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Poverty Situations in the Case of Amuru Woreda, Horro Guduru Wolegga Zone, Oromia Regional State

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Abstract
Over 80% of the Ethiopian people live in the rural areas and agriculture is the main stay of the economy as it commands the lion's share in terms of Gross Domestic Product (GDP), employment opportunities, export earnings and supply of raw materials. This study aims to examine the poverty situations in the case of Amuru woreda, Horro Guduru Wolegga Zone, Oromia Regional state. Poverty is manifested in low per capita income, low literacy rate, low primary school enrollment ratio, limited access to health services, safe water and sanitation facilities, high rate of infant, child and maternal mortality as well as short life expectancy. Employing cross sectional design, this research was undertaken on a random sample of 163 households so as to study rural poverty situation and its determinants in Amuru woreda. Cost of Basic Needs approach and Foster, Greer and Thorbecke measures have been employed to set the poverty line and compute the magnitude of rural poverty. Accordingly, the food and total poverty lines were found to be Birr 6168.24 and 7960.04/adult/annum respectively. Accounting for over 77.5 percent, food takes the lion's share in the consumption expenditure of the poor and occupied substantial amount in the estimated poverty line. While the incidence, depth and severity of food poverty stood at 42, 31.5 and 11.5 percent, the respective measures for total poverty were found to be 45.5, 27.2 and 9.9 percent. The study clearly indicates that the magnitude of both food and total poverty in the woreda exceeds the corresponding average at national level and Oromia region. To the last to minimize magnitude of poverty in the study area: expansion of education and intensification of family planning programme at grass root level, awareness creation towards the significant role of saving habit, mechanism that compel with skill training, not the whole group should be paved and defaulter to incur the costs to loans deserves prime attention.
Keywords: Rural poverty, Households, magnitude, Amuru woreda

INTRODUCTION

Background

Ethiopia, one of the world's oldest civilizations, is still one of the poorest countries in the world. On the other hand, it has a good record of achieving development results. The Government has increased its investments in education and health and the human development indicators have improved. The poverty level has declined from 38.6% in 2005 to 29.2% in 2010. [1]

Over 80% of the people live in the rural areas and agriculture is the main stay of the economy as it commands the lion's share in terms of Gross Domestic Product (GDP), employment opportunities, export earnings and supply of raw materials. It accounts for about 50 percent of the GDP, provides employment for 85 percent of the population, generates about 90 percent of the export earnings, and supplies about 70 percent of the country's raw material requirement for agro-based large and medium sized industries.

The study area, Amuru *woreda*, is found in the Horo Guduru Welega Zone administration of Oromia Regional State. It is located between 60 35' N and 70 52' W latitude and 420 90' E and 480 95' E longitude. Capital of the *woreda,* Obora, is located 411 kms to Ambo road from Addis Ababa.

Agriculture is the main source of livelihood and small-scale farmers, who are thriving for subsistence practicing mixed farming, dominate the sector. Since the agricultural activities of the woreda was based on the rain most of the time it is prone to weather condition change. Many households are only able to produce to meet their food requirements for less than once a year. The major reason related to the poor performance of agriculture in the related unconditional weather condition i.e unable to get rain timely or raining when the yield is ready for harvest (source from Amuru *woreda* Administration, Office of Finance and Economic Development).

1.1 Statement of the Problem

A rough estimate of poverty in rural areas of Ethiopia indicate that 47.5 percent of the population lives below the poverty line of Birr 1075 in 1995/96, while the figure for urban households was 33.2 percent [2].
Amuru *woreda* has bimodal rainfall pattern, consisting of the short and erratic rain, which occur from February to April, followed by the main rainy season (July to September), which accounts for 90 percent of the total harvest. The mean annual temperature and rainfall ranges from 18 to 250c and 500 to 1400 mm respectively. Of the total area, land under cultivation, grazing, forest and settlement comprise 65811, 14530, 7363 and 5797 hectare respectively.

Cereals cover the biggest slice of the cultivated land, with wheat, *teff* and barley accounting for 14959,

10830 and 8759 hectare, followed by chick peas, maize, bean and field peas covering 4850, 4419, 4209 and 3554 hectare respectively.

The total population and number of households of the *woreda* is 92,364 and 20,067 respectively. Of the total households, 18,198 (90.7 percent) are male-headed and 1,869 (9.3 percent) are female-headed. About 96.1 percent of the total population lives in rural areas, while the remaining (3.9 percent) dwells in the capital, Obora.

In this research the researcher want to fill a gap that was not conducted by past researchers in that, there is no any research conducted in this area concerning poverty. So, the researcher expected to find a new and fresh data from the population of this area and add value for policy makers.

1.2 Objectives and Research Questions

The overall objective of the study is to analyze the magnitude (incidence, depth and severity) of rural poverty in Amuru *Woreda*. So as to achieve the aforementioned objective, an attempt will be made to answer the following questions.

1. What are the incidence, depth and severity of rural poverty in the Amuru woreda?
2. What are the characteristics of the poor in the Amuru Woreda?

LITERATURE REVIEW

2.1 Poverty: Concepts and Manifestations

A simple definition of poverty which has almost universally been quoted is that of the *inability to lead a decent life* [3].The *first is material deprivation (lack of opportunity)*, which is measured by an appropriate concept of income or consumption, the *second is low achievement in education and health (low capabilities)*, the third *is vulnerability (low level of security)* and the *fourth is voiceless (powerlessness).*

2.2 Poverty Lines

As Yohannes pointed out that since defining poverty consists of classifying the population in to poor and non-poor, one must also decide where to draw the poverty line (which according to the World Bank, 1993, is a cut-off living standard level below which a person is classified as poor) to transform welfare indicators into definitions of poverty [4]. Three alternative approaches, namely, ***absolute***, ***relative*** and ***subjective***, could be followed in setting a poverty line.

2.2.1 Absolute Poverty

Absolute poverty can be viewed as the inability to secure the minimum basic needs for human survival [5, 6]. The three most popular methods that use caloric requirement to set poverty lines are the ***Direct Caloric Intake, Food Energy Intake (FEI) and the Cost of Basic Needs (CBN). The Direct Caloric Intake method*** defines poverty line as the minimum caloric requirement for survival.

FEI stipulates the cost of attaining a predetermined level of food energy intake expressed in terms of calorie equivalent. The other method, which most usually is practiced in defining an absolute poverty line, is the ***CBN method***. It involves first defining the food poverty line by selecting a basket of food items typically consumed by the poor. This is then augmented by a modest allowance for non-food goods [7]. Hagenaars, puts the CBN approach as follows [8]:

$Z = Co + Oco$

Where, Z is the poverty line

Co is the minimum cost of food

Oco is the minimum cost of non-food items

2.2.2 Relative Poverty

Relative poverty means that some people are poorer than the rest of the community. Thus, the concept of relative poverty is primarily concerned with the distribution of income and hence, inequality in living conditions among a population [9].

2.2.3 Subjective Poverty

The concept of subjective poverty is based on the premise that people are the best judges of their own situation and that their opinions should ultimately be the decisive factor in defining welfare and poverty [10].

2.3 Measures of Poverty

Having set the poverty line, what follow is poverty measures, which is an index that shows the magnitude of poverty in a society. Kimalu et al, [11] pointed out that one poverty measure that has been found manageable in presenting information on the poor in an operationally convenient manner is the FGT (Foster, Greer and Thorbecke) measure developed by Foster et al, [12].

This measure is used to quantify the three well-known elements of poverty: the level, depth and severity (also known, respectively, as incidence, inequality and intensity) of poverty [13, 14].

The FGT formula used to measure overall poverty is shown in the following equation.

$P\alpha = \frac{1}{n}\sum_{i=1}^{q}(1-\frac{yi}{z})\alpha$

Where, Pα is a measure of absolute poverty,

Z is the poverty line,

α is the FGT parameter, which may be interpreted as a measure of poverty aversion, α = 0, 1, 2 yi is the total expenditure/ income of household i, expressed in per adult equivalent (i = 1…n), n is the total number of households in the sample,

q is the total number of poor households (Households below poverty line).

2.1.3.1 The Head Count Index (P0)

The head count index measures the proportion of the population falling below the poverty line $Po = \frac{1}{n}\sum_{i=1}^{q}(1-\frac{yi}{z})0 = \frac{1}{n}q = \frac{q}{n} = H$

2.1.3.2 The Poverty Gap Index (P1)

P1 is an index that measures the extent to which the incomes of the poor lie below the poverty line. It measures the intensity of poverty by averaging the distance between the expenditure of the poor persons and the poverty line.

The index can be calculated using the formula: $P1 = \frac{1}{n}\sum_{i=1}^{q}(1-\frac{yi}{z})1$

Although superior to P0, P1 still implies uniform concern about the depth of poverty, in that it weights the various income gaps of the poor equally [14].

2.1.3.3 Poverty Severity Index (P2)

P2 is an index that shows the severity of poverty by squaring the gap between the expenditure of the poor individual and the poverty line. It increases more than proportionately with the poverty gap. The larger the poverty severity index as measured by Pα = 2, the greater the poverty gap, which, indicates that poverty is severest among the very poor [11]. The index can be calculated using the formula:

$P2 = \frac{1}{n}\sum_{i=1}^{q}(1-\frac{yi}{z})2$

METHODOLOGY

3.1 Research Design

Survey methods are extremely efficient in terms of providing large amounts of data at relatively low cost in a short period of time, and has come to be virtually synonymous with social scientific methodology [15]. Accordingly, the type of research design appropriate for this study is both quantitative and qualitative survey design.

Cross sectional study design can be used to study the subject, poverty. Geoffrey *et.al* [16] indicated how well a cross sectional study design works in identifying chronically poor households in rural India. Hence, this research employed cross sectional design.

3.2 Sample Size and Sampling Techniques

Out of 12 kebeles in the study area, three kebeles, namely, Sidan, Walage and Ejere Goromti representing the aforementioned zones (*kola, dega and woina-dega)* respectively were selected purposively. Those kebeles selected because they represent the three ecological zones perfectly (source from Amuru *woreda* Administration, Office of Finance and Economic Development and kebeles).

In this study households are the major units of analysis. In those three kebeles there are a total of 800 households' *i.e* Welege the smallest kebele in the woreda having 130 households, Ejere goromti 240 households and Sidan the largest kebele in the woreda having a total of 430 households. The sampling frame for the study was a complete list of households in the three kebeles, obtained from the offices (*woreda* Administration, Office of Finance and Economic Development and kebele).

Accordingly, 163 households are included in the sample from the three kebeles and distributed according to the size of the population. Accordingly from Welege kebele 26 households, from Ejere goromti 49 households and from Sidan 88 households were taken as a sample.

3.3 Source of Data and Instruments

Triangulation of data source has a number of advantages that no single source could have. Carvalho and White [17] pointed out that integrating methodology helps in implementing better measurements, confirming, enriching, merging and explaining the findings resulting in better analysis. White [18] also indicates that using quantitative and qualitative approaches together yields synergy.

Poverty being complex, multidimensional and an outcome of multitude of causes, neither quantitative nor

qualitative methods alone could not capture the salient features in a comprehensive way. Interview enables to ascertain both subjective and objective facts [19]. The respondents must be told what the research is all about in the language that they can understand. The respondents in this study are speakers of *Afaan Oromo* (Language of the Oromo people). Therefore, the enumerator was translate into the language and ask the respondents.

Interview was held with 21 knowledgeable local informants, which among others include PA chair persons, Development Agents (DAs), community leaders, *woreda* administrator and heads of pertinent *woreda* offices. Secondary data source used for the study includes published and unpublished materials, donor and government agency reports and project documents.

3.4 Data Analysis

Both quantitative and qualitative methods of data analysis have been employed. The study followed Cost of Basic Needs (CBN) approach to determine the poverty line of the *Woreda*. The Foster-Greer and Thorbecke mathematical model of poverty index was used to compute the incidence, depth and severity of rural poverty. To this end, it employee the Statistical Package for Social Science (SPSS).

RESULTS AND DISCUSSIONS

4.1 Descriptive Analysis

4.1.1 Household Characteristics

As depicted in table 4.1, the average age of household heads was 50 years with standard deviation of 10 and the minimum and the maximum age stood at 26 and 78 years respectively.

About 87.7 percent of the household heads were found in the age group of 20 to 60 and 12.7 percent in the age group above 61. With respect to marital status, 81.6 percent of the household heads were married,

16.6 percent were widowed and the remaining 1.8 percent divorced.

Table – 4.1: Age and marital status

Age of House hold		
Category	**Frequency**	**Percent**
20-30	4	2.5
31-40	34	20.9
41-50	48	29.4
51-60	57	35.0
above 61	20	12.3
Total	163	100.0
Min= 26 Max= 78 Mean=50 std. Deviation= 10 Mode= 60		
Marital status of house hold		
Category	**Frequency**	**Percent**
Married	133	81.6
Widowed	27	16.6
Divorced	3	1.8
Total	163	100.0

Source: Survey Data

According to Feleke et.al [20] labor availability and pressure on consumption is best described by household size. Similarly, Asogwa and Umeh [21] stated land holdings and finance are very limited for the small scale and subsistence farmer. Given this, adding more family creates more pressure on consumption than the labor it contributes which force the Households to fall in poverty.

The average household size of Amuru woreda was found to be 6.31, while the minimum and the maximum number of members in the family were found to be 2 and 16, households with 5 to 10 and 11 to 14 members accounted for 70.6 and 13.5 percent respectively.

As described in table 4.2, the average household size exceeds the average figure of 4.8 at national level,

4.9 Of Oromia Region and also Ethiopian rural households with an average 5.1 people in the year 2010/11 respectively.

Table – 4.2: Household size

Number of House Holds		
Category	**Frequency**	**Percent**
1-4	6	3.7
5-10	115	70.6
11-14	22	13.5
above 15	20	12.3
Total	163	100.0

Source: Own survey

As depicted in table 4.3 of the following around 140 (85.9) percent of the total survey of the family was headed by male and 23 (14.1) percent was headed by Female.

Table- 4.3: House Hold sex

House Hold Sex		
Category	**Frequency**	**Percent**
Male	140	85.9
Female	23	14.1
Total	163	100.0

Source: Own survey

As depicted in table 4.4, about 57 (35 percent) of the household heads were illiterate and only 106 (65 percent) were found being able to read and write. Among 106 (65 percent) of people who read and write 17.9 percent can only read and write. 23.6 percent, 26.4 percent, 18.9 percent, 12.3 percent were complete First Cycle (Grade 1-4), Second Cycle (Grade 5-8), High school (Grade 9-10) and preparatory (11-12) respectively. Only 1 person (0.9%) completes his college education and He is a teacher. Compared to the national literacy level and rural areas of Ethiopia which is 48.3% and 39.7% of the population literate respectively, the study area was high [1]. As with literacy, education is positively related to relative household living standard. Households in the highest living standard enjoy significantly greater education levels than those in lower. That is, if a household has enough income to support its members without children working, those children will be able to attend school instead. Since, agriculture dominates the labor market and while education is certainly entirely important and beneficial in rural areas it may not lead to as many new labor opportunities. Rather, higher educated people migrate to urban areas to take advantage of their skills in a larger labor market.

In the country as a whole, households with heads that have been educated beyond grade 10 have an average household expenditure about 70% higher than households where the head has no education [1].

Table – 4.4: Education status of households

Educational status of House hold		
Category	**Frequency**	**Percent**
cannot read and write	57	35.0
Read and write	106	65.0
Total	163	100.0
Educational level		
Category	**Frequency**	**Percent**
Read and write only	19	11.7
First Cycle complete (Grade 1-4)	25	15.3
Second Cycle Complete (Grade 5-8)	28	17.2
High School complete (Grade 9-10)	20	12.3
preparatory Complete (Grade 11-12)	13	8.0
Above college	1	0.6
Total	106	65.0

Source: Survey Data

From the survey, it was found out that 89 percent of households enroll their children as their age reach for school and 11 percent of the households have non enrolled children for different reasons. This is also slightly higher than that of national and rural Ethiopian which accounts for 62.4% and 59.2% children enrolled respectively [1]. Among Households not sent their children to school, about 66.7 percent of the households were not sent their children for a reason of requiring them for other household activity. In addition, 22.2 and 11.1 percent of the respondents reported seeking their labour for farm and household activities and inability of covering associated school costs as major reasons for not sending children to school respectively.

Table – 4.5: Response of households for non-enrolled children

Are there non-enrolled children in the household currently?		
Category	**Frequency**	**Percent**
Yes	18	11.0
No	145	89.0
Total	163	100.0
If there are non-enrolled children, what are the reasons?		
Category	**Frequency**	**Percent**
required for farm activity	12	7.4
required for other household activity	4	2.5
Inability to cover associated scho ol costs	2	1.2
Total	18	11.0

Source: Survey Data

About 30.1 percent of the households reported that one or more of their family members have been seriously sick 12 months prior to the administration of the questionnaire. About 19.0 percent of the households were found to have had one, 9.8 percent had two and 1.2 percent had three members of their family seriously sick. As depicted in table 4.6, while 27 percent of patients managed to obtain medical treatment and 3.1 did not get treatment, 1.2 percent of the respondents reported high cost, 0.6 percent.

Absence or low quality of health facilities, 1.2 percent No one to escort put reasons for not having medical treatment.

Table – 4.6: Health Situation of households

During the last 12 months, was there an occasion in which one or more of your household members fall seriously sick?		
Category	**Frequency**	**Percent**
Yes	49	30.1
No	114	69.9
Total	163	100.0
If there are seriously sick members, how many?		
Category	**Freque ncy**	**Perce nt**
One	31	19.0
Two	16	9.8
Three	2	1.2
Total	49	30.1
If there are seriously sick member, did the person take medical treatment?		
Category	**Freque ncy**	**Perce nt**
Yes	44	27.0
No	5	3.1
Total	49	30.1
If did not get medical treatment, what are the reasons?		
Category	**Frequency**	**Percent**
Too high cost of treatment	2	1.2
Absence or low quality of facilities health	1	0.6
No one to escort	2	1.2
Total	5	3.1

Source: Survey Data

4.1.2 Economic Characteristics

The vast majority of the population (96.1 percent) in Amuru *woreda* lives in rural areas, and agriculture, which is predominantly mixed, is the main source of livelihood. As described in table 4.8, about 25.8 percent of the household heads cannot engaged in any productive activities in the last 12 months of this questionnaire managed. Out of those 13.5 percent and 8.6 percent respectively cannot engage in any productive because of too old and disability cause.

Table: - 4.7: Engagement in productive work

Was the family member engaged in productive work during the last 12 months		
Category	**Frequency**	**Percent**
yes	121	74.2
No	42	25.8
Total	163	100.0
If family member did not engaged in productive work, reasons for not working		
Category	**Frequency**	**Percent**
too old	22	13.5
disabled	14	8.6
other	6	3.7
Total	42	25.8

Source: survey data

Although crop production is the dominant economic activity in the woreda, it is characterized by low yield. Of the total households, 49.1 percent of the households replied that their yield was increased, 32.5 percent decreased and 18.4 percent unchanged. About 60.7 percent of the population are satisfied to their agricultural output (yield obtained) and 39.3 percent cannot satisfied.

From the survey, it was found out that about 18.8 percent of the reduction in crop yield was attributed to not using modern agricultural inputs and Using below recommended rate and 6.3, 25 and 6.3 and 20.3 percent to poor soil, inadequate tillage (due to shortage of oxen), Disease and pests and inadequate rainfall respectively. Among households engaged in crop production about 1.2% of the population cannot use any kind of agricultural input. All of the sample (100%) replied that they cannot use any kind of improved tools agricultural production. About 33.1% of the population cannot use improved tools of agricultural production because of expensive price, lack of access and supply problems. About 62.3% of total population cannot use improved tools of agricultural production because of no advice given from the extension agents.

Table – 4.8: Agricultural input and improved tools utilization and production yield

Category	**Frequency**	**Percent**
Increased	80	49.1
Decreased	53	32.5
Unchanged	30	18.4
Total	163	100.0

Have you used agricultural input in 2009 E.C

Category	**Frequency**	**Percent**
Yes	161	98.8
No	2	1.2
Total	163	100.0

No 163 100.0

Do you think that the yield obtained in 2009 E.C is good		
Category	Frequency	Percent
Yes	99	60.7
No	64	39.3
Total	163	100.0
If the yield obtained is not good, what are the reasons for the low productivity		
Category	**Frequency**	**Percent**
Not using modern agricultural inputs (Fertilizer, Improved Seed, and Herbicides etc.)	3	1.8
Using agricultural inputs below recommended amount	9	5.5
Inadequate tillage due to shortage of oxen	16	9.8
Poor soil quality	4	2.5
Disease and pests	4	2.5
Inadequate rainfall	13	8.0
others (Specify it)	15	9.2
Total	64	39.3

Source: Survey Data

As shown in the table 4.9 about 1.8 percent of Households have no any kind of animals and the rest 98.2 percent have different kinds of animals: like oxen, cows, heifers, steer, calves, sheep, goats, mules, donkeys, horses and chickens.

As Households reported during questionnaire conducted out of 77.3 percent (126 households) who have cows 54 percent satisfied and 46 percent of Households are not with their milk yield obtained. The reason for low milk yield is aroused from 63.8 percent through poor genetic makeup of cattle's and shortage of feed (grazing land), 22.4 percent from prevalence of disease and 13.8 from other sources like shortage of labour for not keeping cattle properly.

Around 63.2 percent of the Households have chicken and 71.8 percent satisfied with egg yield and the rest 28.2 cannot. 62.1 percent of the Households report that the reason for poor egg yield was because of poor genetic makeup and shortage of feed and 17.2 percent because of prevalence disease. 20.7 percent from other like loss of chickens eaten by other animals.

Table 4.9:- Information related to Animals

Do you have animals?			
Category	**Frequency**	**Percent**	
Yes	160	98.2	
No	3	1.8	
Total	163	100.0	
Do you think that the milk yield obtained is good?			
Category	**Frequency**	**Percent**	
Yes	68	41.7	
No	58	35.6	
Total	126	77.3	
If the milk yield obtained is not good, what are the reasons?			
Category	**Frequency**	**Percent**	
Poor genetic make-up of cattle	13	8.0	
Shortage of feed (grazing land)	24	14.7	
Prevalence of diseases	13	8.0	
others	8	4.9	
Total	58	35.6	
Do you think that the egg yield obtained is good?			
Category	**Frequency**	**Percent**	
Yes	74	45.4	
No	29	17.8	
Total	103	63.2	
If the egg yield obtained is not good, what are the reasons for low egg productivity?			
Category	**Frequency**	**Percent**	
Poor genetic make-up of chickens	16	9.8	
Shortage of feed	2	1.2	
Prevalence of diseases	5	3.1	
others	6	3.7	
Total	29	17.8	

Source: survey data

An attempt was also made to examine the involvement of households in non-farm activities. This income is earned largely during harvest months and months immediately following harvest. The income earned from these activities improves the wellbeing of households and it has a great role in reducing poverty. Accordingly 42.9 percent participate in non-farm activities and the rest 57.1 are not. It was found out that about 42.9 percent of the households were engaged in nonfarm activities, of which 10.4 percent livestock trading, 8.6 percent were in selling local liquor, 6.7 percent selling fuel woods, 6.1 making and selling charcoal, 3.7 percent Grain trade, 3.1 tailoring, 1.8 employee of local institution, and 2.4 percent in selling labour and other. Out of 57.1 percent not involve in non-farm activities cannot involved in nonfarm activities because of 22.7 percent working capital constraints, 21.5 percent report as lack of time other than agricultural activities, 10.4 percent too old or sick, 2.5 percent skill constraints.

Those individuals who often have a primary categorization in agriculture and the non-farm income they earn is highly correlated with agricultural income and rather selling other durables and harvested crops the used income from this sector to cover some living costs which give them advantage over those not participate.

Table 4:- 10 Involvement in Non- Farm Activities

Are you involved in non-farm employment?		
Category	**Frequency**	**Percent**
Yes	70	42.9
NO	93	57.1
Total	163	100.0
If you participate in non-farm activities, what are the activities		
Category	**Frequency**	**Percent**
Making/ selling charcoal	10	6.1
Selling fuel wood	11	6.7
Grain trade	6	3.7
Livestock trading	17	10.4
Tailoring	5	3.1
Selling labour	2	1.2
Selling local liquor	14	8.6
Employee of local institutions	3	1.8
others	2	1.2
Total	70	42.9
Missing System	93	57.1
Total	163	100.0

If you do not participate in non-farm activities, what are the reasons?		
Category	**Frequency**	**Percent**
Skill constraint	4	2.5
Working capital constraint	37	22.7
Lack of time other than agricultural activities	35	21.5
Too old/ sick to carryout	17	10.4
Total	93	57.1

Source: Survey data

From the survey, it was possible to learn that the average annual income of households in Amuru woreda was Birr 60290.02. Households derive 45.81 percent of their annual income from the agricultural sector, of which the lion's share (29.3 percent) comes from crop production followed by sales Animals accounting for 11.2 percent, milk and butter, egg and Honey accounting for 2.9 and 0.56 and 1.85 percent respectively. Sectors outside agriculture account for 54.19 percent, of which wage of Household Head activities, comprising 21.57 percent tops the list.

In an attempt to investigate the income situation of households in the study area, the minimum and maximum annual household income of the study area was found to be Birr 23560 and 94920 respectively.

Table – 4.11: Source and proportion of total household income

Source	**Average Annual income (in birr)**	**Max**	**Min**	**Contribution**	
				To the Total Income (%)	***By Sector***
Crop Production	17649.07	26000	1500	29.3	**45.81%**
Sales of Animals	6766.23	10000	2000	11.2	
Income from butter and milk	1730	4800	240	2.9	
Income from egg production	340.32	720	120	0.56	
Income from honey production	1121.05	3200	500	1.85	
Income from Ekub	2368.42	3600	1200	3.92	**54.19%**
Remittances	2686.36	6000	800	4.45	
Wage of Household	13000	18000	9000	21.57	
Wage of child	5700	7200	4800	9.45	
Income from nonfarm activities	7928.57	14400	2400	13.15	
Income from others (land rent)	1000	1000	1000	1.65	
Total	**60290.02**	**94920**	**23560**	**100**	**100**

Source: survey data

4.1.3 Farm Asset Ownership

Agriculture as a main activity land is considered as the major asset of the rural Households. The relation between

poverty and household production in a given land is mainly appropriate to farm households. The household land holdings in Amuru woreda indicates that 6 people (3.7 percent) of the population have no land of their own and 96.3 have land of their own cultivation. About 49 percent of the households own land between 5.51-6.5 hectares. About 24.8 percent and 26.1 percent holds above 6.51 and 4.0-5.5 hectares of land.

Table – 4.12: Response Landholding in Amuru Woreda

Do you have land of your own for cultivation currently?		
category	**Frequency**	**Percent**
Yes	157	96.3
No	6	3.7
Total	163	100.0
If you have land of your own for cultivation, how many hectares?		
category	**Frequency**	**Percent**
4.0-5.5	39	23.9
5.51-6.5	77	47.2
above 6.51	41	25.2
Total	157	96.3

Source: survey data

Among households that had land of their own, 43.6 percent were found not cultivating for the reasons, which inter alias include shortage of ploughing oxen, labour and others like for grazing, unable to give product accounting for 18.3, 33.8 and 47.9 percent respectively. When asked about their decision, households preferred share cropping, Renting out, leaving unploughed and other accounts 22.5, 2.8, 19.7 and 54.9 percent respectively.

Table - 4.13: Response of households for not cultivating own land

If you can't cultivate all of your lands, what are the reasons?		
Category	**Frequency**	**Percent**
Shortage of oxen	13	8.0
Shortage of labour	24	14.7
Others	34	20.9
Total	71	43.6
If you can't cultivate all of your lands, what is your decision on the land?		
Category	**Frequency**	**Percent**
Renting out	2	1.2
Share Cropping	16	9.8
Leaving unploughed	14	8.6
others (specify it)	39	23.9
Total	71	43.6

Source: survey data

Due to the immense role of oxen for traction, an attempt was made to see ownership pattern. As depicted in table 4.14, about 1.8 percent of the households reported that they do not have ox. While a pair of oxen is actually needed for ploughing, household having only one of ox accounts 6.9 percent and those having 1 pair of oxen, 3 2pairs and 5 and stood at 35, 16.9, 35, 6.3 percent respectively.

Table – 4.14: Response of Households with Respect to Oxen Ownership

Do you have animals?		
Category	**Frequency**	**Percent**
Yes	160	98.2
No	3	1.8
Total	163	100.0
Number of oxen owned at present		
Category	**Frequency**	**Percent**
1	11	6.7
1 Pair	56	34.4
3	27	16.6
2 Pairs	56	34.4
5 and above	10	6.1
Total	160	98.2

Source: survey data

As shown in the following table the households that own cows those give milk and have calves are around 97.5 percent. Among those the majority 52.8 percent have number of cows between 4-6 and 15.7 percent

above 10 cows. 30.2 And 1.3 percent owns between 7-9 and 1-3 respectively.

Table: – 4.15: Response of Households with Respect to Cows Ownership

Number of cows owned at present		
Category	**Frequency**	**Percent**
1-3	2	1.2
4-6	84	51.5
7-9	48	29.4
above 10	25	15.3
Total	159	97.5

Source: survey data

As information gathered from the population an attempt was done to know the number of donkey owned which helps the rural population for transportation and for marketing purpose. Out of all population around 89.6 percent have donkeys of different numbers. But 10.4 percent have no donkey. Around 45.9 percent of the populations have 2 donkeys (male and female). 34.9, 17.1, 2.1 percent of the population have 1, 3 and 4 donkeys.

Table: – 4.16: Response of Households with Respect to donkey Ownership

Number of donkey owned at present		
Category	**Frequency**	**Percent**
1.00	51	31.3
2.00	67	41.1
3.00	25	15.3
4.00	3	1.8
Total	146	89.6

Source: survey data

As information gathered from the population an attempt was done to know the number of chickens owned. Out of all population around 64.4 percent have chickens of different numbers. But 35.6 percent have no chicken. Around 46.7 percent of the population has 10-14 numbers of chickens. 44.8 And 8.6 percent of the population have 5-9 and above 15 chickens.

Table: – 4.17: Response of Households with Respect to chicken Ownership

Number of chickens owned at present		
Category	**Frequency**	**Percent**
5-9	47	28.8
10-14	49	30.1
above 15	9	5.5
Total	105	64.4

Source: survey data

Since the primary activity of those rural people related to agricultural activities there is also an attempt done to know the ownership of traditional as well as modern beehives which makes Households who haves more advantageous than those not have. Through beehives they produce honey and sell to get additional income. As well as they used it as additional food, meaning that they used it to make a local liquor which is commonly called Birz and Tej during holidays or ceremony.

About 47.9 percent of the respondents have the traditional beehives and the rest 52.1 haven't because of the majority 51.8 percent reported shortage of labor. About 28.9 percent because of skill constraints, 9.6 percent have no idea of beehives, 7.2 percent fear of herbicide and 2.4 percent says because of lack of bees cannot participate in honey production.

As the data collected concerning about modern beehives only 20.2 percent of the respondents have modern beehives. Among 79.8 percent who haven't modern beehives the majority 52.3 percent says they haven't it because of finance constraints to get. Around 19.5 percent, 11.7 percent, 14.8 percent and 1.6 percent haven't because of skill constraint to manage, supply problems, other reasons like information gap and fear to bite animals, and fear of bees access respectively

Table: – 4.18: Response of Households with Respect to beehives Ownership

Do you have traditional beehives			
category	**Frequency**		
Yes	78	47.9	
No	85	52.1	
Total	163	100.0	
If not have traditional beehives why?			
Category	**Frequency**		**Percent**
Lack of bees		2	1.2
Fear of bee loss due to herbicide		6	3.7
Have never thought of it		8	4.9
Do not have skill		24	14.7
Shortage of labour		43	26.4
Total		83	50.9
Do you have modern beehives?			
Category	**Frequency**	**Percent**	
Yes	33	20.2	
No	130	79.8	
Total	163	100.0	
If not have modern beehives why?			
Category	**Frequency**		**Percent**
Cannot afford to buy		67	41.1
Do not know how to manag e		25	15.3
Supply problem		15	9.2
Do not have bees		2	1.2
Others (Specify)		19	11.7
Total	128		78.5

Source: survey data

4.1.4 Credit, Saving and Consumption Expenditure

Lack of finance is among the factors hindering the poor from engaging in gainful activities. The recent shift in development paradigm hinges on the provision of small credit to the poor so as to shield them from the adversities of poverty. In Amuru *woreda,* formal credit from commercial banks does not exist; except for agricultural inputs mainly fertilizer. Most credit transactions are within the villages, the vast majority between relatives and friends. Only, one Micro Finance Institution has begun rendering rural credit to peasants. Around 76.7 percent of the population have access to rural credit and 23.3 cannot because of different reasons like 44.7 percent do not want to take credit, 15.8 percent For fear of risk of not paying back, 13.2 percent saving requirement, 10.5 percent Marginalized to get organized in to groups for group collateral, 7.9 percent For fear of defaulters in the group, and the other 7.9 percent Do not know what to do with the credit.

Table – 4.19: Source of credit and access to it

Do you have access to rural credits?		
Category	**Frequency**	**Percent**
Yes	125	76.7
NO	38	23.3
Total	163	100.0

If you do not have access to rural credit, what are the reasons?		
Category	**Frequency**	**Percent**
saving requirement	5	3.1
Marginalized to get organized in to groups for group collateral	4	2.5
For fear of defaulters in the group	3	1.8
For fear of risk of not paying back	6	3.7
Do not want to take credit	17	10.4
Do not know what to do with the credit	3	1.8
Total	38	23.3

Source: survey data

As described in table 4.20, while 8 percent of the households reported that they do not practice saving in any form and 92 percent were found to have the habit of saving. Households were found to practice saving in variety of forms of which, saving in bank, putting money in home, *Ekub* and others like storing part of their harvest and a combination of both top the list accounting for 39.3, 43.3, 16 and 1.3 percent respectively.

Table – 4.20: Response of households for habit of saving

Do you have the habit of saving?		
Category	**Frequency**	**Percent**
Yes	150	92.0
No	13	8.0
Total	163	100.0
If you have habit of saving, in what form?		
Category	**Frequency**	**Percent**
Putting money in the house	59	36.2
saving in bank accounts	65	39.9
Ekub	24	14.7
Others (Specify)	2	1.2
Total	150	92.0

Source: survey data

4.1.5 Status of living condition of the households

An attempt was also made to study living status of households in the last decade. Accordingly, 73 percent of the respondents reported that their status of living had been improved and 16.6 percent replied no change in living condition. About 10.4 percent of the households reported that their living status had declined in the last decade. Of the reported reasons, escalation of fertilizer price, lack of oxen together with fertilizer price escalation and increased family size are the major ones mentioned by respondents.

Table – 4.21: Response of Status of living condition of the household in the last 10 years

Status of living condition of the household in the last 10 years		
Category	**Frequency**	**Percent**
Improved	119	73.0
Deteriorated	17	10.4
The same	27	16.6
Total	163	100.0

Source: survey data

About 9.2 percent of the respondents reported that they have experienced food shortage in the 12 months period prior to the administration of the questionnaire. Various strategies were employed so as to cope up with food shortage of which, cutting down the quantity of food, borrowing and Sending children to the in each meal labour market were the major ones accounting for 13.3, 73.3 and 13.3 percent respectively.

Table – 4.22: Strategies adopted against food shortage

Category	**Frequency**	**nt**
yes	15	9.2
No	148	90.8
Total	163	100.0
If the household experience food shortage, what strategies did the household adopt to deal with the		
Category	**Frequency**	**Percent**
Cutting down the of food	2	1.2
Borrowed from others	11	6.7
Sending children to mea bour	2	1.2
Total	15	9.2

Source: survey data

4.2 Poverty Lines

4.2.1 Food Poverty Line of Amuru woreda

In constructing the food poverty line for the woreda, procedures described in Ravallion [22], cited in [23] have been used. First, all the consumption information, including the consumption from own production and stocks were expressed in monetary terms.

Values that use local prices provide a suitable yardstick for comparison of poverty across villages [23]. Accordingly, the food items were valued as per the prevailing local price, which was collected from two markets,

namely, Sidan Friday market and Obora concurrently with the survey.

Secondly, consumption per household was rescaled to take into account the household size and composition. Adult Equivalent Units (AEU) were derived for each household, and used to calculate consumption per adult equivalent. Nutrition/Calorie based equivalence scale adapted from WHO by [24] was used to convert household members of different age and sex into equivalent male adults.

Thirdly, since poverty lines are essentially tools to allow comparison of welfare across households and regions, constructing a diet for the poor, which is identical for all households is an important step. For such purpose, the minimum food basket that gives 2200 Kcal per adult per month (the minimum calorie suggested by WHO required for an adult to perform daily duties) constructed for a cereal-based farming rural areas of Ethiopia was adapted from Dercon and Mekonnen [25] with some adjustments to fit the specific characteristic of the study area. As described earlier, wheat is more dominantly produced in the *woreda*, and hence, is a staple food crop than barley.

According to Agren and Gibson [26] and EHNRI [27], wheat and barley have similar caloric values (316-369 and 314-374 Caloric/100gm respectively). Therefore, wheat was used instead of barley.

Accordingly, the food poverty line of Amuru *woreda* was found to be Birr 514.02 per adult equivalent per month, which is Birr 6168.24 per adult per annum.

Given an average household size of 6.31 adult equivalents, it was possible to learn that a typical household in Amuru *woreda* needs an income of Birr 3243.47 per month or Birr 3892.59 per annum to escape food poverty.

4.2.2 *Absolute Poverty Line of Amuru Woreda*

The total poverty line can be obtained by adjusting for nonfood expenditure using the average food share of the lowest consumption quartile households. Dividing the food poverty line by the average food share of the lowest income/consumption quartile gives a total poverty line [1]. The average food share of the lowest consumption quartile households in Amuru *woreda* which was found to be 77.49 percent. Therefore, absolute poverty line of the *woreda* is computed as:

$$\text{Birr } \frac{6168.24}{0.7749} = \text{Birr } 7960.04/\text{adult/ annum or Birr } 663.34/\text{adult/ month}$$

Given an average household size of 6.31 adult equivalent units, a typical household in the *woreda* needs an income of Birr 50227.89 per annum or Birr 4185.65 per month to escape poverty.

4.3 Analysis of Poverty Measures

Poverty measures are indices that show the magnitude of poverty in a society. The FGT formula mentioned in depth in chapter two was applied so as to compute the magnitude of poverty, namely, incidence, depth and severity.

4.3.1 The Magnitude of Food Poverty

Table - 4.24: Magnitude of Food Poverty in Amuru Woreda

Incidence (P0)	*Depth (P1)*	*Severity (P2)*
0.42	0.3152	0.1154

Source: Own computation

As depicted in table 4.25, about 42 percent of the households live in absolute food poverty. The food poverty gap of the *woreda* was found to be 31.52 percent. Accordingly, the average consumption shortfall required to bring the poor to the food poverty line was found to be 31.52 percent of the food poverty line. Food poverty severity of the study area was 11.54 percent.

4.3.2 The Magnitude of Total Poverty

Table – 4.24: Magnitude of total poverty in Amuru woreda

Incidence (P0)	*Depth (P1)*	*Severity (P2)*
0.455	0.2718	0.0989

Source: Own computation

Table 4.26 indicate that poverty incidence of the woreda was found to be 45.5 percent, Poverty gap of the woreda was 27.18 percent and Poverty severity index of Amuru *woreda* was found to be 9.89 percent. When we compare this magnitude of poverty with the national rural poverty, is high in all which accounts for 30.4 in poverty incidence, 8 in poverty gap and 3.2 in poverty severity and also above the Oromia regional rural area which accounts for 29.3 in poverty incidence, 7.6 in poverty gap index and 2.9 in poverty severity index.

5. CONCLUSION AND RECOMMENDATIONS

Poverty is one of the major issues in the world that need to be address quickly in the poorest villages in which thousands of people are dying, and most of these people are children's. Poverty refers to the condition of

not having the means to afford basic human needs such as clean water, nutrition, healthcare, clothing, food, and a place to live and poverty is a deadly issue that's killing our population slowly.

Poverty not only persisted, but also continued to worsen in many countries. The situation is much worse in Sub-Saharan Africa, which virtually in all major cross-regional comparative analysis of economic and social progress, is categorized as the *"poorest of the poor"*, with more than 46 percent of its population (almost 300 million people) living on less than $ 1 per day. Since its inception in 1990, all the UNDP reports on Human Development show only African countries as occupying the bottom 25 percent of Human Development Index (HDI) rankings each year. Poverty in Ethiopia is more pronounced in the rural areas as compared to the urban areas. The situation worsened recently because of sharp increases in the prices of food and fertilizers on world markets, which made it more difficult for poor households in Ethiopia, as elsewhere, to secure adequate food supplies.

Poverty measurement and analysis are needed to identify the poor, the nature and extent of poverty and its determinants, and to assess the impact of poverty on the socio economic status of the poor.

Basically the main objective of this study was to analyze the magnitude (incidence, depth and severity) of rural poverty in Amuru Woreda with the help of cross sectional data. The study focused on households of the woreda and it utilized based on a data which was collected through questionnaire from households, focus group discussion and interview from key informants.

CBN approach and FGT measures have been employed to set the poverty line and compute the magnitude of rural poverty in Amuru *woreda* respectively. Accordingly, the food poverty line was found to be Birr

6168.24 /adult/annum and total poverty line Birr 7960.04, which is far below the corresponding average for rural areas at national and Oromia region. Accounting for over 77.49 percent, food takes the lion's share in the consumption expenditure of the poor and occupied substantial amount in the estimated poverty line. While the incidence, depth and severity of food poverty stood at 42, 31.5 and 11.5 percent, the respective measures for total poverty were found to be 45.5, 27.2 and 9.9 percent. The study clearly indicates that the magnitude of both food and total poverty in the *woreda* exceeds the corresponding average at national level and Oromia region.

Recommendation

The result of poverty measures vividly indicate that the overall magnitude of poverty is quite high and worthy of serious attention. In light of this, the following key and priority areas of intervention are forwarded. Concerning to the Household size that educated households are likely to have fewer children. Thus, expansion of education and intensification of family planning programme at grass root level are amongst areas deserving prime attention.

As confirmed by focus group discussions and key informant interviews, due to its role in planning household size, using modern agricultural technologies and entering into more profitable farm and non- farm activities, education has strong poverty reducing impact. Thus, the good beginning underway to enhance access and quality of education need to be strengthened.

The practice, saving habit, was found to have contribution in escaping out poverty. Despite this, 8 percent of the households do not have saving habit and all of the respondents (100 percent) were found to participate in social events that drain substantial amount of their income. Therefore, awareness creation towards the significant role of saving habit could serve the purpose.

As discussed in the result and discussion part, lack of finance is amongst the major bottle necks that constrained the rural people from engaging in meaningful investment and gainful farm and non-farm activities. Although the role of micro finance institutions in response to this is encouraging, But 44.7 and

10.5 percent of the respondents replied that they do not know what to do with the credit and marginalized in group formation respectively as major reasons for not taking loans and 7.9 percent of households reported fear of defaulters in the group. Therefore, mechanism that compel with skill training, not the whole group should be paved and defaulter to incur the costs themselves should precede provision of loans.

The total livestock unit of animals owned, implying that additional units of livestock reduces household's chance of falling into poverty. However, livestock productivity in the study area was found to be too low due to poor management practice, holding of low yielding indigenous breeds and shortage of feed. But there is ample evidence that improving the management practice and use of improved breeds and forage species are among others important to boost livestock productivity.

Although the owning traditional beehives has its part in poverty reducing impact. From the descriptive statistics it was possible to learn that this is attributed due to low honey yield obtained from traditional beehives, as a result of which, households do not consider it as a viable source of income. Therefore, intensification of agricultural extension service is another area of primary relevance. There is mounting evidence that use of modern agricultural inputs like fertilizer, high yielding varieties etc. are among others critical to boost crop production. But, as described in the explanation part all of the households cannot use modern agricultural inputs.

This was also consistently confirmed by all of the focus group discussions and key informant interviews.

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