



Gender and Rural Advisory Services Assessment in Ghana

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List of Acronyms

AEA	Agriculture Extension Agent
CEDAW	Convention on Elimination of All Discrimination Against Women
CSO	Civil Society Organization
FASDEP	Food and Agriculture Sector Development Policy
FGD	Focus group discussion
GADS	Gender and Agriculture Development Strategy
GRAST	Gender and Rural Advisory Services Assessment Tool
ICT	Information Communication Technology
MoFA	Ministry of Food and Agriculture
PPRSD	Plant Protection and Regulatory Services Directorate
RAS	Rural Advisory Services
RELC	Research Extension Linkage Committee
VSLA	Village Saving and Loan Association
WIAD	Women in Agriculture Development

Executive summary

Introduction

Women farmers in developing countries, including Ghana, face challenges in accessing extension advisory services, with most of those services geared towards the needs of male farmers. Alongside other challenges faced by women farmers, this contributes to the gender gap in agriculture productivity in developing countries, whereby women-managed farms are 20–30% less productive than farms managed by men. It has been estimated that closing this gap would help to boost agriculture production by 2.5–4%, improve food security and improve the welfare of rural households (FAO, 2011).

In the context of the launch of CABI's new PlantwisePlus programme in Ghana, which aims to enhance the knowledge and uptake of climate-smart plant health practices through responsive digital advisory tools, this report presents the results of an assessment of the current state of gender-sensitive extension services in Ghana, and provides recommendations for making improvements.

Methodology

The assessment used the Gender and Rural Advisory Services Assessment Tool (GRAST) developed by the FAO for assessing the gender sensitivity of rural advisory systems. This involved looking at three areas: the national enabling environment (policies, institutional structures, and resources); the organizational level (gender sensitivity of the organizational culture of extension service providers); and the individual level (skills, attitudes and motivations of extension managers and extension agents; and clients perception of advisory services).

A mix of data collection methods was used. To investigate the national enabling environment a desk review was conducted that looked at national policies and strategies on gender, agriculture and rural development, and poverty reduction; agriculture extension policies and strategies; Convention on Elimination of All Discrimination Against Women (CEDAW) reports; agriculture investment plans; and agriculture sector reports. Key informant interviews were also conducted with the Director of the Women in Agriculture Directorate (WIAD) and the Deputy Director of the Extension Services Directorate within the Ministry of Food and Agriculture (MoFA). To investigate the individual level (women farmers themselves), 12 focus group discussions (FGDs) were held with men and women farmers' groups in three districts (one in Central Region, one in Bono Region and one in Northern Region), covering about 96 farmers. To investigate the organizational level (extension services/providers), key informant interviews were conducted with district extension managers (two extension officers per district) and with Plant Protection and Regulatory Services Directorate (PPRSD) officers.

The data collected were analysed using qualitative methods, and the GRAST indicators were used to measure how gender-sensitive the delivery of extension services is in Ghana.

Findings

Findings on the national enabling environment

The policy framework in Ghana is favourable to ensuring advisory services are sensitive to the particular needs of women farmers. The Gender and Agriculture Development Strategy II (GADS II), the MoFA medium-term strategy and the draft extension strategy all identify women as potential clients of extension services, and GADS II and the National Development Planning Commission's Medium-term Strategy also commit to ensuring that at least 40% of beneficiaries of extension services are women (although this is modified to 30% by MoFA). Furthermore, there is a policy-level commitment to including gender equality goals as part of the performance evaluation of extension staff.

A key part of the national enabling environment is the role of WIAD, which focuses specifically on promoting technologies that help to reduce the workload of women in agriculture.

Findings on the individual level (women farmers)

Women farmers face many barriers to access extension services. A key barrier is social norms and attitudes, both within farmers' communities and among extension staff. For example, the assessment found that in the Bono and Central Regions women farmers themselves assume that extension activities are meant for men and so do not participate if their husbands are available, while some extension agents reported their belief that there is no need to target women members of households as only the (male) household head needs to be targeted.

Another important barrier is women farmers' time and mobility constraints. Unpaid care work and lack of access to transport is detrimental to women's participation in extension meetings. While extension agents usually consult farmers before deciding the time and date of extension activities, the mechanism for doing this is through Extension Contact Farmers and opinion leaders (village assembly members and chiefs), who are predominantly men, which means that in practice women are rarely consulted and their concerns in this area are likely to be deprioritized.

One barrier that seems to have been successfully overcome in the study communities is women farmers' literacy and educational constraints: while the literacy/educational level of farmers was found to be very low, with women farmers particularly challenged, the extension delivery approach has adapted to this by using oral and visual presentations and field demonstrations, which helps to improve the participation of (women) farmers. Less positively, and with particular relevance for PlantwisePlus, while ICTs (video clips, radio, TV, mobiles) can be useful in delivering extension services, they can also lead to exclusion for women farmers: the study found that, unlike men, most women in the study communities do not use radio, TV or mobile phones to receive agricultural information.

A key issue related to women farmers' uptake of extension services is ensuring their voice is heard. While extension services encourage women farmers to join farmers' groups, which theoretically enables them to demand and access advisory services, participate in joint saving and loan schemes, and share their experiences, in practice group membership is dominated by men, and women do not speak out and do not actively engage.

One of the most important barriers to women farmers accessing gender-sensitive extension services is their low levels of financial resources: women's lack of credit and the high prices of agricultural inputs were found to discourage them from participating in extension activities.

Findings on the organizational level (extension services/providers)

While there is a national policy commitment to ensuring at least 40% of beneficiaries of extension services are women, currently in the study communities the figure is between 15% and 30%. One reason for this may be that extension agents rely on Extension Contact Farmers to select and reach farmers; there are very few women Extension Contact Farmers, and male ones are likely to reach out to men more than women.

The study found that women farmers prefer women extension agents, as they perceive them to be more patient, understanding, responsive and respectful. However, currently only 16.7% of extension agents are women. This is just one part of the high gender imbalance in the agriculture sector, which extends to MoFA, agriculture officers and PPRSD staff. One reason for the low proportion of women extension agents is the particular challenges they face (a lack of public affordable child care facilities, a lack of suitable means of transportation, and security concerns when working in remote communities).

While the information provided by extension services covers the crops produced by women, and while women farmers deem this information relevant and useful, some shortcomings were noted in regard to how gender-sensitive the information/services provided are. First, the bottom-up prioritization process for extension services is facilitated by Research Extension Linkage Committees (RELCs), but it has been reported that the problems affecting women farmers are not identified and prioritized in RELC meetings. Second, extension agents do not carry out formal needs assessments or gender analysis, to understand the needs and information gaps of (women) farmers in their operational areas, and they also (at least in the study communities) usually have not received training on gender. On a more positive note, extension agents do collect sex-disaggregated data on technology adoption, which can help address the constraints faced by women farmers. Finally, in the study communities there was a tendency for extension services to support the organization of women's farmers' groups only around crops traditionally produced by women, such as cassava and tiger nut, where financial returns are limited. This may have the effect of limiting the horizons of women farmers.

Recommendations

Recommendations for the national enabling environment

Ensure the policy-level commitment to including gender equality goals in the performance evaluation of extension staff is actually implemented.

Recommendations for the individual level (women farmers)

Design interventions to shift attitudes and social norms, which are a key barrier to women accessing gender-sensitive extension services.

When extension trainings are organized away from the community, cover the transport costs of women participants and provide child care facilities.

Ensure extension agents do not rely solely on (male) opinion leaders and Extension Contact Farmers to connect with women farmers: instead, they should make efforts to reach out to women representatives in the community. (Raising the awareness of opinion leaders and male Extension Contact Farmers to be more inclusive would also be useful.)

Strive to ensure a balanced gender membership of mixed farmers' groups, so women feel more free to speak out. At the same time, provide leadership trainings for women members of groups, to help them build their confidence and assume leadership positions in these groups.

Explore ways to improve women farmers' access to credit, to close the gender gap in technology adoption.

Conduct an assessment to understand who uses the different ICTs that are utilized to communicate extension information, and research innovations that can enable women to use information communicated through these ICTs.

Recommendations for the organizational level (advisory services/providers)

Raise the awareness of extension agents on the need to ensure gender balance in the selection of Extension Contact Farmers.

Ensure a gender balance in extension trainings and meetings.

Take practical efforts to increase the number of women extension agents, including by tackling the challenges women face in the job (e.g. providing them with child care facilities, providing appropriate means of transport, and instituting working in pairs in remote communities).

Make a conscious effort to ensure the RELC-based prioritization process reflects gender and inclusion-focused issues, for example by ensuring adequate representation of women farmers, female extension agents and the WIAD personnel in the process.

Train extension agents on skills to conduct gender analysis in their operational areas, to develop more gender-sensitive implementation plans and to integrate gender in their work. Also, provide refresher gender trainings at regular intervals, coupled with experience sharing among extension agents on good practices of integrating gender in extension.

Ensure extension agents support women farmers' groups to diversify and engage in the production of new crops, which have more financial returns, to facilitate their economic empowerment.

Go beyond the mere collection of sex-disaggregated data collection in extension to also include qualitative analysis to understand underlying factors contributing to the gender gap and to support the planning and adoption of new strategies or approaches that help to address these factors.

1. Introduction

1.1. Background

CABI's work within the Plantwise program in Ghana and other countries has shown women farmers have limited access to extension advisory services. The challenges observed in the Plantwise Program are globally shared challenges in developing countries. Women not only have limited access to rural advisory services, but most of these services are also geared towards the needs of male farmers, with limited relevance to the needs of women farmers. This gender gap, along with women's limited access to agricultural inputs, contributes to the gender gap in agriculture productivity in developing countries, where women managed farms are 20-30 percent less productive than farms managed by men. Closing this gap would help to boost agriculture production by 2.5-4%, improve food security and welfare of rural households (FAO, 2011).

CABI's new program PlantwisePlus, aims to enhance the knowledge and uptake of climate-smart plant health practices through responsive digital advisory tools. This involves equipping agricultural advisory service providers with decision making tools to provide advice to farmers. As extension agents make use of new digital solutions and provide advice, we need to make sure both men and women farmers are able to access their advisory services and benefit from it. This study aims to help the program look at the agricultural extension advisory system in Ghana in a holistic manner and provide inputs that will inform the design and delivery of the work in a way that benefits both men and women farmers.

1.2. Objective of the study

The objective of this study is to understand what works in designing and delivering gender sensitive extension advisory services in Ghana and to shed light on areas where improvement is required in existing services in order to increase their gender sensitivity.

The following are key research questions that the study addressed:

- How are rural extension advisory programs designed and delivered to enable rural women to effectively participate and benefit?
- How are constraints, such as, time and mobility, literacy and lack of education that prevent women from accessing rural extension services addressed?
- What opportunities are there for women farmers to raise their interests and voice their needs in extension service delivery?
- What institutional mechanisms are in place to effectively implement gender sensitive rural extension services and hold extension staff accountable?
- How does the organizational culture of extension service providing organizations support women to work as extension agents and managers?

1.3. Methodology

The study used the Gender and Rural Advisory Services Assessment Tool (GRAST) that was developed by the FAO. The tool uses a holistic approach to assess gender sensitivity of rural advisory systems and identify strengths and areas of improvement in design and delivery of Rural Advisory Services (RAS).

The GRAST involves three levels of analysis, which are deemed necessary to achieve systemic and meaningful change. These include:

- **National enabling environment:** the inclusion of gender equality as a policy goal in national development, agriculture sector and extension policies; and commitment to implement the policies by setting up the necessary institutional structures and resources for implementation
- **Organizational level:** development of plans to deliver gender sensitive advisory services and gender sensitivity within the organizational culture of extension service delivering organizations
- **Individual level:** skills, behaviors, attitudes, motivations and values of extension managers and extension agents to provide gender sensitive advisory services; and clients perception of advisory services and needs for improvement

1.3.1. Description of the study sites

The study is conducted in three districts of three regions in Ghana: Central Region, Bono Region and Northern Region. The regions are selected to represent different socio-cultural contexts and agro-ecology zones. From the three districts, six study communities, two per district were selected. During selection of study communities in each district, effort was made to include one community located closer to the district capital and market centers and another community remotely located, away from urban centers.

1.3.2. Sampling and data collection

The study used desk review and qualitative data collection methods, such as, key informant interviews and focus group discussions.

The desk review included review of national gender, agriculture and rural development and poverty reduction policies and strategies; agriculture extension policies and strategies; CEDAW reports, agriculture investment plans and agriculture sector reports.

The key informant interview was conducted at the national level with the Director of Women in Agriculture Directorate (WIAD) and Deputy Director of the Agricultural Extension Services Directorate within the Ministry of Food and Agriculture (MoFA). At district level key informant interviews were conducted with district extension managers, two extension officers per district and Plant Protection and Regulatory Services Directorate (PPRSD) officers in each district. In total 14 key informant interviews were conducted.

Focus group discussions with men and women farmers groups were conducted in two communities, in each of the study districts. In total 12 focus group discussions were conducted with farmers and about 96 farmers participated in the discussions. Effort was made to include both women heads of households and women in male headed households in the selection of participants for women focus group discussions.

1.3.3. Data analysis

Qualitative method of data analysis was used to analyze the data. The indicators developed by FAO in the GRAST tool as measurements of gender sensitive delivery of RAS were used to aid the analysis of the data and interpretation of the results.

2. Overview of the gender gap in smallholder farming in Ghana

The agriculture sector in Ghana is predominantly made-up of subsistence smallholder farmers who cultivate about 82 percent of the total cultivated land and produce 80% of the total agricultural outputs (MoFA, 2007; FAO & ECOWAS, 2018). The sector employs 41 percent of the total working population (MoFA, 2018). Agriculture productivity is low due to low use of improved seed varieties/planting materials and fertilizers, lack of credit for farmers, rainfall variability and high dependence on rain-fed agriculture. Post production loss of crops is high due to poor storage, lack of transport and poor post-harvest handling practices (National Development Planning Commission, 2017). A complex land tenure system where land is usually communally owned threatens tenure security and affects investment on land, though efforts to improve the land administration and management system have started (MoFA, 2007).

There are several positive developments in the agriculture sector, in Ghana, in the past few years. Farmers access to agriculture mechanization has improved with opening of Agriculture Mechanization Services Centers (AMSECs) at district level. This has helped to increase the number of farmers using tractors, although the increasing cost of the service is a challenge for farmers (National Development Planning Commission, 2017). Community information centers established across the country, in market places and accessible locations, are helping to provide agriculture related information to farmers. The agriculture extension system has started using ICTs, such as, call centers, interactive voice response system, e-agriculture and e-extension portals and smart phones to provide advice to farmers. However, the extent to which these systems are accessible to both men and women farmers is not clear, as the information on the users of the systems is not disaggregated by sex (FAO & ECOWAS, 2018).

Women play a significant role in Agriculture in Ghana. According to the Gender and Agriculture Development Strategy II (GADS II) of Ghana, they are responsible for 70 percent of the total food production and make up 52 percent of the agricultural work force (GADS II, 2015). The Agriculture Investment Plan states 38 percent of women are employed in agriculture, out of total employed women (MoFA, 2018).

Women face several challenges in agriculture. They have limited access to land. Women in most places in Ghana have only usufruct right to land. They are excluded from inheriting land and they can easily lose their land when they divorce. While married women can access land through their husbands, they are usually given marginal, infertile land. Although land administration projects have tried to improve security of tenure for women, men still hold three times more of the total farms and eight times more of the medium and large-sized farms of five acres and above (Ministry of Gender and Social Protection, 2015; FAO & ECOWAS, 2018; MoFA, 2007).

Another key challenge for women farmers is lack of access to credit. Source of finance for smallholder farmers, in general, is very limited in Ghana. Financial institutions consider farming as very risky, because of low loan recovery rates; and don't usually provide loans to smallholder farmers. Most women do not own property and do not have collateral to enable them to borrow. They rely on informal sources, such as, village level saving and loan associations (VSLA). However, the amount of loan they obtain from these informal sources is not enough to cover investment costs in agriculture. Although the agriculture sector provides in-kind credit to farmers, its timeliness and grace period is not satisfactory for farmers (GADS II, 2015; MoFA, 2007; FAO & ECOWAS 2018).

There is a gender gap in access to agricultural inputs and technologies. The gender analysis conducted to develop the GADS II found that 33 percent of men have accessed new agricultural technologies compared to 12 percent of women. (GADS II, 2015). Use of agricultural inputs such as improved seeds and fertilizers and mechanization services is lower among women compared to men. Women have limited access to cash and find the price of inputs and services unaffordable. Agricultural machineries are usually not women friendly, or easy to manage for women. Training and demonstration activities usually target men. There are limited appropriate women friendly labor-saving technologies introduced to women. (GADS II, 2015; FAO & ECOWAS, 2018)

Women's access to extension services is the focus of this research report and it will be discussed in detail in the next sections. While gender analysis done for development of GADS II in 2015, showed a huge gender gap in access to extension services, with 34.4 percent of male farmers and 9.5 percent of women farmers reporting frequent access to extension services, a recent country gender profile mentions improvement in closing this gender gap (GADS II, 2015; FAO & ECOWAS, 2018). The gender gap in access to extension is attributed to extension agents failing to take account of women's unpaid care work, while planning meetings and trainings; reliance on farmers' contact persons who are usually men to disseminate extension messages; the low number of female extension agents and socio-cultural factors affecting women's ability to participate in extension events. (GADS II, 2015; MoFA, 2007; FAO & ECOWAS, 2018)

2.1. Description of gender roles and relations in crop production in the study sites

In the study communities, in the three regions, both men and women participate in crop production activities. Men and women from the same household often manage separate plots of land. Women work on farms managed by their husbands, in addition to their own. On joint family plots, women usually participate in planting, applying fertilizers, weeding, harvest and post-harvest processing of crops. If men are engaged in off-farm employment, women do all the farm work. This is common in one of the study communities in Central region, where men are often engaged in fishing and artisanship.

Men and women farmers often cultivate and control different types of crops. Smaller size of land, lack of money to buy agricultural inputs and to hire labor and tractors, prevent women from cultivating certain crops. For example, in the Northern region study communities, women do not cultivate crops like rice and yam, which are mainly grown by men. Sometimes farms are located far away from the community, as in the case of rice cultivation fields in Yendi district in the Northern region; and lack of a means of transport, such as motorcycles, which are mostly owned by men, prevent women from acquiring land to farm. In Bono region, although men and women grow similar crops, they have different levels of control on crops. For example, when intercropping is used and maize is grown together with okra, pepper or other vegetables, women control the income from the vegetable crops, while men control the income from maize.

Crops commonly grown by women in the three study districts include soybean, groundnut, tiger nut, vegetables like pepper and okra, cassava, maize and coconut.

Women in the study sites were able to access land through plots allocated to them by their husbands, through inheritance – though most of the parental lands are transferred to male children, through community land allocated to women or through renting. Women hold much smaller sizes of land compared to men. In the three districts. Women's average land holding size ranged from half an acre to three acres, while men's landholding ranged from four to six acres.

3. The National enabling policy environment

3.1. Ratification and implementation of CEDAW

Ghana has signed international conventions protecting the rights of women, such as, the CEDAW convention and the Beijing Platform for Action. The country has established a Ministry of Gender and Social Protection that coordinates activities to promote gender equality across other ministries, municipalities and districts. It has developed a national gender policy that has broad objectives of realizing women's economic empowerment through access to economic opportunities; promoting decent work and addressing disparities in education, health, agriculture, trade and other sectors. Ghana has also adopted an affirmative action policy that requires setting 40 percent quota for representation of women in all public decision-making positions, although it hasn't yet been implemented (Ministry of Gender and Social Protection, 2015).

Article 14 of the CEDAW convention focuses on rural women and calls for elimination of all discrimination against rural women; requests states to ensure rural women equally benefit from development interventions in rural areas, access agricultural credit, technologies and market. States are required to report periodic progress reports on implementation of articles of the convention (UN General Assembly, 1979). Ghana's last report in 2012 shows progress in improving rural women's livelihoods through involvement in new livelihood opportunities, such as, production of shea nuts; and through participation in enterprise development programs on horticulture production and agro-processing targeting women (CEDAW state report, 2012). Shadow reports presented from civil society organizations, on the other hand, showed persisting gaps in access to land, agricultural mechanization and inputs for women (Civil Society Shadow report, 2012). The CEDAW committee's concluding remarks highlighted high level of illiteracy among rural women, exclusion from decision making and limited access to land as persisting gaps affecting the empowerment of rural women (CEDAW Committee, 2014).

3.2. National policy for gender equality and women's empowerment in agriculture and rural development

Ghana has developed a gender strategy for the agriculture sector. It is currently implementing a second phase Gender in Agriculture Development Strategy (GADS II) developed in 2015. The strategy aims to guide the Ministry of Food and Agriculture (MoFA) and its decentralized departments, as well as, its development partners, such as, donor agencies, Civil Society and private sector organizations on how to integrate gender in agriculture in Ghana. The strategy has nine objectives namely: strengthening the institutional capacity of MoFA for development of gender responsive policies and programs; equitable delivery of agriculture services and inputs; equitable access to land; development and dissemination of gender sensitive technologies in agriculture value chains; developing gender responsive agri-business; improved inclusion of gender issues in agriculture research and equal representation of women in agriculture decision making platforms. The strategy further outlines sub strategies and actions plans with broad activities to implement these objectives (GADS II, 2015).

3.3. Gender equality and women's empowerment in national food and agriculture, food security and poverty reduction policies and strategies

In Ghana's current national medium-term development policy, attaining gender equality and women's empowerment in political and socio-economic development of the country is put as a policy goal. The policy commits to attaining a gender balance in all public decision-making positions, to instituting a gender responsive budgeting system and to take measures to change social and cultural norms that are barriers to gender equality. The policy sets targets for minimum proportion of women to benefit from funds to support women's enterprises and micro-finance loans. It commits to undertake interventions that ensure women's equal access to land, improve women's access to skills and income generating opportunities (IGAs) and institute fair pay conditions of service in the formal and informal economy (National Development Planning Commission, 2017).

In the agriculture sector, the Food and Agriculture Sector Development Policy (FASDEP II) states that all policies and programs will be designed from a gender perspective. FASDEP II recognizes women's role as farmers and producers and the different needs and constraints women farmers have as a result of unpaid care work responsibilities that undermine their productivity. It mentions that gender mainstreaming in the agriculture sector is guided by the Gender and Agriculture Development Strategy (MoFA, 2007). The agriculture sector medium term strategy developed in 2018 puts a lot of emphasis on gender mainstreaming. It highlights the need for institutional capacity building on gender mainstreaming, the need for integrating gender in extension programs and ensuring relevance of advisory services to men and women farmers, equitable access to services and sensitization of farmers and opinion leaders on gender equality (MoFA, 2018). The Ministry of Food and Agriculture has set a target that at least 30 percent of the beneficiaries of all agriculture development programs and interventions should be women (interview with WIAD director).

3.4. Gender equality and women's empowerment in national agriculture extension policy

The agriculture extension strategy available in draft form mentions that the national agriculture extension system will ensure adequate extension service to small-scale resource poor farmers, with special attention to women, youth and people with disability. It recognizes that women and other vulnerable groups have different needs; and strategies should be developed to address those needs, although it does not go into detail to mention the strategies (MoFA draft extension strategy). FASDEP II recognizes women's limited access to extension services and stresses the need to integrate gender in extension programs to improve relevance of extension services and accessibility to women farmers (FASDEP, 2007). One of the objectives in GADS II is gender responsive delivery of extension services. The strategy outlines action points, such as, increased recruitment of female extension staff, where possible, adapting women extension volunteers' approach and setting a target to ensure at least 40 percent of extension service users are women (GADS II, 2015).

3.5. Gender responsive budget allocation

There is a national provision for allocation of budget to gender programs. The National Development Planning Commission requires government ministries, departments and agencies to allocate at least 40 percent of their budget to programs that have objectives of enhancing gender equality and women's empowerment. However, this is not implemented in MoFA and other ministries (FAO & ECOWAS, 2018). It appears that the initiative to introduce gender responsive planning and budgeting, with guidelines provided by the ministry of finance has stalled. There are women's empowerment focused agriculture development programs implemented by the WIAD directorate of MoFA, which focus mostly on improving nutrition, supporting women's groups in food processing and value addition. The programs are mostly supported by donor agencies and the WIAD directorate is affected by shortage of funds, especially at regional level, to implement programs (Interview with WIAD Director & Extension Deputy Director).

3.6 Oversight and accountability mechanisms

A Women in Agriculture Development Directorate (WIAD) is created in MoFA, with a mandate to coordinate the implementation of the Gender in Agriculture Development Strategy of the ministry. As part of this mandate, the WIAD directorate develops and implements programs that promote the livelihoods of women and youth in agriculture value chains, food-based nutrition in relation to diet improvement; value addition to agricultural produce; food safety in markets and processing sites etc. In addition to implementing targeted women's empowerment programs, the WIAD directorate supports other directorate and departments to mainstream gender in their programs. WIAD also builds the capacity of MoFA staff on gender through trainings and supports MoFA's M&E team to incorporate gender indicators in the Ministry's M&E framework and tracks gender results (Interview with WIAD director & Extension deputy director).

WIAD has regular coordination platforms with other key sector ministries, including the Ministry of Gender and Social Protection, Civil Society and Private Sector Organizations. It also provides technical assistance to municipal and district assemblies in policy, planning and implementing of gender related food security and agriculture issues (Interview with WIAD director).

4. Challenges for accessing and benefiting from RAS: the user's perspective

4.1. Recognizing women as legitimate RAS clients

Extension agents provide advisory services on crop and livestock production, post-harvest processing and nutrition to farmers in the three districts. PPRSD officers provide advice on disease and pest management. In Bono region, with additional support from a donor agency, extension agents run a farmers' business school and teach farmers to do farming as a business, training them on keeping records of expenses, production and income. Extension agents support farmers to organize into farmers' groups and start saving and loan associations. They support farmers' groups to register and access loans from financial institutions.

Farmers that are usually targeted in extension activities are smallholder farmers cultivating less than five acres of land. There are no fixed criteria used for selection of farmers to participate in extension activities. However, since extension agents usually use farmers' groups to reach farmers, membership in a farmers' group is crucial to get information about upcoming extension activities and to participate. In addition, the invitation of farmers to participate in extension activities, often, depends on their active involvement in production of a specific agricultural commodity, on which the extension event is focused upon.

Extension Contact Farmers select farmers who will participate in extension activities, based on instructions of extension agents on the number of farmers that should be invited to agricultural extension events. 'Extension Contact Farmers' are farmers who live in the community and who are selected by extension agents to help them mobilize farmers for extension activities. Extension agents select Extension Contact Farmers based on their reliability and organization skills. Most of the Extension Contact Farmers are men. In the study district, in the Central region, only 30 percent of the Extension Contact Farmers were women, while in the district in the Northern region, only one of the fourteen Extension Contact Farmers the extension agent works with, was a woman. Some extension agents' preference for male Extension Contact Farmers is due to their belief that women lack organizational skills and do not command respect within the community, due to social norms (Interview with Extension Agent in the Northern Region). Extension Contact Farmers select farmers they consider hard working, who frequently come to farmers' groups' meetings and show an interest to participate in extension activities.

The proportion of women farmers out of the total farmers reached by extension activities in the study communities ranged from 15 to 30 percent. The reach figures, in most cases, are lower than the 30 and 40 percent targets set by MoFA and the national planning commission, respectively. PPRSD officers mentioned reaching a larger proportion of women farmers, between 30-45 percent

The participation of women in extension is different across the three districts. In the study sites in the Northern region, farmers have very limited interaction with extension agents, due shortage of extension staff. Both men and women had limited opportunities to participate in extension activities. In Bono and Central regions, in three of the communities visited, more men than women participated in extension activities. Women in these communities see themselves as supporters of their husbands, and prefer that their husbands participate in extension events. Only women single heads of households regularly participated in extension activities. The PPRSD officer in Bono, believed targeting the heads of the households in extension training can help filter down information to other members of the household. In one community, in the Central Region, men were mostly engaged in off-farm activities and women participated more in extension activities. According to the PPRSD officer in Central Region the participation of women in Plantwise supported plant clinics is higher than the regular extension program, because the Plantwise program made a deliberate effort to reach women.

4.2. Time and mobility constraints

Extension agents visit farmers on bi-weekly basis, in the study communities in Bono and Central regions. In busy agricultural seasons, extension visits can take place as often as weekly. In the Northern region study communities, due to shortage of extension agents, extension visits are rare and happen a few times in a year. Extension visits usually involve, activities, such as, discussion with farmers' groups, field visits, farm demonstrations or trainings.

The constraints limiting women's participation in extension activities are similar across the study communities. Women have limited time, due to work load, as they are responsible for all unpaid care work activities, in addition to their involvement in farming. The time constraint is more pronounced for women with very young children. In Bono and Central regions women assume that is the role of the head of the household to attend extension events. Low levels of literacy discourage them from participating in workshops or seminar style trainings organized in towns. In the Northern region, the culture does not allow men and women to mix; and women, often, do not speak up in extension meetings where men are predominantly represented.

Time and dates for conducting extension activities are decided by extension agents in consultation with Extension Contact Farmers. Extension contact farmers are expected to discuss with farmers and select the time and date suitable for most farmers. However, women are sometimes not involved in the discussion, when the extension contacts are men. In the Northern region study site, where the extension contact person is a man, women are not consulted. In Bono and Central region study sites consultation is made with men and women farmers, through Extension Contact Farmers. In these sites, extension agents usually use women's farmers' groups' regular meetings to reach women farmers.

Extension activities, such as, meetings, trainings and field demonstrations take place in fixed places in the community, in community centers, schools or churches and plots volunteered by farmers. The venues are accessible to all farmers in the community. However, a few times in a year, extension events are organized away from the community; and farmers from different communities are brought together in one center for trainings or meetings. The participation of women reduces in these instances, due to their unpaid care work responsibility or lack of means of transportation. Most men own motorcycles, which enables them to travel and attend. Women, on the other hand, can participate, only if their transport cost is covered by the extension program, which is not always the case, or if their farmers' group members contribute money to cover their transport cost, in cases where they are selected to represent the group.

Women with very young children, bring their children with them to attend extension meetings and trainings, if they don't have someone to look after the children at home. This can be a distraction for women farmers to fully engage in the training.

4.3. Education and literacy limitations

Literacy levels are very low in the study communities, although more men compared to women are literate. In the Northern region, none of the women participating in the FGDs in the two communities were able to read and write, while in the Bono and Central regions only 2 to 3 women out of 8 to 12 FGD participants in four communities were literate.

The extension communication methods used across the three regions are mostly oral presentations, lectures, discussions, field demonstrations and audio and video recordings that do not require literacy. However, sometimes printed materials, such as posters and flyers are used and brochures are handed out to farmers after trainings. Especially, in farmers trainings that happen at the district level, more printed materials are used and women farmers who are illiterate shy away from attending these trainings. Farmers get their children to read the handouts for them or literate farmers read and share with other farmers. In the Bono region study communities, the extension agent is implementing a donor supported farmers business school program that teaches farmers numeracy, in order to help them record their expenses and incomes in farming and calculate profit and loss.

The major local languages, Dagbani in the Northern region, Twi in the Bono and Fante in the Central region are used for most extension communications. English language is used on printed extension materials.

Women farmers' most preferred method of extension communication across all the study communities is field demonstration and group meetings, where they get to interact with other farmers. Visual communication methods, such as, video recordings were ranked second and radio was ranked third, as preferred channels of communication among women farmers. For men, the most preferred method involved primarily direct interaction with extension agents, either in field demonstrations or oral presentations followed by video recordings, in some communities, and radio and TV programs, in others. Printed materials are the least preferred method of communication by both women and men farmers, because of low literacy levels.

4.4. Voice and representation

There are several farmers' groups organized around the production and processing of specific crops, in study the communities in the Northern and Bono regions, while a couple of farmers' groups are found in Central region study community.

The farmers' groups are both mixed (where there are men & women members) and only women farmers' groups. In the Northern region, more than half of the farmers' groups are women-only groups, supported by different agriculture support programs. The women-only groups include: rice and shea butter processing groups. However, there were mixed (men and women) maize and soybean production groups, where women made up 80 percent of the membership. In the Bono and Central regions study communities, on the other hand, most of the mixed farmers' groups are dominated by men, and the groups focus on commodities produced mainly by men, such as; rice, yam, maize and cocoa. Women are more engaged in cassava producing farmers' group in Bono region. In Central region, women were part of savings and loans and a tiger nut producing farmers' group.

Organizing themselves into farmers' groups has several advantages for women farmers. In the Northern region where women shea butter processors' groups have a contract arrangement with a private sector organization, they receive inputs, credit, extension advice and markets through their group membership. In the Bono and Central regions, women farmers' groups can access extension advice and can potentially access loans from rural banks as a group. Jointly saving money and sharing experiences with other farmers are also benefits women farmers get from organizing into groups.

Women organized in farmers' groups are more confident to demand extension services in all the study communities, in the three regions. In the Bono and Central regions, usually, more men farmers than women farmers approach extension agents requesting advisory services. However, when women are organized into groups, they are able to request for services and call extension agents. Women tend to freely express themselves in women-only farmers' groups, or in mixed farmers' groups, where the majority of the members are women. However, they tend to be shy and less vocal in mixed farmers' groups, with majority male membership.

Extension agents in all the study sites play a crucial role in supporting women to organize themselves into farmers' groups. Extension agents motivate and encourage women farmers to join farmers' groups, to start saving and share experiences. They support farmers' groups to get registered, open bank accounts and apply for loans from rural banks. They also link women groups to available opportunities, such as, organizations providing processing machinery for those engaged in processing.

5. Challenges for gender sensitive service provision from the providers perspective

5.1. Human resources and staffing

There is a high gender imbalance in staffing at MoFA, both at the management level and technical level. Currently, only three out of the twelve directors in MoFA are women, which is 25% (Interview with WIAD director, 2021). At the district level, only 19 percent of the agriculture officers are women. Women extension agents make up only 16.72 percent of the total number of extension agents; and only 8% of PPRSD staff are women (MoFA 2020 annual report; Interview with Extension Services deputy director). The attrition rate of women extension agents is very high. There are no measures taken by the government to improve/ retain women extension staff (Interview with WIAD director).

In the study districts, (Bono and Central regions) the proportion of female extension agents is only a quarter of male extension agents. Extension managers are not aware of any efforts made or incentives used to recruit and retain female extension agents. Reasons for women extension agents quitting their jobs in all the three study sites are primarily in order to join their husbands and to be close to their families, although some have also left for better job opportunities. In the Northern region, men quit their job because of work load – as one extension agent is required to cover several operational areas due to shortage of staff – while in the Bono and Central regions, men quit their jobs for better job or education opportunities.

There are on job training and education opportunities for extension staff, which are supported by different donors and government of Ghana (Interview with Extension Services deputy director). The Extension managers and officers in the study districts agreed that there are no discriminatory practices that prevent women from progressing in their career. If there are opportunities and they also upgraded their educational levels, they are promoted. However, unpaid care work responsibilities, taking care of children and households activities coupled with the work demands, limit the time women have to study. The burden of unpaid care and domestic work holds women back, making it difficult for them to further the education (Interview with extension agents in the Bono and Central regions).

In addition to the challenges mentioned above, women extension agents are affected by lack of public and affordable child care services, which is a major problem in all the study communities. Thus, once the women extension agents, have exhausted their three-month maternity leave and if there are no family members to look after their children, they will be forced to take their kids with them to the field. It is difficult and dangerous to transport their young children on motorbikes through this harsh environment to the field, or walk difficult terrains and conduct home visit and field demonstration activities.

Furthermore, lack of transportation to the field, was another challenge raised by women extension agents in all the study areas. Extension agents were provided with motorcycles. However, women extension agents do not use the motorcycles provided, because of the size; Women, on average, are shorter than men, so women's bike models generally have shorter stack heights. On average, women also have shorter torso lengths, so women's bike models tend to have shorter reach lengths. It appears that the bikes are purchased with male extension agents in mind and they are not fit for women. Moreover, public transport is not easily available in the rural communities where they work, and they often hire tricycles – though their fuel allowance will not be able to cover this frequently and sometimes they are forced to walk for long distances.

Security is a concern for women extension agents to work in remote rural communities. To address this problem women extension agents are assigned to operational areas closer to towns. In Central region, extension managers advice women extension agents to take male colleagues with them when traveling for field demonstrations in remote part of their operational areas. However, this is difficult to realize, as there is a high farmer to extension agent ratio and one extension agent covers several operational areas.

Societal attitude towards women in the Northern and Bono regions were also raised as a challenge for women extension agents. In the Bono region, for example, it is not culturally accepted for women to stand and teach in front of men.

5.2. Individual capacity of RAS providers

There are some capacity building efforts within the extension system to build skills of extension staff on mainstreaming gender in their work. With the support of Government Affairs Canada (GAC), the agriculture ministry is implementing the Modernizing Agriculture in Ghana program. The program involves training extension staff using the 'New Agriculture Extension Agent' training module. The module includes one topic on gender and agriculture. Few of the extension managers interviewed have been trained on this module. However, most extension staff have not received gender trainings, especially in the Northern and Bono regions. Extension agents interviewed in the Central region mentioned that they have been trained, but could not explain what they have learned.

The issue of integrating gender in extension activities is raised and discussed during quarterly extension staff meetings and Research Extension Linkage Committee (RELC) meetings. Extension agents are told not to discriminate against women while providing services, to ensure inclusion of women in extension activities and to design strategies to improve women's involvement. However, they are not provided with training that can equip them with the required skills on how to do gender analysis and design strategies to deliver gender-sensitive RAS.

There are no formal experience sharing platforms or events on gender among extension staff, although extension agents in the Central region mentioned informal experience sharing about best approaches to reach women farmers.

5.3. Methods of delivery and content of RAS

5.3.1. RAS delivery approaches

Similar methods are used to deliver RAS in the study communities. Extension agents use demonstration plots, farm visits, farmers' group meetings, farmer business schools, farmer field schools, plant clinics, workshops and seminars. Farmer to farmer experience sharing events are also organized.

Field demonstration is the most preferred approach by both men and women farmers, from the different in-person RAS delivery approaches, followed by farmer to farmer experience sharing and farmers' group meetings. However, in the study communities, lack of resources limits the number of demonstrations extension agents can carry out.

In the Bono region, women's participation is low in farmer business schools and field demonstrations. According to the extension agent in the Bono region, women farmers do not attend farmer business schools because of low literacy levels. In addition, in the mixed sex groups where men dominate, women do not express themselves freely and avoid the meetings. Few women also come to field demonstration plots because of work load. Women farmers feel more comfortable in home/farm visits and in women farmers' group meetings.

Different information communication technologies are used for extension communication. The most common methods used are video clips shown by extension agents during farmers' meetings, radio and TV programs. Community information centers are used to communicate brief messages from extension agents to the farmers; for example, messages to do scouting for pests, such as, fall armyworm, weaver birds and locusts. Community information centers are also used to broadcast radio programs on agriculture. In Bono region, a WhatsApp group is created to share information on plant diseases and solutions. Farmers often use mobile phones to contact extension agents to seek advice.

There are marked differences in the use of ICTs for agricultural information between men and women farmers. In the study communities, few women own a radio and listen to agriculture programs aired on the radio. Although, most women own mobile phones and can use their phones to listen to radio programs, they are not able to do so, because of low literacy levels. Women in FGDS in the three regions also mentioned that they do not have time to listen to the radio or that the time when agriculture programs are aired, around 5pm in the evening, they are busy working and will not be able to follow the program. Community information centers sometimes transmit radio programs on agriculture early in the mornings and women are able to follow the program. Men, on the other hand, cited radio programs as the most preferred source of agricultural information, in all the study communities.

Agriculture programs are aired on TV. However, few farmers in the study communities own one. In the FGDs, only a quarter of the participants owned a TV. TVs are also mostly controlled by men, who decide what programs to watch.

Mobile phones are owned by almost all men and most women farmers. About 80 percent of women FGD participants owned mobile phones, though most are not smart phones. Farmers use mobiles to phone extension agents and ask for advice. Some men farmers in the Northern region also mentioned receiving text and voice messages on agriculture on their mobiles.

Farmers in the Central and Bono regions have interacted with both male and female extension agents, while farmers in the Northern region had interacted with only male extension agents. While farmers in all communities said they are comfortable having both male and female extension agents, women farmers in some communities in the Bono and Central regions mentioned they prefer female extension agents. They felt women extension agents are more understanding and patient. They do not rush through meetings and trainings. They are also more responsive and respectful towards women farmers.

5.3.2. RAS content and relevance to farmers

Extension agents and various ICTs used for agriculture information communication provide advice to farmers on a range of good agronomic practices. These include: preserving new crop varieties; selection of improved seeds; germination test of seeds; spacing; inter-cropping; crop rotation; fertilizer application and preparation of organic fertilizers; weed management, pest and disease management and control; safe handling of pesticides and using bio-control methods for crop pests and diseases. In all the study sites, advice on nutrition and preparation of legumes, such as, soybean to improve household diet were also provided. The advisory services focused both on crops mostly grown by men and by women, such as, different legumes and vegetables. Farmers mentioned all the advisory services they received are relevant for them.

The development of the RAS content is informed by a bottom-up process of identifying and prioritizing key agricultural issues or problems affecting farmers, through Research Extension Linkage Committee (RELC) meetings. The RELC involves farmers, agricultural extension offices and agriculture research organizations. Every year, farmers from different communities are brought together at a zonal center to identify and prioritize main problems/ issues affecting them. The prioritized list of issues from different zones in a district are then discussed and using another prioritization process, key issues from the district are selected. The same process is then followed at regional level, bringing together issues presented from different districts. Finally, regionally, prioritized issues are sent to the central government for planning and budget allocation.

Women farmers are represented in consultation meetings at zonal level. However, the meetings happen in mixed groups, and women farmers often tend not to speak freely in these meetings (Bono region AEA). Gender analysis done for the country gender profile in 2018 mentions the process is often gender blind and problems affecting women farmers are not identified and prioritized in RELC meetings (FAO & ECOWAS, 2018).

Extension agents usually do not undertake a need assessment or a gender analysis to identify information needs and gaps of men and women farmers. However, they use interactions with farmers in the field and one to one consultation to understand their needs and organize trainings or discussions to fill the information gaps they have observed. Farmers also raise challenges and information needs in their regular farmers' groups' meetings, which are then shared with extension agents.

Sometimes, RAS contents are designed based on the agenda or interest of donor agencies or NGOs providing support to the agriculture sector.

The RAS information targeted at men and women farmers is usually based on the kind of crops they produce and traditional gender roles. For example, in the Northern region, women are targeted by RAS on production of legumes, such as, soybean, groundnut, cowpea; while men are targeted by RAS on production of maize, sorghum, rice and yam. Training on preparation of soybean to improve household diet specifically targets women farmers. The advisory services reinforce existing stereotypic gender roles and division of labor, instead of being transformative, or aiming to change the position and status of women.

There are no formal mechanisms through which farmers provide feedback about the approach and delivery of RAS. However, extension agents use farmers' group meetings and one to one consultation to receive feedback from farmers about their concerns and issues, as well as, the effectiveness and usefulness of RAS services.

5.3.3. Technology promotion

Over the past five years extension agents have promoted various good agronomic practices and technologies in the study communities. The most commonly promoted practices include: conservation agriculture and climate smart agricultural practices, especially in the Northern and Central regions. Soybean preparation for household consumption was promoted in all the study communities. In the Bono region, planting machine was introduced and bought by one of the farmers' group. In the Central region, irrigation technology, ground water pumping and a sprinkler system, were introduced.

The technologies selected for promotion are often supply driven. They come from interventions designed in agriculture support programs or projects. The RELC process also feeds into identification of technologies needed by farmers. In some cases, demand driven technologies are introduced, such as, the planter promoted in the Bono region. Some technologies, especially, those promoted by the WIAD Directorate of the Ministry of Food and Agriculture, focus on reducing the workload of women. For example, a cassava processing machine was introduced by the WIAD Directorate, though this was not yet in one of the study communities. The planter machine introduced in the Bono region helps to reduce women's workload, as women are responsible for planting.

The extension agents monitor adoption of promoted practices and technologies by farmers and disaggregate the data by sex. Adoption rates decline when the promoted practice or technology requires capital, especially for women farmers. Women farmers are good at adopting conservation agriculture practices, according to extension agents in the Bono and Central regions. However, among women, there is a low use of fertilizers in the Bono and low uptake of irrigation technologies in the Central region because of lack of money or credit.

5.3.4. Unmet RAS needs

Lack of access to credit for agriculture is the most significant challenge and unmet need of farmers in all the study communities. Women farmers especially face challenges to buy inputs such as fertilizers, improved seeds or rent tractors. Lack of timely supply of fertilizers is rated as the second highest challenge faced by farmers followed by lack of information about supply of improved seeds, in the Northern and Bono regions. Lack of access to processing machineries for shelling soybean and maize in the Northern region, poor market prices during bumper harvest in the Bono region were raised by women farmers. In the Central region, both men and women farmers raised concerns about lack of finance to procure water harvesting and water lifting technologies for irrigation.

5.4. Institutional practices and organizational culture

The Gender and Agriculture Development strategy requires every directorate in MoFA to integrate activities that contribute to gender equality and women's empowerment in their plan and budget. Although budget is not available for extension agents to implement targeted women's empowerment activities, they are required to ensure at least 30 percent of the farmers they are reaching are women. Extension program reviews involve WIAD personnel who monitor the achievement of targets set to reach women farmers by extension staff. The WIAD Directorate has budget dedicated to women's empowerment activities and collaborate with extension agents in implementation of activities.

The Gender and Agriculture Development strategy requires collection of sex disaggregated data in the Monitoring and Evaluation system (GADS II, 2015). The 2020 annual report of MOFA provides sex disaggregated figures on farmers reached by improved technologies or participation in extension events (MoFA 2020 annual report). However, the sex disaggregated data is not supplemented with qualitative information that helps to explain the disparities between men and women revealed by the quantitative data. There is no further analysis and interpretation of the sex disaggregated data, in order to inform future planning (Interview with WIAD director & Extension Services deputy director 2021).

Interview with extension managers and agents show that they collect sex disaggregated data regularly at output level, on number of men and women farmers participating in different extension events, for example. They also collect age and disability disaggregated data. The data helps agriculture offices to gauge their ability to reach women farmers.

MoFA's gender strategy requires gender to be integrated in staff performance evaluations. However, this has not been implemented (GADS II, 2015; Interview with WIAD director). Interviews with extension managers and extension staff show that gender aspects are included in work plans and implementation progress reviews. Extension agents are requested to set targets to reach women farmers, and are asked to explain, if their implementation is below the target. However, gender sensitive extension provision is not an area of annual performance appraisal of extension agents, except in the case of WIAD officers. Gender knowledge is not required for recruitment of AEAs. Gender related questions are not included in recruitment interviews.

According to extension managers interviewed in the study, the extension directorate tries to create a gender sensitive culture by providing training opportunities to both men and women staff without discrimination. On WIAD position, priority is given to women applicants during recruitment. In the Central region, the district assembly has introduced a couple of hours' time-off for nursing mothers for breast feeding, for additional three months after the end of a three-months maternity leave period.

Having organizational policies on preventing gender discrimination and sexual harassment is part of the creation of a gender sensitive organizational culture. All interviewed extension agents are not aware of the existence of these policies in the organization. Extension managers were not able to explain if the office has such policies, but mentioned assumptions that these policies exist at national or the municipality level.

6. Conclusion

6.1. Recognition of women as legitimate RAS clients

The GRAST assessment tries to answer seven key questions that are crucial for development and delivery of gender sensitive RAS. The first question the assessment focuses on is inclusion of women as legitimate RAS clients in national and organizational policies and delivery of services. The study shows there is a strong policy framework ensuring the targeting of women as RAS clients. Policy documents in GADS II, medium-term strategy of MoFA and draft extension strategy have clearly identified women as RAS clients. The policy documents state a commitment to ensure that at least 40 percent of RAS beneficiaries are women in GADS II and the National Development Planning Commission's Medium-term Strategy, although this is modified to 30 percent by MoFA.

Currently, extension reach of women in the study communities is between 15 to 30 percent, below the national target. Although the targeting and selection criteria used by government RAS providers does not discriminate against women, a few issues that can be barriers were identified in the study. Extension agents rely a lot on Extension Contact Farmers to select and reach farmers for extension activities. There are very few women Extension Contact Farmers. Male Extension Contact Farmers reach out to men, more than women farmers. It would be useful to raise the awareness of extension agents on the need to ensure gender balance in selection of Extension Contact Farmers.

Other challenges affecting women's inclusion as RAS clients are social norms in the community and attitudes of some extension staff. For example, in the Bono and Central Regions, women farmers assume extension activities are meant for men and would decline participation, if their husbands are available. Some extension agents in the study communities believed targeting the head of the household in agricultural trainings would be enough, as information will filter to other household members. However, experience shows this is not always the case. Therefore, sensitization activities by extension agents and interventions that aim to change attitudes and shift social norms need to be designed.

6.2. Accounting for women's time and mobility constraints

Addressing time and mobility constraints of women is part of delivering gender sensitive RAS. Extension agents are advised to ensure date and time selected for extension activities are suitable to all farmers, including women farmers. Extension agents in the study communities usually consult farmers before deciding the time and date of extension activities, through farmers contact persons and opinion leaders. While this is a good practice that should continue, extension agents need to be aware that relying on male Extension Contact Farmers and opinion leaders (village assembly members and chiefs) who are predominantly men, means there is little opportunity for women to be consulted or women's concerns are likely to be deprioritized. Extension agents should be conscious about this and try to reach out to women representatives in the community. Raising the awareness of opinion leaders and male Extension Contact Farmers to be more inclusive would also be useful.

Women's participation in extension meetings reduces, when meetings are held away from the community, because of unpaid care work and lack of transport facility. Women with young children are especially affected. When extension trainings are organized away from the community, effort should be made to cover the transport cost of women participants. Availing child care facilities, such as, assigning space and someone to look after children, during the duration of the trainings, can also help to increase women's participation.

6.3. Literacy and educational limitations

Gender sensitive RAS has to be mindful of literacy and educational constraints of farmers. In the study communities, literacy level of farmers, especially women farmers, is very low. The extension delivery approach has taken account of this and uses oral and visual presentations and field demonstrations, interspersed with printed materials. Local language is used for communication. This helps to improve participation of women farmers.

The study shows that women learn better when they interact with other farmers, in a group, with field demonstrations or visual presentations. This should be considered, while preparing communication approaches for women.

Currently similar communication approach is used for all groups of farmers. It would be useful to develop targeted communication materials for young people, who are literate, and for older men and women, who are mostly illiterate.

6.4. Women's voice and representation

Gender sensitive RAS programs facilitate rural women's ability to represent their interests and voice their demands. The RAS delivery in Ghana has paid attention to organizing women into farmers' groups, with the help of external donor supported programs. This has proved to be empowering for women farmers, enabling them to demand and access advisory services, to start joint saving and loan schemes and share experiences. However, just joining farmers' groups is not a guarantee to empower women. In mixed groups, where membership is dominated by men, women do not speak out and do not actively engage. Therefore, attention should be given to balancing gender in membership of mixed farmers' groups.

In the study communities in the Bono and Central regions, there is a tendency to support the organization of women's farmers' groups only around crops traditionally produced by women, such as, cassava or tiger nut, where financial returns are limited. Supporting women farmers' groups to diversify and engage in production of new crops, which have more financial returns can facilitate their economic empowerment. Leadership trainings for women who are organized into groups, can help them to build confidence and assume leadership positions in mixed farmers groups.

6.5. Inclusive and effective RAS delivery approaches

Gender sensitive RAS programs are expected to deliver information in a way that is inclusive and effective for women and men farmers. The assessment shows that the use of participatory methods by extension agents has encouraged the participation of women farmers. Extension agents use participatory methods, such as, field demonstrations, farmers' groups' meetings, farmer to farmer experience sharing events to deliver RAS. Men and women farmers in the study communities appreciated field demonstrations, farmer to farmer experience sharing and farmers' group meetings. However, as earlier mentioned, where meetings are dominated by men, women are less likely to actively participate and engage in the training, even when participatory methods are used. It is important to ensure gender balance in extension trainings and meetings.

ICTs like video clips, radio, TV, mobile phones are used extensively for RAS. But there is a marked difference in the use of ICTs between men and women farmers. Most women do not use radio, TV and mobile phones to receive agricultural information, while men use these ICTs. The extension directorate should conduct an assessment to have a clear understanding of users of different ICTs and the uses of ICTs in communicating RAS information. Some innovations can be introduced to enable women to use information communicated through these ICTs. For example, women listen most to the radio programs when transmitted through community information centers. Women farmers' groups can assign members, in rotation, to listen to the radio programs and discuss what they have learned during their regular meetings.

There is a preference for women extension agents among women farmers in communities in the Bono and Central regions, since they perceive women extension agents to be more patient, understanding, responsive and respectful towards women. Effort should be made to increase the number of women extension agents, as this could help to increase the participation of women farmers in extension activities.

6.6. Relevance and usefulness of the RAS content

The relevance and usefulness of information provided to women, as determined by women clients, is one measure of gender sensitive RAS provision. The assessment shows that information communicated by rural advisory services cover both crops produced by women and men farmers. Men and women farmers deem the information provided by extension agents relevant and useful to them.

The design of advisory services in Ghana is informed by a bottom-up prioritization process facilitated by the RELCs, which helps to ensure the RAS content is informed by farmers' needs. However, this process has been criticized for not giving enough attention to gender related issues in the prioritization process. Conscious effort should be made in the prioritization process to reflect gender and inclusion focused issues. Ensuring adequate representation of women farmers, female extension agents and the WIAD personnel in the process of prioritization can also help.

Formal needs assessment or gender analysis is not carried out by extension agents, to understand the needs and information gaps of farmers in their operational areas. Instead, extension agents rely on their knowledge of the context and interaction with farmers to develop their plans. Training extension agents on skills to conduct gender analysis can help them to carry out assessments in their operational areas and to develop more gender sensitive implementation plans.

In gender sensitive RAS delivery, technologies promoted by RAS organizations are expected to be relevant and accessible to women farmers. The WIAD directorate in Ghana focuses on promotion of technologies that help to reduce the workload of women in agriculture. Agriculture Extension agents collect sex disaggregated data on technology adoption, which is useful to understand the level of adoption and constraints faced by women farmers. The assessment in the study communities shows that women farmers are good in adopting practices, in conservation agriculture. However, technology adoption by women farmers reduces with needed capital (inadequate capital). Access to credit is an area that needs to be addressed to close the gender gap in technology adoption. Lack of credit and high cost of agricultural inputs is also one factor that discourages women from participating in agricultural extension activities.

6.7. Gender sensitive organizational culture

Organizational culture of RAS providing institutions and their ability to enable women to become RAS agents and managers contribute to the delivery of gender sensitive services. In Ghana, and the study districts, it was observed that there was a wide gender imbalance in the number of extension staff and high attrition rate of female extension staff. The main reason given by women extension agents for quitting their jobs was they want to be closed to their families. The assessment in the study districts reveal several challenges faced by women extension agents, such as; lack of public affordable child care facilities, suitable means of transportation and security concerns, while working in remote communities. There should be efforts to address these challenges. Availing child care facilities, means of transport – for example, during procurement of motorcycles keeping in mind that users include women - and working in pairs in remote communities can help.

Institutional mechanisms, such as, capacity building of extension staff on gender, incorporation of gender indicators in organizations' M&E framework and collecting sex disaggregated data, incorporation of gender in extension staff performance evaluation are measures that can help to ensure gender sensitive delivery of RAS. In the study communities, only few managers are trained on gender, while most extension staff have not received training. During quarterly meetings, extension staff are reminded to integrate gender in their work. While the strong rhetoric on gender integration in meetings helps to indicate the organization's commitment, extension agents need to be trained with practical skills and tools that they can use to integrate gender in their work. Refresher gender trainings at regular intervals coupled with experience sharing among extension agents on good practices of integrating gender in extension can help to build the capacity of extension staff.

There is a strong practice of collecting sex disaggregated data in extension, in the study communities and the nation as whole. Sex disaggregated data collection in extension can be very useful to inform planning and address gaps. It would also be useful to include qualitative analysis to understand underlying factors contributing to the gender gap and to support planning and adoption of new strategies or approaches that help to address the underlying factors.

The policy level commitment to include gender equality goals as part of extension staff's performance evaluation, has not been implemented. Implementing it would help to strengthen the accountability system for delivery of gender sensitive RAS.

7. Recommendations

- Recruit more women lead farmers as Extension Contact Farmers to ensure women farmers receive information about extension events and are consulted on the date and time for agricultural trainings and meetings.
- Create an enabling environment for women farmers to access extension advisory services by raising the awareness of community leaders and men about the benefits this has for the whole household.
- When extension trainings are organized away from the community, facilitate women's ability to participate by covering transportation cost and availing on-site child-care facilities for women traveling with young children.
- Build the capacity of women organized in farmers groups by providing trainings, such as, leadership skills to help them gain confidence and voice their needs.
- Support women farmers' groups to diversify and engage in production of new crops that have more financial returns and can facilitate their economic empowerment.
- Identify innovative ways to help women use ICTs to access agricultural information. For example, provide women groups with radios or mobile phones to listen to agricultural programs in a group and discuss together on the messages.
- Improve women farmers access to credit to close the gender gap in technology adoption.
- Sensitize agriculture extension agents on gender equality issues to change their attitudes and beliefs shaped by social norms. In addition, provide continuous training to extension agents to build their skills on conducting gender analysis/ integrating gender in farmers' needs assessment, use of participatory methods and effective ways of reaching women farmers to deliver advisory services.
- Organize experience sharing platforms for extension agents to share experiences on good practices of integrating gender in extension advisory services. For example, create social media platforms, such as, a 'What's App group', among extension agents to share experiences.
- Implement strategies to increase retention of women extension agents, such as, availing child care facilities, providing motorcycles suitable for women, and encouraging working in pairs to address security concerns, while working in remote locations.
- Beyond collecting sex disaggregated data, include qualitative analysis to understand underlying factors contributing to disparities between men and women, in-order to plan new strategies or approaches that help to address the underlying factors.
- Implement the commitment to include gender equality goals as part of extension staff's performance evaluation, to strengthen the accountability system for delivery of gender sensitive RAS.

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