardworking, enterprising, and gossiping less are noteworthy. Although these reasons are subtle, they may be important reflections of the influence of the prevailing societal beliefs about gender roles and characteristics at collective level.

Table 10: Preferences and reasons for preferring to work with men alone to change lives.

	POOLED	WOMEN	MEN	P-VALUE
Prefer working with men alone to change their lives	11.94	10.78	13.88	0.238
Reasons for preferring to work with men alone				
Men are more enterprising/resourceful	56.58	54.76	58.82	0.722
Gossip less	34.21	42.86	23.53	0.077
Easier to approach	28.95	26.19	32.35	0.556
More hardworking/energetic	72.37	71.43	73.53	0.839
Have more networking opportunities	25.00	26.19	23.53	0.790
Better endowed with resources	15.79	21.43	8.82	0.134

Results presented in Table 11 show that 17% farmers reported that they preferred working with women alone to change their lives. Unlike preferences to work with men alone, a significantly higher per-

centage of women (20%) than men (11%) preferred working with women alone. Reasons provided for preference working with women alone significantly differed by gender, with 85% women believing that women understand women's issues better compared to only 15% of men who preferred working with women alone. In contrast, significantly more men (48%) compared to women (21%) perceived women as soft-spoken, explaining the reason they preferred working with them. Another important observation from the analysis is that a significant proportion of women said that they preferred working with fellow women to better their lives because their spouses will not be suspicious of anything about their group interactions. The contrasting reasons for men and women reasons for preferring to work with women alone to change their lives reflect gender-specific challenges, possible gender stereotypes, and diverse needs and perceptions of men and women acting collectively, making it crucial for producer organizations to create spaces where women can collaborate and address gender-specific challenges.

Table 11: Preferences and reasons for preferring to work with women alone to change lives.

	POOLED	WOMEN	MEN	P-VALUE
Prefer working with women alone to change their lives	16.54	19.61	11.43	0.006
Reasons for preferring to work with women alone				
Women understand women issues better	67.62	85.90	14.81	0.000
Women are soft spoken	27.62	20.51	48.15	0.000
Easier to approach	41.9	37.18	55.56	0.095
My spouse will not be suspicious of anything	9.52	12.82	0	0.000

However, most farmers (72%) indicated that they preferred working with both men and women to change their lives (Table 12). The difference between men (75%) and women (70%) farmers that preferred working with both men and women was not statistically significant, revealing a broad consensus among members of farmer producer groups on the value of working with both men and women. This might suggest the critical role of complementary strengths of men and women in pursuing collective goals and the role of groups in promoting gender-inclusive practices. This is depicted by reasons provided most of the respondents that men and women working together brings diverse ideas together and resources together (labour), easing the work of farmers and farmer groups. These results reveal the importance and benefits of gender collaboration and diversity in farmer producer groups. However, the slight variations in reasons for preferring to work with both men and women provide critical entry points for fostering even greater gender collaboration through collective action.

Table 12: Preferences and reasons for preferring to work with both men and women to change lives.

	POOLED	WOMEN	MEN	P-VALUE
Prefer working with both men and women to change their lives	71.52	69.61	74.69	0.163
Reasons for preferring to work with both men and women				
Men and Women bring together various ideas	84.29	81.16	89.2	0.022
Men and Women together ease the work	48.89	50.72	46.02	0.330
Men and Women together provide more labour	32.74	30.07	36.93	0.130

FGDs appeared to link individual agency and collective agency. Discussions revealed that both women and men who successfully made decisions and transformed their lives had worked with both men and

women. They emphasized that activities related to agricultural production need to embrace ideas from both men and women because of their diverse experiences. Participants in discussions also noted that collectiveness at home and beyond households also guarantees benefits, such as reduction of food insecurity and gender-based violence, as mentioned by one of the men participants:

“In my group, I had notorious men who used to beat their wives, day, and night on a daily basis, but now that I have put them down, they no longer beat them. For those whose wives are in the group, I always call their husbands to come and sensitize them, and for those whose husbands are in the group, I call their wives and talk to them.”

The results presented in table 9 through table 12 were further disaggregated by the type of group as presented in table 13. The results show that exercise of voice in groups, as measured by opportunity to speak, raise grievances, and feeling comfortable when speaking, was higher for men than women in both MFN and non-MFN groups. However, the differences were not statistically significant. The exercise of agency, as measured by individual agency (decisions that matter to self) and collective agency, was also higher for men than women in both MFN and non-MFN groups. The difference in collective agency between men and women was statistically significant only in the non-MFN groups. The freedom to participate in group decisions freely and actively was not significantly different between men and women in both MFN and non-MFN groups. These results indicate that there is no significant difference between MFN and non-MFN groups in terms of enabling men and women to exercise voice. The statistically insignificant differences provide clear evidence that both MFN and non-MFN groups have contributed to enabling women to exercise voice as freely as men. This is also true in helping women to participate in decision-making actively and freely and making decisions that matter in their lives. However, MFN have effectively closed gender disparities in collective agencies.

Table 13: Exercise of agency and voice by gender and group type

GENDER OUTCOME	MFN		P	NON-MFN		P
	WOMEN	MEN		WOMEN	MEN	
Exercise of voice in groups (%)						
Opportunity to speak in a group	95.65	97.58	0.339	96.51	97.37	0.641
Raise a grievance/get fair hearing	94.81	96.53	0.393	96.39	97.30	0.638
Comfort speaking in the group	95.13	97.03	0.365	95.18	100.00	0.310
Exercise of agency (%)						
Decisions that matter to self	91.30	95.17	0.093	86.05	92.11	0.551
Free/active decision-making	94.10	93.72	0.498	94.19	97.37	0.402
Collective agency			0.222			0.009
Both men and women	72.05	73.43		65.12	84.21	
Men	16.77	12.08		27.91	5.26	
Women	11.18	14.49		6.98	10.53	

There was significant difference between the proportion of men (84%) and women (65%) who preferred working with both men and women in non-MFN groups. In contrast, no significant difference was reported between the proportions of men (73%) and women (72%) (Table 13).

Equal percentage, 97%, of women members of MFN and non-MFN groups reported having opportunities to speak in a group. Similarly, the proportion of men members of MFN groups that had opportunity to speak in group (98%) was not significantly higher than that of non-MFN men members (97%).

Furthermore, the proportions of women in MFN (94%) and those in non-MFN (97%) groups, as well as those of their men counterparts, were not statistically significantly different in terms of having the ability of raising grievances and expecting fair hearing. Additionally, no significant association was found between the percentages of men and women in MFN and those of their counterparts in non-MFN groups in terms of feeling comfortable speaking in the group. This suggests that mechanisms used by both MFN and non-MFN groups have been effective in enhancing voices of men and women beyond households. This aligns with focus FGDs which established that views of both men and women were respected in all groups because all members, regardless of gender, are free to express their views during the meeting. However, participants in discussions affirmed that all views are subjected to vetting by group members before they are passed.

However, mixed findings were reported with respect to collective agency. Regardless of group type, equal percentage, 94%, of women members of MFN and non-MFN groups indicated that they had freedom to participate in decision-making freely and actively. There was no significant difference between the percentage of men respondents in MFN (94%) and men in non-MFN groups (97%). However, men members in non-MFN groups appeared to participate more in group decision-making process than those in MFN groups. This could be attributed to some men meetings attendance patterns as reported by informant interviews. Collective agency among men MFN member (73%) was lower than that of non-MFN men MFN member albeit the difference was not statistically significant ($p=0.339$). These results indicate MFN groups have resulted in greater collective agency for men compared to non-MFN groups.

Intersection of socioeconomic and group characteristics with farmers' voices and collective agency

The study revealed that educational attainment is associated with farmers exercising their voices, as measured by the opportunity to speak, raise grievances, and feeling comfortable when speaking, albeit having relatively higher positive influence on men's voices than women's voices (table 14). Being single appeared to undermine men's voices, especially in raising grievances and expecting a fair hearing, while reducing women's opportunities to speak in groups. Farming as the main occupation was associated with low percentages of respondents exercising their voice in groups compared to other occupations, regardless of gender. In contrast, being employed or in business enhanced expression of voice, especially for women. There was a gap in farmers' voices with respect to household headship, where a higher proportion of men household heads than women heads reported having a voice in farmer associations. Age (being young or an adult) did not influence exercising farmers' voice as reflected by the insignificantly small gap in the proportions of men and women that exercised voice in groups.

Respondents with less than 5 years and 5–10 years of membership in the organizations had lower rates of exercising voice compared to respondents who had been members for over 10 years. However, the gap grows wider between men and women across the three categories of lengths of membership in favor of men's voices in groups. The gender gap across the three measures of farmers' voice widened with leadership, with lower rates of women reporting having voices in groups compared to men. Membership mode also mattered, with respondents who joined through compulsion or application exercising their voices more than those who were invited or joined voluntarily. Furthermore, MFN groups closed gaps in farmers' voices in groups compared to non-MFN groups, regardless of gender.

Table 14: Intersection of socioeconomic and group characteristics with individual level collective agency

VARIABLE	OPPORTUNITY TO SPEAK		RAISE GRIEVANCE		COMFORT SPEAKING	
	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN
Education level (%)						
No formal education	92.73	100.00	90.20	66.67	90.20	66.67
Primary	96.36	97.92	96.60	97.87	96.23	97.87
Lower secondary	95.52	96.55	92.19	96.43	93.75	100
Upper secondary	100.00	100.00	100	100.00	100.00	94.44
Certificate	100.00	87.50	100	100.00	100.00	100
Diploma	100.00	100.00	100	100.00	100.00	100
University		100.00		66.67		100
Post-graduate		100.00		100.00		100
Marital status (%)						
Married	94.90	97.25	95.34	97.17	95.70	98.11
Never married	94.12	100.00	93.75	88.89	87.50	88.89
Widowed	100.00	100.00	95.08	100.00	96.72	100.00
Separated/divorced	97.22	100.00	94.29	100.00	91.43	100.00
Main occupation (%)						
Farming	95.93	97.76	94.96	96.33	95.23	97.71
Salaried employment	100.00	100.00	100.00	100.00	100.00	83.33
Business	75.00	88.89	100.00	100.00	66.67	100.00
Other	100.00	100.00	100.00	100.00	100.00	100.00
Household head (%)	97.06	97.31	93.94	97.24	93.94	97.70
Age (%)						
Youth	95.56	100.00	95.35	94.06	95.35	96.04
Adult	95.97	95.83	95.04	98.55	95.04	98.55
Length of membership (%)						
< 5 years	94.8	97.32	97.47	95.86	96.62	97.24
5-10 years	97.73	97.40	90.70	97.33	92.25	97.33
> 10 years	96.15	100.00	96.00	100.00	96.00	100.00
Mode of membership (%)						
Invitation	93.50	95.59	95.65	96.92	97.39	96.92
Voluntary	96.80	98.16	94.85	96.88	94.12	97.50
Compulsory	100.00	100.00	100.00	88.89	100.00	100.00
Application	100.00	100.00	100.00	100.00	100.00	100.00
Inheritance-based		100.00		100.00		100.00
Leadership in group	99.11	100.00	97.30	99.01	97.30	99.01
Group type (%)						
MFN	95.65	97.58	94.81	96.53	95.13	97.03
Non-MFN	96.51	97.37	96.39	97.30	95.18	100

The results in table 15 show the intersection of various socioeconomic and group characteristics with freedom to participate in group decisions freely and actively. Level of education attained was positively associated with freedom to participate in group decisions, with higher education levels leading to higher freedom to participate for both men and women. A higher proportion of widowed respondents, regardless of gender, reported having freedom to participate in group decisions compared to those who were married, single, separated, or divorced. Respondents with salaried employment or business as their main occupation reported a higher freedom to participate in group decisions compared to those in farming. A higher proportion of men household heads reported having the freedom to participate in group decisions compared to women household heads. Respondents who joined the group through application or compulsion had a greater freedom to participate compared to those who joined through

invitation or voluntarily. Respondents in MFN groups reported higher freedom to participate in group decisions than those in non-MFN groups. More women in leadership positions freely and actively participated in group decisions than men respondents. These results suggest that educational attainment, marital status, main occupation, household headship, membership mode, leadership in groups, and group type are associated with greater freedom to participate in group decision-making processes.

Table 15: Intersection of socioeconomic and group characteristics with freedom to participate in group decisions freely and actively.

VARIABLE	WOMEN	MEN
Education level (%)		
No formal education	89.09	83.33
Primary	94.18	95.14
Lower secondary	97.01	94.83
Upper secondary	100.00	88.89
Certificate	100.00	87.50
Diploma	100.00	100.00
University		100.00
Post-graduate		100.00
Marital status (%)		
Married	93.88	94.95
Never married	94.12	88.89
Widowed	98.36	100.00
Separated/divorced	88.89	87.50
Main occupation (%)		
Farming	94.15	94.62
Salaried employment	100.00	83.33
Business	75.00	88.89
Other specify	100.00	100.00
Household head (%)	92.65	94.17
Age (%)		
Youth	94.07	95.05
Adult	94.14	93.75
Length of membership (%)		
< 5 years	94.40	91.95
5-10 years	93.94	97.40
> 10 years	92.31	100.00
Mode of membership (%)		
Invitation	92.68	92.65
Voluntary	94.66	94.48
Compulsory	100.00	100.00
Application	100.00	100.00
Inheritance-based		100.00
Leadership in group	100.00	97.03
Group type (%)		
MFN	94.10	93.72
Non-MFN	94.19	97.37

Table 17 presents the results of the intersection of various socioeconomic and individual agency and individual community capacity. The results reveal that level of education attained was associated with higher levels of both individual and individual community capacity, but with relatively higher positive influence on men's agency compared to women's agency. Single, married, and separated or divorced individuals had lower opportunity to act collectively compared to widows. Farming as the main occupation

appeared to have implications on both individual agency and individual community capacity, regardless of gender, while being employed or in business enhanced agency, particularly for women. Household headship was also associated with agency, with a higher proportion of men household heads reporting higher agency than women heads. Length of group membership and group type also played a role in enhancing agency for both men and women. Respondents who joined through compulsion or application reported having higher individual community capacity and agency. For group type, MFN groups members had a higher individual community capacity compared to non-MFN groups' members. Leadership was also associated with higher agency, with more men leaders having higher agency than women leaders. These findings indicate that socioeconomic and group-level characteristics intersect to influence men and women agency and individual community capacity.

Table 16: Intersection of socioeconomic and group characteristics with individual agency and individual community Capacity

VARIABLE	INDIVIDUAL AGENCY		INDIVIDUAL COMMUNITY CAPACITY	
	WOMEN	MEN	WOMEN	MEN
Education level (%)				
No formal education	87.27	100.00	65.45	83.33
Primary	90.55	93.75	70.18	73.61
Lower secondary	91.04	96.55	76.12	77.59
Upper secondary	100.00	88.89	66.67	66.67
Certificate	85.71	100.00	85.71	75.00
Diploma	100.00	100.00	0.00	100.00
University		100.00		66.67
Post-graduate		100.00		100.00
Marital status (%)				
Married	89.46	94.50	69.73	74.77
Never married	94.12	94.44	76.47	83.33
Widowed	91.80	100.00	75.41	100.00
Separated/divorced	91.67	100.00	66.67	62.50
Main occupation (%)				
Farming	89.82	95.07	71.25	73.99
Salaried employment	100.00	100.00	40.00	100.00
Business	100.00	88.89	50.00	77.78
Other specify	100.00	85.71	66.67	85.71
Household head (%)	92.65	94.62	69.85	74.44
Age (%)				
Youth	91.85	95.05	76.30	67.77
Adult	89.38	94.44	73.27	76.39
Length of membership (%)				
< 5 years	88.80	94.63	70.80	75.17
5-10 years	91.67	96.10	69.70	72.73
> 10 years	96.15	89.47	73.08	84.21
Mode of membership (%)				
Invitation	92.68	94.12	78.05	76.47
Voluntary	88.97	95.71	67.62	74.85
Compulsory	100.00	100	66.67	77.78
Application	100.00	50.00		50.00
Inheritance-based		100		100.00
Leadership in group	93.75	97.03	71.43	79.21
Group type (%)				
MFN	91.30	95.17	72.05	73.43
Non-MFN	86.05	92.11	65.12	84.21

Conclusion

The study investigated types of men and women who exercised voice and agency in different types of groups. The study findings showed that sociodemographic and group characteristics determine individual and collective agency. Specifically, level of education attained, marital status, main occupation, household headship, membership mode, leadership in groups, and group type play a significant role in shaping the voices and agency, especially of women farmers, beyond households. While there were no significant differences in exercising of voice between MFN and non-MFN members, results indicate that MFN were effective in closing gender differences in individual and collective agency. Additionally, the results also show that women hold fewer leadership positions than men, regardless of group type. Furthermore, the findings suggest that farmers with higher levels of education and those who are employed or in business tend to have greater opportunity to exercise voices and agency compared to those with lower educational attainment and those in farming. The results also indicated that group type, and membership length and mode, have implications for men and women farmers' voices and agency. In addition, household headship and leadership in groups were also associated with higher levels of agency for both men and women.

The greater opportunities to exercise voice and agency highlight the success of interventions that address the intersectionality of these factors to enhance voices and agency of men and women farmers beyond households, especially women. For instance, community-based programs and advocacy efforts have addressed cultural norms and beliefs that undermine voices and collective agency of single, married, or separated/divorced women.

Despite high agency as revealed by strong preferences for men and women acting collectively and participation in group decisions, there are still underlining gender issues and beliefs that shape gender dynamics within the groups. This is a valuable finding for producer organizations, researchers, and policymakers working on gender equality and the inclusivity agenda. Transformative approaches that address the complexities of societal and cultural factors are needed. Such transformation will require i) community dialogues and engagements; ii) group-level gender-sensitization fora; iii) women's leadership training and mentorship programs, and iv) strengthening existing networking and collaboration platforms.

While the study highlights the types of men and women currently exercising voice and agency beyond the household, further analysis is needed to link empowerment beyond households, and household and farm-level outcomes. Thus, further analysis should explore the link between empowerment beyond the household and socioeconomic outcomes in farming households and communities. Further analysis is also needed to better understand and strengthen the links between collectiveness and achievement of individual goals and objectives, such as farm-level outcomes and individual and collective access to services, partnerships, and market linkages.

Acknowledgement

This research was financially supported by the CGIAR GENDER platform under the Methods module. It was a collaborative activity with the International Food Policy Research Institute, the Alliance of Bioversity International and CIAT and the National Agricultural Research Organization. It involves data generated through technical work done by the Pan-African Beans Research Alliance (PABRA) through the Alliance of Bioversity International and CIAT and the National Agricultural Research Organization with MasterCard Labs in Uganda. We would like to especially thank Ruth Meinzen-Dick and Eldidi Hagar for highlighting gaps and providing inputs that made the paper read better. Thanks to all the farmers, enumerators, private sector partners and government officers who made undertaking this study a success. We would also like to thank Moses for programming the tool all enumerators for data collection. In addition, the authors would like to express their appreciation to Vincent Johnson, consultant to the Bioversity-CIAT Alliance Science-Writing Service, for his editorial review.

References

- Acosta, M., van Wessel, M., van Bommel, S., & Feindt, P. H. (2021). Examining the promise of ‘the local’ for improving gender equality in agriculture and climate change adaptation. *Third World Quarterly*, 42(6), 1135-1156. <https://doi.org/10.1080/01436597.2021.1882845>
- African Internet Rights. (2020). *Bridging the digital gender gap in Uganda: An assessment of women’s rights online based on the principles of the African declaration of Internet rights and freedoms*. Retrieved from <https://africaninternetrights.org/en/resource/bridging-digital-gender-gap-uganda-assessment-women%E2%80%99s-rights-online-based-principles>
- Andersson, E., & Gabrielsson, S. (2012). ‘Because of poverty, we had to come together’: collective action for improved food security in rural Kenya and Uganda. *International Journal of Agricultural Sustainability*, 10(3), 245-262. <https://doi.org/10.1080/14735903.2012.666029>
- Asongu, S. A., Orim, S. M. I., & Nting, R. T. (2019). Inequality, information technology and inclusive education in sub-Saharan Africa. *Technological Forecasting and Social Change*, 146, 380-389. <https://doi.org/10.1016/j.techfore.2019.06.006>
- Bernard, T., & Spielman, D. J. (2009). Reaching the rural poor through rural producer organizations? A study of agricultural marketing cooperatives in Ethiopia. *Food Policy*, 34(1), 60-69. <https://doi.org/10.1016/j.foodpol.2008.08.001>
- Delea, M., Sinharoy, S., Cheong, Y. F., Heckert, J., Seymour, G., Meinzen-Dick, R. S., & Yount, K. M. (2021). *The group-related collective agency scales (GCAS-23 and GCAS-12)–Full and short form scales for construct measurement*. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4004711
- Diro, G. M. (2017). *Strategies to raise agricultural productivity, address gender inequalities, and reduce rural poverty in Uganda*. Brookings. Retrieved February 20, 2022, from <https://www.brookings.edu/blog/africa-in-focus/2017/10/16/strategies-to-raise-agricultural-productivity-address-gender-inequalities-and-reduce-rural-poverty-in-uganda/>
- Errico, S. (2021). Women’s Right to Land Between Collective and Individual Dimensions. Some Insights From Sub-Saharan Africa. *Frontiers in Sustainable Food Systems*, 5, 690321. <https://doi.org/10.3389/fsufs.2021.690321>
- Evans, A., & Nambiar, D. (2013). *Collective action and women’s agency: A background paper*. World Bank. Retrieved February 20, 2022, from <https://openknowledge.worldbank.org/handle/10986/21032>
- Fischer, E., & Qaim, M. (2012). Linking smallholders to markets: Determinants and impacts of farmer collective action in Kenya. *World Development*, 40(6), 1255-1268. <https://doi.org/10.1016/j.world-dev.2011.11.018>
- Gammage, S., Kabeer, N., & Van der Meulen Rodgers, Y. (2016). Voice and agency: Where are we now?

- Feminist Economics*, 22(1), 1-29. <https://doi.org/10.1080/13545701.2015.1101308>
- Goetz, A. M., & Jenkins, R. (2016). Agency and Accountability: Facilitating Women's Participation in Peace-building. *Feminist Economics*, 22(1), 211-236. <https://doi.org/10.1080/13545701.2015.1086012>
- Ingutia, R., & Sumelius, J. (2022). Do farmer groups improve the situation of women in agriculture in rural Kenya? *International Food and Agribusiness Management Review*, 25(1), 135-156. <https://doi.org/10.22434/IFAMR2020.0142>
- Klugman, J., Hanmer, L., Twigg, S., Hasan, T., McCleary-Sills, J., & Santamaria, J. (2014). *Voice and agency: Empowering women and girls for shared prosperity*. World Bank.
- Lecoutere, E. (2017). The impact of agricultural co-operatives on women's empowerment: Evidence from Uganda. *Journal of Co-operative Organization and Management*, 5(1), 14-27. <https://doi.org/10.1016/j.jcom.2017.03.001>
- Majurin, E. (2012). *How women fare in East African cooperatives: The case of Kenya, Tanzania, and Uganda*. Retrieved February 20, 2022, from https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/---coop/documents/publication/wcms_735776.pdf
- Mastercard. (2022). *The Mastercard index of women entrepreneurs: How targeted support for women-led business can unlock sustainable economic growth*. Retrieved February 20, 2022, from <https://www.mastercard.com/news/media/phwevxcx/the-mastercard-index-of-women-entrepreneurs.pdf>
- McFerson, H. M. (2010). Poverty among women in Sub-Saharan Africa: A review of selected issues. *Journal of International Women's Studies*, 11(4), 50-72.
- Meinzen-Dick, R., Quisumbing, A., Behrman, J., Biermayr-Jenzano, P., Wilde, V., Noordeloos, M., ... & Beintema, N. (2011). *Engendering agricultural research, development, and extension*. IFPRI.
- Mujawamariya, G., D'Haese, M., & Speelman, S. (2013). Exploring double side-selling in cooperatives, case study of four coffee cooperatives in Rwanda. *Food Policy*, 39, 72-83. <https://doi.org/10.1016/j.foodpol.2012.12.008>
- Paradigm Initiative. (2021). *Gender digital divide – A gap that should be bridged*. Retrieved February 20, 2022, from <https://paradigmhq.org/gender-digital-divide-a-gap-that-should-be-bridged/#:~:text=According%20to%20a%20survey%20by,to%20the%2027%25%20of%20Men.>
- Peterman, A., Quisumbing, A., Behrman, J., & Nkonya, E. (2011). Understanding the complexities surrounding gender differences in agricultural productivity in Nigeria and Uganda. *Journal of Development Studies*, 47(10), 1482-1509. <https://doi.org/10.1080/00220388.2010.536222>
- Poole, N. D., Chitundu, M., & Msoni, R. (2013). Commercialisation: A meta-approach for agricultural development among smallholder farmers in Africa? *Food Policy*, 41, 155-165. <https://doi.org/10.1016/j.foodpol.2013.05.010>
- Qanti, S. R., Peralta, A., & Zeng, D. (2022). Social norms and perceptions drive women's participation in

agricultural decisions in West Java, Indonesia. *Agriculture and Human Values*, 39(2), 645-662. <https://doi.org/10.1007/s10460-021-10277-z>

Quisumbing, A. R., & Pandolfelli, L. (2010). Promising approaches to address the needs of poor female farmers: Resources, constraints, and interventions. *World development*, 38(4), 581-592. <https://doi.org/10.1016/j.worlddev.2009.10.006>

Rodgers, Y. & Akram-Lodhi, H. (2019). *The gender gap in agricultural productivity in sub-Saharan Africa: Causes, costs, and solutions*. Retrieved from <https://www.unwomen.org/en/digital-library/publications/2019/04/the-gender-gap-in-agricultural-productivity-in-sub-saharan-africa>

Roncoli, C., Orlove, B. S., Kabugo, M. R., & Waiswa, M. M. (2011). Cultural styles of participation in farmers' discussions of seasonal climate forecasts in Uganda. *Agriculture and Human Values*, 28, 123-138. <https://doi.org/10.1007/s10460-010-9257-y>

Selhausen, F. (2016). What determines women's participation in collective action? Evidence from a Western Ugandan coffee cooperative. *Feminist Economics*, 22(1), 130-157. <https://doi.org/10.1080/13545701.2015.1088960>

Shiferaw, B., Hellin, J., & Muricho, G. (2011). Improving market access and agricultural productivity growth in Africa: what role for producer organizations and collective action institutions? *Food Security*, 3, 475-489. <https://doi.org/10.1007/s12571-011-0153-0>

Taylor, P. (2013). *Number of mobile cellular subscriptions per 100 inhabitants in Uganda from 2000 to 2020*. Statista. Retrieved February 20, 2022, from <https://www.statista.com/statistics/510637/mobile-cellular-subscriptions-per-100-inhabitants-in-uganda/#:~:text=There%20were%2060.53%20mobile%20subscriptions%20registered%20for%20every%20100%20people%20in%202020>

UN CDF. (2021). *Bridging Uganda's digital divide: Gender mainstreaming in digital agriculture*. Retrieved February 20, 2022, from <https://www.uncdf.org/article/7221/bridging-ugandas-digital-divide-gender-mainstreaming-in-digital-agriculture>

UNFFE Information Desk. (2022). *Mastercard farmer network – MFN*. Retrieved February 20, 2022, from <https://unffe.org.ug/project/mastercard-farmer-network-mfn/#:~:text=MasterCard%20Farmers%20Network%20shall%20be,and%20transaction%20data%20with%20farmers>

USADF. (2021). *Digitizing Uganda's farmers in partnership with Mastercard Inc.'s Lab for Financial Inclusion*. Retrieved February 20, 2022, from <https://www.usadf.gov/story/670>

Williams, E. M., Väisänen, H., & Padmadas, S. S. (2022). Women's economic empowerment in sub-Saharan Africa. *Demographic Research*, 47, 415-452. <https://www.jstor.org/stable/48708285>

Willman, A., & Arnold, M. (2022). *A sustainable green recovery for Uganda depends on women*. World Bank. Retrieved February 20, 2022, from <https://blogs.worldbank.org/nasikiliza/sustainable-green-recovery-uganda-depends-women>

World Bank & FAO. (2009). *Gender in agriculture sourcebook. Agriculture and rural development*. World Bank.

