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Full Length Research Paper

Assessment of the extent and level of participation in agricultural activities among women farmers in Sar Midir District, Ethiopia

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Abstract

The study was conducted with the aim of analyzing the extent and level of women farmers' participation in performing agricultural activities in Sar Midir district, Ethiopia. A random sampling method was used to select sample respondents. Pre-tested structured interview schedule was used to collect the data. The study employed both quantitative and qualitative data. The quantitative data were analyzed and interpreted by using descriptive statistics such as mean, percentage, and frequencies in order to draw important conclusions and generalizations. The qualitative data were also analyzed and described by using qualitative methods such as narration, and generalizations. The study also employed inferential statistical analysis methods. Based on the output of this study, the participation levels of women were identified. From the survey result, it was recognized that; there was a variation in the extent of participation of women in agricultural activities in the study area. Again the results of the study showed that 27.1% of the sampled respondents are under low participation category, 53.6% are under medium level of participation category and 19.3% of the respondents are under high participation category. The study result showed that women contribute 73.4% of labor to crop harvesting activities and 91.5% in poultry rearing. However, women's work in the agricultural activities documented as marginal and they have been considered more as consumers than as producers.

Keywords: Agriculture, women, participation, extent, level

INTRODUCTION

Eighty-three percent of the population of Ethiopia depends directly on agriculture for their livelihoods, while many others depend on agriculture-related cottage industries such as textiles, leather, and food oil processing. Agriculture contributes about 46.3 percent of gross domestic product (GDP) (World Bank 2008) and up to 90 percent of total export earnings. As part of the current five-year (2006–2011) Plan for Accelerated and Sustained Development to End Poverty (PASDEP), the government is continuing to invest heavily in agriculture. A core part of the government's investment in agriculture is the public agricultural extension system. On the whole, Ethiopia has ample resources for agriculture. The country has 111.5 million hectares of land, and although 74 million hectares are arable, only 13 million hectares are being used for agricultural activities. Water resources are also plentiful in much of the country. There are about 12 million farmer households providing human resources. Ethiopia's livestock resources are among the top in the world, at least in terms of quantity. The country also has a high level of biodiversity, with several different economically important crops indigenous to the country such as teff (Daniel *et al*., 2010).

In the economy of Ethiopia, as in many of African countries, women are the backbone of the food production system. They are the majority of the people

reside in rural areas and derive their livelihood from farming (EARO, 2000). 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 health care for their children, and reaching markets. Girls have less access to education than boys, and maternal mortality is high if the specific healthcare needs of women are not met. Providing better services to women is not only necessary to realize their rights, but it contributes to economic growth and poverty reduction. Providing better services to rural women is also essential in using agriculture for development. Women play an important role in performing household farm management practices but this role often goes unrecognized due to perception bias (IFAD, 2011).

Victimization of Ethiopian women by gender- based oppression and exploitation in all spheres of life, lack of adequate recognition and economic valuation of their contribution, denial of their right to have access to and control over means over means of production and their major shares of category of the poorest of the poor were reported as the basic reasons why the government of Ethiopia has given due to the consideration to the multi-faceted problems of Ethiopian women. The level of concisiousness in a society of the role played by women in the development of the country (Gemechu, 2008). The deep- rooted cultural benefits and traditional practices of a society that prevent women playing their full role in the development process; lack of appropriate technology to reduce the work load of women at household level; shortage of property qualified women development agents to understand and help motivated and empower rural women were reported as some of the major constraints hindering the progress of women in sustainable development in Ethiopia (Ayferam, 2015).

Women make essential contributions to the agricultural and rural economies in all developing countries. They often manage complex households and pursue multiple livelihood strategies. Their activities typically include producing agricultural crops, tending animals, processing and preparing food, working for wages in agricultural or other rural enterprises, collecting fuel and water, engaging in trade and marketing, caring for family members and maintaining their homes. Many of these activities are not defined as “economically active employment” in national accounts but they are essential to the well-being of rural households (FAO, 2010).

In rural Ethiopia, women play key role in both livestock management and household activities besides farming activities. They are the household managers but their work is considered as non-productive, unorganized, and undocumented Hence, development assistance has failed to reach women in the rural areas both in absolute and relative terms compared to men for two reasons: agricultural development programs were traditionally focused on men as producers; and a lack of knowledge or false assumption about the role of women in agriculture (Lemlem, 2010).

Hence, location or content specific situation analysis of the extent and level of participation of women in performing agricultural activities is essential to identify the gaps and constraints in increasing their contribution on farm production. In the research area, however, no practical attempt has been made about the issue of rural women contribution to understand how they are contributing in different agricultural activities. Therefore, this study is expected to fill such gap existed in the area for a period by contributing some insights and implications for intervention in the study area.

MATERIALS AND METHODS

The study was conducted in Sar Midir District, Amhara National Regional State, Ethiopia. The district comprises 33 kebele administrations. The district is found 180 km southeast from Bahir Dar (the Regional Capital City) and 365 km Northeast direction from Addis Ababa. The town is located at 10^0 52' North latitude and 38^0 17' East longitudes and at an average altitude of 2650 m.a.s.l.

Farming system of the Study Area

Agriculture is the backbone of the economy of the district. It provides means of occupation for almost all population of the district. The livelihood of the community in the area is heavily dependent on crop and livestock production and the farmers in the area were practicing mixed farming system. According to WFEDO (2010) cropping season annual report, important crop types in the district include; wheat (5487 ha), teff (5350 ha), sorghum (4485 ha), barely (2925 ha), haricot bean (2748 ha), field pea (2270 ha), beans (2748 ha), maize (705 ha), chickpea (356 ha), and grass pea (244 ha) with their decreasing order of area coverage. But sorghum and haricot bean are widely cultivated in the lowland areas (ASE, 2004). According to the WAO (2010), the livestock population of the district was cattle (72,854), sheep (31,124), goats (51, 723), equines (15,962), and poultry (31,221). Its production is inter-dependent with the available land resources and crop production.

Agricultural Extension Service Coverage of the Study Area

Agricultural extension service has its own impact on farm productivity of peasant agriculture. In the district there are 105 development agents (DAs) of which 83 (79%) are males and the rest 22 (21%) are females. They are rendering regular agricultural extension services to farmers and all of them were graduated from ATVET

Table 1: Frequency of rural women participation in major farm activities

No.	Farm activities	Frequency of participation		
		Always	Rarely	Never
1	Soil conservation	38(27%)	85(60.7%)	17(12.3%)
2	Plowing	0 (0%)	3(2.1%)	137(97.9%)
3	Sowing	5(3.6%)	7(5%)	128(91.4%)
4	Weeding	128(91.4)	12(8.6%)	0(0%)
5	Applying irrigation	33(23.6%)	39(27.8%)	68(48.6%)
6	Harvesting	104(74.3%)	36(25.7%)	0(0%)
7	Transporting	58(41.43%)	68(48.57%)	14(10%)
8	Storing	97(69.3%)	43(30.7%)	0(0)
9	Marketing	68(48.5%)	54(38.6%)	18(12.9%)
10	Livestock feeding	84(60%)	49(35%)	7(5%)
11	Pen cleaning	122(87.1%)	14(10%)	4(2.9%)
12	Milking	38(27.1%)	81(57.9%)	21(15%)
13	Herding	42(30%)	74(52.9%)	24(17.1%)
14	Sell livestock	8(5.7%)	34(24.3%)	98(70%)
15	Poultry rearing	128(91.5%)	9(6.4%)	3(2.1%)

Source: Computed from own survey data (2013)

College at middle level agricultural diploma program in plant science, animal science, and natural resources. These professionals have direct contact with farmers on a regular schedule under close supervision of nine agricultural extension supervisors, of which all are male. There are also 16 subject matter specialists at District Agriculture and Rural Development Office level; all are male to support the front-line extension services on field level, in addition to their services to covering district level agricultural development achievements. In the district there are 33 rural development centers situated in the localities of the farming community to transfer technical knowledge and skills by the use of farmers' training centers (FTCs), and there are also ten animal health clinics that are used to serve the farmers (WAO, 2013).

Sampling Techniques

A multistage sampling design was used for the selection of study respondents using random sampling technique. Out of the total 33 kebele administrations four were selected through random sampling technique. 140 sample respondents were also sampled randomly from the respective list of farm women households in the selected four Kebele Administrations based on probability to proportional sample size. Key informants, development agents and subject matter specialists of the district were purposively selected to make discussions about the issue. The data were collected for the 2012/2013 cropping season with the aid of pre tested interview schedule. In this study, both primary and secondary data have been collected. The study employed both quantitative and qualitative data. The quantitative data were analyzed and interpreted by using descriptive statistics such as mean, percentage, and frequencies in order to draw important conclusions and generalizations. The qualitative data were also analyzed and described by using qualitative methods such as narration, and generalizations. The study also employed inferential statistical analysis methods.

RESULTS AND DISCUSION

Extent of women participation in agricultural activities

The main intention here is to know to what extent respondents are involving in each identified household farm management activities. Therefore, the extent of women participation in 15 identified agricultural activities have been measured based on the frequencies in which each member is participating for the last three consecutive years. Respondents were asked the frequency of their participation as always, rarely and never (Table 1).

From the survey result, it was recognized that; there was a variation in the extent of participation of women in agricultural activities in the study area. The extent of participation for the selected women was indicated in Table 1. As the survey result indicates, from the total sample respondents 27% were always participate, where as 60.7% and 12.3%, were rarely and never participate, respectively on soil conservation activities. In relation to crop harvesting activities, it was recognized that 74.3% of respondents were participated always, whereas 25.7%

Table 2: Participation level and their score ranges

Participation category	N	%	Participation range
Low	38	27.1	6-12
Medium	75	53.6	13-19
High	27	19.3	20-26
Total	140	100	6-26

Source: Computed from own survey data (2013)

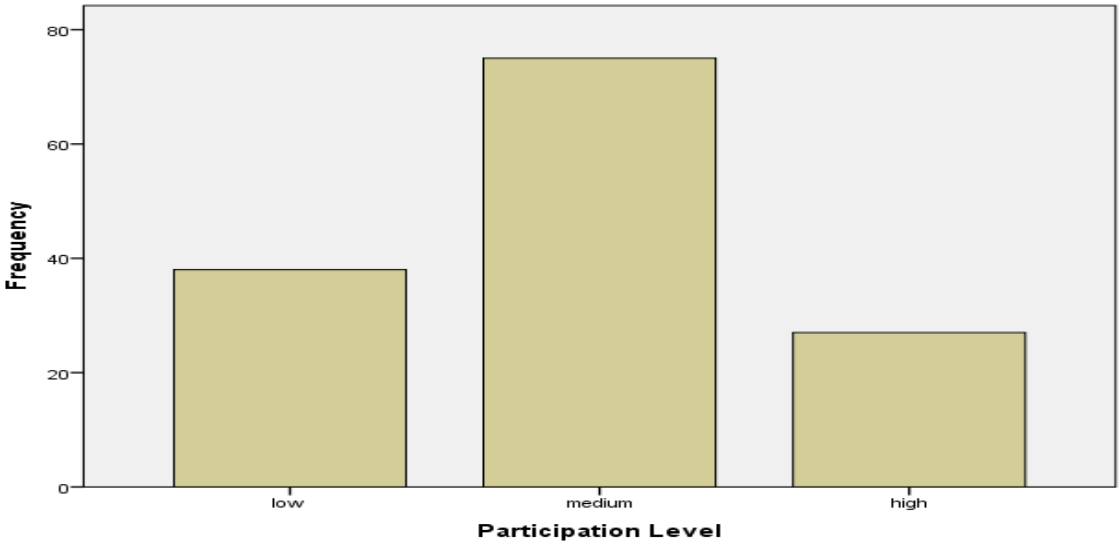

Figure 1: Participation level of respondents
Source: Computed from own survey data (2013)

were participated rarely. Moreover, 60% participated always on livestock feeding; however, 35% and 5% were rarely and never participate, respectively. Furthermore, 91.5% of respondents were actively participating in poultry rearing whereas 6.4% and 2.1%, rarely and never participate, respectively. In relation this, 97.9% of the respondents were never participated in plowing of farm management activity.

Women's participation level in performing agricultural activities

The level of women participation in this study has been measured by calculating the score values obtained for each respondent from the frequencies of the indicator activities. Then the mean value is calculated after summing up of each individual score. Following Ebrahim (2006), Tilahun (2008) and Abebe (2011) respondents were classified into three categories based on their respective score values for the purpose of this study that is low, medium and high. This is based on considering the mean actual score of the respondents obtained for the value of the whole activities. Hence, categorization of respondents based on their participation score was 6-12, 13-19 and 20-26 for low, medium and high categories respectively. The score was expected from 0 which is minimum score to 30 which is the maximum score for each respondent, while the actual score obtained was in between 8 to 26. The results from the indicators in Table 2 shows that 27.1% of the sampled respondents are under low participation category, 53.6% are under medium level of participation category and 19.3% of the respondents are under high participation category. This result is also clearly indicated from Figure 1.

Association between continuous variables and level of women participation

Age of the respondent: Age is one of the personal/demographic characteristics that is important to describe about the respondent situations and can give a clue about the condition of those women in the area. According the result presented in Table 3 the mean age of the respondents is 43.08 years with minimum and maximum value of 21 and 76 respectively. The analysis of one-way ANOVA (F = 6.96 and P = .001) shows that, there is significant mean difference between age of the participants among the different participatory categories.

Table 3: Continuous variables within participation categories

Continuous Variable	Mean for participation category			Mean total	SD	F-value
	Low	Medium	High			
AGE	48.76	43.09	39.00	43.08	11.15	6.96***
FAMLSIZE	6.00	6.12	6.19	6.10	2.34	0.54NS
HHFAMSIZ	1.14	1.19	1.13	1.16	.53	0.207NS
FARMINCO	2289.47	3554.66	3840.74	3266.43	2039.92	2.53***
COMUPART	15.12	17.77	19.96	17.47	2.62	9.75***
FARMDIS	2.93	2.73	2.50	2.72	1.53	4.159***

Note: *** Statistically significant at less than 1%
NS- Not significant
Source: Computed from own survey data (2013)

The finding is in line with the results of Farid (2009) studied on nature and extent of rural women's participation in agricultural and non-agricultural activities.

Household farm income: In this study, the household farm cash income was estimated based on the sales of crops and livestock and livestock products. Respondents were asked to tell the average income they are obtaining from different income sources. Then, the mean income in Table 3 shows that the lower participatory group has a mean income of Birr 2289.47, and the medium participatory group has the mean income of Birr 3554.66. On the other hand, the high participatory group has the mean income of Birr 3840.74. The result of the one-way ANOVA (F = 2.53 and P = .000) shows that there is a significant mean difference at 1% level among the income of the different participatory categories.

Women participation in community affairs: Community affairs are the different interventions in the society which are very crucial to exchange information and to increase the exposure of women to the outside environment. Some of the community affairs in which the women are expected to attain in their locality include the following different particulars. Those are: public meetings, attending funeral and wedding ceremonies, visiting or asking women who gave birth, participating in religious events and festivals, cooperating when houses are constructed and participation in local political activities.

The four frequency categories *i.e.* never, rarely, sometimes and always are organized for the above six identified activities. Then, the participation of women in different community affairs has been measured by rating their frequencies as never with value 1, rarely with value 2, sometimes with value 3 and always with value 4. The maximum score for one respondent will have a value of 24 if a woman is participating in all those different affairs frequently/always and the minimum score will be 6 if a woman is not participating at all in any of those activities. Based on this assumption, the participation of women in such activities has been calculated for each respondent and the mean value is summarized as indicated in the Table 3.

The mean total value of score obtained for the total participation of respondents is 17.47. The mean score value of the low, medium and the high participatory groups are: 15.12, 17.77 and 19.96 respectively. The one-way ANOVA (F = 9.75 and P = 0.000) shows that there is a significant mean difference of scores among the different participation groups.

Farm distance: Farm distance from household's residence has its own impact on hosting demonstration of different agricultural activities on farmer's farmland. As walk to farm spent a long time, the working duration on farm of farmers become shorter that affects agricultural activities. As provided in Table 3 below the average distance traveled for sample households was 2.72 km, and that of high, medium and low participation categories mean distance was 2.50 km, 2.73 km and 2.93 km, respectively. One way analysis of variance (F=4.159and p=0.007) was conducted based on women travel from her home to her farm and the test result showed that there is a significant mean difference between participation categories.

Association between dummy variables and level of women participation

Educational status of the respondents: As it can be seen from Table 4, out of the total sample respondents 62.9% illiterate and 37.1 % were literate. The result of the study also showed that the distribution of literate women in the participation categories were 15.8 %, 32.0 %, 81.5 %; in low, medium and high participation groups respectively. Whereas, the proportions of illiterate respondents were 84.2 %, 68.0 % and 18.5 % in low, medium and high participation groups respectively.

The Chi-square test (χ^2 = 52.21, p=0.000) indicated that there is existence of statistically significant difference in the educational status among the three participation categories. The result of the study indicated that women who have at least basic education were found to be having high participation on household farm management than that of the non educated women farmer. From this it

Table 4: Dummy variables within participation categories

Dummy variables		Participation category: Low n	Low %	Medium n	Medium %	High n	High %	Total n	Total %	χ^2 -value
EDUSTA	Illiterate	32	84.2	51	68.0	5	18.5	88	62.9	52.21***
	Literate	6	15.8	24	32.0	22	81.5	52	37.1	
HHSTAUS	Housewives	33	86.8	59	78.7	20	74.1	112	80	8.56**
	HH heads	5	13.2	16	21.3	7	25.9	28	20	
CREDITUT	Yes	27	71.1	32	42.7	6	22.2	65	46.4	33.16***
	No	11	28.9	43	57.3	21	77.8	75	53.6	
EXTCON	Yes	6	15.8	53	70.7	22	81.5	81	57.9	53.06***
	No	32	84.2	22	29.3	5	18.5	59	42.1	
FARMTRN	Yes	7	18.4	14	18.7	21	77.8	42	30.0	25.27***
	No	31	81.6	61	81.3	6	22.2	98	70.0	
RADUTLN	Yes	9	23.7	49	65.3	20	75.0	78	55.7	1.12NS
	No	29	76.3	26	34.7	7	25.0	62	44.3	

Note: *** Statistically significant at less than 1%
** Statistically significant at less than 5%
NS- Not significant
Source: Computed from own survey data (2013)

is possible to conclude that education contributes significantly for the participation of women in agricultural activities.

Household status: Limited numbers of women respondents are household heads whereas the majorities are housewives. This is based on the sample drawn from the total members or target population in the study area. The status of the women being housewives or households has its own contribution for their participation in household farm management. Then it was expected that household heads are independent to decide in their house and to participate more in the external activities. But in the contexts of housewives, it is expected that the situation is different because everything housewives perform in their house needs the approval of their husbands.

According the result presented in Table 4, from the total sample respondents 80% were housewives and 20 % were household heads. The result of the study also showed that the distribution of housewives in the participation categories were 86.8 %, 78.7 %, 74.1 %; in low, medium and high participation groups respectively. Whereas, the proportions of household heads respondents were 13.2 %, 21.3 % and 25.9 % in low, medium and high participation groups respectively.

The chi-square test (χ^2 = 8.56 and P=.014) shows that, the association between household status and women participation in household farm management is significant at 5% probability level.

Utilization of credit: Credit service is also another component of economic variables that influences participation of rural women in farming activities especially for poor farmers to relax the limited finance for purchasing agricultural inputs and farm implements. According the result presented in Table 4, those women who used credit particularly are 71.1% of the low participatory group. And 42.7% of the medium group and 22.2% of the high participatory group are those who used for credit for different purposes like for livestock rearing, to buy farm implements and improved seeds, and also for buying of food for consumption. The chi-square test (χ^2 = 33.16 and P = .000) shows that there is a significant associations between women use of credit and saving institutions and their participation.

The information obtained by the participants with FGD also conveys the same idea. The participants involved in the focus group discussion were members of the Amhara credit and saving institution (ACSI) of Enebsie Sar Midir branch found in the area. According to the results of the discussion, much of their attention has been shifted in using credit for buying farm implements.

Contacts with extension agents: Extension services are one of the main components in the rural development strategies to increase the livelihoods of the rural people. When there is contact with extension agent, the greater is the possibilities of farmers being influenced to adopt new farm management activities. The village level worker is one of the most important sources of information on agricultural innovations to farmers, Here the nature of getting the extension services by the respondents was obtained by asking whether they are getting any of the services given by the extension organization or not.

The result on sampled farmers contact with extension agent presented in Table 4 above illustrated that, from the total 140 sample respondents, 81 (57.9 percent)

farmers reported having contact with development agents and 59 (42.1 percent) farmers reported having no contact with development agents.

According the result obtained from the analysis, Table 4 shows that those women who are getting extension contact or services in the high participatory group are 81.5 percent. On the other hand, those women who are under the low participatory group had less extension contact that means only 15.8% of them had an extension contact. But in the case of medium participatory group 70.7% of them had an extension contact. The chi-square test (χ^2 = 53.06 and P = .000) shows that there is a significant relationship between extension contact and women participation in agricultural activities at 1% level. This agrees with the study carried out by (Almaz, 2008).

Participation in farm management training: Participation in short term task oriented extension training is one of the means by which farmers can acquire new knowledge and skill. But, during focused group discussion the group members replied that, agricultural extension workers/ development agents focus in inviting resource-rich and male farmers for the training program in thinking of that resource-rich farmers are in a good position to practice the technology which available to them in the immediate situation after the training is carried out. In addition, female farmer's participation in the training program may be constrained by their associated workload in the family, their reproductive work, and cultural taboo they replied during focus group discussions.

As it is indicated in Table 4 above, 77.8% of the respondents in the high participatory category have the participation in household farm management practices. From the medium participation group 18.7% of them have the participation in household farm management. Whereas in the case of the low participatory group, only 18.4% of them have the participation in household farm management. The chi-square test (χ^2 = 25.27 and P = .000) shows that there is a significant associations between women participation in agricultural activities at 1% probability level.

CONCLUSIONS

It can therefore be concluded that rural women are the major working forces of household in the study community. They participate in almost all farm management activities but there are problems that limit their involvement from different socio-economic and agricultural activities. Finally, rural women participation in performing agricultural activities was dependent on a number of different factors and subjected to change. Therefore, administrators, experts and other concerned bodies should conduct periodic needs assessment to determine the extent and level of women participation, to identify factors causing concern to rural women.

RECOMMENDATIONS

From the finding of the study and conclusion the authors recommended the following forward to increase the extent and level of participation in agricultural activities.

- ❖ Rewarding model female farmer and good practices of that female farmer to initiate others.
- ❖ It is better to provide training for women culturally acceptable and appropriate.
- ❖ Increase women's access to education and promote family planning and projects.
- ❖ Raise awareness in a community about the knowledge of women's in growth of productivity.
- ❖ Increase the linkage and interaction of women's affairs office all religious institutions
- ❖ Giving awareness for the society about merits and demerits of traditional activities.
- ❖ Create linkage and introduction among women's affairs office and NGO"s
- ❖ Teaching women's about their rights and responsibilities in a family, community and society at large being with concerned bodies.
- ❖ Design and implement on agricultural services for females.
- ❖ Increase women's, training on application of technology they use in agriculture.

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