

Gender Disparity in the Utilization of Agricultural Extension Services in Bure Woreda, North Western Ethiopia

Gashaw Tenna Alemu

Department of Rural Development and Agricultural Extension, College of Agriculture and Environmental Sciences, Bahir Dar University, Bahir Dar, Ethiopia.

Corresponding author: gtenna@yahoo.com

Received: April 01, 2014

Accepted: December 6, 2014

Abstract: *Globally, rural women face a particular burden in division of labor. Providing better agricultural extension services to rural women is essential in using agriculture for development. Hence, this study sought to ascertain the status of agricultural extension services utilization with the existing gender gaps in Bure Woreda, North Western Ethiopia. The survey was conducted in three purposively selected PKAs which have the maximum number of FHHs. Thus 160 samples were selected via multistage random sampling. Pre-tested structured interview schedule and other secondary sources were used to collect primary and secondary data, respectively. Key informant interviews and focus group discussions helped to generate the necessary qualitative data. Frequency, means, standard deviation, t-test and chi-square were used for analysis. The core survey result showed that on average 60.76% MHHs and only 29.71% FHHs utilized the selected agricultural extension services in the last three years (2009/10-2011/12). The analysis result depicted gender differences related to FHHs which include illiteracy, less ownership of productive resources plus less utilization of extension services. Therefore, adult education, efficient extension service systems, intervention to improve livestock sector via livestock credit, creating strong linkage with extension contacts, and giving reasonable place for women in farmers' organizations were strongly recommended to boost agricultural development in the study area.*

Keywords: Gender, Gender Disparity, Extension Package, Extension Program, Utilization

1. Introduction

Globally, rural women, especially those from poor households, face a particular burden. In view of the gender division of labor, they spend considerable time fetching water, getting healthcare for their children, and reaching markets. Girls have less access to education than boys, and maternal mortality is high. Providing better extension services to women is not only necessary to realize their rights, but it contributes to economic growth and poverty reduction (Quisumbing *et al.*, 1995; IFPRI, 2000; and Mason and King, 2001, 2005). Providing better services to rural women is also essential in using agriculture for development (World Bank, 2007; World Bank, FAO, and IFAD, 2008). Women, particularly in Africa, play an important role in agriculture but this role often goes unrecognized due to perception bias. The perception of the roles that men and women play in agriculture is biased toward men, and as a consequence, perceptions about the need for rural services are biased toward men as well (Sen, 1990a, 1990b; World Bank, FAO, and IFAD, 2008).

The gender division of labor in agriculture means that female and male farmers usually have different extension needs. However, extension services worldwide remain dominated by men. It is estimated that globally only 15 % of extension agents are women (IFAD, 2009). The female farmers' agricultural activities have been least priority in countries' research agenda. They lack improved extension packages and services that assist them to improve their productivity. So far, the extension system in Ethiopia is unable to address the cultural taboos against the participation of female farmers in ploughing and sowing, which subsequently reduces the rigid division of labor both at the household and field levels (EARO, 2000).

In Ethiopia especially in the Amhara Region, the need for policy review is obvious. Thus, the important contributions made by women in agriculture justify the necessity to make the system more equitable (ANRS BoA, 2013). Therefore, specific situations need to be reviewed and respective action to be taken. Generally speaking, women and men in Bure woreda have clear separate labor roles to play. The main criteria for the division of labor in the area are age and sex. Women are responsible for reproductive activities in and around the household while men do most of the work on farm or work for wage (BWAO, 2013). Thus, one can argue that many rural women are exposed to social and economic problems due to the existing gender disparity in utilizing agricultural extension services based on their division of labor in the study area. Hence, developing effective and sustainable extension service for women farmers within the context of broader rural development strategies has also become a challenge (Lisa and Jacob, 1992). Therefore, location or content specific situation analysis of the gender disparity in agricultural extension service delivery is essential. However, there is no specific empirical information about gender gaps in utilizing extension services between female and male farmer groups especially in the proposed study area. Hence, this study had been conducted to produce empirical data that can provide a clear understanding of their circumstances of gender disparity in agricultural extension service delivery, in Bure Woreda, West Gojjam Zone of the Amhara National Regional State.

Generally, as an objective, the study tried to investigate the status of agricultural extension services' utilization among rural households with the existing gender differences in the study area to answer the research questions .i.e. how the delivered agricultural extension services are utilized by farmers; and how gender gaps occur in the utilization status of agricultural extension services delivery.

Literature indicated that extension service is vital for rural people, which they can use to improve their productivity, income and welfare and to manage the resources, on which they depend, in sustainable way. An effective agricultural policy on gender is very important to institutionalize gender equality and empowerment in agriculture and rural development strategies of Ethiopia. The conditions of both rural male and female farmers in Ethiopia can be significantly enhanced if agricultural development policies are improved and the existing gender-neutral extension services are made gender responsive and access by female farmers to productive resources improved through the formulation and implementation of effective gender empowerment strategies (WB, 2001). Organizational or institutional situations, economic conditions, and socio-cultural variables, rural female farmers' access to agricultural services such as credit, extension services and rural institutions enable them to manage their environmental and socio-economic challenges in agriculture on a sustainable basis so as to control and benefit from the delivered agricultural extension services. Thus, empowering rural female farmers and improving their access to productive resources, extension services and rural institutions can play a significant role in enhancing their extension services' utilization to enhance productivity, food security and sustainable development (Ibid). Based on this and similar areas of conceptual constructs, assessing the status of agricultural extension services utilization with the existing gender gaps are considered as an objective of this investigation.

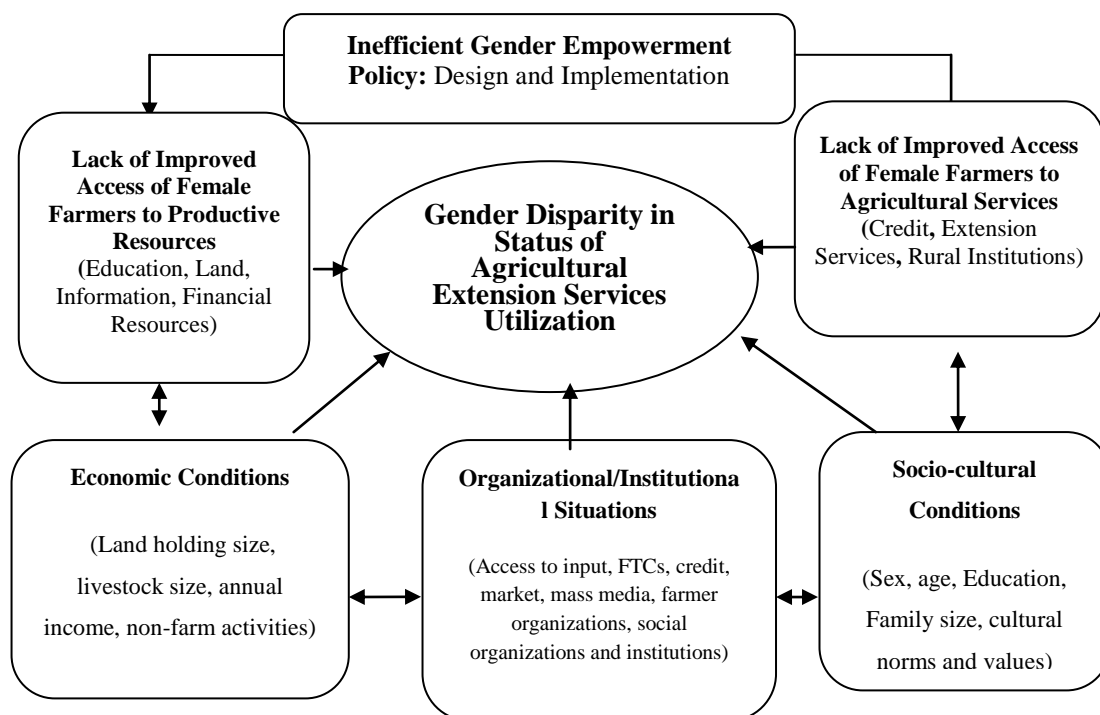


Figure 1. Conceptual framework of the study

2. Materials and Methods

Bure, located on the North-western part of Ethiopia is one of the 11 Woredas of West Gojjam Administrative Zone. Bure, the main town of the Woreda at located at a distance of 400 kms from Addis Ababa and 148 kms from Bahir Dar. According to the data obtained from BWAO (2013), the total population of the Woreda is 116,076 of which 110,511 live in rural areas while 5,565 live in urban area. The topography of the area has different features; 76% gentle slope, 10% mountains and the remaining 14% is uneven land. The main source of economy for the Woreda population is land which is majorly used for crop and livestock production (BWAO, 2013).

Generally, multistage sampling had been used for this study since it accommodates different techniques at a time. At the first stage, Bure Woreda was purposely selected because of its high productivity potential and its highest number of women population in the North Western part of Ethiopia (CSA, 2007). Secondly, from the total 20 PKAs of the Woreda, only three PKAs with the highest number of FHHs were selected purposively to acquire the maximum number of FHHs for analysis. Thirdly, stratified random sampling was employed to stratify respondents into MHHs and FHHs. The scenario behind stratified random sampling was to determine and come up with equal number of sample size from the two (male and female) strata. Finally, Systematic random sampling technique was employed to select 160 sample

households out of 4,123 household heads found in the sampled PKAs. The principle of probability proportional to size (PPS) or ratio sampling was used as a basis to fix the number of FHHs and MHHs selected from respective PKAs.

Data were collected from both primary and secondary sources to answer the research question. Primary data were collected from primary sources such as from respondents through pre-tested individual interview schedule, key informant interviews and focus group discussions. Secondary data were collected from secondary sources such as journal articles, books, and unpublished documents such as extension package manuals and reports from the Woreda agricultural office.

The quantitative data were tabulated and analyzed by using both descriptive (range, frequency, percentage, mean and standard deviation) and inferential statistical tools (chi-square and independent sample t- test). The qualitative data were interpreted and described by using interpretations, categorizations, and narrative explanation of facts to supplement the findings of quantitative data analysis.

3. Results and Discussions

The discussion part mainly compared the two household heads (MHHs and FHHs) groups and showed the gender differences in the status of utilization on selected agricultural extension services.

Households are important institutional units for most development processes including agricultural extension service delivery (Etenesh, 2001). Thus, discussing on the demographic features of household respondents and the inferential results (Table 1) would be important to see the status of utilizations among rural households.

According to the survey result displayed in table 1, the mean age of the total sample respondents is 47.11 years with minimum and maximum age of 33 and 74 years, respectively. However, the result of the t-test indicated that there is no statistically significant difference between the mean age of FHHs and MHHs. The average family size of MHHs and FHHs was found to be 6.01 and 5.81, respectively. However, the independent sample t-test indicated no significant mean differences between the two categories at 10% probability level. According to Deribe (2007) on a survey conducted in Dale woreda of SNNPR, family size contributes to the variation in getting access and utilization of agricultural extension information. This is because the higher number of family members leads to decisions to take risk for participation

in utilization of technology packages. This also leads to exposure to get information. Therefore, family size contributes to the variation in getting access and utilization of agricultural extension information. So, the larger family size of MHHs in the study area enables them to fully participate and utilize different agricultural extension services.

The survey showed that 90% of FHHs and 21.25% of MHHs are illiterate. There is a significant mean difference ($\chi^2=77.242$) between MHHs and FHHs at less than 1% significance level. Poor educational background of FHHs affected their utilizations of agricultural extension services negatively. This is because farmers with better educational status have a capability to understand and interpret the information transferred to them from Development Agents (DAs) easily, and others. Accordingly, IFPRI (2012) reported that education level is significant in male heads' access to different types of extension services, but education level matters to female heads only in accessing or visiting demonstration plots. Similarly, lack of education and poor awareness level may be a bottleneck to utilize the extension service delivered appropriately. Additionally, Asres (2005) on a survey conducted in Dire Dawa administrative council proved that educational level of the sample household heads is one of the variables that affect their participation in agricultural extension services.

Table 1. Distribution of respondents based on their demographic characteristics

Demographic Descriptions Age Group (Category)	HHs Category (N=160)			Total HHs (N=160) N (%)
	MHHs (N=80) N (%)	FHHs(N=80) N (%)		
18-33	4 (5)	0 (0)		7 (4.4)
34-59	66(82.5)	64(80)		130(72.2)
>59	10(12.5)	16(20)		26(14.4)
Mean	46.68	47.54		47.11
Standard Deviation	9.54	10.25		9.88
t-value	0.551 NS			
Family size Category	MHHs(N=80) N (%)	FHHs(N=80) N (%)	Total HHs(N=160) N (%)	
1-3	0(0)	1(1.25)	1(0.62)	
4-6	52(65)	55(68.75)	107(66.88)	
7-9	28(35)	24(30)	52(32.5)	
Mean	6.01	5.81	5.91	
Standard Deviation	0.95	1.49	1.25	
t-value	-1.011 NS			
Educational level of respondents	HHs Category (N=160)		Total sample (N=160)	
	MHHs (N=80) N (%)	FHHs (N=80) N (%)	N	(%)
Illiterate	17	72	89	55.6
Literate	63	8	71	44.4
χ^2 -value	77.242***			

NS= Not significant at 10% probability level ***= Significant at less than 1% probability level
Where: N= Number of respondents HHs= Household heads; MHHs= Male household heads;
FHHs= Female household heads

Land and financial resources are of prime importance for poor rural women, but technology, seeds and fertilizer, livestock and fisheries, irrigation, marketing opportunities and off-farm employment are also essential (ECOSOC, 2014). Land is the primary source of livelihood for all rural households. The size of the land reflects ownership of an important fixed farm asset. The larger farm size implies more resources and greater capacity to invest in farm and increased production. However, a noticeable gap exists in entitlement to this important resource between FHHs and MHHs (ANRS BoA, 2013). According to the survey result, the average land holding size of MHHs and FHHs was 2.286 ha and 1.183 ha, respectively. There is a statistically significant mean difference ($t = -12.132$) on land holding size between FHHs and MHHs at less than 1% level of significance. From this result, one can understand that the number of landless farmers is high at FHHs. This also indicates that FHHs have less access to productive resource when compared with MHHs. Thus, this difference shows that land holding size affects the extension services utilization. Although the survey result showed that, on average a household have 5.75 TLU (6.83 for MHHs and 4.66 for FHHs) with a standard deviation of 2.44 (2.36 for MHHs and 2.52 for FHHs), the number of TLU owned by MHHs was greater than FHHs. There was a significant mean difference ($t = -5.630$) at less than 1% level of significance between MHHs and FHHs. The reason for the difference is the low socio-economic status of FHHs to own such important assets.

Concerning farm resources, Umeta *et al.*'s (2011) survey result conducted in the central rift valley's of Ethiopia clearly indicated that, FHHs access to productive resources is low when compared with MHHs. FHHs owned a mean of 1.43 ha whereas MHHs owned a mean of 2.03 ha of farm size and their difference is significant at 1% significant level ($t = 3.28$, $p = 0.001$). MHHs have better access to oxen than FHHs and their difference is significant at 1% probability level ($\chi^2 = 6.88$, $p = 0.009$). In general, these great variations of resource level between MHHs and FHHs favored the MHHs to have more access to financial capital by selling their livestock to purchase extension package inputs from suppliers. In addition, farmers who owned a large number of livestock have the capacity to bear risks of using the available extension packages. This by itself encourages the use of technological packages. Similarly, IFPRI (2012) reported that land size and asset in the form of livestock matters for both male and female heads as a factor affecting visit by extension agents and attendance in community meetings. Therefore, the findings indicated that MHHs in the study area have a better utilization status of agricultural extension services.

3.1. Utilization Status of Agricultural Extension Services

The agricultural extension services provided for farmers are so many and difficult to measure due to their multi-faceted nature. However, for the purpose of this study, the major extension services given in the study area were identified based on the result of Focus Group Discussions (FGDs) and with the help of BWAO. Thus, crop production packages (maize, wheat, *teff* and horticultural crops), livestock development packages (cattle fattening, sheep and goat production, sheep and goat fattening, and poultry production), extension programs (extension training, on-farm trial and demonstrations and farmers field day), credit and home economics services are mainly identified for this study to see their status of utilization by FHHs and MHHs in the last three consecutive years (2009/10-2011/12).

Crop production packages as a whole include the use of improved or high yielding seed variety, fertilizer, planting techniques and use of chemicals. Livestock development package usually includes improved breeds, housing, feeding, and veterinary services. Meanwhile, services like participation on extension programs, credit and home economics are delivered in a single entity either directly or indirectly to implement packages (ANRS BoARD, 2004).

The result of FGDs clearly revealed that even if there was a good coverage of extension services, low status and low level of participation of resource-poor and women farmers' in utilization of agricultural extension services was reported. Additionally, the discussion that was made with Woreda experts and DAs indicated that, extension workers tend to work with resource-rich male farmers who had shown an interest in the extension packages to achieve the minimum number of packages assigned to each DA and Woreda expert.

For example, in Ethiopia, researchers note that male extension agents are prevented from interacting with female farmers by strict cultural taboos. Another issue noted is that male extension officers more likely subscribed to the common misconception that women are not farmers and overlooked women in the household (Moore *et al.*, 2001).

Table 2. House Holds' distribution on utilization of extension packages/programs/services

S.N	Extension Packages/ Programs/ Services	HHs Category (N=160)				χ^2 -value; (P-level)	Total (N=160)	
		MHHs(N=80)		FHHs(N=80)			Yes (%)	No (%)
		Yes (%)	No (%)	Yes (%)	No (%)			
1	Maize package	80(100)	0(0)	4(5)	76(95)	144.762*** ; (0.000)	84(52.5)	76(47.5)
2	Teff package	17(21.25)	63(78.75)	0(0)	80(100)	19.021***; (0.000)	17(10.6)	143(89.4)
3	Wheat package	15(18.75)	65(81.25)	2(2.5)	78(97.5)	11.123***; (0.001)	17(10.6)	143(89.4)
4	Horticulture package	20(25)	60(75)	24(30)	56(70)	0.502 NS	44(27.5)	116(72.5)
5	Cattle fattening package	59(73.75)	21(26.25)	19(23.75)	61(76.25)	40.025***; (0.000)	78(48.75)	82(51.25)
6	Sheep and goat production package	45(56.25)	35(43.75)	32(40)	48(60)	4.231**; (0.040)	77(48)	83(52)
7	Sheep and goat fattening package	45(56.25)	35(43.75)	31(38.75)	49(61.25)	4.912**; (0.027)	76(47.5)	84(52.5)
8	Poultry production package	24(30)	56(70)	36(45)	44(55)	3.840**; (0.050)	60(37.5)	100(62.5)
9	Extension trainings	80(100)	0(0)	36(45)	44(55)	60.690***; (0.000)	116(72.5)	44(27.5)
10	Practicing on-farm trail and demonstrations	80(100)	0(0)	4(5)	76(95)	144.762*** ; (0.000)	84(52.5)	76(47.5)
11	Participation in farmers field day	77(96.25)	3(3.75)	0(0)	80(100)	148.434*** ; (0.000)	77(48)	83(52)
12	Credit services	71(88.75)	9(11.25)	54(67.5)	26(32.5)	10.569***; (0.001)	125(78)	35(22)
13	Home economics services	19(23.75)	61(76.25)	67(83.75)	13(16.25)	57.926***; (0.000)	86(53.75)	74(46.25)

Source: Own computation (2013); ***, **= Significant at less than or equal to 1% and 5% probability level respectively

Where: NS= not significant at 10% level of significance N=Number of respondents (%) = percentage
 HHs= Household heads MHHs= Male household heads, FHHs= Female household heads

Maize, wheat and *teff* are the major cereal crops produced in the study area to enhance food security. Additionally, horticulture is also the major package used by farmers to enhance the income of the household (BWAO, 2013). Hence, an assessment was made to examine its status of utilization by farmers (Table 2). As indicated in table 2, out of the total (160) sampled households, on average, 52.5%, 10.6%, 10.6% and 27.5% participated in maize, *teff*, wheat, and horticulture packages, respectively. The participation of FHHs in crop production packages was insignificant; i.e. only 5%, 0% and 2.5% of FHHs participated in maize, *teff* and wheat packages, whereas MHHs took the highest utilization share (100%, 21.25% and 18.75%, respectively) except in the horticulture package which 30% of FHHs and 25% of MHHs utilized. Statistically, there is a significant mean difference at 1% level of significance ($\chi^2 = 144.762, 19.021$ and 11.123) between MHHs and FHHs in producing maize, *teff* and wheat packages. The same result had been found by Edlu (2006) on a survey conducted in Enemore and Ener Woreda, Gurage Zone. The result clearly proved the dominance of MHHs in utilizing crop production packages. Even if the number of FHH users (30%) are greater than MHH users (25%) in horticulture package, there is no significant mean difference between them ($\chi^2 = 0.502$). This result implies that FHHs in the study area probably preferred small backyard horticulture package with much less production cost due to their less land holding size. This result is in line with IFPRI (2011) that the Women's Development and Change extension package emphasizes extension advice on traditional women's activities such as home gardens and poultry in Ethiopia.

Fattening and other production packages are the major components of livestock packages that have been utilized in the study area. Expanding improved poultry package towards women to improve food security and cash income is also one of the extension domains that have been strongly pushed in the study area (BWAO, 2013). Hence, an assessment was made to examine its status of utilization by farmers (Table 2). Firstly, out of the total respondents, 73.75% MHHs and 23.75% FHHs; 56.25% MHHs and 40% FHHs; and 56.25% MHHs and 38.75% FHHs participated in cattle (cow and oxen) fattening, sheep and goat production, and sheep and goat fattening package, respectively. There is a statistically significant mean difference ($\chi^2 = 40.025, 4.231$ and 4.912) at less than 1% probability level between MHHs and FHHs in using cattle fattening package; and at less than 5% probability level for both sheep and goat (sheep and goat production; $P=0.040$ and sheep and goat fattening; $P=0.027$) packages. Secondly, 37.5% of HHs (30% MHHs and 45% FHHs) participated in poultry production package and there is a significant mean difference ($\chi^2 = 3.840$) at 5% significance

level between MHHS and FHHS. In describing gender differences, the dominance of MHHs on livestock fattening and production packages is clearly observed except in poultry production package. It is clear that livestock ownership of FHHs in sheep (0.54) and goat (0.39) is higher than their counterparts; that is, 0.41 and 0.26 respectively. Generally, the reason for this result may be the economical advantages gained due to more livestock ownership. MHHs get more extension support from extension workers because they are able to pay either down payment or cash to utilize those packages than poor FHHs. Several authors have also indicated that gender and resource status differences in using recommended modern technology are also causes (Bezabih, 2000; and Techane, 2002).

Participation in various areas of extension programs of training, practicing on-farm trial and demonstration, farmers' field day or visit, etc. enables farmers to identify their farm problems and to set sound solutions for further measure (ANRS BoARD, 2004). However, the results of the study indicated that the beneficiaries of these services are mainly male farmers than women. All MHHs participated in extension trainings and practiced on-farm trials and demonstrations. While 96.25% of MHHs participated in farmers' field day, only 45% and 5% FHHs participated in extension trainings and practiced on-farm trials and demonstrations in the past three years' cropping season both in Farmers' Training Centers (FTCs) and other demonstration centers. Meanwhile, all FHHs have not participated in farmers' field day and visiting programs. There is a significant mean difference ($\chi^2 = 60.690, 144.762$ and 148.434) between MHHs and FHHs at less than 1% significance level in participating on extension trainings, on-farm trials and demonstrations and farmers' field day or visiting programs, respectively. Gender disparity is clearly reflected in participation of extension programs, since on average, only 16.67% FHHs have participated in various components of extension programs. In contrast, 98.75% MHHs participated on various areas of extension programs conducted in the previous three years cropping season. This result is in line with Umeta *et al's* (2011) survey result in the central rift valley of Ethiopia which reported that an average participation of women farmers in extension events like training, field days and demonstration is very low (<21%). The reason reported was that DAs focus on inviting MHHs for the extension program thinking that male farmers are in a good position to practice the technology after the training or the visit. It is also easy for the DAs to fulfill the targeted quota plan given from the Woreda. In addition, low female HHHs' participation in the extension program was due to their poor communication skills, fear of walking with male HHHs in the field, lack of invitation by DAs, and reasons associated with their household

workload and cultural influences. Similarly, Mahilet (2006) on a study conducted in Alemaya Woreda stated that MHHs, have better contact with DAs, and thus they are in a better position than FHHs in accessing extension services such as attending demonstration, participating in field day or training, and receiving written information. Similar results were also found by Habtemariam (1996) indicating that only 37% of the women have participated in extension advice and training in Ethiopia. Moreover, Asres (2005), on a study conducted in Dire Dawa administrative council, showed that out of the total respondents, only 8.1%, 7.5%, 6.3%, 6.9% and 1.3% of women had participated in extension planning, training, farmers' field day, demonstration and on-farm trial and extension exhibition, respectively. Luqman *et al's* (2006) and Kizilaslan's (2007) studies also support the above finding that extension programs are the main components in the rural development strategies to enhance the livelihoods of the rural people. But women's participation in extension programs is not sufficient. Considerably, they have little access and benefit from extension trainings and/or services. However, the participation of females in various areas of extension programs facilitates the effectiveness and efficiency of the utilization agricultural extension services.

Credit helps farmers alleviate current liquidity constraints and enhances the use of technology package and services correspondingly (ANRS BoARD, 2004). Different institutions like the Amhara Credit and Savings Institution (ACSI) and the Commercial Bank of Ethiopia (CBE) give saving and credit services for farmers in the study area (Abebe, 2011). Thus, out of the total 160 HHs, 88.75% MHHs and 67.5% FHHs have utilized credit services. There is also a significant mean difference ($\chi^2=10.569$) at less than 1% probability level between MHHs and FHHs (Table 2). This finding is in line with Umeta *et al's* (2011) survey result, that 52.9 % of MHHs have received a sort of credit at least for one or more than one times, whereas only 47.1% of FHHs received it. Edlu (2006) stated the reasons for the significant mean difference between male and female farmers towards using credit service. The reasons include female HHs may face high interest rate, shortage of farm land size, inability to pay down payment, and lack of collateral to take credit. However, credit is an effective policy option to encourage utilization of agricultural extension packages or services. It has been suggested by many authors that credit has strong and significant role in enabling the use of technological packages (Bezabih, 2000; and Techane, 2002). Therefore, households that have the access and utilization to credit service would positively and significantly affect the household heads' participation in full extension package service.

To achieve food security at household level and to improve the life standard of farmers, delivering home economics services is the only choice. The service includes food preparation, post-harvest technologies and improvement of house standards. The users may be either female or male and can use the services either alternatively in a single entity or as a whole based on their interest and environmental situations (ANRS BoARD, 2004). The result of the study indicates that only 23.75% MHHs and 83.75% FHHs have utilized home economics services either in a single entity or as a whole. Statistically, there is a significant mean difference ($x^2 = 57.926$) at less than 1% probability level between FHHs and MHHs. This result indicates that females were more responsible and performed much higher than males with regard to the tasks that were usually carried out around home. As a result, rural women's participation and utilization of extension services have been found to be minimal. In line with the above finding, UN (1992) reported that women are mostly proposed for programs of home economics which, though very useful, disregard their role in agricultural production.

In line with the above finding, Buchy and Basaznew (2005) found crucial shortcomings both in the gender sensitivity of extension provision and in the way gender and women's affairs were situated within the bureaucracy in the Awasa Bureau of Agriculture. While farmers in general were underserved by extension agents, women farmers made up only a small fraction of farmers receiving extension services. They seldom went to extension field visits unless they were related to home economics. Even where training by agricultural staff was in principle open to men and women farmers, the training times were selected without consideration of women's time burdens.

4. Conclusions and Recommendations

The major resources required for farm activities in the study area; i.e. land and livestock assets are relatively better in male headed households than female-headed households to undertake crop and livestock production and to use the services rendered by professionals to those activities. In line with this idea, FHHs' utilization of inputs based on their need in terms of type and amount was found to be minimal. Only very few FHHs were having links with the DAs of PKAs to get advice and benefits. Therefore, MHHs benefited more from agriculture outputs and led live better life. Generally, the MHHs were stronger in different aspects of life than the FHHs.

As the results of this study revealed, the education level of the respondent had a significant mean difference among HHs which significantly influenced their extent of utilization of extension services. Thus, addressing gender disparities in accessing to rural education via provision of continuous information and special, adult education programs is vital and is strongly recommended.

It was found that land holding size significantly affected the utilization of agricultural extension services. Thus, in addition to fair farmland distribution, developing and disseminating technologies and strategies are relevant to FHHs to increase productivity.

Since livestock is one of the significant assets influencing farmer participation and utilization of agricultural extension services, intervention to improve the sector should be encouraged through empowering farmers to own livestock through provision of credit. Furthermore, development of improved livestock feed and health service should be paid attention to improve their productivity.

Linkages of the society to extension workers and their institutions have a great impact on the success of the farming community. Hence, the community must have strong linkage with extension workers (Umeta *et al.*, 2011).

Finally, reasonable place should be given for women in the participatory extension programs and development process, even by reserving specific minimum quota in committees or leadership, both in formal and informal farmers' organizations.

Acknowledgments

I would like to thank all the academic and supporting staff of Bure Agricultural TVET College, Bermuda members, and Bure Woreda Agricultural Office staffs for their continued and unreserved material, technical and moral support during sampling and data collection process. I would like to thank also data enumerators and all my respondents for their willingness and cooperation in order to have the data for this research.

References

Abebe Getahun. 2011. Women Participation in Rural Cooperatives: The Case of Bure Woreda, West Gojjam Zone, Amhara National Regional State. M.Sc. Thesis Presented to the School of Graduate Studies of Haramaya University, Ethiopia.

- ANRS BoA (Amhara National Regional State Bureau of Agriculture). 2013. *Six month work plan execution and evaluation report*.
- ANRS BoARD (Amhara National Regional State Bureau of Agriculture and Rural Development). 2004. *Crop Production Package, Dairy Farms and Livestock Development Package and Home Economics Package*. Training Manuals for FTCs. Bahir Dar, Ethiopia.
- Asres Elias. 2005. Access and Utilization of Development Communication by Rural Women in Dire Dawa Administrative Council, Eastern Ethiopia. M.Sc. Thesis Presented to the School of Graduate Studies of Alemaya University.
- Bezabih Emana. 2000. The role of new crop varieties and chemical fertilizer under risk: the case of smallholders in Eastern Oromia, Ethiopia. Ph.D. Thesis, University of Hannover, Germany.
- Buchy, M., and F. Basaznew. 2005. "Gender-Blind Organizations Deliver Gender-Biased Services: The Case of Awasa Bureau of Agriculture in Southern Ethiopia." *Gender, Technology and Development* 9 (2): 235–251.
- BWAO (Bure Woreda Agriculture Office). 2013. *Six month work plan execution and evaluation report*.
- CSA (Central Statistics Authority). 2007. The 2007 population and housing census of Ethiopia, Central Statistics Authority, Addis Ababa, Ethiopia.
- Deribe Kaske. 2007. Agricultural Information Networks of Farm Women and the Role of Agricultural Extension: The Case of Dale Woreda, SNNP Region. M.Sc. Thesis Presented to the School of Graduate Studies of Haramaya University.
- EARO (Ethiopian Agricultural Research Organization). 2000. Institutionalizing Gender Planning in Agricultural Technology. Generation and Transfer Processes, Addis Ababa.
- ECOSOC (Commission on the Status of Women). 2014. Emerging issues, trends and new approaches to issues affecting the situation of women or equality between women and men. "Women's access to productive resources". ISSUES PAPER. Thursday, 13 March 2014.
- Edlu Badwo. 2006. Extension Program Coverage and Utilization by Different Categories of Farmers in Enemore and Ener Woreda, Gurage Zone. M.Sc. Thesis Presented to the School of Graduate Studies of Haramaya University, Ethiopia.
- Etenesh Bekele. 2001. Factors maintaining the gender –gap in entitlements to rural resources in Ethiopia; Department of Agricultural Extension, seminar papers presented on 19-20 November 2001, Alemaya University.

- Gurmesa Umeta, Felekech Lemecha and Taha Mume. 2011. Survey on women access to agricultural extension services at selected woredas of Mid Rift Valley of Ethiopia. *Journal of Agricultural Extension and Rural Development* Vol. 3(3), PP. 51-63, March 2011.
- Habtemariam Kassa. 1996. Agricultural Education, Research and Extension in Ethiopia: Problems and Linkages. In: Mulat D., Aregay W., Tesfaye Z., Solomon B.: Sustainable Intensification of Agriculture in Ethiopia. Proceedings of the Second Conference of the Agricultural Economics Society of Ethiopia, held in Addis Ababa 3-October 1996. Agricultural Economics Society of Ethiopia, Addis Ababa, PP 161-181.
- IFAD (International Fund for Agricultural Development). 2009. *Value chain Development in the Eastern Region, Dominican Republic*, Project Design Document.
- IFPRI (International Food Policy Research Institute), 2000. *Women: The Key to Food Security: Looking into the Household*. Washington, DC: IFPRI.
- IFPRI (International Food Policy Research Institute). 2005. *Women: Still the Key to Food and Nutrition Security*. Report No. 33. Washington, DC: International Food Policy Research Institute.
- IFPRI (International Food Policy Research Institute). 2012. Agricultural Extension Services and Gender Equality. An Institutional Analysis of Four Districts in Ethiopia. Working Paper No. 28, August 2011.
- IFPRI (International Food Policy Research Institute). 2012. Gender Differences in Access to Extension Services and Agricultural Productivity. ESSP II working paper 49.
- Kizilaslan, N. 2007. Rural Women in Agricultural Extension Training. Department of Agricultural Economics, Faculty of Agriculture, *Research Journal of Social Science*, 2: 23-27 Gaziosmanpasa University, Turkey.
- Lisa, S., and K., Jakob. 1992. *Agricultural Extension in East Africa*, World Bank technical papers. The World Bank Washington D.C.
- Luqman, M. N., M., Hussain and A. K., Saeed. 2006. Extent of Rural Women's Participation in Agricultural and Household Activities. Department of Agricultural Extension, University of Agriculture, Faisalabad, *Journal of Agriculture and Social Science*. 02 (1): 5-9.
- Mahilet Abitew. 2006. Gender Analysis in Agriculture: Implication for Agricultural Extension in Alemaya Woreda, Ethiopia. M.Sc. Thesis Presented to the School of Graduate Studies of Alemaya University.

- Mason, A., and E. King. 2001. *Engendering Development: Through Gender Equality in Rights, Resources, and Voice*. Washington, DC: World Bank; Oxford, UK: Oxford University Press.
- Moore, K. M., S. Hamilton, P. Sarr, and S. Thiongane. 2001. Access to technical information and gendered NRM practices: Men and women in rural Senegal. *Agricultural and Human Values* 18 (1): 95-105.
- Quisumbing, A., L. Brown, H. S. Feldstein, L. Haddad, and C. Pena. 1995. *Women: The Key to Food Security*. Report No. 21. Washington, DC: International Food Policy Research Institute.
- Sen, A. 1990a. "Gender and Cooperative Conflicts." In *Persistent Inequalities*, edited by I. Tinker, 123–150. New York: Oxford University Press.
- Sen A. 1990b. "More Than 100 Million Women are Missing." *The New York Review of Books*, December 20, 37.
- Techane Adugna. 2002. Determinants of fertilizer adoption in Ethiopia; The case of Major cereal Producing Areas, M.Sc. Thesis Agricultural Universities Alemaya University.
- UN (United Nations). 1992. *Survey of economic and social conditions in Africa*, Economic Commission for Africa, United Nations, New York.
- World Bank. 2001. *Engendering Development: Through Gender Equality in Rights, Resources and Voice*. Policy Research Report. Washington DC.
- World Bank. 2007. *Global monitoring report 2007: Millennium development goals—Confronting the challenges of gender equity and fragile states*. Washington, D.C.
- World Bank, FAO (UN Food and Agriculture Organization), and IFAD (International Fund for Agricultural Development). 2008. *Gender in Agriculture Sourcebook*. Washington, DC: World Bank.