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DETERMINANTS OF OFF FARM PARTICIPATION OF RURAL FARM HOUSEHOLDS IN SHEBEDINO DISTRICT OF SIDAMA ZONE, SOUTHERN ETHIOPIA

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ABSTRACT

During the past two decades, the food security debate has come to consider the contribution of off farm sector to rural livelihood as supplementary to income obtained from agriculture. Income generated from farming has failed to support livelihood need of the rural farm households in developing countries, and agricultural development policies have largely produced little improvement, especially in Sub-Saharan Africa. As a result, farm households in rural areas participate in multiple economic activities and thus diversify income sources to minimize agriculture related problem. Therefore this study has been conducted in Shebedino Woreda of Sidama Zone, Southern Ethiopia with the main objective of analyzing the determinants of off farm participation of rural farm households. Both primary and secondary of data were used in the study and analyzed though qualitative and quantitative methods. Inferential statistics such as chi-square and binary logistic regression were implemented to investigate the most important factors determining off farm participation. To determine the sample size for the study, multi stage sampling techniques were employed by first selecting Shebedino Woreda purposely; the whole Woreda was divided in to two groups by stratifying based on the agro ecological zone of the area. Accordingly, one kebele from each stratum was selected by using simple random sampling. Furthermore 186 households were selected through systematic sampling method. The finding of the study shows that among the sample of factors, off farm training, credit service, household saving, education status, presence of draft animals, size of farm land were most important determinants to influence off farm participation of the households. The result also shows that the role of off farm activities to fulfill the livelihood needs of the farm households; food security, better health, educating children, better housing and relaxation of financial constraint are main benefits households have got from off farm income. Distance of market, shortage or lack of input and low price of the products are among main challenges that farm households face while practicing off farm activities. Overall results of this study shows that insuring the quality and distribution of off farm training to all farm households, providing credit service through easily accessible way, creating awareness and mobilizing saving, ensuring the sustainability of adult education, exhausting the benefit of draft animals and enhancing the productivity of farm land are most important tools to attract more farm households to off farm participation.

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INTRODUCTION

Ethiopia is a rural and agrarian society where nearly 85 percent of the population lives on agriculture and livestock for their livelihood (AGP, 2010). National economy of Ethiopia still relies on the agricultural sector which is characterized by low labour productivity, a declining farm size (an average of one hectare per household) and subsistence farming, soil degradation, tenure insecurity, weak agricultural research base and extension system, lack of financial services, imperfect agricultural markets and poor infrastructure. Furthermore, the agricultural system of Ethiopia is dominated by rain fed agriculture, where the performance of the sector

highly dependent on the timely on set, duration, amount and distribution of rain fall that makes the sector highly vulnerable to drought and other natural calamities (CSA, 2007). The agricultural sector is the main source of income for 90% of the rural population of Ethiopia. It generates about 46% of the Gross Domestic product and 82% of the foreign exchange rate for the country (EEA, 2013). The main types of farming activities are crop production, livestock husbandry and mixed farming. Mixed farming is the dominant type of farming system and includes both crop production and animal husbandry. The dominant type of farm input is labor and most of the farm labor comes from family members (Beyene, 2008)
In rural areas of developing countries in general and Ethiopia in particular, many rural farm households participate in off farm income diversification as important source of income. In spite of the high potential of the off farm sector in generating income, they are not covered by government policies and strategies (Beyene, 2008). Even though the potential of the off-farm is not realized and the existing gap in government policy to support the sector, farmers in different part of the country are allocating the labor in the off-farm sector to meet their needs and offset income shortfalls (Mentewab et al, 2010).

For a very long time, the perception of farm households in developing countries is that they rely almost exclusively on agriculture and undertake little or no off farm activities. This perception has led policy makers to concentrate on the farm sector at the expense of the off-farm sector. However, since the last three decades or so, there has been increasing evidence showing that small-holder farm households in developing countries rarely rely on agriculture alone, but often maintain a portfolio of income activities in which off-farm activities are an important component (Raphael, 2008). Ethiopia is mainly the agrarian economy where around 85% of its population is employed in the sector. Agriculture played a significant role in the economy. It generates employment, food supply, foreign export earning, and dominant contributor to the GDP of the Ethiopia (AGP, 2010).

Agricultural system in the country remained traditional and characterized by low productivity, traditional farming system, rain fed, low irrigation system, dominated by small holder or fragmented land size and low level of mechanization, declining rain fall, deforestation, land degradation, soil erosion, and resulting climate change had affected agricultural productivity badly (AGP, 2010). According to Raphael **(**2008**),** in the time or case of low agricultural productivity, off-farm activities play a significant role to stabilize the income of the household. Farm households in Ethiopia are participating in off farm activities since last regime to supplement their farm income. By undermining the importance of off farm income to the farmers, the sector was given less attention and was not supported by development policies (Abebe, 2002). During the Military Government known as Derg, different public organizations like the Rural Technology Promotion Department (RTPD) of the Ministry of Agriculture, the Handicraft and Small Industries Development Agency (HASIDA) of the Ministry of Industry and the Adult Training Centers of the Ministry of Education were trying to promote the off-farm sector. However the attempt of these institutions was ended without any significant outcome or success because there were policy and inistitutional problems from the beginning. There was no defined and organized institutional support and assigned focal point to support off farm sector. (Beyene, 2008).

After the down fall of centrally planned government, the Ethiopian People Revolutionary Democratic Front (EPRDF) launched market economy which allows the participation of private investment in different sectors of the economy (Beyene, 2008). However due to the low attention given to the sector at the past times, off-farm sector did not contributed to the national economy (Tasew, 2002), in general and the farm households of Shebedino Woreda in particular. Even though different attempts (such as training, grouping of operators in the form of cooperatives and provision of credit) had been made by Government and Non Government Organizations to encourage the households to participate in the area, the result obtained is remained below their expectation (SWADO, 2013). However, the sector remained attractive and unexploited to its full capacity. By understanding the importance of the off farm income diversification and the potential of the study area to employ even more household, there is dearth of research effort made to boost the rural household participation in the sector and large number of household in the Woreda remained with no income other than low farm income to support their livelihood (SWADO, 2013).

Shebedino Woreda is one of the 19 Woredas and two City Administrations of Sidama Zone. It is located 27kms from the Zonal capital, Hawassa Town and along Ethio-Kenya high way. The Woreda is characterized by mixed agricultural system where farmers support their livelihood from crop production and livestock husbandry. The study area is characterized by low agricultural productivity, variable rainfall, declining arable land available per household and youth unemployment (SWADO, 2013). To halve these problems, household off farm income diversification plays a significant role in sustaining and stabilizing the household income (Tasew, 2002). Despite the importance of the off farm income, households' participation appears to be constrained by economic, social, financial, institutional and physical factors (Woinshet, 2010). Thus, identifying the determinants that affect the off farm participation decisions of farm households is necessary if there is a need to make households diversify the ways in which they gain their livelihood.

MATERIALS AND METHODS

Study Design

The study used both qualitative and quantitative research method. Quantitative research is based on measurement of quantity or amount it is applicable to that can be expressed in terms or quantity, whereas qualitative method produces narrative or textual descriptions of the phenomena under study (Scott et al, 2009). Therefore throughout this study the researcher used quantitative method to compute and interpret numerical information and qualitative method to narrate and explain the information obtained from qualitative data.

Data Sources

Answering the basic question stated on the study and to attain the desired objectives, the study was depended on the data obtained from various sources. Therefore, throughout the study, information obtained from both primary and secondary sources was employed. Primary were collected from direct observation, closed ended and open ended questionnaires, Focus Group Discussion and Key informant interviews. Secondary data were gathered from documents, reports,

journals, proceedings, bulletins, Internet, periodicals, various books and other relevant materials.

Population of the Study

The target population of this study was comprised of all rural small farm households who have additional income generating activities and those households who are not currently participating in any activities other than farming in selected Kebeles of Shebedino Woreda.

Sampling Procedure

Sample Size Determination

According to the Shebedino Woreda Revenue Authority Branch Office, there are 901 and 1125 households in Dila Aferara and Galuko Hireye Kebeles respectively, making the population of 2026. Since it delivers the desired number of sample size for the study, the sample size was determined by using Yemane (1967).

$$n = \frac{N}{1+N(e)2}$$

$$n = \frac{2026}{1+2026\,(0.07)2}$$

$$n = 186$$

Sampling Techniques

In order to make the study efficient, reliable, flexible and representative, appropriate sampling technique was employed. Accordingly in the study multi stage sampling technique was employed. Accordingly two strata containing homogenous population each (high land or *Dega* and semi low land or *Woina Dega*) was formed to select sample kebele. It should be noted that Kolla climatic zone do not exist in Shebedino Woreda. In third stage, two kebeles (one from each stratum) were selected by using simple random sampling. The reason for selecting one only one kebeles from each strata was because of financial shortage and assuming since the selection employs be probability sampling method, it was represent all kebeles in the area. And finally from each kebeles, households were selected randomly by using systematic sampling technique by randomly selecting the first household from the list and then considering the n^{th} households on the bases of the respective kebeles.

Analytical Model Specification

The association of dependent and independent variables was examined through Chi-square test and binary logistic regression and the binary logistic model can be specified as follows.

$$Z(x) = \{\text{Exp}(B0 + LBi * xi)\} / \{1 + \text{Exp}(B0 + LBi * x1)\} \quad (1)$$

Derivation of the logit model can be performed as follows:

$$\text{Let } p = \frac{\exp(z)}{\{1+\exp(z)\}} \quad (2)$$

$$1 - p = \frac{1}{\{1 + \exp(z)\}} \quad (3)$$

$$\frac{p}{1-p} = \exp(z) = \text{odds} \quad (4)$$

Taking the natural logarithm of the above would result:

$$\frac{p}{p-1} = e^{B_0X_0} * e^{B_1X_1} * e^{B_2X_2} * \dots\dots\dots e^{B_nX_n} \quad (5)$$

$$\ln\left[\frac{pi}{1-pi}\right] = B + B X + B X + B X \dots .. B X \quad (6)$$

Where p = probability of being participant

1−p = probability of being non participant

ln [pi/(1 − pi)] = is the probability which the odds of farmers are being non participant

Xi = X_1, X_2, X_3 ……..X_n: are the independent variables used in the model.

Bi = B_1, B_2, B_3 ……. B_n: are the regression coefficients indicating the magnitude of change (increased or decreased risk) in the independent variable.

The odds ratio Z^i is the factor by which the odds change when i^{th} independent variable increases by one unit.

Description of Study Variables

Dependent Variable: Participation in Off Farm Activity

This is dependent variable used in the study. It refers to the participation of rural farm households in any income generating activities out of the farm.

Independent Variables

Age of Household Head

This is a continuous variable showing general experience that increases the marginal value of time in each activity. At the younger age the probability of participating in off farm activity increases and it decreases at older age.

Health Status of Household

This is also dummy variable which shows the health status of household. This variable will be expected to affect the off farm participation positively.

Sex of Household Head

This refers to the characteristics of farm household; that is whether the household is male headed or female headed. Thus its sign will be expected to be positive for male headed households than female headed households.

Education of Household Head

Education is Categorical variable, representing the status of

education of HHH. Education is expected to have positive sign on the off farm participation for both farm households

Off farm Training

This is dummy variable implying to whether households have taken training on off farm work activities. The presence of training expected to positively affect the participation of farm household in off farm work.

Location of Market

This is also continuous variable showing the relative distance of nearest market from the farm. A long distance (measured by kilo meters) is expected to affect the participation of farm households in off farm activity negatively.

Size of Cultivable Land

This refers to the cultivable land size measured in hectares. Small size of land is expected to encourage the participation of HHs in off farm activities.

Own Saving

Saving is dummy variable showing whether HHs have their own saving or not. Thus households having their own saving are more likely participate in off farm activities than those households who do not have their own saving.

Presence of Draft Animals

This refers to those animals like horse, donkey, and mules used as the means of transport in rural areas. The presence of draft animals is expected to affect the off farm participation of farm households positively.

Credit

This is dummy variable the access to credit for farm households. Thus the presence of credit will be expected to affect the off farm participation of farm household positively.

Infrastructure

This variable refers to those infrastructures such as road, water, electricity and telecommunication. The farm households having access to at least one of the infrastructures are more likely to participate in off farm activity.

Production of Agriculture

This is Continuous variable showing the Production of on farm work. If the output of on farm work is high, farm households are less likely to participate in off farm activity.

Family Size

Size of family is continuous variable that represent the number of family member in the household. Large size of family expected to affect off farm participation of the HHs positively.

Agro Ecological Zone (AEZ)

AEZ household's location based on the climatic zones and it is dummy variable representing Dega and Woinadega. Thus households more likely participate in off far activities more in Woynadega than Dega.

RESULTS AND DISCUSSION

Types of Off Farm Activities Practiced in Study Area

In the study area farm households were engaged in different types of activities that are practiced for fulfillment of livelihoods of farm households. Off farm activities are among the major activities that supplement farm income. Table 3 summarizes types of the off farm activities practiced in the study area. As shown in the table, households have been participating in two categories of off farm activities, namely self employment and wage employment. Among the self employed households majority of participants 57 (54.8%) have been participating on local trade (trade on consumption goods or local shop), which is followed by animal fattening 53 (50.9%). magnitude and direction of the independent variable. The larger the value of Beta the stronger the influence of independent variable has on dependent one. The model fitness was checked by the Chi-square with 189.956 and p-value with $P<0.001$

Off farm Training

Off farm training and off farm participation of rural farm households has statistically significant relationship ($B=3.346$, $P<0.001$). The positive beta value shows that direct relationship of off farm training with off farm participation of farm households. The odds ratio can be interpreted as a household who get training on off farm activities expected a 28.398 increase in the log odds of involving in off farm activities holding all independent variables constant. This indicates that farm households who get off farm training on off farm activities has more probability of involving in off farm activities. According to their training guideline, first, to give training for trainers, these are model households of Kebele and then to diffuse these training through those households who took training of trainers at FTC Centre. The duty of the office is to schedule training program, provide materials and inputs to support training and to follow up the program to take correction measure if problem reported. They receive the performance report from DAs and there is no strong way of checking whether farm households have fully participated or not in the training program. In the part of the NGOs they give training for only participants in specific off farm activities. The importance of the training on off farm participation was also investigated by Beyene (2008) in Ethiopia.

Access to Credit

Credit service is also among the variables that found to have positive relationship with off farm participation of farm households. It was hypothesized that households having access to credit service could participate more in off farm activities. In the regression model the access of training has statistically significant and positive relationship with off farm participation of rural farm households ($B=2.404$, $p<0.05$). The access of the credit was coded as 1, if respondents have borrowed money from financial institutions and 0, otherwise. Access to credit has the odds ratio of E ($B=11.069$) indicating that rural farm households

Table 1. The sample size for each kebele

No	Selected Kebeles	AEZ	Total HHs	Sample HHs	Sampling
1	Galuko Hireye	Dega	1125	103	PPS Sampling
2	Dila Aferara	Woina Dega	901	83	
	Total		2026	186	

Note: AEZ- Agro- Ecological Zones HHs- Household PPS-Probability Proportional Size

Table 2. Summary of Independent Variables

No.	Variables	Description of Variables	Type	Expected Sign
1	Age	Age of Respondent	Continuous	-ve/+ve
2	Health	Health Status of Respondent	Dummy	+ve
3	Sex	Sex of Household Head	Dummy	-ve/+ve
4	Education	Education of the Household Head	Categorical	+ve
5	Family	Size of Family	Continuous	-ve/+ve
5	Training	Off Farm Training	Dummy	+ve
6	Distance	Distance Of Market	Continuous	-ve
7	AEZ	Agro ecological zone	Dummy	-ve/+ve
8	land	Size of Cultivable Land	Continuous	+ve
9	Draft animals	Presence of Draft Animals	Dummy	+ve
10	Credit	Access of Credit	Dummy	+ve
11	Road	Access all Weather road	Dummy	+ve
12	Electricity	Access of electricity	Dummy	+ve
13	Water	Access of Clean Drinking water	Dummy	+ve
14	Telecom	Access of telecom service	Dummy	+ve
15	Farm work	Productivity of farm work	Continuous	-ve
16	Saving	Presence of saving	Dummy	+ve

Table 3. Types of off farm activities in the study area (n=104)

Self Employment	N	%*	Wage Employment	n	%
Sale of food and drinks	4	3.8	Daily wage work	6	5.7
Local trade	57	54.8	Food for work	13	12.5
Selling fire wood and charcoal	7	6.7			
Animal drawing carts	34	32.6			
Carpentry	4	3.8			
Sell house construction materials	1	0.9			
Animal Fattening	53	50.9			
Bee keeping	12	11.5			
Pottery	2	1.9			
Poultry	38	36.5			

Note: - *Multiple answers were possible; percentages are calculated according to the person involved in each category and do not add up to 100%.

Table 4:- Summary of independent variables and their corresponding Chi-square and p-value

Explanatory Variables	X^2	P-value
Size of farm land	7.85	0.020**
Presence of draft animals	57.62	0.000***
On farm production	4.3	0.273
Age of HHH	15.444	0.001***
Educational status of HHH	59.05	0.000***
Sex of HHH	3.168	0.75
Health status of HHH	0.103	0.748
Off farm Training	111.17	0.000***
Access to credit	26.206	0.000***
Access to all weather road	4.048	0.044*
Access to clean drinking water	0.600	0.439
Access to electricity	2.879	0.090
Access to telecommunication service	13.36	0.000***
Agro ecological zone	0.224	0.636
Distance of market	7.61	0.055
Own saving	64.19	0.000***
Family size	8.08	0.018**

Note: - *P<0.05, **P<0.01 and ***P<0.001

Table 5. Result of binary logistic regression

Variables	Coefficient B	Significanc	Odds ratio (Exp(B))
Age of Household Head	-1.241	.153	.289
Education status of HHH	1.024	.023*	2.783
Ownership of Draft Animals	2.426	.002**	11.316
Off farm Training	3.346	.000***	28.398
Access for All Weather Roads	.672	.406	1.959
Own Saving	2.476	.002**	11.897
Size of Farm land	1.568	.045*	4.797
Family size	.283	.626	1.328
Access for Telecom Service	-.776	.327	.460
Access for Credit service	2.404	.002**	11.069
Constant	9.922	.004	.000

who have the access to credit expected to increase 11.069 in the log odd of participating in off farm activities by keeping other independent variables constant. This reveals that the more the households have access to credit the more the probability of participating in off farm activities. In the study kebeles OMFI is main provider of credit for the respondents. It has sub branches in every kebeles of the Woreda with one OMFI agent. Its close access to the farm households has assisted farm households to borrow from financial institution and believed to motivated farm households to participate in off farm activities.

Own Saving

Households' own saving also found to influence the off farm participation of the households positively. At the beginning saving was hypothesized as, it would affect the off farm participation of farm households positively. In other word, households having own saving are more likely to participate in off farm activities than those households who do not have initial saving. In the table above own saving shows statistically significant and direct association with off farm participation of farm households (B=2.746, $p<0.05$). It has the odds ratio or E(B) of 11.897. Therefore by holding other variables constant, households having their own saving in the financial institutions are expected 11.897 increase in the participation on off farm activities. This confirms that households having own saving would participate in off activities more likely than those households who do not have their own saving. According to the key informant interview with OMFI agents, households' own saving serves as collateral to borrow from the institution. Thus, households expected to save certain percentage of money before they get credit. FGD, also insured that, household who have his or her own saving did not face ups and down to start their business, especially in nonfarm activities. This finding is also consistent with other studies that confirm financial position of households encourages them to participate in off farm income generating activities by relaxing their financial constraint (Norsida and Sami, 2009).

Presence of Draft Animals

Presence of draft animals in the study kebeles has facilitated the participation of farm households in off farm activities. In the regression model it has statistically significant and direct relationship with the participation of farm households in off farm activities (B=2.426, $p<0.05$). Since B=2.426, its odds ration or E(B) will be 11.316, explaining households who have draft animals would expected to have 11.316 increase in the log odds of off farm participation. Thus, this can be interpreted as the rural farm households who own draft animals have more probability of participating in off farm activities. The ownership of draft animals by farm households was hypothesized as farmers having draft animals are more likely to participate in off farm activities than those households who did not own the draft animals. In the finding majority of farm households who are participating in off farm activities are owners of draft animals. One of the uses of draft animals for owners in study kebeles is to transport the product of farm households from home to market and vice versa. This has solved the transportation problem of households. The second perhaps main service of the draft animals particularly donkeys and mules are to pull animal drawing carts with huge loading. Farm households who have animals drawing carts give the service of loading of different materials for those households who do not have draft animals and earn additional income besides farm income. Some participant households in Galuko Hireye kebele also has carts pulled by horse which give transportation service for humans. The farm households who have draft animals could participate more in off farm income generating activities than those households who do not have the draft animals. In other word the presence of draft animals is one of the determinants of off farm participation of farm households. In line with this finding Beyene (2008), concluded that draft animals has positive effect on the participation of households in off farm activities.

Educational status of HHH

Educational status of the HHHs is one of the important determinant of the off farm participation in study kebeles. The result of the education status of HHH is the same as expected, i.e., in the definition of independent variables education was assumed to have positive sign on off farm participation of households. Accordingly the (β=1.024) in the binary logistic regression shows that education is one of the predictors that have positive relationship with dependent variable with p-value ($p<0.05$). Education has the odds ratio or E(B) of 2.783. Therefore, by holding other independent variables constant, households who attended at least primary education would expected to have 2.783 increase in the log odds of participating on off farm activities. This can be interpreted as the probability of involving in off farm activities increases for those households who have attended at least primary (basic) education. FGD, pointed out those households who have attended at least basic education program can calculate their cost and revenue; use modern technologies even in farm work and participate in economic, social and political

aspect actively than those households who did not attended formal education. However its quality and viability needs further intervention by responsible bodies. The positive effect of education on the off farm income diversification of households is similar with the study conducted by (Babatunde et al, 2010) and (Wionishet, 2010) in Nigeria and Ethiopia respectively. According to the authors, households at least completed primary education has more likely to participate in off the farm than those households who did not attended formal education.

Size of Farm Land

Finally the result of binary logistic regression model shows that, the size of farm land has statistically significant and positive association with off farm participation of rural farm households (B=1.568, $p<0.05$). The positive sign of Beta shows that land size available for the households have direct relationship with off farm participation of the farm households. It's odds ratio (E(B) =4.797) shows that by keeping other independent variables constant, households having relatively large size of farm land could have 4.797 increase in log odds of off farm participation in additional income generating activities. This proves that the probability of participating in off farm activities increases with the size of farm land. But it was expected that the size of farm land would have indirect or negative relationship with off farm participation, i.e., farm households tend to participate on off farm activities for push factor of small and fragmented farm land. On the other word as land size gets smaller, farm households should forced to participate in off farm activities to generate additional income. However in the finding beta value indicates that farm households' off farm participation decline with small land size and increase for the larger size of farm land.

In the study, one of findings about the source of finance to start the off farm business is own saving; it's possible to believe that own saving is generated from farm income and households with large size of farm land can earn more farm income. Thus they can start off farm activities in the form of self employment. They can save portion of their income in financial institutions and get more credit than those farm households who have small land size. This could assist them to expand their business to further scope. In line with this the information gathered from FGD, reveals that farm households with large farm land employ agri-wage workers to till and cultivate the land, for farm management and harvesting out puts. Thus they did not face time shortage for participating in off farm activities.

The key informant interview with the DAs also supported this result, as farm households earn more income from their farm; they choose to reinvest their income on self employment activities off the farm. Thus in the study kebeles, large farm land can be linked with greater income, saving and then investment in self employment activities off the farm. On the other hand, households with small farm land did not get surplus income either to start business or to save in financial institutions to guarantee loan service. Thus farmers with small farm land are believed to be discouraged to participate in off farm activities. Further FGD participants informed farm households with small land size choose to move to towns for searching daily wage work for the survival of their family.

In general, according to this finding, households having relatively large size of farm land are more likely to participate in off farm activities than those households have small and fragmented farm land.

Conclusion and Recommendation

Conclusion

Agriculture only has known to fail to support the livelihood of the farm households. As result, rural off farm participation of farm households found to play important role in supporting and stabilizing the livelihood of the farm households. Accordingly in this study about 55.9% of the households among the total farm households sampled for the study were found to participate in off farm activities. This status of participation is low if compared with the potential of the sector. Among the important determinants, training on off farm activities stands in first place. Technical support to develop the capacity of the farm households who are participating and not participate in the off farm sector in the study area is found to be important factor to affect off farm participation of the farm households. Skill improvement of training provided for farmers play significant role to attract farm households to the off farm sector. However the viability and the distribution of the training given to the farm households was an even due to various factors. It was not well planned, no adequate preparation was made before commencing training, appropriate trainers and trainees were not recruited well. The second most important determinant of the farm households to participate or not in off farm activities is credit access. In the study, households who have credit access have participated more than those households who did not have credit access. However the provision of the credit to the farm households was found to be limited by OMFI only.

Another important determinant of the off farm participation of households was households' own saving. Households having own saving were participated more in off farm activities than households who did not have their own saving. In the study area households own saving serves as collateral to guarantee loan service. However due to the low farm income households were faced financial constraints to save in financial institutions and needs improvement and intervention by the responsible bodies of the Woreda. Households who owned draft animals found to participate more in off farm income generating activities. Draft animals especially donkeys and horses found to be major contributors to the household's additional income. However, despite their importance draft animals were not given enough care. Health of these draft animals did not treated well. They were not contributing to their maximum potential.

Draft animals which pull carts were better contributors than those animals that transport loading on their back. Thus attempts should be made to exhaust the benefit of draft animals. Education of the household head is one of the determinants of off farm participation. Households who have attended at least primary education more likely to participate in off farm income generating activities. Educated farmers could participate in every aspect of their life actively than illiterates. Attempt has been made to

expand adult education at rural areas. However the sustainability and the participation of the wider range of households in the adult education were kept under question mark and needs strong intervention. It was found that farm households with small plot of farm land faced financial constraint because of low farm income. Productivity of land is very low, so that they did not get surplus income to save and or invest in off farm activities. According to FGD, they choose to migrate to towns and other places, especially, Hawassa is major destination for these farmers to find and be employed in daily wage work. There almost no wage work practiced in the area. Most of the off farm activities were self employments and needs money to start.

Recommendations

The finding of this study have wide range of recommendations to the improvement of the off farm participation of the households in the region in general and Shebedino Woreda in particular. Since the study was used quantitative method by using probability sampling, its results could be generalized to the whole Woreda. Based on the major finding of the study, the following points were recommended. The off farm sector plays important role in the supporting farm households to fulfill their livelihood need. So that, improvement of the participation of households, needs the intervention of responsible bodies. The study revealed that the participation of farm households has found to be affected by different factors such as off farm training, provision of credit, farm households own saving, availability of draft animals education status of the household heads and size of farm land. Based on these major findings, the following recommendations were forwarded by researcher for the further improvement of FHH participation in the off farm sector.

Off farm training should be expanded: - to this end, the program of off farm training should follow three series steps. The first step is preparation period, at this period, the program of training should be well planned; number and composition of participants should be known, training inputs should be adequately supplied, trainers should be recruited carefully, training manual, guide line, and checklists should be introduced to the trainers, the place and time of training should be known, and announcement to participants about training date should be carefully completed..

Access of credit should be enhanced: - credit is one of the determinants of off farm participation of the households. Financial capacity of the farm households should be built by providing credit in affordable and easily accessed manner. Lack of the collateral or initial saving was one of the bottle necks for farm households to borrow from OMFI. In addition of initial saving, households' farm plot of land (land ownership identity card) should be included as collateral to guarantee loan service.

Households' saving habit should be improved: - saving was one of the determinants of off farm participation of the households. Unplanned expenditures during the time of coffee harvest were one of the harmful practices that affect households' saving culture in the study area.

Benefit of the draft animals should be exhausted: - To exhaust the benefit of draft animals, owners should give treatment, vaccination and care at nearby veterinary clinics. Households who have animal drawing carts were better off than others who use draft animals by loading on their back. Thus, provision of carts in affordable price may help farm households to exhaust the benefits of draft animals. Hence authorities should work in this way to improve the farm households' participation in the off-farm activities.

Expansion of the adult education should be sustainable: - education was found to influence off farm participation positively, even if its sustainability issues should be kept in mind and HEWs have their own sectoral duty at Village (kebele) level.

Attempts should be made to increase the productivity of small size of farm land: - size of farm land was one of the determinants of off farm participation in the Woreda. Small size of land was associated with low participation of the households in off farm activities. By promoting this sector, farmers will be able to get sufficient amount of income which in turn may be used investment on the farm practices. Off farm activities may be used as means of income diversification which will help to reduce poverty and boost a rural economy as whole.

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