Agricultural Extension Training and Women's Participation in Ethiopia: Insights from District Level Services

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Abstract

Development agents (DAs) are assigned in the local administrations called Kebeles to provide training/advising services to smallholder farmers. In this contribution, the participation of women farmers is compared with that of male farmers in the context of Ankasha district, Awi Zone, Ethiopia. Annual reports on number of trainees were accessed from the district department of Agriculture (2011-2014). Basically, reviewing district reports was done followed by interviewing experts (N=9), DAs (N=6), and organizing 3 Focus Group Discussions with farmers (N=31) each composed of 10-11 individuals. All experts, DAs, and farmers were selected purposively. The Focus Group Discussions were organized in three Kebeles which were selected using lottery method of simple random sampling from 33 Kebeles in the district. To prioritize factors that contributed to low participation of women farmers and to get participant farmers' perceptions, the study used Likert scale type of questionnaire. The results revealed that illiteracy, poor mainstreaming of gender in the agricultural sector and priority to widowed or divorced women farmers as the first, second, and third (respectively) important factors to contribute to low participation of women farmers in the training services provided by the district. Thus, largely, women farmers' participation was found nominal. The extension training and advising services provided by DAs have to consider all women farmers (widowed, divorced, married, and bachelorettes). In the study context, women of all social status are participating in the farming activities of pre-planting, during-planting, and after-planting. And, there is a need to design a training programme in line with these activities for women farmers of all social status. The study will have theoretical contribution to adult learning theory and gender development or mainstreaming. This is the first study to evaluate district level training services as related to the number of women farmer participants in the public agriculture-related education programmes.

Keywords: *Agricultural extension, Gender, Training, Productivity performance, Awi, Ethiopia*

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1. Introduction

From the global survey of 115 countries by Food and Agriculture Organization of the United Nations (FAO) in the 1980s to the micro-studies by World Bank and International Food Policy Research Institute (IFPRI) in 2010, numerous studies show access to extension services is lower for women as compared with men (World Bank and IFPRI, 2010; Ragasa, 2013). And, it is reported that the exclusion of women from the extension services affects agricultural productivity and efficiency which undermines development agendas. Unless there is recognition to the different contributions of men and women in the sector, rural development projects and programs will be mismanaged and the results will be poor agricultural outputs and incomes, and food and nutrition insecurity. According to the World Bank findings (2001), ignoring gender inequalities contributes to people's ill-being and limits countries' abilities to grow sustainably and thereby reduce poverty. Yet, in Sub-Saharan Africa; as documented by studies of the World Bank (2005a) for different countries, considering the "missed potential of women" in agriculture results in good outcomes; for instance: shifting labor and fertilizer between men's and women's plots could increase output by 10 to 20 percent (Burkina Faso); giving women farmers the same inputs and education as men could increase yields by more than 20 percent (Kenya); reducing time burdens of women could increase cash incomes for smallholder coffee and banana growers by 10 percent (Tanzania); and if women enjoyed the same overall degree of capital investment in agricultural inputs, including land, as their men counterparts, output in Zambia could increase by up to 15 percent (Zambia).

Owing to these facts, Ethiopia as one of the Sub-Saharan African country, has invested much on public agricultural services (Belay, 2004). The agricultural sector and institutions that support it, such as extension is thus believed to be the key to poverty reduction in Ethiopia. Particularly, beginning in 2003 (10-12 July) with the Maputo Declaration, the Government of Ethiopia began an unprecedented public investment in the agricultural sector (Davis, et al., 2010). It demonstrated its commitment to allocate 10% of the national budget to agricultural reform which gives priority to women farmers and the youth in general. Ethiopia's commitment to rural development in general and public extension in particular is assumed to modernize and revitalize its agriculture through improved and new crops, livestock, and Natural Resource Management (NRM) technologies (Gebremedhin, Hoekstra, & Tegegne, 2006).

To maximize yield in the crop production, NRM, and livestock sectors, DAs were assigned in the Kebeles to professionally train/advise farmers (both men and women). However, their training is inclined to helping largely either male adult farmers or those of women (widowed or divorced) who are heads of the household. And, large number of husbanded women or bachelorettes farmers are ignored which is against the commitment of government in the Maputo Declaration. Nevertheless, many studies (Whitehead & Kabeer, 2001; Kes & Swaminathan, 2006; Kilic, Winters & Carletto, 2015; Farnworth & Colverson, 2015) reported the importance of empowering women farmers of all social status to achieve food security in sub-Saharan African countries. Earlier than these studies; of course, Saito and Weidemann (1990) stressed that raising the productivity of women farmers must be the centrepiece of agricultural strategy in order to improve household food security in Sub-Saharan African countries.

However, researchers still reported gender-biased services provided by gender-blind organizations in Ethiopia (Buchy & Basaznew, 2005; Yu, Nin-Pratt, Funes, & Gemessa, 2011). Not only that but it is asserted that in comparison with men, women farmers in Ethiopia are principally disadvantaged since they have limited access to productive assets including irrigation water, credit, extension services, and rural institutions which put them in difficult situations to implement innovations (Mulema, Farnworth, & Colverson, 2016). Also, the biases in rural advisory services are often caused by the belief that men are created for farming; that is, managing livestock and crops meant for the market whilst women are created for gardening; that is, operating largely outside the market economy. In this regard, the Women's Development and Change Extension Package of Ethiopia assumes that women garden rather than farm, and thus provides advice related to home gardens and poultry (Cohen & Lemma, 2011).

In sum, in Ethiopia, the existence of gender variation on farmers' productivity due to labor, resource endowment, access to information (extension) and cultural taboo constraints were discovered (Pender & Gebremedhin, 2007). There are also estimations indicating that male-headed households have 5% higher farm productivity than female headed households (Elias, 2013) and the variation in productivity differences are attributed to the factors enlisted earlier (Pender & Gebremedhin, 2007). This study; thus, is aimed at filling this gap since the current public extension services delivery expects married and bachelorettes women farmers to understand the extension packages and improve productivity without being involved in the extension training services offered by DAs. It was conducted with the purpose of exploring

the status of women farmers' participation and discovering the main reasons that hinder their participation in the public extension services rendered by DAs within the context of Ankasha district as a case.

1.2. Theoretical Framework

The theory of adult education (Knowles, 1973) identified six principal features for adult learners; namely: adults are autonomous and self-directed; adults bring life experiences and knowledge to learning experiences; adults are goal-oriented; adults are relevancy-oriented; adults are practical; and adult learners like to be respected. In support of this, another most convincing argument is experiential learning theory which appears in Kolb's influential paper *Experiential Learning: Experience as the Source of Learning and Development* (1984), which made reference to a quote attributed to the Chinese philosopher Confucius (450 B.C.): *"Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand."* Besides, when a training programme is designed, scholars recommended the importance of paying attention to individual learner differences (Jonassen & Grabowski, 1993). That is, three core dimensions of individuals should be taken into consideration: a) cognitive (mental ability, attention, information gathering/organizing, learning styles); b) personality (ambiguity tolerance, achievement motivation, risk taking); and, c) prior knowledge (e.g., about the topic of extension training). Also, trainees should be coached very well and be given a task that helps them improve their performance; and they should be able to get proper feedback. Learning/training is effective when it is followed by feedback (Nicol & Macfarlane-Dick, 2006). The current scenario in the public extension training service delivery also demonstrates the relevance of workplace learning theory (Long, Ryan, Burke, & Hopkins, 2000). That is, extension training services should be able to consider farmer characteristics (age, sex, ethnicity, education, ability, motivation); job characteristics (planting, weeding, harvesting); farm characteristics (small plot, type of crop, soil, water needs of crop); socio-political and economic environment (price of inputs/outputs, policy issues on credit access, land use, land ownership certification). Accordingly, it is widely recognized that current agricultural extension approaches should be based on these theoretical assumptions.

In this study, training is defined as: "the acquisition of skills, concepts, or attitudes that results in improved performance in an on-the-job environment" (Goldstein, 1980, p.230). Recognizing the theoretical assumptions of adult education, experiential and workplace

learning, individual learner differences, and feedback to the public extension training services and having conceptualized training, the study tried to answer the following research questions. To what extent women farmers participate in the public agricultural training services provided by DAs? If their participation is low, what are the principal factors that hinder their participation?

2. Description of the Study Area

This study was conducted in Ankasha *woreda* of Awi zone of the Amhara National Regional State (Figure 1). During the study time and according to the Ankisha *woreda* Census Office (2014), the total population of the *woreda* was 232,549 (112,825 males and 119,724 females). Taking the average family size of Ethiopia as five (CSA, 2010) the total population of the *woreda* is assumed to be 46,510 household heads. With the objective of increasing production and productivity, the agricultural office organizes training services which are offered by DAs in each kebele administration. During the study time, the total number of Development Agents (DAs) who were assigned to deliver agricultural extension training services in the *kebeles* were 194 (30 females and 164 males). All of them have Diploma (10+3) from the Agricultural Technical and Vocational Education and Training (ATVET) colleges. The DA-farmer ratio of the woreda was 1:240; that is, one DA is expected to provide training/advising services for 240 smallholder farmers. In Ethiopia, the national DA to farmer ratio is 1:476 (Davis, et al., 2010). Thus, the DA to farmer ratio is better in the woreda as compared to the national DA to farmer ratio. The woreda is known for growing varieties of crops such wheat, barely, maize, and *teff*.

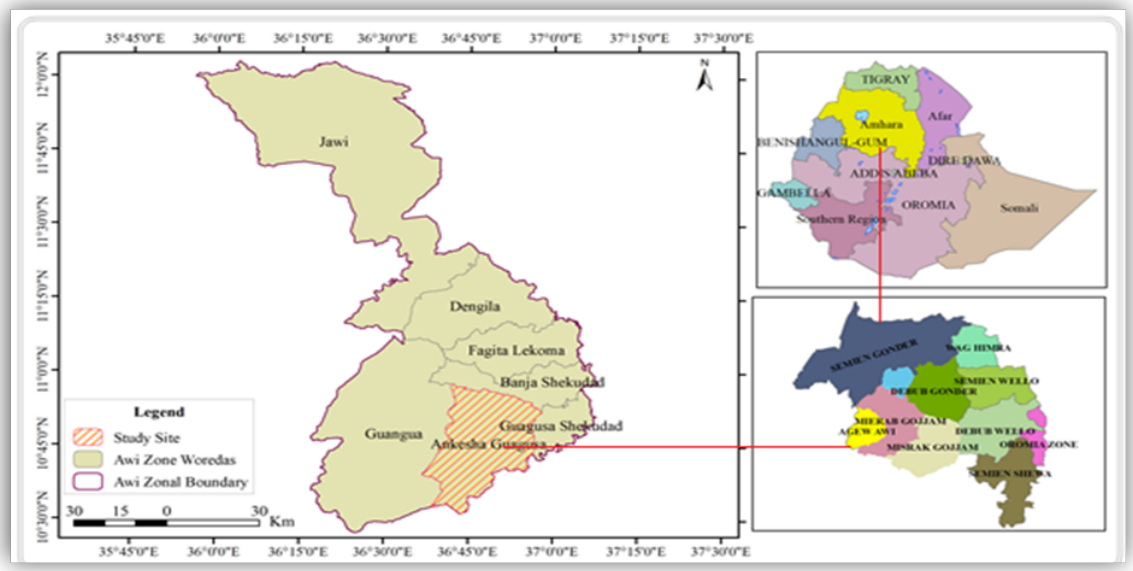


Figure 1 Locational map of study area

3. Research Methodology

Exploratory sequential mixed methods research design composed of qualitative and quantitative research methods was employed for the study. This is due to the fact that this kind of study is new to the study area. From the total (33 kebeles) in the *woreda*, 3 kebeles were selected using simple random sampling technique with the objective to give equal chance in representing the study *woreda*. Purposive sampling method was employed to select experts (N=9), DAs (N=6), and farmers (N=31).

3.1 Methods of Data collection

Mainly, reviewing the woreda reports was the main method of data collection. To further corroborate the reviewing process, data were also collected through conducting an in-depth interview with experts and DAs. To conduct a rigorous investigation of the problem under consideration, 3 (three) FGDs with both male and female farmers each composed of 10-11 individuals were organized. Discussions were held until data saturation was achieved and consensus was reached among the FGD participants. To facilitate and iteratively listen participants voice during data analysis, their voices were recorded and coded for experts, development agents, and farmers respectively.

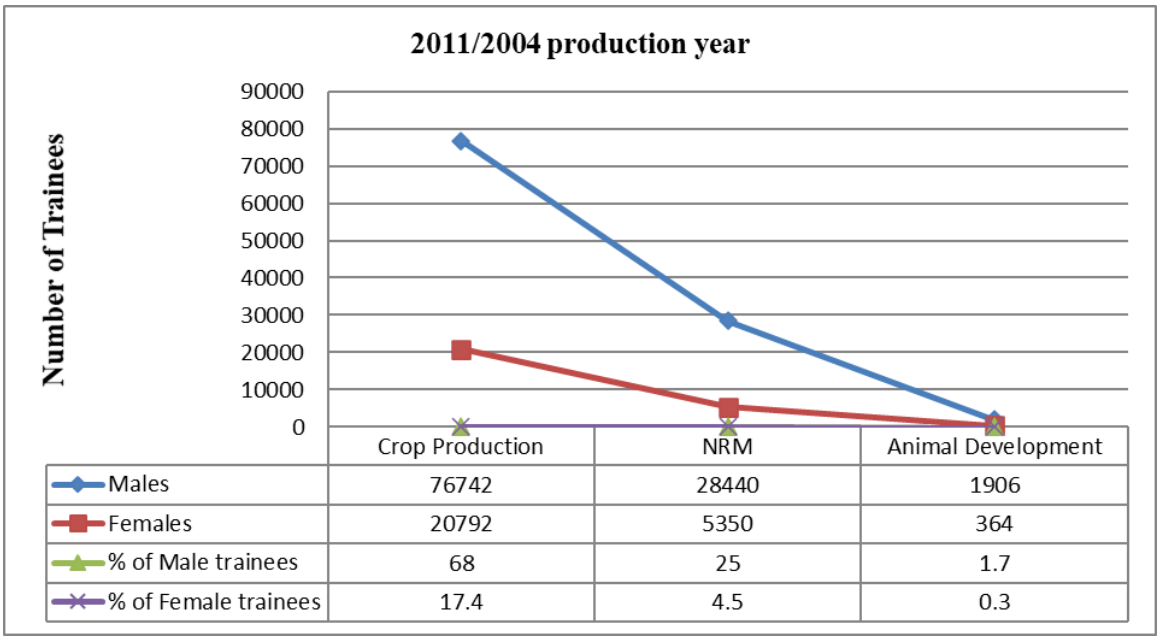
3.2. Methods of Data analysis

Data was analysed based on pre-defined themes: Natural Resources Management (NRM), Crop production, and Animal Development since training was provided by the woreda based on these three fields. Also, content analysis which involves coding themes that were repeatedly uttered by participants was used as a method of data analysis to identify reasons for low participation of women farmers. These reasons were later substantiated by supportive direct quotes from the participants recorded voices made during verbatim analysis and references from literature sources. To rank the reasons for low participation of women farmers in descending order, descriptive statistics was used to present data and arrange the results accordingly.

4. Results

4.1. Review of District Level Reports

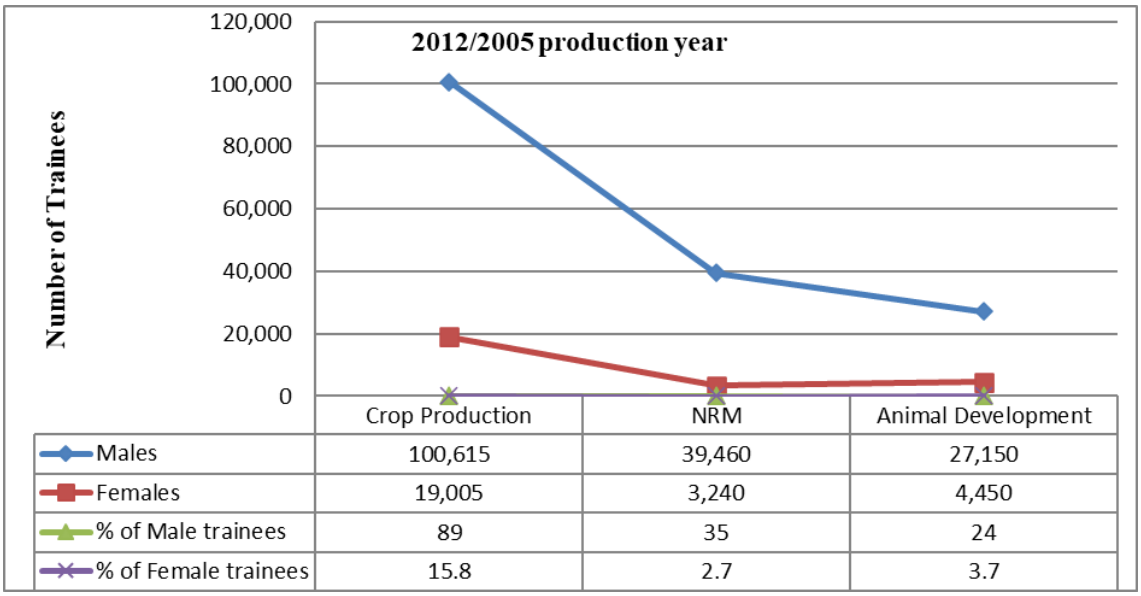
Annual reports review was made by the researchers. The unpublished annual district level department of Agriculture report (2011) showed the delivery of training on three fields of extension package: Crop production, Natural Resources Management (NRM), and Animal Development. In the report, 68% of male and 17.4% of female trainees received training on crop production. Similarly, 25% of males and 4.5 % females received training in Natural Resources Management. The number of trainees for animal development was 1.7% for males and 0.3 % for females. The following graph (Fig. 1) summarized the findings from the reviewed report. Comparison made on the number of trainees in the three fields of extension package showed that relatively large number of trainees were registered in the crop production field and the number of registered trainees in the Animal development package was nearly insignificant (Fig. 1).



	Crop Production	NRM	Animal Development
Males	76742	28440	1906
Females	20792	5350	364
% of Male trainees	68	25	1.7
% of Female trainees	17.4	4.5	0.3

Figure 2 Number of male and female trainees for three fields of extension packages.

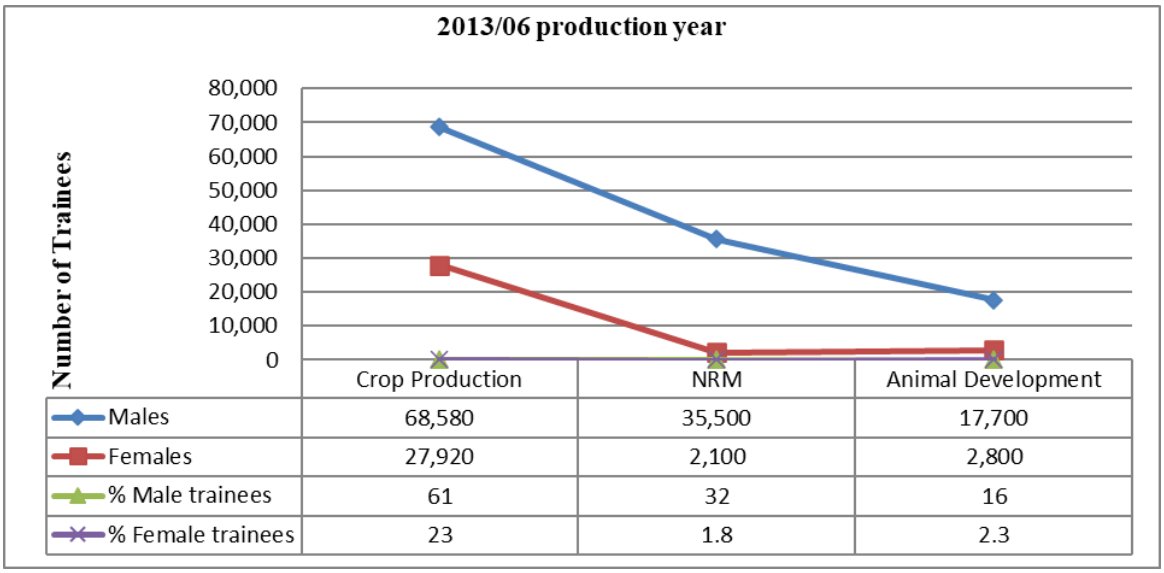
The second report review made by the researchers was that of unpublished annual district level department of Agriculture report (2012). Like the previous year, delivery of training on three fields of extension packages was registered: Crop Production, Natural Resources Management (NRM), and Animal Development. In this report, 89% of male and 15.8% of females received training on crop production while 35% of males and 2.7% of females received on NRM. Relatively better than earlier year, 24% of male trainees and 3.7% of female trainees received training on animal development. However, the number of trainees in animal development was still less as compared to crop production. Figure 2 summarized findings from the reviewed report.



	Crop Production	NRM	Animal Development
Males	100,615	39,460	27,150
Females	19,005	3,240	4,450
% of Male trainees	89	35	24
% of Female trainees	15.8	2.7	3.7

Figure 3 Number of male and female trainees for three fields of extension packages

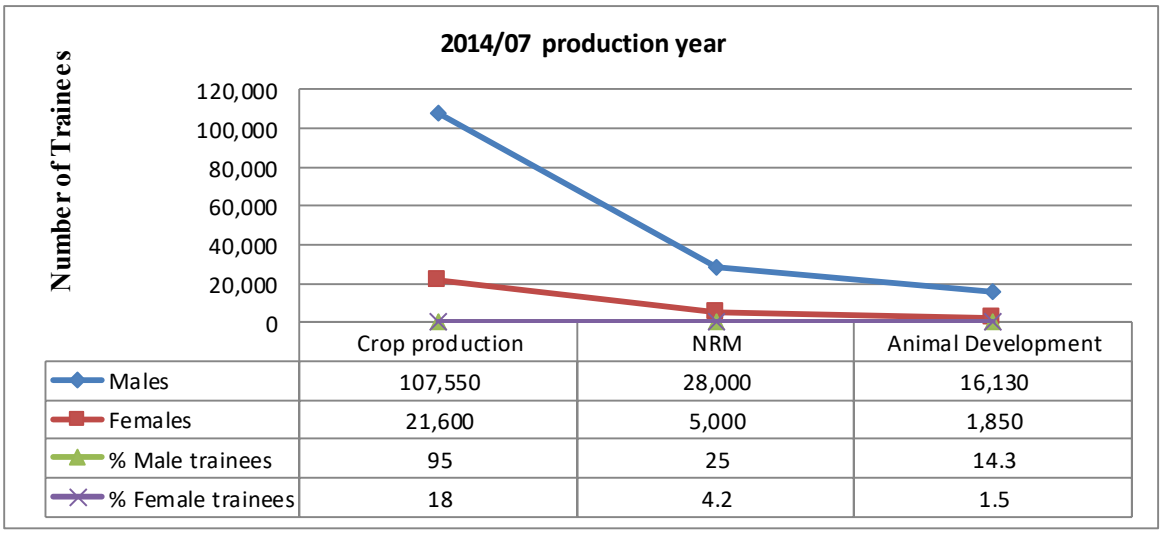
The third report review made by the researchers was that of unpublished annual district level department of Agriculture report (2013). Like the two previous years' report, the number of trainees for crop production was 61% and 23 % for males and females respectively. The number of trainees for NRM was computed 32% and 1.8% for males and females respectively. Animal development trainees were found still less for both males and females as compared to the other fields of extension packages (Figure 3).



	Crop Production	NRM	Animal Development
Males	68,580	35,500	17,700
Females	27,920	2,100	2,800
% Male trainees	61	32	16
% Female trainees	23	1.8	2.3

Figure 4 Number of male and female trainees for three fields of extension packages.

The fourth report review made by the researchers was that of unpublished annual district department of Agriculture report (2014). In this report, 95% of males received training on crop production training while 25% and 14.3% of them received on NRM and animal development respectively. Similar to the earlier three reports, the number of female trainees in all the three fields of extension package was found less (Figure 4).



	Crop production	NRM	Animal Development
Males	107,550	28,000	16,130
Females	21,600	5,000	1,850
% Male trainees	95	25	14.3
% Female trainees	18	4.2	1.5

Figure 5 Number of male and female trainees for three fields of extension packages.

From the four graphs, we learnt that the percentages of women farmers' participation was found between maximum 23% and minimum 0.3% while that of male farmers' was between

maximum 95% and minimum 1.7%. This informed us high range among women and male farmer trainees while their total population covered 51.1% of the district (District Level Census Office, 2014). Also, it is to be noted that the percentage of male and female trainees in the four reports included those who received repeated training. If the females who took training repeatedly were identified, the percentage would be less than the numbers computed in the figures. Unfortunately, the *district* failed to identify those who took the training repeatedly; which is an indicator of a training programme given without a good plan.

Following the end of our district report evaluations and as stated elsewhere, we organized in-depth interviews with experts and DAs followed by FGDs with farmers. The demographic and socio-economic characteristics and the results obtained from the successive discussions are presented below.

4.2. Profile of Study Participants and Empirical Findings

As illustrated in Table 1 below, male participant experts and DAs constituted 77.8% and 66.7% while female participants represented 22.2% and 33.3 % respectively. The main reason to take large number of male experts and DAs was due to a smaller number of females at the level of experts and DAs in the district and Kebeles. However, the number of farmer participants was made to compose large number of female participants (74.2%) as compared to male participants (25.5%). Based on Tarekegne, Wesselink, Biemans & Mulder (2017) classification of age, 33.33% of experts, 100% of DAs, and 29.03% of farmers belonged to the early career age group while 66.7%, 0%, and 70.97% of them respectively belonged to the mid-career age group. Nevertheless, no participant was registered in later career age group which may be informative that the agriculture work force is dominated by the productive mid-career age group (cf. Tauer,1995). Experts (33.3%) and DAs (66.7%) had work experiences between 1-10 years while 66.7% of experts and 33.3% of DAs had work experiences between 11-20 years. There were no experts and DAs with working experiences between 21-30 years. When we looked at the farming experiences of farmer participants, 16.12% of them had farming experiences between 1-10 years while 51.61% of them had experiences between 11-20 years. Unlike experts and DAs; however, 32.27% of them had farming experiences between 21-30 years. Related to their level of education, 100% of experts and 16.67% of DAs received their BA/BSc degrees while 83.33% of DAs were diploma (10+3) graduates from ATVETs. Yet, the level of education of farmers was at the level of basic literacy (25.81%) and illiteracy (74.19%). The fields of specializations of

experts and DAs were dominated by the three disciplines equally: natural resources management (33.33 % of DAs and 33.33 % of experts), animal production (33.33% of DAs and 33.33% of experts), and crop production (33.33% of DAs and 33.33% of experts). The marital status profile of experts was 55.56% (married) and 44.44% (bachelorette /bachelor) while that of DAs was 33.33% (married) and 66.67 % (bachelorette /bachelor). Similarly, the marital status profile of women farmers was found as follows: widowed (32.26%), divorced (29.03), married (25.81%), and, bachelorette (12.91%). See Table 1 below.

Table 1 Demographic and socio-economic characteristics of participants

Variables	**Experts (interview)**		**DAs (interview)**		**Farmers (FGDs)**	
	N=9	**%**	**N=6**	**%**	**N=31**	**%**
Sex						
Male	7	77.8	4	66.7	8	25.8
Female	2	22.2	2	33.3	23	74.2
Age group						
Early career (23-35 years)	3	33.3	6	100	9	29.03
Mid-career (36-55 years)	6	66.7	0	0	22	70.97
Later career (56-75 years)	0	0	0	0	0	0
Work experiences/farming experiences						
1-10 years	3	33.3	4	66.7	5	16.12
11-20 years	6	66.7	2	33.3	16	51.61
21-30 years	0	0	0	0	10	32.27
Level of education						
Degree	9	100	1	16.67	0	0
Diploma (10+3) from ATVETs	0	0	5	83.33	0	0
Basic Literacy	0	0	0	0	8	25.81
Illiterate	0	0	0	0	23	74.19
Field of specialization						
Natural resources management	3	33.33	2	33.33	0	0
Animal production	3	33.33	2	33.33	0	0
Crop production	3	33.33	2	33.33	0	0
Marital status						
Widowed	0	0	0	0	*10*	32.26
Divorced	0	0	0	0	*9*	29.03
Married	5	55.56	2	33.33	*8*	25.81
Bachelorette/bachelor	4	44.44	4	66.67	*4*	12.90

The interview sessions we held with Experts and DAs and the FGDs with that of farmers themselves outlined reasons for less participation of women farmers in the training services provided by DAs (see Table 2). We summarised the empirical findings supported by literature sources to maximize trustworthiness of the study. According to Lincoln and Guba (1985), ensuring credibility is one of most important factors in establishing trustworthiness.

And, one of the methods of doing this is to assess the degree to which the current result is congruent with those of past studies. In this regard, Silverman (2001) also stated that the key criterion for evaluating works of qualitative inquiry is the ability of the researcher to relate his or her findings to an existing body of knowledge. That is, evaluating works of qualitative inquiry can be done through enhancing triangulation which has three primary purposes: convergence, complementarity, and dissonance (Erzerberger & Prein, 1997). Researchers can choose strategies of improving validity by triangulating their findings so that a more complete picture of the issue of interest under investigation is formed. Through ascertaining the complementarity of various data sources to existing body of knowledge, it is possible to generate multiple dimensions of the same research issue and thereby increase the level of our understanding (cf. Fielding & Fielding, 1986). Not only that but, if there are dissonance findings that diverge from previous studies, it is stated that, they will serve as a point of departure for future studies (Miles & Huberman, 1994) or enhance empirically-based hypothesis construction (Erzerberger & Prein, 1997). Thus, we followed the approach of supporting empirical findings with literature sources (Table 2).

Table 2 Reasons for low participation of women farmers, exemplary quotes and supportive references from literature sources

No.	Reasons for low participation of women farmers	Exemplar quotations	References
1.	Infrastructure constraint	'The root causes of agricultural crises in Africa are aggravated by...poor rural infrastructure...'	Maputo Declaration 7, 10 to 12 July, (2003,1)
		'The training centre is far from our residence'	FGD-2 participant woman farmer, FA.3
2.	Women engagement	'Rural women of all ages spend much of their day engaged in domestic chores, including collecting water and firewood, processing and preparing food, travelling and transporting, and care giving'	IFAD (2016,1)
		'Women are busy of all-rounded domestic chores...like household tedious task, pregnancy, caring children...and they give priority to this'	Interviewee expert, Exp.1
3	Husband/ Community	'In most cases women and youth are not invited to attend meetings and social discussions that	National Extension

	perception to the training	concern women and youth with the assumptions that men can convey the message to them'	Strategy of Ethiopia (2014, 32)
		'Perception held by husband in the sense that his attendance is enough to gain knowledge and skills and he believes that he can transfer to his wife'	Interviewee development agent, DA.1
4	Misconception about the training itself	'In most cases, the extension service is viewed by farmers as input delivery service while in fact it should have been knowledge broker and facilitator of linkages'	Gebremedhin et al. (2006, 23)
		'Training is good for the sake of attendance. Because, to access inputs like: fertilizer, better seeds, chemicals, credit, or technologies, I must attend the training'	FGD-3 participant male farmer, FA.11
5.	Cultural Factors	'A great majority of women do not participate in decision making or express their needs during meetings because of prevailing socio-cultural barriers which elevate the role of males in such forums'	National Agricultural Strategy of Ethiopia (2014,32)
		'My husband prefers my staying at home...If I start to get out, he will not feel comfortable...he may think that I used to behave as If I were not husbanded'	FGD-1 participant woman Farmer, FA.14
6.	Poor Mainstreaming of Gender in the Agricultural sector	'Given the extensive participation of women in all aspects of agricultural production, the mainstreaming of gender into the agriculture sector is a key strategy'	Commonwealth Secretariat (2001,7)
		'Both DAs and Kebele level agricultural experts lack knowledge on equality of opportunity'	Interviewee expert, Exp.5
7	Male Development Agents' Frustration	'The strength and orientation of the rural ideology have a unique influence on both gender role and gender relations'	Little (1987,335)
		'Women farmers are disadvantaged by the lack of female extension workers in areas where the cultural norms mean it is difficult for a female farmer to talk to a male extension worker'	McNamara et al. (2014,16)
		'Personally, I am frustrated to establish relation with husbanded women farmers for fear that their husbands will not be positive culturally'	Interviewee development agent, DA.5
8	Larger family size	'time is a precious commodity not only for scientists but also for farmers'...	Hoffmann et al. (2007,364)
		'women are responsible for feeding the family'	Doss (2001,2077)
		'I do have large number of families and caring them takes much of my time. And, I fail to attend training'	FGD-2 participant

			woman farmer, FA.7
9	Illiteracy	'Women are key actors in the process of economic development. However, they are being impeded by their very low levels of literacy and education'	Browne & Barrett (1991, 275)
		'I am not educated; I mean I cannot read and write. So, if I am going to attend the training, I feel that I will not understand the training. And, I prefer to remain at home'	FGD-1 participant woman Farmer, FA.19
10	Priority to Widowed/ Divorced women farmers	'Male bias is seen as lying in 'traditional' social structures, especially in the household and the state'	(Elson, 1995, vii)
		'DAs have also their own limitations. They usually include women who are divorced/widowed. They usually told our husbands to participate and do not tell us...their priority is head of the household'	FGD-2 participant woman farmer, FA.7
11.	Failure of agricultural researchers/scientists to coach DAs, or support farmers at grass-root levels	'Social distance between farmers and agricultural scientists [researchers] limited effectiveness of participatory learning'	Bentley (1994)
		'Researchers guide collective learning processes through playing three roles as: reflective scientist, intermediary, and facilitator'	Pohl et al. (2010, 277)
		'Researchers used to come to our district and interviewed us many times. They also requested us to fill questionnaires. However, nobody reports the findings to us and supports us based on the findings'	Interviewee expert, Exp.6

Note*: Exp.=expert; DA.= development agent; FA. = farmer*

4.2.1. Prioritizing factors affecting women farmers' participation

Farmer participants (N=31) of the study were also requested to prioritize the factors that affect women farmers' participation in the extension training services using a five point Likert scale type questionnaire stated as: 1= has no effect at all; 2= has of little effect; 3=has moderate effect;4= has high effect; and, 5=has very high effect. Thus, based on the perception of farmer participants, illiteracy, poor mainstreaming of gender, and priority to widowed or divorced women farmers were found to be the first, second and third (respectively) most important factors to contribute to women's less participation in the training services provided by district level agriculture departments. Refer Table 3 below which is arranged in descending order.

Table 3 Ranking the effects based on means computed from perceptions of farmer participants

Descriptive Statistics					
	Farmer Participants (N=31)	Minimum	Maximum	Mean	Std. Deviation
Illiteracy	31	3	5	4.19	.749
Poor mainstreaming of Gender in the Agriculture sector	31	1	5	3.90	.908
Priority to widowed or divorced women farmers	31	3	5	3.74	.575
Women engagement	31	1	5	3.68	1.013
Cultural factors	31	2	5	3.68	.909
Large family size	31	2	5	3.61	.715
Misconception about the training itself	31	2	5	3.13	.885
Husband/community perception to the training	31	1	4	2.61	.882
Infrastructure constraint	31	1	4	2.29	.864
Male development agents' frustration	31	1	5	2.10	1.106
Failure of agricultural researchers to coach DAs or support farmers at the grassroots levels	31	1	5	2.06	.855

5. Discussion

It was learnt that trainings were given in the three fields of extension packages in the selected district across the four years (2011-2014). Yet, the number of trainees of women farmers was very low in each field as compared to that of males. As indicated in the graphs above (Figure 1- Figure 4), the average participation of women revolves between 0.3% (for animal development) and 23 % (for crop production). From the district level Census Office unpublished report (2014), it was learnt that women constituted about 51.4% of the total population of the district. The current training services are largely inclined to male farmer trainees and giving equality of opportunity to all women farmer trainees (Widowed, divorced, husbanded, and bachelorettes) is absent in the context of the study. This study revealed the perception of the roles that men and women play in agriculture is biased towards men. As a result, perceptions about the need for extension advising/training services are also biased towards men though Ethiopia has enacted gender equality policies. Our finding concurs with the findings of other researchers who conducted a study on 'agriculture extension services and gender equality in Ethiopia' (cf. Cohen and Lemma, 2010) and the current agricultural strategy of Ethiopia which recognized poor gender and youth mainstreaming in extension programs planning, implementing and in monitoring, learning and evaluating (cf. Ministry of Agriculture and Natural Resources, 2017).

It is noted that adult learning theory informed us that adults are goal-oriented, relevancy-oriented, and practical-oriented. And any training programme which is designed to empower

adults should be based on these principles. However, the training offered to farmers does not consider all these principles and is not given based on sound planning, monitoring and evaluation of its outcomes. Women farmers are assumed to understand the extension package without being involved; that is, husbands are expected to transfer their knowledge and skill to their wives (cf. Kolb, 1984). The most important point to be considered here is that large numbers of farmers in Ethiopia are illiterate. Because of the complex nature of transfer, how an illiterate farmer is able to transfer the knowledge and skill he accessed from the training to his wife is questionable. It is to be noted that transfer is very difficult to happen (Perkins & Salomon, 1994). It needs mindfulness and reflective practices between the mentor and the mentee; that is, participatory training delivery facilitates the occurrence of transfer (Baldwin & Ford, 1988). In the interview held with experts, DAs, and FGDs with farmers, the training is offered also without proper feedback though effective training needs provision of proper feedback to trainees (Nicol & Macfarlane-Dick, 2006).

Learner differences are not considered; for instance, learning styles of trainees, personality, and prior knowledge (Jonassen & Grabowski, 1993). Though most of the trainees are adults and needs practice-oriented training (cf. Knowles, 1973), the training provided by DAs is found to be lecture method and largely theoretical. In this regard, a male farmer who participated in the FGDs stated:

DAs used to tell us what we know so far. They focused more on theory. Also, the topics are always the same: Frankly, I have been trained on crop production, NRM, and Animal Development for the last five years. In my view, crops are different: maize, teff, wheat, barley. They have different characteristics. There are different varieties for each. We have different priorities; I prefer to plant teff; while my colleagues prefer maize, or wheat. So, DAs do need to design a training that can address such issues and our priorities.

Besides, work place learning theory (Long, et al., 2000) informed us that farmer characteristics such as: age, sex, ethnicity [language], education (illiterate and literate), ability, and motivation should be considered during a training programme delivery. The current practice in the study context does not reveal such evidences. The criteria to bring farmers together to a training session is only their farming activity. Their sex, age, level of education, cognitive ability, and motivational differences are not taken into account. Still, a training design that addresses: a) job characteristics; for instance, planting, weeding, harvesting, spraying pesticides and herbicides; b) farm characteristics; such as, small plot of land, type of crop, soil characteristics and sensitivities; and, c) socio-political and economic environment issues; like, price of inputs/outputs, policy issues on credit access, land use and soil fertility are missed. It is to be noted that the public agricultural extension training services is designed to increase knowledge and skills of farmers which is based on the assumption that education [training] improves production performance and maximize household food security (cf. Huffman,2001; Fane, 1975). Unfortunately, the educational services provided to farmers are found poorly organized and are not provided based on theoretical foundations of adult teaching and learning principles which is mainly attributed to the capability of DAs (Tarekegne, et al., 2017). The inequality between men and women in the training services offered by DAs is still going on with its potential to contribute to lower

agricultural productivity, household food insecurity and prevalence of rural poverty (IFAD, 2009).

6. Conclusion

It is learnt that women who are widowed and divorced are participating in the training services rendered by DAs whilst other women farmers who are husbanded and bachelorettes are ignored. To enhance agricultural productivity, ensure household food security, and reduce rural poverty, the training provided to smallholder farmers should be all inclusive. We learnt that training is provided for the sake of providing reports for higher public officials. Instead, it should be designed scientifically to enable smallholders be able to acquire knowledge and skills and achieve positive attitudinal change so that they can improve their farming performance (productivity) in terms of yield/hectare. Illiterate women farmers should be able to attend adult education and achieve literacy since education plays significant role to minimize factors that hinder women farmers' participation in the rural development practices. We concluded that the numerous rhetorical expressions on empowering women and mainstreaming gender in the public sectors are non-existent in practice; for instance, in this case, in the agricultural extension training/advising services provided by DAs which is biased towards male farmers largely.

7. Implication for Theory, Policy and Practice

The study will give a new lease of life to adult learning theory (or adult education), theories of feedback and work-place learning, gender development and mainstreaming in the rural development process of Ethiopia. It will initiate policy makers to review the agriculture extension training/advising services from the view of empowering women farmers of all social status and monitor their commitment entered into Maputo Declaration (10-12 July, 2003) and to CAAD (Union, 2003). It will also help district/local level agricultural extension service implementers to consider those factors affecting women farmers' participations.

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