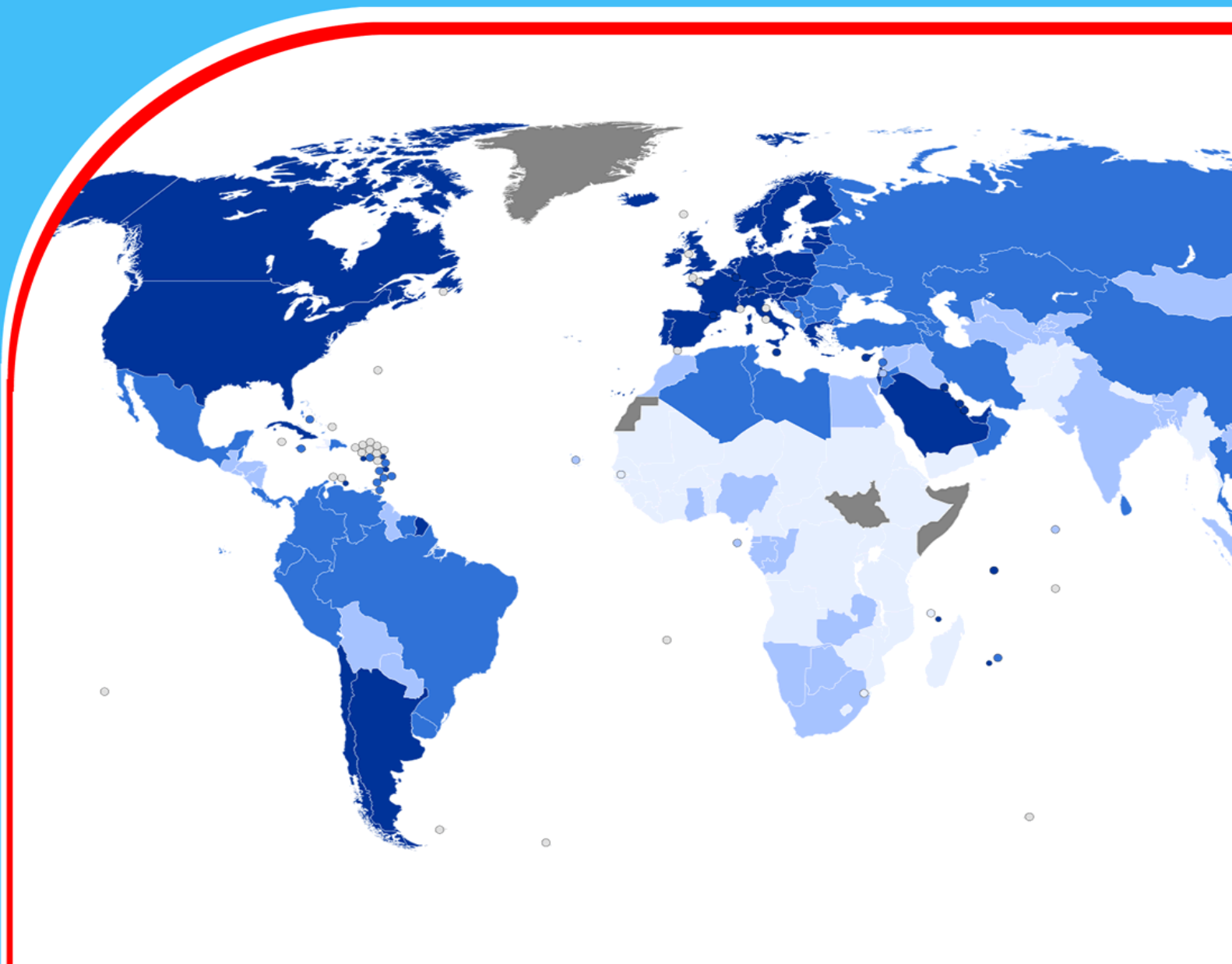


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The Future of Farmer organisations: Opportunities and Challenges in Achieving Household Food Security. Evidence from Acholi Sub-region, Northern Uganda.

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ABSTRACT

Purpose: The study set out to determine the relationship status of farmers' organisations in the region, examine the opportunities for farmer organisations in achieving households' food security, and investigate the challenges farmer organisations face in achieving household food security.

Methodology: The study used descriptive, correlational and cross-sectional research designs grounded by a mixed-methods approach. Quantitative data was collected on a sample of 370 households using a structured questionnaire, while qualitative data was collected from 16 face-to-face interviews. The study used both purposive and simple random sampling techniques. Data analysis was done using descriptive and Pearson correlation analyses, while thematic content analysis generated qualitative results.

Findings: The Study indicated a positive albeit weak relationship between farmer organisations and household food security in the Acholi Sub-region. The results indicated that most farmer organisations are inactive and informal with low household participation. A possible explanation could be the small membership size and organisations' inability to tap existing production and marketing opportunities.

Unique contribution to practice and policy: The study guides the government in creating an enabling environment that supports farmer organisations in accessing external markets and market information by improving infrastructure and strengthening capacity building of farmer organisations to increase food security.

Keywords: *Farmer Organization, Household, Food Security*

INTRODUCTION

Sustaining household food security is increasingly becoming an issue in Uganda. Over 50% of the population in Uganda experience some sort of food insecurity. IPC (2021) report indicate that 23% of 2.6 million people in Uganda suffers from acute food insecurity, 40% suffer from minimal acute food insecurity, moreover 38% are stressed. In the Acholi Sub-region, over 50% of the households eat less than two meals, below the recommended standard of three meals a day as a result of food insecurity (UBOS & ICF, 2018). FAO (1996) define Food Security as a situation when “*all people, at all times, have physical and economic access to sufficient, safe and nutritious foods to meet their dietary needs and food preferences for a healthy and active life*”. Household food security therefore suggest a situation when all household members at all times, have physical and economic access to enough safe and nutritious foods that meet their dietary needs and food preferences for a health and active life. The definition of food security rests on four significant pillars; Food availability, food access, stability and utilization. Food availability implies having enough suitable and quality food supply in terms of production, food stocks, food imports and food aid (FAO, 2011). Ville et al., (2018) indicate that food availability is a necessary but not a sufficient condition for food security. While food may be available, one need to have the ability to access it. Therefore, food access implies the ability to obtain sufficient and nutritious available foods that meet individual dietary needs for a health and active life. This suggest that the available food should be sufficient to meet both current and future needs of a household, implying food stability. FAO (2013) defines stability as having sufficient foods at all times regardless of the food time and spatial factors. Food utilization derives its meaning from an anthropological perspective. FAO (1996) definition of utilization incorporates the issues of micro-nutrients for a safe, balanced and nutritious diet.

Studies such as (Latynskiy & Berger, 2016; Salokhe, 2016; Rahmadanihet et al., 2018; Kujur et al, 2019; Bizikova et al. 2020) indicate that through farmer organizations, smallholder farmers have the ability to improve household food security. Smallholder farmers contribute 70% to global food production, meanwhile majority of them are food insecure (SDC, 2017). Kujur et al, (2019) state that farmer organization are institutions of farmers democratically formed and legally registered as an organization. Farmers’ organizations can further be classified into producer associations, unions, cooperatives, and federations with autonomous membership (IFAD, 2016). Farmers’ organisations are drivers of agricultural production. They enhance access to input and output markets, agricultural productivity, and access to financial services, form a platform for local and international networks, and reduce knowledge and information asymmetries. Aside from the direct contributions, farmer organisations representatives are the voice of many small-scale farmers in the development decision-making process (Kujur et al, 2019; FAO, 2014; Ojiagu, 2015). Salokhe (2016) suggest that farmer organizations promote market efficiency, production and productivity, and profit for its members.

There are various farmer organisations in Uganda but most of these are community-based, dealing in a common commodity (Ekepu, 2017). These are organized into two; the Depot Committee (DC) formed to unite farmers at village and parish level, and the Area Committee Enterprise (ACE) comprising of several associations of farmers formed at the county and sub county levels (Latynski & Berger, 2016). The concept of farmer organization is simple, by registration and accepting the terms and conditions, farmers become members of the group.

Membership to a farmer organization signifies ownership of a farmer organization irrespective of their position in the group (Kujur et al., 2019).

Numerous studies have linked farmers' organisations to food security (Rahmadanihet al., 2018; Bizikova et al., 2020). Minah (2022) asserted that the contribution of farmers' organisations to households' food security depends on the functioning of these organisations and the level of members' participation. Agricultural farmers' cooperatives aim at increasing agricultural productivity and households' income, especially for small-scale farmers. These offer collective support in and economic empowerment, which is critical in achieving households' food security (Latynskiy et al., 2016). Farmer organizations are organised to protect and foster farmers' interests under one umbrella. This arrangement makes it easy to attract the government and other more prominent organisations (Latynskiy et al., 2016).

Resources

This study was motivated by the increasing number of smallholder farmers in Uganda and the increasing demand for food worldwide. Smallholder farmers have failed to meet the increasing food demand, and many of them are still below the poverty line with high levels of food insecurity. It is documented that the primary cause of their failure is limited access to markets, inputs, finance, and failure to participate in the decision and policy-making process (Rwelamia, 2015). In this study, farmer organisations are seen as reliable hope for smallholder farmers to improve their status. The central question researchers need to ask is the contribution and ability of farmers' organisations to households' food security. Therefore, the primary purpose of the study was to establish the relationship between farmer organisations and household food security in the Acholi subregion, Northern Uganda.

LITERATURE REVIEW

Conceptual Review

Farmers' organisations

Kujur et al, (2019) define Farmers' organisations as "farmers' groups with well-defined membership aimed at linking their members to the outside world." Meanwhile IFAD (2016) defines a farmer organisation as any group of farmers with a general assembly in farmer groups, unions, federations, cooperatives, and farmers Associations aimed at promoting the interest of its members. IFAD (2016) definition of farmer organisation is used in this study given that farmer organisations in the Acholi region are diverse and majorly aim to improve the social-economic welfare of their members through increased agricultural production and access to markets. Although (Latynskiy et al., 2016; Kujur et al., 2019) shows that farmer organisations are a group of farmers, these groups are not distinctively defined. Besides, the role of farmer organisations in achieving household food security is not well indicated. IFAD (2016) definition of farmer organization is thus relevant to the study.

Households' food security

FAO (1996) define Food Security as a situation when "*all people, at all times, have physical and economic access to sufficient, safe and nutritious foods to meet their dietary needs and food preferences for a healthy and active life*". Household food security therefore suggest a situation

when all household members at all times, have physical and economic access to enough safe and nutritious foods that meet their dietary needs and food preferences for a health and active life. This definition emphasises four main dimensions of food security; food availability, access to food, stability and utilization. While availability focus more on adequate food (quantity), less value is attached to the micronutrients, proteins, safety, and quality of foods consumed. Moreover, availability of food may not guarantee accessibility, stability and utilization. Meaning it is a necessary but not sufficient condition to guarantee food security.

Theoretical Framework

The study was premised on entitlement theory by Sen (1981). Sen (1981) describes a food-secure household as having adequate entitlements and a set of resource endowments as described in the theory of entitlement. According to Sen, entitlements are categorized into E-mapping, exchange entitlements, and transfer entitlements. Households are entitled to transfer resources and inheritance, trade-in households' endowments, including their labor, and are entitled to production resources. Besides, the concept of household entitlements fits in the objectives of farmers' organisations to ensure that food production and productivity are increased, and members have the opportunity to trade in available endowments, including labor.

Development of farmers' organisations

Farmer organisations are fully recognized under the umbrella of the World Food Organization. Chiyoge (2012) suggests that farmers' organisations have existed since the 17th century and 18th century. Farmers' organisations have evolved globally through agricultural cooperative societies (Pelimian, 2015). Recognizing their contribution to poverty reduction and household food security, farmers' organisations have gained recognition under different movements. In the 1950s and 60s, National Farmers' organisations emerged from different parts of the world; in 1955, a national farmers organisation was formed in the USA to increase agricultural food production. Different regional organisations govern these. In Africa, farmers' organizations are governed by the Pan African Farmers Organization established in 2010, promoting farmers' participation in advocacy and policy decision-making. In 2001, the East Africa Farmers Federations was found to promote the interest of farmers concerning production, markets, and information and promote relations on behalf of their member organisations. The Federation houses several national farmers' organizations in East Africa, including the Uganda National Farmers' Federation, founded in 1922. The Uganda National Farmers Federation is an umbrella to many non-government organisations, about 70% of which are District farmers' organisations (Latynskiy et al., 2016).

In Uganda, farmer organisations started way back in the 1900 under the British protectorate, and were officially recognised in 1946 and a cooperative governing act introduced in 1962 (Kyazze, 2010). Agricultural cooperatives were established with a need to promote production and marketing of traditional cash crops such as coffee and cotton. These later became policy management and policy mobilization institutions through different organizations such as the Uganda coffee marketing board (Cordaid, 2015). Moreover these collapsed with the poor political climate in the 19780's. The collapse of the state owned cooperative societies led to the privatization of government cooperative organizations and emergence of many self farmer organizations mainly supported by non government organizations (Cordaid, 2015). Nonetheless,

although there are many farmer groups in Uganda, their voice has not been heard. This has motivated the government to support a few government organisations like the National Agricultural Advisory Services (NAADS) in 2001. By 2009, 55,000 farmers groups were registered under NAADS. According to UBOS (2012), by 2009/10, 906,000 households in Uganda were members of farmer's organisation of which 51% were males, and 49% were female.

Future opportunities for farmer organizations

The current trend in external factors offers farmer organizations great opportunities to contribute to food security and national development. It is projected that by 2050 the world population will rise by 9.3 billion, mainly in developing countries (FAO, 2015). This population will require an increase in production by 70%. This can only be achieved through agricultural transformation and commercialization. The World Bank report also indicates that by 2050 agricultural land will reduce amidst an increase in trade and market. According to the FAO-UN (2015) report, by 2050, two-thirds of the population will be urban and the demand for agriculture production is expected to grow by 70% compared to 2005/2007. For the production of small older farmers to increase as expatiated, the JRC (2016) report recommends increased agriculture intensification as land and water resources decrease in relative terms. Reduce post-harvest losses and waste. Partnership with other developing partners in promoting food security should be promoted at local, national, and international levels.

The agriculture sector is dominated by smallholder farmers producing mainly for consumption (Apanovich & Emazur, 2018). These have no voice to enable them to lobby for better market opportunities, access to finance, information, and participate in decision making (Minah, 2022). JRC report (2016) indicates that 80% of food supply in Asia and Sub-Saharan Africa comes from smallholder farmers. As individuals, smallholder farmers are not likely to participate in decision making, pool resources for intensification and commercialisation, external access markets, financial resources, and information on agriculture. According to Latynskiy et al., (2016) and Minah (2022) small-scale farmers face low market access due to limited awareness, technology, market skills, low production, limited financial resources, infrastructure, and poor information and policy environment. Through farmer organisations, the voice of small-scale farmers can be heard in decision-making and framing policy (McInerney, 2014; Latynskiy et al., 2016). Farmer organisations offer opportunities for smallholder farmers to share information, lower production and storage costs, pool resources, get access to markets and offer a platform for communication and advocacy (FAO, 2014). Ferris et al. (2014); Latynskiy et al., (2016) indicated that farmer organisations encourage intensification and commercialization and reduce transaction cost.

Farmer organizations can pool resources and offer more market output (Kujur, 2019). This enables them to compete in better markets to bargain and influence time and price. High prices translate into increased profit, household income, and food security. Farmer organisations are better positioned to engage in policy formulation and decision-making processes (FAO, 2014; Latynskiy et al., (2016). Cooperatives can offer a platform for smallholder farmers to commercialize and increase household income. They enable their members to acquire farm inputs, add value to the output, and access markets (McInerney, 2014). Cooperatives have the potential to overcome information and challenges by working together with one voice,

transacting on behalf of smallholder farmers, and avail timely supply of farm inputs. Cooperatives also play a crucial role in capturing international markets by adding value and increasing output. Cooperatives also make it easy for smallholder farmers to participate in decision-making through collaboration with other stakeholders under the International Cooperative Alliance (McInerney, 2014).

Farmers' organizations and Household food security

Salokhe (2016) states that farmer organizations increase food security by increasing farmers' income following increased production and productivity. Another study by Nyang (2010) found that farmer organizations can increase food security by reducing post-harvest waste and losses. Rahmadanihet et al., (2018) suggest that farmer organizations significantly contribute to food security by offering their members opportunities to access markets, information, natural resources, training, credit, and storage facilities. They also work as a platform for farmers to be part of the decision-making process. Armando (2009) studied the history of food security and cooperatives in seven countries in Africa and three counties of East Africa and found that countries with a long history of cooperatives were more food secure than their counterparts. Cooperatives contributed to food security by increasing members' incomes and accessing food in their village markets.

Another study by Biru (2014) on 108 respondents in Tigray using both qualitative and quantitative approaches found that cooperatives and household food security highly correlate. The study indicates cooperatives directly improve production, access to food, and food stability in rural areas. It was also found that about 82% of households with membership to cooperatives had high dietary diversity. FAO (2013) shows that farmer organizations enable smallholder farmers to access input and information on markets that increase production and income. As a result of to increase in access to markets. On the contrary, a study by Bizikova et al., (2020) on the contribution of farmer organization to smallholder agriculture in Sub-Saharan Africa and India found a low contribution of farmer organizations to farm production and productivity. Another study by Mwaura (2014) found low food productivity among farmer organization members in Uganda due to limited adoption of modern farming inputs.

A study by Cordaid(2015) indicate that most of the members to the agriculture cooperatives in the 19th centuries experienced low agricultural productivity. Well-functioning cooperative societies provide farmers access to farm inputs, output markets, information, extension services, and support joint production, ultimately improving production and household food security. Countries with well-functioning agriculture marketing cooperatives have high yields and good staple foods export turnover. In Ethiopia, such farmers attain a 7-8% premium price.

Challenges facing farmer organizations

Bizikova et al., (2020) indicates that the performance of farmer organizations, especially in developing countries is still low. FAO (2014) shows that for farmer organizations to exploit their full potential in influencing income and household food security, they should be autonomous, independent from external influence with a sound leadership and management team. They also need to have a solid membership base, provide needs-based services, and have inclusive leadership. The success of many farmer organisations in developing countries is limited by

tedious centralized registration processes, inadequate policies, and limited training and capacity building (FAO, 2014). Many farmer organisations experience low production and productivity due to low use of farm inputs, low access to extension services, and fragmented production at a low scale (Salokhe, 2016; Kujur, 2019). Farmers face low access to credit and financial resources and pests and diseases (Rwelamira, 2015; Latynskiy et al., 2016).

Millie (2006) suggests that small and medium enterprises empowerment and diversification of food systems and markets enable policy growth and transformation. FAO (2010) found that Agricultural Cooperatives are constrained by limited resources, poor resource management, training and extension services, limited communication, unfavorable government policies, and land fragmentation. Moreso, farmer organisations are constrained by inadequate infrastructure, deplorable road networks, limited access to information, inadequate centralised storage facilities, and low collaboration with other development partners (Rwelamira, 2015).

METHODOLOGY

The study was grounded on pragmatism research orientation, using a mixed-method approach. According to Creswell (2014), the world is dynamic and not static, involving objective and subjective realities. Household food security is a social problem existing in a natural setting, implying that the truth about household food security in the Acholi sub-region was derived by seeking respondents' perceptions about food security and comparing it with the available theories on food security. The study applied a cross-sectional research design involving both quantitative and qualitative research approaches. A sample of 370 household heads was selected from a population of 1,059,500 households, guided by the Krejcie and Morgan (1970) table. The study sample was obtained from four districts of the Acholi Sub-region in Northern Uganda (Gulu, Amuru, Kitgum, and Agago). Interviews were conducted on 16 (saturation point) respondents comprising both farmer organisation representatives and market heads.

The study employed both purposive and simple random sampling techniques. Purposive sampling was explicitly used to select interview respondents. On the other hand, simple random sampling was employed to select households. More still, proportionate stratification was applied to select the required number of households per District. Quantitative data was obtained using a questionnaire survey method through a structured questionnaire. In contrast, a face-to-face interview method was employed in collecting qualitative data, guided by the interview guide. Data were analyzed using SPSS version 22 after it was managed by cleaning, summarising, and coding. After data management, the data were analyzed to generate descriptive statistics, Pearson correlations, and hierarchical regression findings for conclusions on study hypotheses.

Qualitative results were obtained through thematic analysis guided by O'Connor and Gibson (2003). The data were coded, organized into themes, and subjected to content analysis. Before the primary data analysis, data were subjected to validity and reliability tests. Both content and construct validity tests revealed that the content and the constructs were valid. The content validity obtained was above 0.7, while construct validity was confirmed by the Average Variance of Extraction above 0.5, consistent with Amin's (2005) recommendations for an appropriate tool.

Further, the reliability test yielded a Cronbach's alpha of 0.829. According to Amin (2005), a Cronbach's Alpha above 0.7 indicates reliability. An Exploratory factor analysis was also conducted to explore factor structures and reduce the items to the reliable level. Exploratory factor analysis results revealed KMOs above the minimum 0.6 and a significant Bartlett's test of sphericity, implying that the data was suitable for further analysis (Amin, 2005).

Descriptive analysis Results

Profile of respondents

Analysis of personal profile was done to describe the characteristics of the sample respondents. The analysis revealed that 59% of the sampled respondents resided in rural areas and 41% in urban areas. Findings further indicated that 53% of the respondents were females and 47% male. 62% were in the age bracket of 18-35, 29% between 36 -40, 6% above 60 years, and 3% below 18 years. Agriculture was the primary source of occupation of the respondents (50%), followed by formal employment (19.7%), casual work (14. %), and business (6%).

Status of farmer organization

Table 1: Farmer organization membership

	Frequency	Frequency (%)
Member to farm org	129	35
Nonmember to farm org	241	65
Total	370	100

Source: Primary data (2018)

The results in Table 1 show that membership to farmer organisations is still minimal, accounting for only 35% of the total number of households surveyed. These results are not different from Adong's (2013) study. The study found that only 12% of the households in northern Uganda were attached to farmer organisations and only 16% for the entire national agricultural economy. Zivkov (2013) also found that 39.7% of the farmers in Serbia belong to farmer organisations.

Table 2: Gender participation

	Frequency	Frequency (%)
Male	67	52
Female	62	48
Total	129	100

Source: Primary data (2018)

Cross-examining gender and membership to farmer organisations, the results in table 2 show that 52% of households belonging to farmer organisations were male and 48% were female, with only 4%. The slight difference in gender representation gives us an initial conclusion that gender is not very significant in determining household membership to farmer organisation. These results are consistent with Adong's (2013) findings in a similar study.

Table 3: Members' level of education

	Frequency	Frequency (%)
No schooling	16	12
Primary	47	36
Secondary	57	44
Tertiary	6	5
Other	3	2
Total	129	100

Source: Primary data (2018)

Further examination of farmer organisation membership and members' level of education revealed that most households in farmer organisations stopped in the primary and secondary school. In contrast, only 5% stopped at the tertiary level. The results suggest that majority of members of farmer organisations are literate enough to make informed decisions, lobby for better opportunities, and attract resources. Ojiagu (2015) observed that education is significant in influencing cooperatives members' income level in Nigeria.

Table 4: Member's level of benefit from organization objective

Members	Market information	Output market	Farm inputs	Value addition	Collective labor
Benefited	49(38%)	57(44%)	52(40%)	27 (21%)	38 (29%)
Not benefited	80(62%)	72(56%)	77(60%)	102(79%)	91(71%)
Total	129(100%)	129(100%)	129(100%)	129(100%)	129(100%)

Source: Primary data (2018)

The core objective of any farm organisation is to increase production, access to output and input markets. Table 4 indicates that farmer organisations in the Acholi sub-region have not achieved their expectations. Only 38% of members to farmer organisations have benefited from access to farmer information, 44% output market, 40% farm inputs, 21% value addition, and only 29%

benefited from collective labor. According to (Butler, 2001; Ampaire, 2013; and Adong, 2013), membership size plays a critical role in achieving organisation objectives. Butler emphasized that large organisation has better opportunity to attract resources, knowledge, and access market information. Adong (2013) found that access to input and output markets and market information is still a significant challenge for farmer organisations in Uganda.

Qualitative descriptive findings

Table 5: Gender participation

	Frequency	Frequency (%)
Male	22	70
Female	10	30
Total	32	100

Source: Primary data (2018)

Results in Table 5 indicate that majority (70%) of the respondents interviewed were male. This implies that men are more involved in farmer organizations than women in the Acholi sub-region and are more knowledgeable in food security matters than their female counterparts. The results suggest that more sensitization on membership contribution to household food security farmers is needed to reduce the gender gap.

Table 6: Education of respondents

Level of Education	Frequency	Percentage frequency (%)
No schooling	4	13
Primary	11	33
Secondary	13	42
Tertiary	3	10
Other (Non formal)	1	2
Total	370	100

Source: Primary data (2018)

From the results in Table 6, 87% of the study respondents in the Acholi sub-region had obtained some level of schooling. This implies that they were better positioned to express their views about household food security.

Inferential Analysis Results

Membership to Farmers' organization and Household food security

Pearson correlation results revealed a positive and significant albeit weak relationship between membership to farmers' organisations and household food security ($r = .24, p < .01$). This means that if households are members of farmer organisations such as farmer groups, farmers' unions, and farmers' cooperatives; they can improve food security through improved food production, coping strategies, and better dietary patterns. These results support the hypothesis that membership in farmers' organisations is positively associated with household food security.

These statistics match the qualitative results indicating that farmers' organizations can improve households' food security. One of the Interviewees stated, *"If well-managed farmer organisations are capable of increasing household food security by enabling members to access modern inputs, transport their products in bulk at low transport cost, and access external markets."* Nonetheless, other interviewees revealed the low contribution of farmer organizations to households' food security due to a poor working environment. One of the interviewees noted that *"... there is no clear market destined for our products. We market our food on our own mainly within the district, and the prices are meager. In fact, we are losing hope in farmer organisations,"* a member said.

It was further pointed out that farmer organisations face a challenge of low and inconsistent food production due to changing weather patterns, pests, and diseases. *"Seasons have now changed. The dry season is so long that most crops die in the gardens and a few are harvested prematurely, leading to low production"*. Another member once also said, *"pests and diseases have become a serious problem to us, and there is no way we can achieve sustainable food security. We keep on getting low output and making losses time and again. It is all useless."* The above qualitative statements justify a low but significant Association between farmer organisations and household food security in the Acholi sub-region ($r = .24, p < .01$) obtained from quantitative analysis.

DISCUSSION OF RESULTS

These findings are consistent with other studies on farmer organisation and household food security. Alkao (2017) and Rahmadanah et al. (2018) studies on farmer organisation and market access found that household members to farmer organisations had higher income and food security than others. Oporoc (2016) shows that household members of the farmer group had high levels of household food security than their counterparts. Similarly, Armando's (2009) study found that farmer cooperatives provide a platform to improve food security by providing avenues for market access. Ochieng et al. (2018) found that farmer organisations have an opportunity to access modern farm inputs to increase production and income. According to Alkao (2017), households with market access received USD 220.11, while non-farmer organisation members without market access received a lower income of USD 177.90.

Rahmadanah et al., (2018) assert a positive relationship between farmers' organisations and household's food security. Armando (2009) found a positive correlation between agricultural cooperatives and households' food security. Pelimina (2015) found that farmers' organisations are correlated with households' wellbeing, while Chelagat (2015) found that Farmer

organisations increase food security. Alkao (2017) further observed that farmers' organisations impact households' food security through market access and increased income. Idowu et al., (2019) shows that lack of income affects market participation and membership in farmer organisation. Alkao (2017) found income to be a weak predictor of market participation. Ochieng et al., (2018) further noted that farmers' organisations promote household food security by increasing market participation increasing production.

Other studies (Herman et al., 2012; ILO, 2013; FAO, 2014; Sanchez, 2014; Ally, 2015; Tolno, 2015; Ojiagu, 2015; Ahmed, 2017; Alkao, 2017; Kujur,2019) indicate that farmers' organizations contribute to food security by offering a platform to smallholder farmers to access markets by pooling resources and availing farmers with market information. Studies (Ahmed et al, 2017; Thieng et al., 2014; Zeweld et al., 2017) also denote that farmers' organisations offer smallholder farmers an opportunity to access and use modern farm inputs, which increase production and productivity.

Surprisingly, while the correlation study findings and literature above indicate a positive association of farmer organizations and household food security, study findings were statistically weak, indicating low performance of farmer organizations. In practice, members of farmers' organisations marginally experienced frequency differences from their counterparts regarding households' food security. In other words, household members to farmer organisations equally experienced low household food security, as Bizikova et al., (2020) reported.

The degree of correlation coefficient may be understood in the current state of farmers' organisations in the Acholi sub-region. Qualitative findings on the status of farmers' organisations in the Acholi sub region indicated that their performance in the Acholi sub region is still inadequate. Foremost, membership to farmers' organisations is small. Face-to-face interviews revealed a small membership to farmers' organizations, mainly from urban centers.

Descriptive findings further showed that most households in the Acholi sub-region belong to farmers' groups, and very few belong to a farmers' union or an agricultural cooperative. Adong (2013) equally shows low membership to farmer organisations in the Acholi sub-region. Moreover, Bizikova et al., (2020) notes that inadequate membership size and low members' commitment are crucial indicators of poor performance in farmers' organisations. Tolno (2015) asserts that the size of membership to farmers' organisations is limited by several factors including distance to market, households' income, level of education, and family size. Theng et al., (2014) study on the impact of farmer organisations on households' food security in Cambodia found low participation and size of membership to farmer organisations was due to low access to market information, low commitment, and long distance to market.

Both quantitative and qualitative findings exposed that farmers' organisations in the Acholi sub region have limited external connections. Most of the households belong to community organisations within their village and a small number belong to farmers' organisations outside their village. Latynskiy et al., 2016 observed that farmers' organisations need great external support and a good working environment to succeed. Also, Rahmadanihet et al., (2018) found that the ability of farmers' organisations to improve food security depends on several factors, including their ability to access external markets. Kujur et al., (2019) shows that farmer organisations increase internal and external markets.

Sasakawa Africa Association report (2012) on Strengthening farmers' organizations in Ethiopia, Mali, Nigeria and Uganda suggests that while farmers' organisations promote market access, their ability to achieve food security depends on the type of markets accessed. Latynskiy et al., (2016) further noted that inadequate external linkages limit the performance of farmer organisations. Likewise, the current study found that most Acholi sub-region organizations have minimal connections with external organisations. Face to face revealed that most smallholder farmers in the Acholi sub region belong to farmers' groups. This is in line with Adong's (2013) study findings that the most significant percentage of farmers' organizations in the Acholi sub-region comprises farmers' groups with limited market opportunities.

Study findings further show that farmers' organisations in the Acholi sub region lack access to modern input and output markets. The study revealed that members to farmers' organisations have not benefited much in accessing input and output markets. These findings are supported by several research findings from other studies indicating that the performance of farmers' organisations in lowly developed countries is still low, with limited access to input and output markets. Mwaura, (2014); Asgeny and Berger, (2016); and Bizikova et al., (2020) denote that farmer organisations have a challenge of limited access and use of farm inputs. Grashuis and Su (2018) indicate that farm inputs increase with market sales. Alkao (2017) also shows that farmer organizations increase farm inputs.

Furthermore, the descriptive analysis revealed that most of the farmers' organisations in the Acholi sub-region had no access to market information. Other researchers (Adong, 2013; ILO, 2014; Magesa et al., 2014; Alkao, 2017; Ochieng et al., 2018) also observed that the majority of farmers' organisations in lowly developed countries still face a challenge of remoteness and low access to markets and market information. The information received is either incomplete or obsolete. Research findings confirm that farmers' organisations are positively associated with household food security. study findings support Bizikova et al., (2020) findings that the performance of farmers' organizations in developing countries is still too low to promote food security. Tallam (2017) indicates that their level of market access influences the performance of farmers' organisations.

Status of farmer organisations in Acholi su-region

Qualitative results revealed that most of the farmer organisations in Acholi sub region are self initiatives and not formal. A few formal farmer organizations are supported and led by non governmental organizations. Discussions further revealed that most of the farmer organisations are not functioning well. These have low access to markets, low access to farm inputs, financial services, and experience low access to information. These results are consistent with the quantitative findings indicating that farmer organisation members are still few (35%). Further still, over 60% of the members have not benefited from accessing market information, input and output markets, processing activities, and collective labor, as observed in table4.

Opportunities to increase household food security

Studies by (Tolno, 2015; Ojiagu, 2015; Kujur et al., 2019; and Minah, 2022) found that farmer organizations can increase household income, access to markets, and food security. Interviews revealed that farmer organisations in Acholi sub region had got several opportunities to increase

household food security. It was mentioned that Acholi Sub-region is located near South Sudan, allowing farmer organisations to increase trade volume and raise household income. Further, most of the main roads to big external markets have been tarmacked, including the Gulu-Nimule Juba road, Gulu-Kampala highway, and Gulu-Arua road. The study also found that the region has land that farmer organisations can exploit for commercial and intensive production for trade and household food security. *“As you can see, most of our land is vacant. But we cannot cultivate it all,”* a member said.

During the interviews, members also mentioned that most people had gone back home to concentrate on agriculture. This indicates that the region can pool resources. Discussions, however, exposed that farmer organizations in the study areas have a low capacity to exploit the available opportunities to improve household food security. *“We have no access to external markets; most of the output is sold to agents at farm gate prices. This has greatly demoralized us and has kept our household income very low,”* A member of one of the farmer groups explained. Results also indicated that most of the access and community roads are in deplorable conditions. A similar study in Ghana by Asibey-Bonsu (2012) found that 13% of farmer organizations had access to the market, and only 24% had access to farm inputs.

Challenges faced by farmer organizations

Households were asked to mention the challenges they face in achieving household food security. The following were identified; (i) Inadequate modern storage facilities, which fructuates the idea of output collective centers *“ Available storage facilities are weak with no security measures. Most times, thieves break into the stores and steal all the foods. Modern metallic granaries can be a solution but are very expensive given our income levels,”* A member narrated during the intervies. (ii) Low tradable output due to low production and productivity resulting from harsh climatic conditions, inadequate extension services, and low use of modern farm inputs. *“Because of the poor climatic conditions characterized by very long dry spells and rainy season fluctuations, crop yields are deficient and . increased levels of pests and diseases aggravate the situation”* a female member explained. (iii) Low market accessibility to better external markets because of the poor transport and communication networks especially in rural areas. Farmers resort to selling their produce to middlemen and local traders to avoid high transaction costs. This result in low profit due to low prices and low bargaining powers, resulting into low household income and household food security.

These findings confirm the quantitative findings that farmer organizations have not benefited from their objectives. The above findings are similar to findings by other scholars (Adong, 2013; Mwaura, 2014; Negi et al., 2018; Kujur et al., 2019; Bizikova et al., 2020)

CONCLUSION

Both qualitative and qualitative results indicate a positive but low relationship between farmer organisations and households’ food security, suggesting that farmer organisations have a weak effect on household food security in the Acholi sub region region. The study further shows that most farmer organizations are not active, experiencing many challenges, including low access to market information, markets, low prices, and inadequate storage facilities. moreover the findings indicate that if well supported farmer organisations are capable of increasing household food

security in the Acholi sub region. However, the future of farmer organisations in achieving households' food security in Acholi sub region depends majorly on the working environment of farmer organizations in terms of their membership size and their ability to increase production, access market information, and input and output markets. It is expected that the contribution of farmer organisations to household food security will improve if the identified challenges are addressed.

RECOMMENDATIONS

This study identified several recommendations for this objective to be achieved.

1. Study results indicated low household awareness of the role of farmer organizations in promoting household food security. Through the Uganda National Farmers Federation and other non government farmer organizations, the study recommends more capacity building and awareness campaigns on the role of farmer organizations in achieving household food security to bring up the size of membership from 35%, as descriptive findings indicate.
2. There is a need for coordination and linkages between informal and formal farmer organisations through the national farmers federation and any other national and international farmer and agricultural organizations. Results show that over 80% of farmer organisations membership is in informal farmer groups not registered by the government.
3. There should be a platform by the government to increase access to external markets through bulding available national and international market networks for better functioning of farmer organisations.
4. There is a need for government to establish local communication channels through which agriculture and market information can be communiucated to all agricultural stakeholders right from the grassroot.

AREAS FOR FURTHER RESEARCH

Study results gave enough evidence to accept the hypothesis that farmer organizations are positively related to households' food security in the Acholi sub-region. The study recommends another study investigating the causes of households' food insecurity in the Acholi sub-region. Furthermore, research findings demonstrated that the achievement of farmer organisation objectives of increasing production and productivity, access to markets, and market information has not been achieved. The study suggests a comprehensive study to investigate reasons for the low achievement of farmer organization objectives in the Acholi sub-region.

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