

Gender and Access to Agricultural Resources by Smallholder Farmers in the Upper West Region of Ghana

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The research was financed by the World Food Programme, Country Office, Ghana.

Abstract

Men and women continue to have differential access to agricultural resources despite the seemingly equal roles they play in agriculture in many developing countries. The study sought to determine the relationship between gender and access to agricultural resources in the Upper West Region of Ghana. Simple random sampling technique was employed to select 400 farmers disaggregated into men and women from four districts in the region. Statistically significant differences were observed between gender and access to land, labour, inputs and radio, extension agents and input suppliers ($p < 0.05$) while there was no significant difference between gender and access to credit ($p > 0.05$) even though women also have more access to credit than men. It has been recommended that more aspects of the culture of the people be improved to pave way for more access to agricultural land in particular. Levels of credit support are very low in the region and financial institutions need to reduce some of the bottlenecks to allow easy access to credit. Also extension agents should endeavour to educate smallholders on how to access information through electronic platforms and also make them seek more information from input suppliers as the current situation demands.

Key words: Gender, Inputs, Credit, ICT.

1. Introduction

There is an increasing recognition that ownership, access and, control over agricultural resources constitutes critical elements in the determination of the well-being of farm households. Farmer capacity to employ improved technology and investment depends on their access to productive resources. Both men and women contribute significantly to agricultural production yet, their access to these agricultural resources differ (Deere and Doss 2006; FAO, 2010). In spite of the contribution of women to agriculture, it is evident that they do not have as much access to and control over agricultural resources as men.

Okali (2011) observed that women have been the core subject of gender and indicated that the term 'gender issues' has been widely used to refer to disadvantages faced by women in the field of agriculture despite the theoretical meaning of gender as roles of males and females. In agriculture, women feature prominently as they are believed to produce more than half of all the food that is grown, specifically, up to 80% in Africa (Mehra and Rojas, 2008). It has been assumed that if incomes of women are increased, they may have more access to resources and invest in their children's education, health care and nutrition. However, they are constrained by poor access to resources, taking new opportunities, including new markets, by their limited educational background, poor networks and mobility restrictions. Gender difference, arising from the socially constructed relationship between men and women, affects the distribution of agricultural resources and cause many disparities in development outcomes.

Women face several challenges, most importantly cultural restrictions in accessing land than men and the land they control is often of poorer quality and their tenure is insecure (FAO, 2010). Globally, women hold title to approximately two percent of land and are frequently denied the right to inherit property (Steinzor, 2003). In Ghana for example, Deere and Doss (2006) indicated that women held land in only 10% of Ghanaian households. This situation is crucial to the understanding of their subordinate position in society in order to explain gender inequality in Ghana. Women's lower access to land has affected their ability to practise sustainable environmental management, thus impacting negatively on agriculture and biodiversity on their farms (Ardayfio-Schandorf and Awumbila, 2000). This "gender gap" hinders women's productivity and reduces their contributions to the agricultural sector and to the achievement of broader economic and social development goals. Labour constraints have been observed to be more acute for female-headed households than male-headed households (Dillon and Quiñones, 2010). Women Agricultural labour refers to women's own ability to produce outputs; the quantity and quality of supplemental labour they are able to access, which is often non paid labour allocated within the household (Quisumbing and Pandolfelli, 2010). Women farmers mostly depend on their husbands for the available labour as most farms are owned by the men. They also have the problem of poor financing which does not allow them to hire labour extensively. They therefore depend on their own labour and that of their households. Thus they spend more hours working on their farms since they cannot afford hired labour.

Some of the basic barriers faced by women are the transaction cost of credit, well-defined property rights and being poorer than men (World Bank, 2008). Even though men also face these barriers, those faced by women are more acute in rural agricultural communities. In order to improve women's access to credit, most of the micro-finance programs are being directed towards women in Ghana. Some of these include Microfinance and Small Loans Centre (MASLOC) and the Rural Banks. In cases where women have access to credit, the amount is very small and the repayment conditions are not very suitable, making women not to accept some of these financial arrangements.

Poor access to credit facilities prevents women from purchasing the needed inputs for agricultural purposes. Thus it has been observed by (Mehra and Rojas, 2008) that women are able to access only one percent of credit in agriculture. In cases where tools which are very suitable for women are available, most them are either unaware of such tools or do not have money to buy them. They therefore continue to use the old manual methods which decrease their speed of work and productivity (World Bank, 2008).

Information and Communication Technologies (ICTs) such as radio, Television, Internet and mobile phones are major contributors to extension advisory services especially in remote areas. For these to reach women effectively, Manfre (2011) suggested the need to account for women's lack of financial resources to pay for ICTs, higher levels of technology and language illiteracy and norms that discourage women from using the technology. Input suppliers also carry out extension advisory service on a limited scale. This is a form of private extension advisory system which is a supplement to the public extension system. Clark (2012) observed that input suppliers can be an effective and sustainable way of advising farmers on input use this has achieved successes in research. A model, known as the input supplier model, is one of the privatised extension systems which offers extension services to remote smallholder farmers and is basically built on a network of rural, privately owned agro-dealer businesses that enables farmers to easily access timely, and affordable quality inputs. It provides farmers with technical advice of farming techniques and correct use of inputs and initiates a productivity revolution in smallholder farming (World Bank, 2007).

In some cultural settings in developing countries, contacts between men and women are restricted. Where majority of extension workers are male, women farmers are likely to have less access to public extension services. This is because the male extension agents carefully tend to approach male farmers more than female farmers under the false notion that extension advice will eventually "trickle down" from the male household head to all other household members (FAO, 2010). Moreover, extension services are often directed towards farmers who are wealthier and more likely to adopt modern innovations. Women are less likely to access resources and may therefore be overlooked by extension service providers. A review by the World Bank (2010) revealed that in Ghana, only two percent of female-headed households and twelve percent of male-headed households reported receiving extension advice. In Tanzania, the result was slightly higher (20% for women and 27% for men-headed households).

Inequality in the distribution of resources between men and women is linked with production inefficiency yet interventions targeting smallholder farmers often fail to address women's lack of access to and control of important agricultural resources (Quisumbing and Pandolfelli, 2010). There is available literature on women's access to resources in general but there is a lack of consensus on actual magnitude and effects of gender differences in access to agricultural resources in the Upper West Region.

The objective of the study therefore is: to determine the relationship between gender and access to agricultural resources in the Upper West Region.

2. Methodology

The survey design was used for the study with data collection being quantitative in nature. The quantitative data was collected on access to agricultural resources including access to agricultural information through various means. Questionnaires were used for a face-to-face interview of the respondents. The population of the study consisted of farmers in four districts in the Upper West Region. These are: Nadowli, Wa East, Jirapa and Sissala East. The districts were randomly selected from the eleven districts of the region. The survey covered only four districts because of costs and the sparse distribution of the districts. One hundred farmers comprising fifty (50) males and fifty (50) females were randomly selected from each district making a total of four hundred (400) farmers from four districts in the region.

Results obtained from the questionnaires were coded and entered into the computer for statistical analysis using the Statistical Package for Social Sciences (SPSS). Cross tabulations of variables were done and Chi-Square tests used to establish relationships.

3. Findings and Discussions

3.0 Smallholder farmer's access to resources for agricultural activities

Access to resources for agricultural activities was analyzed and presented under access to land, labour, improved seeds, agro-chemicals, credit and agricultural information. The analysis and results allowed a clearer

understanding of the differences and similarities that exist between males and females regarding access to resources for agricultural activities in the Upper West region of Ghana.

3.1 The relationship between gender and smallholder farmers access to land

The study found that family lands and skin lands are prominent in the Upper West Region (Table 1), a situation Abdulai, Issaka and Ndekugri (2007) observed in the Upper regions of Ghana that family lands and skin lands constituted 90% of the available lands for agricultural purposes. Both sexes have very good access to land with the men dominating in Nadowli, Wa East and Sissala East. The survey shows that men (71.5%) have more access to land than the women (68%). The Chi Square analysis showed a significant relationship between gender and access to land ($\chi^2 = 0.581$; $df=1$, $p= 0.446$). That is, access to land was dependent on gender in favour of the male farmer. Respondents indicated that the male inheritance system does not allow females to inherit land because these lands may be transferred to other families on the death of a husband or when the female goes out to marry from another family. This was confirmed by Quisumbing and Pandolfelli (2010) that men are given preference over women in accessing land in such patrilineal systems.

Table 1: Relationship between gender and smallholder farmers' access to land

District	Male						Female					
	Family		Skin		Total		Family		Skin		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Nadowli	35	70	15	30	50	100	27	54	23	46	50	100
Wa East	44	88	6	12	50	100	39	78	11	22	50	100
Jirapa	29	58	21	42	50	100	43	86	7	14	50	100
Sissala East	35	70	15	30	50	100	27	54	23	46	50	100
Total	143	71.5	57	28.5	200	100	136	68	64	32	200	100

Source: Survey Data, 2013. $\chi^2 = 0.581$; $df=1$, $p= 0.446$; Sig

3.2 Relationship between gender and smallholder farmers' access to labour

Smallholders need labour on the fields for most manual work such as planting, weeding and harvesting. This labour is mostly in the form of hired or family labour. It has been observed that generally most farmers in the region have access to labour. However, the Chi Square analysis in Table 2 revealed a significant relationship between gender and smallholder farmers' access to labour ($\chi^2 = 28.571$; $df=1$, $p = 0.000$) implying that access to labour was dependent on gender in this case, with the men having more access than the women. Similar observations have been made about men having more access to labour than females (Dillon and Quiñones, 2010) with the FAO (2011) indicating that female-headed households face more severe labour constraints than male-headed households. However, it is likely that since most farmers in the region depend on family labour (FAO, 2011) and the men control the households thus the labour force, they would definitely have more access than the women.

Table 2: Relationship between gender and smallholder farmers' access to labour

District	Male						Female					
	Yes		No		Total		Yes		No		Total	
	N	%	n	%	n	%	n	%	n	%	n	%
Nadowli	42	84	8	16	50	100	37	74	13	26	50	100
Wa East	40	80	10	20	50	100	28	56	22	44	50	100
Jirapa	43	86	7	14	50	100	22	44	28	54	50	100
Sissala East	45	90	5	10	50	100	33	66	17	34	50	100
Total	170	85	30	15	200	100	161	80.5	80	19.5	200	100

Source: Survey Data, 2013. $\chi^2 = 28.571$; $df=1$, $p = 0.000$ Sig

3.3 Relationship between gender and smallholder farmers' access to credit

One of the basic resources necessary for any meaningful agricultural production by smallholders is the access to credit. From Table 3, smallholder female farmers (19.5%) had more access to credit than their male counterparts (11.5%). Even though there is access to credit in the region, less than 20% of the respondents had access to it indicating that access to credit is woefully inadequate. Result of the Chi Square analysis showed that there was no significant difference between gender and access to credit by smallholder farmers ($\chi^2=4.12$ $df=1$, $p=0.249$).

Research on access to credit by men and women produced mixed results. FAO (2011), supporting this finding, indicated that credit markets are not gender neutral. Mehra and Rojas (2008) for example observed that women have more access to credit than men while FAO (2012) indicated that while there is little notable difference between men and women's access to credit, market oriented women farmers have significantly better access to NGO and co-operative credit sources as compared to men. In another situation, credit institutions are believed to ration women out of the market or grant the women smaller loans as compared to men for similar activities (Fletschner, 2008). Thus this finding is still in tune with such mixed results from authors.

Table 3: Relationship between gender and smallholder farmers' access to credit

District	Male						Female					
	Yes		No		Total		Yes		No		Total	
	n	%	n	%	n	%	n	%	N	%	n	%
Nadowli	6	12	44	88	50	100	14	28	36	72	50	100
Wa East	7	14	43	86	50	100	4	8	46	92	50	100
Jirapa	8	16	42	42	50	100	16	32	34	68	50	100
Sissala East	2	4	48	48	50	100	5	10	45	90	50	100
Total	23	11.5	177	88.5	200	100	39	19.5	161	80.5	200	100

Source: Survey Data, 2013. $\chi^2 = 4.12$; $df=1$, $p = 0.249$ Not Sig

There were two major problems identified by the respondents in their quest to access credit. They indicated that credit was usually not given at the time they needed it and also, there were cumbersome procedures making processing of the loans very difficult. More women (49.5%) indicated that the untimely nature of the loans was a problem to them as compared to 46% of the men (Table 4). Also, more of the men indicated that processing of the loans was too difficult and that likely led to the untimely nature of the loans obtained.

Table 4: Problems encountered by respondents when assessing credit

District	Male						Female					
	Untimely		Processing		Total		Untimely		Processing		Total	
	N	%	N	%	n	%	n	%	n	%	n	%
Nadowli	26	52	24	48	50	100	34	68	16	32	50	100
Wa East	12	24	38	76	50	100	17	34	33	66	50	100
Jirapa	27	54	23	46	50	100	26	52	24	48	50	100
Sissala East	27	54	23	46	50	100	22	44	28	56	50	100
Total	92	46	108	54	200	100	99	49.5	101	50.5	200	100

Source: Survey Data, 2013. $\chi^2 = 0.491$; $df=1$, $p = 0.483$ Sig

3.4. Relationship between gender and smallholder farmers' access to inputs

Inputs in the form of improved seeds, fertilizers, insecticides and herbicides are available in the region to both men and women. These inputs are very necessary for crop and animal production. Statistically, there was a significant relationship between gender and smallholder farmers' access to agro-chemicals in the region ($\chi^2 = 2.356$; $df=1$, $p = 0.125$) (Table 5). Thus men (74%) had more access to the inputs than women (67%) confirming the FAO (2011) observation that there is a wide gender gap in agricultural technologies including improved plant varieties and animal breeds. These gaps lead to gender inequalities in access to and adoption of new technologies; thus the use of purchased inputs depends on the availability and accessibility of complementary assets such as land, credit, education and labour (FAO, 2011). For example, male-headed households show much wider use of fertilizers than their female counterparts in many countries (FAO, 2010).

Table 5: Relationship between gender and smallholder farmers' access to inputs

District	Male						Female					
	Yes		No		Total		Yes		No		Total	
	N	%	N	%	n	%	n	%	n	%	n	%
Nadowli	35	70	15	30	50	100	34	68	16	32	50	100
Wa East	36	72	14	28	50	100	31	62	19	38	50	100
Jirapa	38	76	12	24	50	100	35	70	15	30	50	100
Sissala East	39	78	11	22	50	100	34	68	16	32	50	100
Total	148	74	52	26	200	100	134	67	66	33	200	100

Source: Survey Data, 2013. $\chi^2 = 2.356$; $df=1$, $p = 0.125$ Sig.

3.5 Relationship between gender and smallholder farmers access to Agricultural Information.

The study assessed access to information through Information and Communication Technology (ICT) such as Television, Mobile Phone, Radio and Internet; Input suppliers and Agricultural Extension Officers.

Television

Two men and a female indicated they received agricultural information through Television. The men were found in the Wa East and Jirapa districts. These figures are highly insignificant.

Mobile Phone

Across the region, smallholders indicated that they do not use the mobile phone to access agricultural information from Agricultural Extension Agents or e-service providers. However those who have the mobile phones explained that apart from social interactions, they sometimes communicate with one another on issues related to farming. They therefore use the phone for social interactions more than for agricultural purposes.

Radio

Regarding access to agricultural information through radio, the Chi Square analysis proved a significant relationship ($\chi^2 = 34.720$, $df=1$, $p = 0.000$) between gender and access (Table 6). Thus male farmers had more access than the female farmers. This is likely due to the fact that after farm work, male farmers have more time to listen to radio while women carry out household chores like cooking and attending to the children.

Table 6: Relationship between gender and smallholder farmers access to Agricultural Information through Radio

District	Male						Female					
	Yes		No		Total		Yes		No		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Nadowli	19	38	31	62	50	100	4	8	46	92	50	100
Wa East	15	30	35	70	50	100	7	14	43	86	50	100
Jirapa	21	42	29	58	50	100	2	4	48	96	50	100
Sissala East	11	22	39	78	50	100	5	10	45	90	50	100
Total	66	33	134	67	200	100	18	9	182	91	200	100

Source: Survey Data, 2013. $\chi^2 = 34.720$, $df=1$, $p = 0.000$ Sig

Internet

Both males and females in the Upper West Region do not access agricultural information via the Internet as indicated by the results. This indicates an ICT deficit in the region and may be largely due to access of computers and the Internet and the knowledge to operate such machines if even they are available.

Discussions on ICT

Apart from radio where 33% of men and 9% of women have access, there was no or very little access to other ICTs in the study area. Even though ICTs play important roles in transferring information, smallholders and rural women in particular face barriers in accessing ICTs because of their limited education, financial and time constraints (Best and Maier, 2007). Using radio in Ghana does not necessarily depend on educational levels because most of the local radio stations transmit information in the local languages. Some of the radio stations that broadcast a lot of agricultural programmes include Classic (Techiman), Volta Star (Ho), Radio Ada (Ada) and Ripe (Somanya). There are also integrated and customized ICT platforms designed to help stakeholders in agricultural value chains to communicate with one another efficiently. In Ghana, we have Esoko Ghana and MFarm being the current service providers.

In most cases, where smallholders have access to some of these ICTs, they use them for social purposes more than assessing agricultural information from AEAs. In assessing information in cassava value chains, Anaglo (2011), observed that actors in the chain only used mobile phones to call and converse with family and friends, watching Ghanaian and Nigerian films and soccer on the TV and listening to music and political issues on the radio. It is therefore the responsibility of the extension agents to advise farmers on the use of these gadgets to assess agricultural information which will go a long way to improve a lot of farming practises of our farmers.

3.6 Relationship between gender and smallholder farmers access to agricultural information through input suppliers

Input supplies also form part of the information dissemination process. Statistical analysis regarding access to agricultural information through input suppliers revealed a significant relationship ($\chi^2 = 1.463$; $df=1$, $p= 0.226$) between gender and smallholder farmers' access. From Table 7, generally, more male farmers (14.5%) had more access than the female farmers (10.5%). This is likely due to the fact that the female farmers may even prefer to send their husbands to buy the inputs especially chemicals for them. This is because they may either not have time to go to the shops or they just want the men to support them.

Input suppliers form an integral part of the extension delivery process. As farmers buy inputs, they receive an informal advice from the suppliers on how to use the inputs, especially agro-chemicals. Some of the input dealers for fear of wrong application of chemicals have taken it upon themselves to offer such extension services to farmers who purchase inputs from them. Using the Input Supplier Model, Clark (2012) observed that input suppliers can be an effective and sustainable way of providing input and extension services to high potential areas. However, Thapa (2009) has reservations of the quality of inputs and technical recommendations because there are no monitoring mechanisms for such services.

Table 7: Relationship between gender and smallholder farmers access to agricultural information through input suppliers

District	Male						Female					
	Yes		No		Total		Yes		No		Total	
	N	%	n	%	n	%	n	%	n	%	n	%
Nadowli	7	14	43	86	50	100	3	6	47	94	50	100
Wa East	12	24	38	76	50	100	13	26	37	74	50	100
Jirapa	3	6	47	94	50	100	2	4	48	96	50	100
Sissala East	7	14	43	86	50	100	3	6	47	94	50	100
Total	29	14.5	171	85.5	200	100	21	10.5	179	89.5	200	100

Source: Survey Data, 2013. $\chi^2 = 1.463$; $df=1$, $p= 0.226$ Significant

3.7 Relationship between gender and smallholder farmers access to agricultural information through Agricultural Extension Agents (AEAs)

Agricultural extension services are meant to assist farmers adopt improved practices leading to improvement in their yields and subsequent well-being. The study found that more men (73.5%) had access to extension services than women (57%) (Table 8). A significant relationship ($\chi^2 = 12.007$; $df=1$, $p= 0.001$) was established between gender and smallholder farmers' access to agricultural information through Agricultural Extension Officers (AEAs). It has been generally accepted that extension services are more available to men and the wealthier farmers than women. This is because there are more men carrying out extension delivery services than women in most countries and Ghana is not an exception. Even though it was observed that extension services favoured men more than women in many countries (FAO, 2011), Doss and Morris (2001) observed that in Ghana, female farmers in male-headed households have equal contact with extension agents but female farmers in female-headed households have much less contact. However, FAO (2011) observed that service providers tend to approach male farmers more often than female farmers because of the general misperception that women do not farm and that there would be a "trickle down" effect from male household heads.

Table 8: Relationship between gender and smallholder farmers access to agricultural information through Agricultural Extension Agents (AEAs)

District	Male						Female					
	Yes		No		Total		Yes		No		Total	
	N	%	N	%	n	%	n	%	N	%	N	%
Nadowli	40	80	10	20	50	100	35	70	15	30	50	100
Wa East	29	58	21	42	50	100	9	18	41	82	50	100
Nandom/Jirapa	35	70	15	30	50	100	38	76	12	24	50	100
Sissala East	43	86	7	14	50	100	32	64	18	36	50	100
TOTAL	147	73.5	53	26.5	200	100	114	57	86	43	200	100

Source: Survey Data, 2013. $\chi^2 = 12.007$; $df=1$, $p= 0.001$ Significant

4 Conclusions

The study assessed smallholders' access to resources such as land, credit, labour and inputs and also access to agricultural information through ICTs, agricultural extension agents and input suppliers.

It was observed that for all the variables studied, there was a statistically significant relationship between gender and access to the resources. Women were found to have more access to credit than men even though other research results were always mixed. Men were found to have more access to land, inputs and information than women. Access to land has always been the preserve of men and it was not surprising that the result was still in favour of men. Likewise, the men also had more access to inputs such as seeds and agro-chemicals. Finally, the men had more access to agricultural information through ICTs, input suppliers and extension agents.

5 Recommendations

It is recommended that more attention is paid to women farmers especially trying to reduce cultural barriers that make them have less access to land. Access to credit is very low in the region even though women were found to have more access than men. Microfinance institutions and rural banks should be encouraged to reduce some of their restrictions to access to credit with emphasis on the complex and tiresome form filling procedures which discourage most farmers from patronising their products. The input supply network should be made more efficient in order for the suppliers to be able to provide timely, affordable and quality inputs and tailored advisory services which will improve productivity and therefore household incomes. More attention should be paid to access to information through ICTs by first of all, improving extension advisory services, and then advising farmers on how to access information through the radio, Television and the mobile phone platforms.

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