

Women Smallholder Farmers Access to Agricultural Extension Services; Challenges And Prospects. A Case Study of the Builsa South District of the Upper East Region of Ghana.

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Abstract

Agriculture does not only serve as an important source of rural livelihoods in the Builsa South District and for that Ghana but also makes vital contributions to the country's economy. Rural women are major agricultural producers especially at the household level where they are seen as backbone of the family. Despite their recognition in their role in the agricultural sector, the study revealed they have least access to agricultural extension services with 55% access being average, 23% indicating low access and 22% having high access to extension services. There are many constraints which are being faced by smallholder women farmers in getting access to extension services (IFPRI, 2020). To explore challenges women face in accessing agricultural extension services in the Builsa South district, the research adopted a convenient sampling technique in the selection of the study respondents. Data was collected over two week's period in the month of July, 2021 from 150 women small holder farmers. Both qualitative and quantitative methods of data collection were used and analysis was done by using Statistical Package for Social Scientist (PSS) software. The results showed that women farmers' access to agricultural extension services was limited. Among different challenges which hinder women's access to agricultural extension services were cultural constraints, low literacy levels among women, non-availability of female extension staff in agricultural extension departments, lack of local women organizations, violence against women, limited access to credit facilities, less control over resources, social structure, and limited access to market information, mobility and lack of

self-confidence. Based on the findings, the study concluded that for women to make meaningful contributions in increasing agricultural productivity it is necessary that more Agricultural Extension Services (AES) be provided to women farmers and their accessibility increased. Women will also be required to work in groups and seen leading the process of accessing extension services from Department of Agricultural Development Unit (DADU). Similarly, the study further suggests for a strong advocacy movement for government and non-government development partners to train community extension agents who can support DADU in extension delivery. Communities will need to be empowered to lead their own development efforts in a more holistic and comprehensive manner. To this end, the study recommended the need for emphasis to be placed on women extension agents so as to be able to address the gender, cultural and social barriers associated with extension services.

Index Terms: Agriculture, Extension Services, Smallholder, Farmers, Challenges and Prospects.

1.0: Introduction

The study explored the challenges and prospects rural women face in accessing Agricultural Extension Services in Builsa South District of the Upper East Region of Ghana. Agriculture is the cornerstone of the Ghanaian economy (Pealoré 2012). Besides being the largest single source of foreign exchange earnings for the country, it also produces the bulky of the food consumed locally. Specifically the sector contributes about 25% of the country's Gross Domestic Product (GDP) and accounts for 65 percent of the export earnings and provides livelihood (employment, income, and food security needs) for more than 80 percent of the Ghanaian people. In Ghana, as in many other regions of the developing world, women constitute more than 80% of the agricultural producers. While women in Ghana produce more than 60% of the food consumed in the country, they face severe constraints than men in accessing productive resources including markets, credit, education and training, and support services such as agricultural extension services. Closing the gender gap in agriculture would produce significant gains by increasing agricultural productivity, reducing poverty and hunger and promoting sustainable rural development. Although the participation of rural women in agricultural production at the household level is higher and they spend more time than men in agricultural related activities their work has not been recognized and documented both at the national and international levels (IFPRI, 2020). Even though the agriculture sector is increasingly becoming more technologically sophisticated, commercially oriented and globally integrated, women have little access to agricultural information provided agricultural extension officers. Most of the AESs and programmes that provide training and assistance to small scale farmers tend to target men because they are the household heads and often more access to productive resources such as

land. In the process women who constitute more than 70% of the farmers are overlooked. Due to this reason, rural women face a number of constraints which negatively affect their role in agricultural production. The government of Ghana has identified the agricultural sector as one of the key drivers in achieving Ghana Beyond Aid Plan 2021, and achieving the Millennium Development Goals (MDGs). Towards this end, various policy measures and programmes such as Planting for Food and Jobs (PFFJ) have been put in place to increase agricultural productivity and production. One of these measures is the provision of AESs to farmers so as to help them to optimize their use of limited resources available to enhance agricultural productivity and food security in the country. The main aim of agricultural extension services is to provide small scale rural farmers with the latest information and agricultural technologies to both the gender (male and female) at their door steps in order to eradicate poverty and hunger through sustained growth in the agricultural production. But rural women who are the major contributors to agricultural production face many problems and challenges in accessing extension services. The study therefore designed to find out challenges women in the Builsa South District in the Upper East Region of Ghana faced by farm in their quest to access AES.

2.0: Literature Review

2.1: Women Access to Agricultural Extension

According to the Centre for Agriculture and Bioscience International (CABI) 2020 there is the need for government to extend agriculture extension services to female smallholder farmers across Ghana especially among rural communities. In conducting a Gender and Rural Advisory Services Assessment in Ghana, CABI, 2020 urged stakeholders in the agriculture extension services need to create an enabling environment for female farmers to access extension advisory services. In supporting this findings, Pealore (2021) emphasized the role of raising awareness among community leaders and men of the benefits of such services had for the whole household and community. Pealore (2012) in accessing the role of irrigation farming in the Tono Irrigation dam in the Upper East Region acknowledged the poor extension services especially for women farmers and how that affected yields and incomes. Generally, female farmers have limited access to extension advisory support including plant health services due to various challenges such as low levels of financial resources, inadequate access to technology and information, weak institutional systems that support women extension and many others (Pealore 2020). The outcome of this is that, it has significantly contributed to the gender gap in agriculture productivity in the Ghana and globally, which if addressed strategically would boost agriculture production and help improve the welfare of rural households and food security (IFPRI–World Bank. 2010). According to Lindiwe (2012) because of women’s dominant presence in all aspects of smallholder production, ensuring policy priorities taking into account their needs and socio-

economic conditions is imperative. Yet including women in agricultural policy processes in sub-Saharan Africa will require a significant change in approach to overcome such challenges as low literacy rates and the logistical and cultural barriers to participation of rural women in public decision-making process (CARE, 2012). Pealore (2020) argues the need for what he calls true participation; a process where technologies, problems and solutions are designed by communities rather than prescribed for. This can be achieved by better understanding the cultural and social set up of communities. Unfortunately, development agents or planners and doors (partners) are quite distant from this reality and tend to define the development path for communities (Pealore 2020).

2.2: Constraints and opportunities women and extension strategies

The constraints affecting rural women's ability to improve yield, profit, and efficiency in agriculture include (1) women's legal and cultural status, which affects the degree of control women have over productive resources, inputs such as credit, and the benefits which flow from them; (2) property rights and inheritance laws, which govern access to and use of land and other natural resources; (3) the relationship among ecological factors such as the seasonality of rainfall and availability of fuelwood, economic factors such as product market failures, and gender-determined responsibilities such as feeding the family, which trade off basic household self-provisioning goals and care of the family against production for the market and (4) the way that agricultural services are staffed, managed, and designed (FAO, 2015).

Also, a study conducted by World Bank, (2012) shows that in practice, women farmers tend to rely on rain-fed agriculture, and have poor access to inputs (fertilizers, seeds and water), to extension (most extension agents are men), to credit, and to markets for their products. Women either own small pieces of land or have no land at all as confirmed by Pealore (2021) studies on the participation of beneficiaries and stakeholders in the development of the irrigation component of the Northern Rural Growth Program in Ghana. Lindiwe (2012) further built on these findings and indicated that in Africa, women receive 7 percent of extension services, 1 percent of all agricultural credit and own only 1 percent of the land. Women also bear the brunt of the burden of providing social protection services both to vulnerable people within the immediate family and those in their community. This limits their potential as agricultural producers. At the same time, by force of circumstance or by culture, women are often highly resilient, able to turn their hands to many different tasks and to find ways of overcoming obstacles (Lindiwe, 2012). CARE international in their CARE's Pathways to Empowerment Programme also amplified the need to implement and scale up their successful model of increasing women's access to quality agricultural resources like land, water, markets, agricultural training and services through collective actions, Village Savings and Loans groups and other empowerment programmes (CARE. 2012). These are all interventions that seeks to acknowledge

the challenges faced my women in extension services and the need to address them through strategic approaches.

Women play a significant role in the agricultural sector such as poultry production, livestock and crop production; hence, a large percentage of rural farmers are women. As a result, women contribute directly to household food security and the well-being of children. Their role in nutrition is therefore very paramount (Pealore, 2020). The deliberate and conscious inclusion of women in agricultural extension is therefore to be seen as one of the productions systems that help to address gender inequality in agriculture. However, in many countries, women in poultry production operate under greater constraints (Tabler et al., 2020). The common constraints that women face in all the sectors are lack of education, limited access to credit and input, land availability and tenure, lack of suitable farm and household technology and training centers (Hassan et al., 2012). Rural women in Ghana contribute significantly in almost all activities related to both livestock and crop production. As women in Ghana spent most of their time in the homestead (Gebre et al., 2021), they are heavily engaged in household chores which often is not measured as productivity. Very significant also is the fact that women are often seen producing very nutritional and yet cultural crops such as beans, leafy vegetables and others are readily consumed by households. In addition to women addressing personal family's diet, they are able to sell their produced during lean season to generate cash revenue (Padhi, 2016), and 90% of the income under the control of women is channeled back into their households (Wong et al., 2017). Hence, women's involvement in agriculture helps the household to reduce poverty and food insecurity (Padhi, 2016) through increased distribution of resources to women's family members. Despite their critical role in household nutrition and income, the agricultural extension services do not reach the majority of the women in rural Ghana. This applies to this study area too which is in the Builsa District of the Upper East Region of Ghana. Therefore, this study identifies the factors that affect women's access to agricultural extension services in Ghana.

2.3: The Cultural Dimension of Women Access to Extension Services

In Africa and for that Ghana, culture plays a very significant functioning of the general being of society. This ranges from all the livelihood capitals of society such as social, political, economic, physical and human. As argued by Gebre et al., 2019 and Lemma et al., 2020, due to socially defined roles and identities, women in many developing countries including Ghana lack access to extension services, land, agricultural inputs and professional opportunities in agricultural extension (Gebre et al., 2019; Lemma et al., 2020). Evidence shows that when women are the targets of extension services, both women and their children benefits, as women invest more portion of their income in the family than their male counterparts (World Bank, 2012). If extension services are to be useful to women, they must take into account the unique social, cultural and economic contexts of women. The gender of the facilitator can also be an important part of the context. It is widely believed that women in sub-Saharan Africa prefer working or

need to work with women's extension agents (Diaz & Najjar, 2017). Increasing the number of female extension agents to overcome cultural barriers in communication between male extensionists and female farmers, which so far have resulted in few visits to female farmers. There is therefore the need for various development actors to consciously design initiatives that allows women extension agents with a very strong technological advancement that fits very well within the local context. Digital extension using local dialect at no or very minimal cost will allow rural poor and women have access to extension delivery while also addressing the cultural barriers.

According to Fiasorgbor (2021), extension provisioning in Ghana is a challenge for all farmers. Though there are regional as well as ecological variances in the concentration of extension deficits. Farmers in the southern especially for forest ecological zones have better access to extension services compared to those in the coastal and savannah zones. Though Fiasorgbor (2021) study did not indicate the type of extension and which commodities, there is a general conclusion which might not be the case. As observed by Pealore (2012) vegetable extension services is a new area and will require a specialized approach compared to general agricultural extension services (Pealore 2012). It is however important to note that, these ecological disparities, can largely be traced to not only colonial rule, which have not seen much improvement as argued by FAO (2015). In addition to regional differences, the FAO (2013) notes that gender differences in extension services become more distinct than other resources. This is supported by the World Bank and the International Food Policy Research Institute's study, conducted in 2010, which reveals that contact between extension officers and farmers is usually low and even lower for women. The study found that the number of male farmers visited by extension officers vacillated between 10% and 13% as against less than 2% for female farmers (FAO, 2013). Similarly, studies conducted by Bortey-Doku Aryeetey (2013) shows that the lack of equality in accessing extension services for women is due to various reasons, which cultural and other factors come to play. In buttressing this argument, Pealore (2012) noted the shortage of women extension officers coupled with unconscious and deliberate efforts by government to prioritize the need to train women in the extension service delivery. Agarwal (2011) alluded that communities with engrained patriarchal values, like the northern regions; cultural limitations on the degree to which female farmers can interact with male extension officers additionally narrows women's access to extension services. More so, extension services focus on cash crops to the neglect of staple foods or subsistence crops; an area basically dominated by men where women venture at the risk of offending well established cultural norms (Agarwal, 2011). Women in agriculture face various difficulties, including inadequate access to training, machinery, and new farming technology. In very unequal societies, women lack the economic resources and capacity to invest in suitable agricultural technologies, and the knowledge to employ improved and sustainable agricultural practices (Zakaria et al. (2015).

3. Methodology

The study was conducted in four farming communities (Yerinsa, Chiok, Kasiesa and Naadema) in the Builsa South District of Ghana. The study adopted the descriptive survey research design in exploring the challenges women in the Builsa South District of the Upper East Region of Ghana face in accessing Agricultural Extension Services. A descriptive survey research design was thought to be the most appropriate as the purpose of this study is to provide a detailed description of the challenges women face in accessing AES. The study population comprised all women farmers in the study district whose main occupation is farming. The unit of analysis was the individual women who lived in the district with farming as a source of livelihoods. The study also included the staff of Builsa South Department of Agricultural Development Unit.

It proved rather difficult to establish the actual study population owing to the absence of a register of all women farmers in the district. Thus, the study dealt with a population of unknown parameters which together with time and feasibility. In the prevailing circumstances convenient sampling procedure was considered the most appropriate sampling technique for this study. By this method it was possible to interview only women who were easy to locate and willing to participate in the study. A sample of 100 women smallholder farmers were drawn using convenient sampling procedure with 10 DADU staff who were purposively selected and interviewed. Major data collection tools were interview guides, observations and key informant interviews. In addition to the primary data, extensive use of the existing literature and reports related to the study focus were used. Data was then cleaned up, grouped into two; the quantitative and qualitative data and analysed. The quantitative data was coded and with the help of SPSS analysed and presented in the form of frequency tables, and percentages. The qualitative data was subjected to thematic and content analysis and used to support the quantitative analysis in the study. The use of quotes from respondents were also used to describe and support statistical data.

4. Key Findings and Discussion

Out of a total of 100 female farmers interviewed, 94% were married with 92% within the ages of 18-64 years. More than half (57%) of female smallholder farmers could not read and write in English. In examining the type of farming system engaged by female farmers, the study found out that, out of 100 women farmers interviewed, only 4% are practicing livestock only compared to the 32% practicing crop farming only. Majority (64%) of women smallholder farmers are practicing both crop and livestock farming system as presented in table 1

Table 1: Farming System Practiced by Farmers

	Frequency	Percent	Cumulative Percent
Crop Farming	32	32.0	32.0
Livestock Farming	4	4.0	36.0
Mix Farming	64	64.0	100.0
Total	100	100.0	

Source: Field Survey; 2021

Respondents were asked how often they demand for extension services from Department of Agricultural Development Unit (DADU) of the District Assembly, 37% of the respondents said they often do while 63% said they do not often demand. Some of the services often demanded for included crop production practices such as seed variety selection, planting requirements, farm management and pest control. A 34 year female farmer in Kassiesa said:

“I planted maize on my field and after it germinated some of the plants had some strange disease with the leaves been eaten by insects. I was worried so I had to call on DADU extension officer to help me solve the problem.”

Another female farmer aged 42 years from Yerinsa also had this to say:

“I am a woman and you know how vegetables are important to us. I planted Okro in my millet farm this season. The millet germinated very well but the Okro did not then I planted the okro the second time and it did not germinate again. I called on DADU extension officer who helped me to do a germination test. We did it and finally he told me my seeds were not good. I still don’t know what the problem was.”

Contrary to these two women, a 40 year woman from Chiok had this to say:

“I mistakenly sprayed my maize farm with a chemical and needed DADU to advice me what I can do. I called them but they did not come to my aid. I visited their office and I was told an officer will come to my farm. As we talk, nobody has come to me but God being so great, I did not lose my crops”

In terms of level of access to extension services by women, 55% of women farmers felt their access to extension services was average while 23% felt it was low. Only 22% recorded very high access to extension services from DADU. Farmers who had low access to DADU extension services argue that, anytime they demanded support from DADU staff, extension officers either do not come or they come late when their services are no more needed. Similarly, the 55% women

farmers who rated their access as average explained that though they get the services required from DADU, it is often not timely.

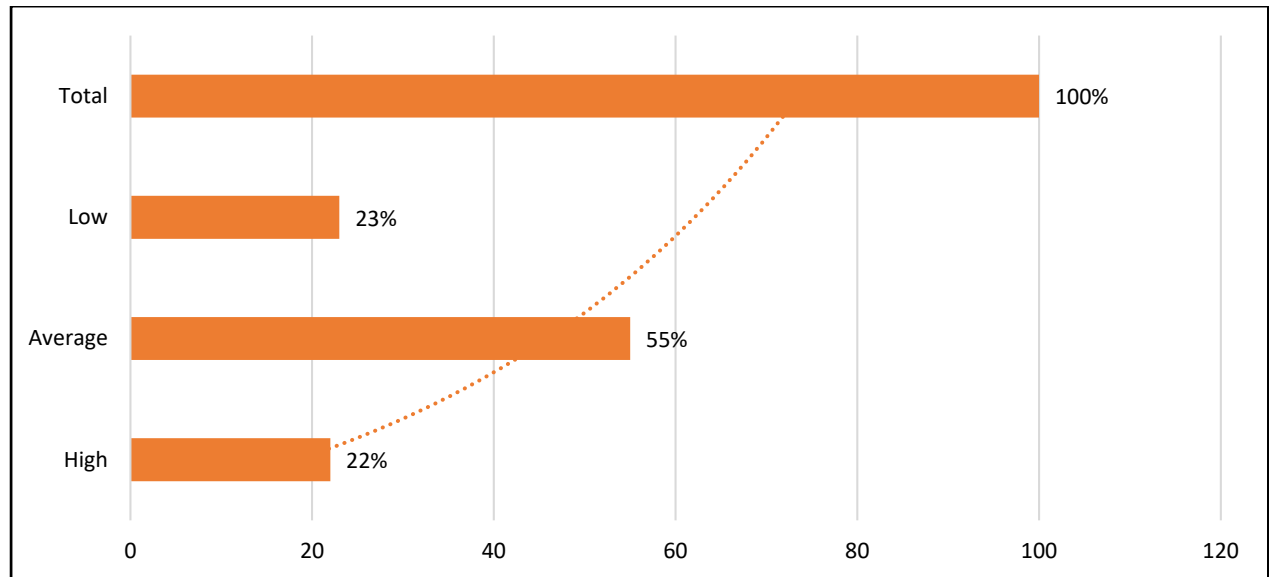


Figure 1: Level of Access to Extension Services by Women

Source: Field Study; 2021

Some of the services provided by the DADU is basically on agronomic practices such as type of pesticides control or management, seeds selection, ploughing services, planting spacing, timely harvesting, post-harvest losses management and others. This was commonly related to cash crops such as maize, beans, groundnuts and sorghum. In the livestock sector, extension services is provided to farmers on small ruminants, poultry and cattle. Women in irrigation farming are also provided with extension services in vegetables production techniques. Similarly, in exploring the level of satisfaction of services provided by DADU, the study shows that as high as 53% of women felt the extension services provided by DADU is average while 21% felt is poor with 26% recording good services as presented in figure 2.

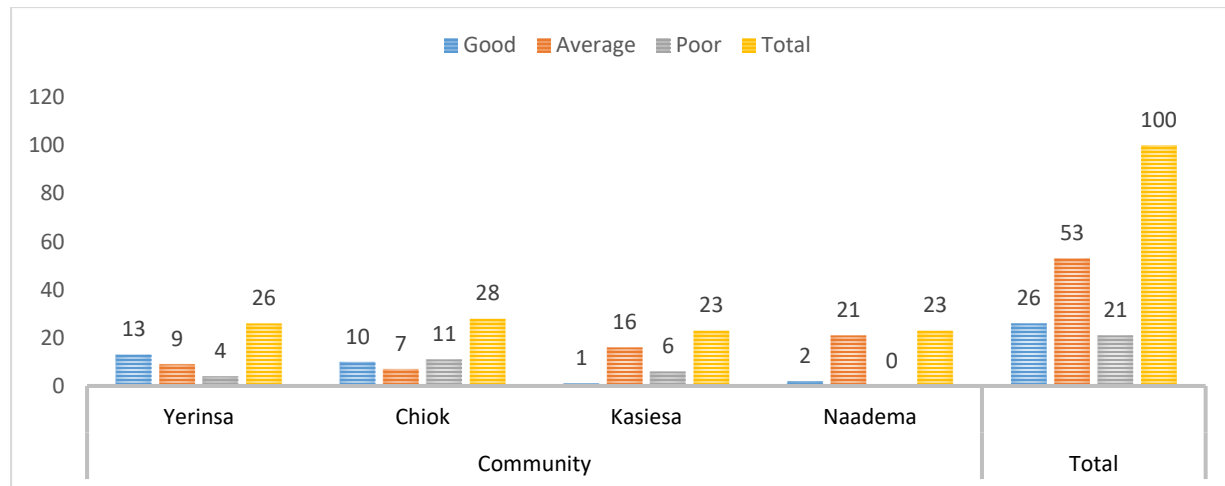


Figure 2: Women Level of Satisfaction to Extension Services

Source: Field Survey; 2021

In examining if there were any special extension services for women in the District, the study found out that out of 100% farmers, more than half (77%) of women farmers did not have any special extension service support while only 23% of women farmers argued that they were provided with special services. The study found out that, there are quite a number of challenges faced in the delivery of extension services. In assessing the perception of both smallholder farmers and DADU, a number of challenges were identified. Low agricultural extension officers which affects the coverage and quality of services provided to farmers. Similarly, it was observed by both farmers and DADU, that the poor road and communication network does not allow effective extension delivery in the District. The lack of resources such as motorbikes and fuel by extension officers was identified as an obstacle to reach more farmers. Similarly, the study revealed that, illiteracy level of farmers was also identified as a major challenge on the side of DADU as the mode of communication is English while majority (over 96%) of smallholder farmers speak and understand the local language.

Despite the challenges faced by women farmers in accessing extension services in the District, farmers have adopted a number of coping strategies as presented in table 5

From the table 3, it is evident that half (50%) of respondents relied on their own knowledge and experience in addressing their extension service's needs. A total of 28% of the farmers relied on peers for extension support. Similarly, 11% felt they had no choice than to rely on DADU if they need services with 11% indicating they actually do not have any challenge hence do not require any form of extension services in the District.

In assessing how extension services delivery could be improved, the assertion revealed, there is the need for DADU extension officers to be provided with logistics such as motorbikes and fuel so as to be able to reach more farmers. The study also highlighted the need for the government of Ghana to recruit more agricultural extension officers especially women farmers since gender plays a very important role in the cultural setting of the district. As a result of flaws in the public

extension system, it will also be appropriate to develop the private sector type of extension service. The privatized agricultural extension initiative will be provided by private companies, non-governmental organizations (NGOs), community-based organizations (CBOs), and faith-based organizations (FBOs). This is private extension with little or no government participation. The Private Delivery Systems will be more accountable by improving the policy framework for agriculture and agribusiness, strengthening implementation capacities for value chain development and by promoting development and dissemination of resource-friendly technologies. The Private Delivery Systems are keen on addressing aspects of gender in projects, as they normally offer agricultural extension in form of development projects, which have, at times, gender plans, articulating how the needs of both men and women farmers concerns will be addressed. It also means that the Private Delivery Systems will be mainly provided by NGOs and Farmer Based Organizations providing a blend of experience and best practices among the private and public sector.

In terms of demographic characteristics of the district, the study revealed that a significant proportion of 94% women were married with 92% within the working force ages between 18- 64 years. Marriage is a significant social capital in the study area just as it is perceived in the country. Marriage is a strong socio-cultural resource that is held with high esteem especially women who get to the age of 18 years and above where they are considered adults and are capable of taken responsible decisions. Marriage comes with some family responsibility especially when it comes to food requirement of households, health needs and general house chores. This additional responsibility therefore compels women to be active in the economic space of agriculture. Also, the district has also demonstrated very high women working population who can significantly contribute to the economic growth of the district and the country at large. As economic drivers, women role in the agricultural sector is critical in achieving sustainable food security and resilience both at the household and national level. To achieve this great potential, women farmers will require attention by way of extension support including marketing and general crop value chains development. Achieving this should not be a challenge considering the current 43% of women with formal education which is a reflection of the quality of the human capital of the district represented by women. Though the proportion of educated women in the district is less than half (43%) the ability of women to read and understand agricultural extension services delivery programs is encouraging.

In exploring the type of farming system practiced by women in the district. Having majority (64%) of women smallholder farmers are practicing both crop and livestock farming system is due to the fact that the study district is a patriarchal society. As a patriarchal society, men are entitled to land coupled with the type of compound farming system which do not allow women to have access to land for crop intensive farming. Until recently, women did not have the right to own and control livestock. Women now are able to buy and rear livestock often small ruminants such

as sheep and goats as well as poultry such as fowls and guinea fowl. Usually because of the small land size (0.5 -2 acreages) women have with the little financial capital available to them, they are able to integrate crops production and livestock rearing. Husbands and household heads are willing to release family lands for women use which is not the case for livestock. Livestock though a very significant livelihood diversification strategy among rural households, women are often limited in the acquisition of livestock though might have poultry (fowls and guinea fowls). Generally, having a mix of crops and livestock makes farmers more resilient but quite limited to few women farmers.

What I have observed on the field as a researcher and development practitioner in Northern Ghana is that the farming system has a lot of influence on the nature and type of extension support. There is more attention to crop extension compared to livestock while irrigation extension is often missing and shelved under the umbrella of DADU general crops extension. However, the study investigated how often women farmers demanded for extension services and it was discovered that less than half (37%) often do while 63% do not. Extension services demanded for included seed variety selection, planting requirements, farm management and pest control which is mainly on the crop production. This trend is also due to the fact that there are more women in the crop production compared to livestock. Nationally, there are shortage of veterinary officers which further makes it insensitive for livestock farmers in Ghana. A 34 year female farmer in Kassiesa said:

"I planted maize on my field and after it germinated some of the plants had some strange disease with the leaves been eaten by insects. I was worried so I had to call on DADU extension officer to help me solve the problem."

Another female farmer aged 42 years from Yerinsa also had this to say:

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From the three case studies taken, it is evident that women have access to DADU to make their request. In some cases, the request are being granted and at another point is not granted. This situation could affect productivity if the availability of the services to women farmers is not

granted timely. It was also observed during the interviews with farmers that, farmers who often demand for regular extension services do not get the services if they do not move to the DADU office physically. This situation of untimely services is due to the lack of means such as motorbikes to reach farmers. Also, information to DADU is always too short a time for them to respond as expected by farmers. Amidst COVID-19, there is the need for adequate utilization of extension digitization such as use of phone, radio and other social media technologies. Extension services should also be specific and focused in addressing women specific needs making the use of phone communication to address specific needs of women farmers. Farmers in all the study communities felt where their extension request is not met was a disincentive to them. However, DADU alluded that, because of inadequate staff and logistics it is often difficult for staff to move to all communities in the District to provide timely extension services. What this also means is that, there is the need for the training and equipping of Community Based Extension Services (CBES). The CBES should complement DADU efforts in bridging the farmer to extension officer ratio in the District. There is therefore the need for a strong private – government partnership in the delivery of extension services.

In also understanding the frequency at which farmers demand for extension services from DADU, the study revealed that women access in terms of availability, knowledge of source of access to extension services and timely response in addressing their needs has been a challenge in developing countries including Ghana. Having more than half (55%) of women rating their access to extension services on the average with 22% high means that generally extension delivery efforts can be improved with the needed support.

Similarly, in examining the satisfaction level of extension services provided by DADU, the study showed that as high as 53% of women in the District felt the extension services provided by DADU is average in terms of meeting their needs. The timely extension response and providing the needed technical support were not satisfactorily enough hence the average rating. What this means also is that, majority of women expect extension services from DADU hence an improvement in DADU extension unit will go a long way to meet the majority of women farmers.

The study further observed 21% of women rating the level of satisfaction of services provided by DADU as poor. This rating indicates that, women are not able to have timely access to extension services from DADU upon request and in cases where the request is granted, their concerns are not appropriately addressed. Similarly, only 26% of women in the district felt that the services provided by DADU was good as presented in fig 1. When asked why, respondent were quick to argue that, DADU is able to address their concerns when called upon on time. It can therefore be seen that, with the needed logistics in terms of equipment, human resources, DADU will be able to meet the needs of women smallholder farmers. The scarcity of resources coupled with limited human resources possess as a challenge for the department to provide extension services to

smallholder farmers. This is more challenging in the Builsa South District and other parts of Upper East due to the dispersed nature of settlement coupled with very weak Farmer Based Organization development in the region.

The culture and perception of society shapes and reshapes the way people live and their general way of doing things. This is more true in a society where norms and cultural beliefs are its fabric. Recognising this, coupled with the significant role of women in providing household food security and nutrition, there is the need for women to have special extension services. Such services include the assignment of women extension officers to women smallholder farmers. This is very essential as it allows a full participatory process in the extension delivery. It also allows farmers to express and articulate their concerns as they engage with their colleague women. From the study, out of 100% more than half (77%) of women farmers did not have any special extension service support as presented in figure 3. Also, as demonstrated in figure 3, only 23% of women farmers argued that they were provided with special services. These findings suggest that, there is the need for government, DADU and development partners to begin to engage women in the extension service. This can be done through community based extension service provision or professionally training more women in agricultural extension.

In assessing the challenges women farmers face in accessing extension services from DADU, the study found out that, there are quite a number of challenges faced in the delivery of extension services. According to farmer's, DADU has low agricultural extension officers hence are not able to visit most communities on time. This revelation is confirmed by the management of DADU. As a result of this situation, Agricultural Extension Officers are not able to attend to individual farmers as and when it is needed. This phenomenon affects the coverage and quality of services provided by DADU to farmers. Group's extension services is also not very effective due to the few officers the Department has. Similarly, it was observed by both farmers and DADU, that the poor road and communication network does not allow effective extension delivery in the District. The lack of resources such as motorbikes and fuel by extension officers was identified as an obstacle to reach more farmers. With this limited logistics, DADU is compelled to only get in touch with farmers their resources can allow. This is more aggravated by the scattered settlement pattern system which does not allow the effective formation and functionality of Farmers Based Organizations (FBOs). It also adds more cost to DADU as more distances will have to be covered to reach fewer farmers.

Despite the challenges faced by women farmers in accessing extension services in the District, farmers have adopted a number of coping strategies. The study found out that, half (50%) of respondents relied on their own knowledge and experience in addressing their extension service's needs. This also means that farmers are able to store and apply knowledge acquired over time and as such experience plays a very significant farmer production system. A 65 year female farmer had this to say;

“I have been farming groundnuts for over 40 years and I think I have so much experience to teach other women. I know when to plant and how to do it to get good yields. Sometimes I apply ash on parts of the farm when I realise insects are trying to invade it. I also uproot some of the groundnuts when I see they are infested. I teach my colleagues so they sometimes call me to provide my experience and knowledge”.

This statement by the woman demonstrate that, there is a higher potential to train and equip communities with women extension officers. Government and other development partners will therefore require to prioritise this approach in Districts like the Builsa South. A total of 28% of the farmers relied on peers for extension support. This is much expected as farmers often learn faster from each other. There is much trust and interaction among peers hence there need for community based extension development approach. Similarly, 11% felt they had no choice than to rely on DADU if they need services with 11% indicating they actually do not have any challenge hence do not require any form of extension services in the District.

The study also assessed how extension services delivery could be improved. The assertion revealed, there is the need for DADU extension officers to be provided with logistics such as motorbikes and fuel so as to be able to reach more farmers. The study also highlighted the need for the government of Ghana to recruit more agricultural extension officers especially women farmers since gender plays a very important role in the cultural setting of the district. As a result of flaws in the public extension system, it will also be appropriate to develop the private sector type of extension service. The privatized agricultural extension initiative will be provided by private companies, non-governmental organizations (NGOs), community-based organizations (CBOs), and faith-based organizations (FBOs). This is private extension with little or no government participation. The Private Delivery Systems will be more accountable by improving the policy framework for agriculture and agribusiness, strengthening implementation capacities for value chain development and by promoting development and dissemination of resource-friendly technologies. The Private Delivery Systems are keen on addressing aspects of gender in projects, as they normally offer agricultural extension in form of development projects, which have, at times, gender plans, articulating how the needs of both men and women farmers concerns will be addressed. It also means that the Private Delivery Systems will be mainly provided by NGOs and Farmer Based Organizations providing a blend of experience and best practices among the private and public sector.

5. Conclusion and Recommendations

In conclusion, the study showed that women farmers' access to agricultural extension services is limited due to many challenges. Among different challenges which hinder women's access to agricultural extension services were cultural constraints, low literacy levels among women, non-

availability of female extension staff in agricultural extension departments, lack of local women organizations. Based on the findings of this study it is concluded that for women to make meaningful contributions in increasing agricultural productivity it is necessary that more extension service officers especially women agents so as to increase women accessibility. The study suggests that for women to embrace modern agricultural practices there is an urgent need for private and public partnership in extension service development. The study further concludes that high costs of accessing extension officers and far location of extension officers are amongst the leading factors in inhibiting women farmers' access of extension services. Other factors are also responsible for limiting the access of extension services by women in Builsa South district, including culture where most male extension officers are male, limiting their contact with women farmers. The study confirmed there is inadequate extension service delivery due to DADU not having adequate resources both human and equipment.

The study therefore recommends the following as critical for effective agricultural extension delivery services in the Builsa South District.

1. There is the need for private extension service providers to be trained to complete the government efforts. This is very critical to address women access to extension services as well as augmenting the government failure to meet the 1 officer to 500 farmers ration in Ghana.
2. Extension services seems to be provided to only cash crops rather than traditional and or indigenous crops such as millet, bambran beans which are often dominated by women. It is therefore recommended that for Ghana to be food secured and resilient, there is the need for the district and for that matter Ghana to focus on food sovereignty through the development of traditional crops. This is even more urgent in the midst of COVID-19 and climate change.
3. The spread of the coronavirus disease across the globe has largely affected all sectors of the economy and the Builsa South District is not an exception. With the advent of this COVID-19, there is the need for DADU, development agencies such as LINK Ghana, World Vision Ghana, Action Aid Ghana, Association of Church Development Projects and SNV to digitize extension services through various medium including radios, phones and others in the extension delivery services. This will help reduce body hourly contacts while reaching several

smallholder farmers within the shortest possible time without any risk of spreading COVID-19 and other related diseases.

4. In addition, the study sees the need for centralized government to prioritise women access to agricultural extension by supporting them adequately through the establishment of irrigation and credit facilities to promote all-year round agriculture to help increase food crops production and incomes, it is also recommended that women in the Builsa South should have Women in Agricultural Development Movement (WADeM). A concept that will allow women smallholders to come together to identify and address issues that affect them.

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