



Rural Households' Livelihood Diversification Activities; A Case Study from Borena District, North Central Ethiopia

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Article information	Abstract
History <i>Received 15/11/2022</i> <i>Accepted 01/02/2023</i> <i>Published 15/02/2023</i>	<i>In Ethiopia, farm households are not adequately engage and pursue diverse livelihood activities to cope with various challenges due to livelihood asset crisis and persistent cultural bottle neck. Thus, the main purpose of this study was to identify the rural households' livelihood diversification activities in Borena district, north central Ethiopia. The study follows a pragmatism paradigm with a cross sectional study design. The required data were drawn both from primary and secondary sources. The study used multistage sampling procedure, involving a combination of purposive and random sampling techniques to select 358 sample household heads. Household sample surveys, key informant interviews and focus group discussions were the principal means used to acquire primary data. In analyzing and interpreting the primary data, quantitative research techniques was employed. Percentages, mean and standard deviation were employed to analyze the quantitative data while thematic narration techniques were used to analyses the qualitative data. The result indicate that slightly more than one-third (33.8%), one-fourth (26.5%) and nearly half (49.7%) of the respondents were engaged exclusively in on-farm, off-farm and non-farm activities, respectively. Thus, policy makers need to intervene in the highest possible means of livelihood diversification while designing and reforming strategies related to diversification of livelihoods.</i>
Keywords <i>Livelihood activities, pragmatism paradigm, Borena</i>	
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1. Introduction

At the very verge of the concepts of livelihood, an attempt is made to assess how the accessibility and dynamicity of livelihood capitals (natural, social, human, physical and financial) have motivated or challenged farm households in making living. To this effect, the author of this study has two central arguments. Firstly, to ensure satisfactory livelihood, rural households should have adequate livelihood capitals. To realize this assertion, it is noticed the fact that all livelihood capitals or assets are not equally accessed by farm households. Secondly, rural households who have relatively better access to livelihood capitals might be in a better position to diversify their livelihood than their counterparts. Moreover, the analyses in this section are based on the fact that due to wealth status, education, sex, health and experiences of farm households, not all people at a place have equal access to livelihood capitals. Mostly, in a specific community, resources are concentrated in the hands of the most powerful groups (socially, economically and politically) (Degefa, 2005).

Scholarly studies on agricultural activities in SSA countries indicated that most of the hungry people live in rural areas where their livelihood is based on traditional subsistence farming alone (WFP, 2014). Unfortunately, farm households in these countries pursued little non-farm livelihood activities (Reardon et al., 2006). For instance, in Ethiopia, although agriculture is the main sources of livelihood of the people and the mainstay of the economy by accounting nearly half (44%) of GDP, 90% of the exports, 85% of total employment and the base of living for more than 85 % of the population (WFP &

CSA, 2014), rural households' participation in the non-farm activities is not as such supported and adapted (Gebrehiwot et al., 2018; Bealu, 2019). This suggests the need for a serious attempt to address the food insecurity problem and livelihood diversification gaps by identifying the centrality and associations of agricultural and non-agricultural activities. Cognizant to this, livelihood diversification has been suggested by scholars and development practitioners alike as an alternative strategy for alleviating poverty, expanding household income sources and achieving increased food security (Ibekwe et al., 2010; Abduselam, 2011). As noted by Ahmed (2012), rural households' with diversified income sources are more likely to have greater resilience and flexibility than households that rely on agricultural activities alone (crop production and herding).

The literature on how rural people earn their livelihood showed that rural farmers' decision on their means of living is framed as a debate over whether it is better to specialize (i.e., harvesting of one or two cash crops) or diversify (like multiple cropping or engaging in various off/and non-farm activities besides agriculture). Specialization is often promoted as part of a strategy based on comparative advantage to alleviate food insecurity and poverty (Govereh & Jayne, 2003). Thus, it permits the household to provide their yield in the market, thereby getting more income and consume better. However, specialization is typically associated with the use of improved agricultural technology, sound rural market linkage (Mansanjala, 2006), large size farmlands and suitable topography, but absent in the north-central part of Ethiopia.

Diversification has two parts. The first part is cultivating multiple crops on farmers' land. Proponents of crop diversification believe that multiple portfolios are promoted as part of a strategy to manage production risk and are possible ways to tackle the problem of being poor (Michler & Josephson, 2017). However, contemporary studies showed that crop diversity alone could not be a viable strategy to alleviate food insecurity as it restricts the means of living to be only from agricultural activity (Birtal et al., 2012; Qin & Zhang, 2015). The second part of diversification is engaging in off/and non-farm activities besides agriculture. Proponents of this claim argue that this strategy helps to reduce economic losses from both climate change and unpredictable market swings (Kasperski & Holland, 2013), meets people's need of improving their living conditions, including food security (Nwaogu et al., 2017) and generate economic growth (Kasperski & Holland, 2013). Its strategy combines agricultural and non-agricultural activities, depending on what people can afford (Martin & Lorenzon, 2016). This suggests, there is a conviction, that livelihood diversification may be a viable strategy to alleviate food shortage and other life necessities. Hence, in the context of this study, livelihood diversification refers to participation in various off/and non-farm activities besides agriculture, as opposed to relying on farming or herding alone. The author of this article follows the latter view, which regards livelihood diversification as an antidote for addressing livelihood risks, including climate change aggravated and human-induced food insecurity.

Rural households are faced with the increasing need of looking for alternative jobs to supplement their land based livelihood. However, the focus of the Ethiopian government, on the country, local and household levels, has been to augment agricultural production and productivity to attain food self-sufficiency (Amare & Belaineh, 2013) by overlooking the contribution of livelihood diversification to food security (Degefa, 2005; Gebrehiwot et al., 2018; Bealu, 2019). Moreover, although huge resources have been invested in agricultural research and extension packages to alleviate food deficiencies in Ethiopia, they could not ensure food security among the citizens (FAO, 2010) and did not focus adequately on the issues related to off and non-farm employment (Desalegn & Moges, 2016). For example, only slightly more than one-fourth (27%) of the rural Ethiopians were engaged in non-farm activity (Negler & Naude, 2014). Therefore, the central theme of this study is to investigate the rural households' livelihood activities and their livelihood diversification strategies in Borena district, North-central Ethiopia.

2. Materials and Methods

2.1 Description of the Study Area

The study area, Borena district, is located in South Wollo zone, in Amhara National Regional State (Figure 1). It is about 467 kilometers North of Addis Ababa and 284 kilometers South-East of Bahir Dar town (Regional Capital). The district is found between 100 34' 2" to 100 53' 16" N and 380 27' 39" to 380 55' 49" E (CSA, 2008). The area is bordered by Mehal Sayint district at the north, Wogidi district at the south, Legambo district at the east and the Abay River at the west.

The district is characterized by different landscape features: mountains (10%), rugged land (40%), flat land (20%) and valley (30%). Its altitude extends from 500 meters above sea level at the bottom of the canyon of Abay to 3200 meters above the sea level at the northeast corner of the district. As a result, it is characterized by four agro-climatic conditions: Woinadega (47%), Dega (20%), Qolla (32%) and Wurch (1%). The area receives an average annual rainfall of 600-850 millimeter. Its mean monthly temperature is 22°C, which ranges from a minimum of 13°C to a maximum of 27.20°C (BDAO, 2016).

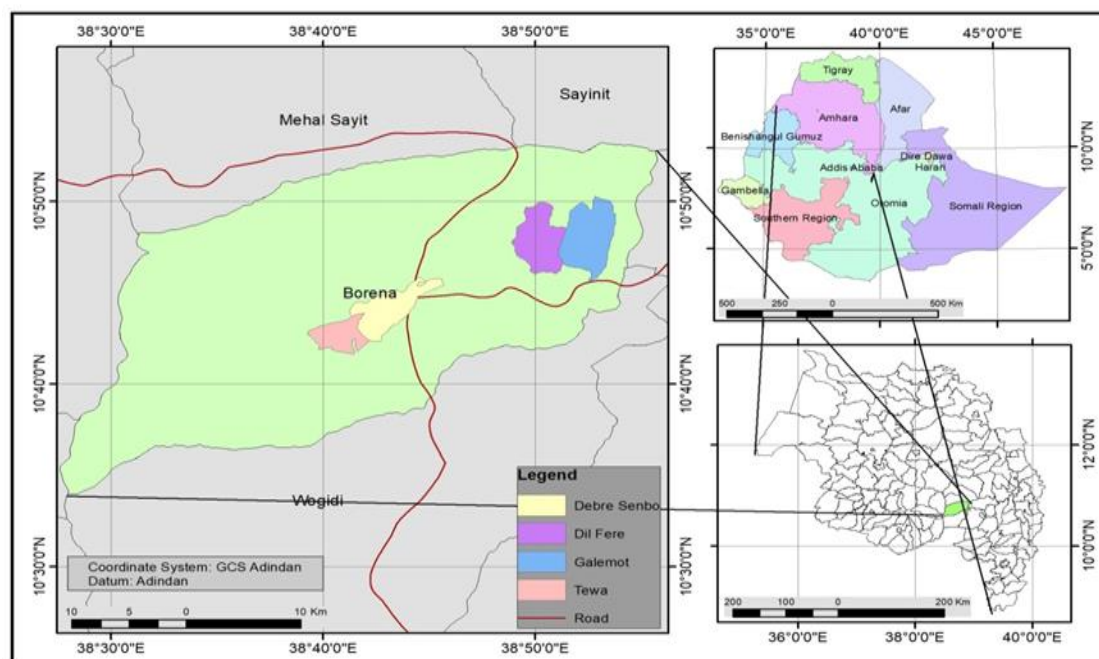


Figure 1: Location map of the study area (Source: Produced based on CSA data)

2.2 Methods

This study follows the pragmatism world view in which the researcher collected and analyzed both the qualitative and quantitative data. Moreover, the researcher employs a cross-sectional survey research design as survey research design is particularly useful for non-experimental descriptive statistics that seeks to describe reality (Mathers et al., 2007).

2.2.1 Sampling Procedures and Sample Size Determination

Multistage sampling method involving in purposive and random sampling techniques was employed to select 358 sample households. In the first stage, Borena district was purposively selected as the district is one of the drought-prone districts of South Wollo zone of ANRS (ARAB & EARO, 2000) in which most of the rural household faced persistent food shortage. In the second stage, based on high prevalence of livelihood diversification, four rural kebeles out of 35 were selected purposefully.

In the third stage, since the total household head in the selected kebeles was 5082, the representative sample size was determined based on the table provided by Krejcie & Morgan (1970) and Raosoft on-line sample size calculator within 5% marginal error and 95% confidence level. Both the table and online sample size calculator indicated that to the average 358 household heads represents 5082 total household heads (those who reside in four selected kebeles) (table 1). Then, the number of samples derived from each selected kebeles which could be included in the sample was determined by probability proportional to size principle. Hence, the amount of samples drawn from each selected kebeles was determined. At the fourth stage, using simple random sampling techniques, by taking kebele records as a sampling frame, the required sample size was selected randomly from each selected kebeles. The distribution of total household heads and the sample size by kebeles are given in Table 1 below.

Table 1: Distribution of total and sample households in selected kebeles

Selected <i>kebeles</i>	Total Number of Household Heads	Selected Sample Household Heads
Debr Senbo	1249	88
Dilfrie	1164	82
Tewa	1363	96
Galemot	1306	92
Total	5082	358

Source: Author's construction (2018)

Quantitative data are primarily collected from sample respondents and a structured questionnaire is used as the main instrument. Almost all of the items used in the structured questionnaire were close ended items. To investigate the precision and understandability of the questions as well as whether the questionnaires are able to collect the intended information or not, the Amharic version of the questionnaire was piloted with 30 subjects. The final version was prepared after incorporating the necessary modifications

The qualitative data are gathered from eight purposefully selected Key Informant Interviewees with semi-structured questionnaires. It also collected from 4 purposefully selected focus group discussants.

3. Results and Discussions

3.1 Rural households' Livelihood Activities

Rural livelihood activities are actions taken by the rural people to obtain household income and consequently may help to achieve food security (Ellis & Allison, 2004; Yenesew et al., 2015). Conventionally, rural households in the study area obtained their income from agriculture, off-farm, non-farm activities and the combinations of these activities. Therefore, in this sub-section, the author discusses the main sources of income of rural households.

3.2 Agricultural Activities

As in the other parts of rural Ethiopia, agricultural activity is the main source of livelihood for farm households in the study area. Consequently, the survey result disclosed that 33.8 % of the sample households are engaged exclusively in agricultural activities (crop production and animal husbandry only). A similar result was reported by Yenesew et al. (2015) in which 39% of their study subjects were totally engaged in on-farm activities. Seid (2016) also found that 33.3% of his sample households were engaged in only on-farm activity as their livelihood strategy and Daniel et al. (2016) reported that slightly above half (53%) of their sample respondents acknowledged that they were engaged only in agricultural activities. Moreover, Bealu (2019) revealed that 43.9 % of his study subjects were engaged only in agricultural activities. However, a contrasting result, relatively higher proportion, is reported by Adugna &Wogayehu (2012) in which 64.1% of their respondents were engaged in agricultural activities. These inconsistencies may be due to the methodological approach of each researcher and the nature of the study subjects.

As displayed in Table 1.1, from the total sample of farm households' who were engaged in only agricultural activity, the majority (91.1%) practiced mixed farming involving both crop production and animal husbandry. However, 8.9 % of the sample households were engaged only in crop production. Most astonishingly, none of the respondents engaged in animal rearing only.

Table 1.1: Respondents' engagement in agricultural activities

Agricultural Activities	Responses	%
Crop production only	32	8.90
Animal rearing only	0	0.00
Mixed farming	326	91.10
Total	358	100.00

Source: Field Survey (2016)

3.3 Off-farm activities

Off-farm activities are activities where farm households engage in activities outside their own farms within the agriculture and natural resource-based activities such as firewood, charcoal and grass selling as well as land/animal renting (Yenesew, et al., 2015). In other words, off farm is defined as the activities devoted to off ones' own farm work. Likewise in the present study, off-farm activities include local daily wage labor at the village level or the neighboring areas in return for cash payment, charcoal, firewood and grass selling, and land/animal renting.

The survey data demonstrated that out of the total sample households, 26.5% of the respondents are engaged in off-farm activities besides agriculture while 73.5% of the respondents did not participate in any of the off-farm activities listed below in Table 1.2. This finding was in harmony with the findings of other researchers. For example, Yenesew et al. (2015) confirmed that 36.9% of their investigated households were engaged in off-farm activities besides agriculture. Moreover, Seid (2016) pointed out that 17.8% of their investigated households were engaged in off-farm activities besides agricultural activities. Besides, Arega (2013) argued that the off-farm activities practiced in drought-prone areas of the northern part of Ethiopia are used as a survival strategy rather than asset accumulation and households practiced a combination of off-farm activities in order to secure their food necessities. In addition, a study by Guyu (2016) in Belo-Jingafu district of Benishangul-gumuz region of Ethiopia showed that farm households participated in off-farm activities in part-time rather than on permanent basis. This implies that participating in the prevailing off-farm activities is common, particularly for the poor.

Table 1.2 shows that among the sample households who participated in the off-farm activities, 23 % of them were engaged as a wage laborer at the village level or the neighboring areas in return for cash payment during the survey period. In addition, community leaders as key informants reported that wage labor was the most important means of generating income at times of food shortage. Mostly, landless, labor surplus and smallholders rural farm households are engaged in daily wage labors: crop harvesting, weeding, hay cutting and collection, reaping and so on due to push factors. Likewise, a significant number of the households, 13.7 % and 11.6 % of the investigated households, reported that they were engaged in agricultural wage labor and renting land, and firewood selling activities, respectively. In line with this finding, the majority (55.9%) of Yenesew's (2014) off-farm participants were engaged in agricultural wage labor activities. However, 73.5 % of the sample households reported that they did not engage in any of the off-farm activities mentioned below during the survey period.

Table 1.2: Sample households' off-Farm activities

Off-farm activities	Number of respondents	%
Agricultural daily wage labor only	22	23
Firewood selling only	11	11.6
Charcoal production and selling	2	2.1
Renting land or pack animals	3	3.2
Grass selling	5	5.3
Agricultural labor and fire wood selling	10	10.5
Agricultural labor and charcoal selling	4	4.2
Agricultural labor and renting land	13	13.7
Agricultural labor and grass selling	9	9.5
Wood selling, and charcoal production and selling	6	6.3
Wood selling and renting land and/or pack animals	2	2.1
Wood and grass selling	5	5.3
Renting land and/or pack animals and grass selling	3	3.2
Sub total	95	26.5
Not participated in any one of the off-farm activities	263	73.5
Total sample	358	100

Source: Field Survey (2016)

Rural households have their own justifications that impede them from participating in various off-farm livelihood opportunities available in their surroundings. Accordingly, the majority of the respondents

(35.7%) acknowledged that the absence of adequate resources (investors who own extensive land and hire agricultural labor), forest and grassland were the main factors that deter them from participating in any of the off-farm activities. Besides, close to one-fourth of the respondents (24.7 %) mentioned inability to engage in various off-farm activities like sickness, old age and laziness as a potential reason for not participating in any of the off-farm activities. Moreover, Table 1.3 displays that 16% of the sample households cited inability to work and absence of resources as a reason for not participating in any of the off-farm activities. Likewise, 9.5% of the sample respondents reported that negative attitude towards some of the off-farm activities as a reason for not engaging in any of the off-farm activities. The result was also substantiated by FGD discussants and informant interviews. That is, the focus group discussants confirmed that absence of adequate forest resource deprived them not participated in the off-farm activities. The key informants also assured that some of the rural people may not have positive attitude towards firewood and charcoal selling.

Table1.3: Respondents' reasons for not participating in the off-farm activities

No .	Reasons for not participating in any of the off-farm activities	Number of respondents	%
1	Negative attitude to some activities	20	7.6
2	Absence of resources	94	35.7
3	Inability to do	65	24.7
4	Negative attitude to some activities and absence of resources	25	9.5
5	Negative attitude to some activities and inability to do	17	6.5
6	Inability to do and absence of resources	42	16
	Total	263	100

Source: Field Survey (2016)

3.4 Non-farm activities

According to Haggblade et al. (2010) and Yenesew et al. (2015), non-farm activities refer to all rural business activities outside of farming. This includes non-agricultural activities such as petty trading, local beer selling and handcrafting. Likewise in this study, non-farm activities refer to those activities performed outside the agricultural activities. These include petty trade (grain, fruits and vegetables), handicraft activities (weaving, spinning, pottery, tannery, black-smithing), skilled labor (carpentry, masonry and mill operator), unskilled labor (guard, day laborer in construction work), selling of local drinks, trading of small ruminants and cattle, and remittance transfers within and across nations. Consequently, Table 1.4 reveals that, out of the total sample households, 49.7 % were engaged in the non-farm activities besides agricultural activities while 50.3 % of the households were not engaged in any one of the non-farm activities listed below. This result is similar to Yenesew & his colleagues' (2015) finding in which 46.3% of their sample households were engaged in the non-farm income-generating activities and differs from Adugna & Wogayehu's (2012) finding in which less than one-fourth (22.8%) of the respondents were engaged in the non-farm activities.

The findings of the study also disclosed that among the various non-farm activities practiced by the study subjects, 10.7% and 10.1% of them are engaged in a combination of petty trading and remittance, and selling local drinks and remittance, respectively. Moreover, as revealed in table 1.4, selling of local drinks (tella, areki, bukri, korefie) and receiving remittances either from abroad or within a country each constitute 6.2% of the households' engagement in non-farm activities. Similarly, petty and small ruminant trading, and unskilled labor and selling local drink combinations, each shared 4.5 % of the non-farm activities practiced by the sample households.

A thorough examination of Table 1.4 indicates that those households who received remittances participated in various incomes generating non-farm activities including petty trading, handcraft and skill need labor, cattle and small ruminant trading and local drink selling. The possible reason could be they may use these remittances as start-up capital to begin small businesses.

Table 1.4: Sample households' participation in the non-farm activities

Non-farm activities	Number of respondents	%
Petty trading (like trading of cereals, vegetables, fruits, and snacks)	6	3.4
Hand crafts (like weaving, spinning, blacksmithing, tannery and pottery)	5	2.8
Unskilled labor (guards, construction work, sand extraction)	7	3.9
Skill require tasks (carpentry, masonry, mill operator's)	3	1.7
Cattle trading(like oxen, caw, bull, heifer, calves)	4	2.2
Trading small ruminants (sheep and goats)	6	3.4
Selling local drinks (like <i>tella</i> , <i>areki</i> , <i>bukri</i> , <i>korefie</i>)	11	6.2
Remittances from abroad and within a country only	11	6.2
Petty trading and hand crafts	2	1.1
Petty trading and unskilled labor	3	1.7
Petty trading and skilled labor	5	2.8
Petty trading and cattle trading	6	3.4
Petty trading and small ruminants trading	8	4.5
Petty trading and Selling local drinks	5	2.8
Petty trading and remittances	19	10.7
Hand craft and skilled labor	2	1.1
Hand craft and selling local drink	7	3.9
Hand craft and remittance	5	2.8
Un skilled labor and selling local drinks	8	4.5
Un skilled labor and remittance	5	2.8
Skilled labor and selling local drinks	7	3.9
Skilled labor and remittances	6	3.4
Cattle trading and remittances	9	5.1
Selling local drinks and remittance	18	10.1
Cattle and small ruminant trading	1	0.6
Petty trading, selling local drinks and trading of small animals	4	2.2
Petty trading, selling local drinks and remittances	2	1.1
Selling of local drinks, trading of small animals and remittances	3	1.7
Sub total	178	49.7
Not engaged in any one of the non-farm activities	180	50.3
Total	358	100.0

Source: Field Survey (2016)



Figure 1.1: Non-farm activities: Small shop (left), Pottery marketing (middle) and Weaving (right) pursued by the rural people: (Source: Photo taken by the Author on December, 2016)

Table 1.5 shows the possible reason (s) why rural households were not participating in any of the non-farm activities. The reasons were put in rank order. Accordingly, one-third (33.3%) of the respondents acknowledged that deficiency of startup capital was their number one problem that hindered them from

participating in any of the non-farm activities. In addition, 17.2%, 10% and 7.2% of the sample households mentioned deficiency of credit services, shortage of diversification training and shortages of knowledge and skills were their 2nd, 3rd and 4th reasons that constrained them from engaging in the various non-farm activities, respectively.

Table 1.5: Respondents' reasons for not participating in the non-farm activities

No .	Reason not participated in the non-farm activities	Respondents (in No.)	%	Ran k
1	Absence of opportunity	9	5	9
2	Shortage of start-up capital	60	33.3	1
3	Deficiency of credit services	31	17.2	2
4	Negative attitude to some activities	7	3.9	8
5	Shortage of trainings	18	10	3
6	Inability to participate	13	7.2	6
7	Lack of knowledge and skills	15	8.3	4
8	Absence of market	14	7.8	5
9	Infrastructure problem	13	7.2	6
	Total	180	100	

Source: Field Survey (2016)

Table 1.5 also displays that the absence of opportunity was raised as one of the problems that challenged them from engaging in the non-farm activities though smallest in amount. This shows that participation in the non-farm activities is less likely affected by lack of opportunities compared with the other factors. In other words, farm households have at least some non-farm opportunities to engage in non-farm activities. Instead, the problem lies in some other constraints. This was substantiated by community leaders who listed shortage of credit services, lack of startup capital, absence of training and skills as their main problems concerning participation in the non-agricultural activities. In the same line, Khatun & Roy (2012) confirmed that lack of capital and credit problem ranked first and second constraints of rural households, respectively in their study of rural livelihood diversification in West Bengal. A similar finding was also reported by Bealu (2019) in which 35.6% and 21.9% of his study subjects mentioned a lack of working capital (credit) and poor asset base, respectively, as their main challenges hindered from participating in the non-farm activities.

3.5 Major Livelihood Activities and Household Income

Household gross income includes the total income a household obtained from different income sources during the survey year (Yenesew, 2014). Correspondingly, in this study, the total gross farm household income is obtained from a combination of income earned from on-farm, off-farm and non-farm activities regardless of their cost of production. Of course, the net total income of rural households can be calculated by deducting the total cost of production from the total household income gained from different income sources (Yenesew et al., 2015; Ambachew & Ermiyas, 2016). However, due to the lack of authentic data (total annual expenditure to labor cost, land rent expenditure, and cost of different inputs: fertilizers, improved seeds, insecticides), the researcher attempted to see the gross income derived from on-farm, off-farm and non-farm activities.

As shown in Table 1.6, 47.63 % of the study subjects obtained their gross income from crop production and animal husbandry sources, showing agricultural activities are still the leading source of income for rural people. Slightly more than one-third (33.7%) of the household's gross annual income was obtained from the non-farm activities and 18.67% of the respondents gather their gross income from the off-farm activities though selling of firewood and charcoal are not patronage in view of environmental sustainability. This finding varies significantly in contrast to the national estimate, where more than 80% of the rural peoples' livelihood income was gained from agricultural activities (CSA, 2010). Moreover, Yenesew (2014) confirmed that only 11.1 % of the investigated farm households earned their income from off-/non-farm income in Debre Elias district of East Gojjam. Ambachew & Ermiyas (2016) also revealed that 10.5 % of the sample farm households obtained their income from off-/non-farm income in the south Gonder zone. Such inconsistency may be due to the methodological approach in documenting livelihood diversification and the local contextual situation which relates to engagement in non-farm/off-farm/agriculture etc.

The analysis also shows that the contribution of non/off-farm activities to the total household income was above half. In line with large percentage contributions of the non/off-farm activities, key informants in all study kebeles reported that participation in different non/off-farm activities besides agriculture was indispensable for achieving food security. This might be because of the fact that, unlike the agricultural activity, such activities are not affected by natural calamities.

Table 1.6: Contributions of income sources to the mean and gross annual income

Activities	Mean Income (ETB)	Total income(ETB)	%
Agricultural Activities			
Crop production	8244.15	2,951,417	
Selling of live stocks	1823.5	271,700	
Subtotal	5033.825	3,223,117	47.625
Off farm Activities			
Wage labor	3688.42	350,400	
Wood selling	7402.7	273,900	
Charcoal selling	9647.37	183,300	
Renting land/animal	8194.44	295,000	
Selling grass	3663.64	161,200	
Subtotal	6519.314	1,263,800	18.674
Non-farm activities			
Petty trading	5450.72	376,100	
Hand crafts	9355.56	84,200	
Skilled labor	9072.61	417,340	
Unskilled labor	7806.9	226,400	
Cattle trading	3696.55	107,200	
Trading of small ruminants	17946.7	269,200	
Selling of local drinks	7547.8	347,200	
Remittances	7812.1	453,100	
Subtotal	8586.1175	2,280,740	33.701
Grand Total	20,139.26	6,767,657	100

Source: Computed based on collected data & average price of food grain (2016)

4. Conclusion

The ultimate objective of this study was mainly focused on investigating the major livelihood activities and diversification strategies pursued by farm households in *Borena* district, North central Ethiopia. Based on the key findings of the study, the following concluding remarks are forwarded:

- ◆ Slightly more than one-third (33.8 %) of the sample households are engaged exclusively in agricultural activities (crop production and animal husbandry only).
- ◆ Slightly more than one-fourth (26.5%) of the respondents are engaged in off-farm activities besides agriculture while 73.5% of the respondents did not participate in any of the off-farm activities.
- ◆ Nearly half (49.7 %) of the respondents were engaged in the non-farm activities besides agricultural activities while 50.3 % of the households were not engaged in any one of the non-farm activities

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