RESEARCH ARTICLE

ANALYSIS OF RURAL HOUSEHOLD POVERTY STATUS: THE CASE OF WOLISO DISTRICT OF SOUTH WEST SHOA ZONE, OROMIA REGIONAL STATE, ETHIOPIA

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ABSTRACT

In many developing and developed countries, program managers and policy makers who constantly dealing with poverty related interventions have to make best decisions from a wide range of program and policy options. Information for making such decisions must be based on sound data-based analysis. In order to make such analysis, there is a need to undertake empirical studies. Therefore, the main objective of this study was to assess the rural household poverty status. The district under study has 37 Kebeles and 5 Kebeles were selected using simple random sampling. From the sampled Kebeles, using probability proportional to size sampling method 140 households were selected. Both primary and secondary data were collected for the study. The primary data were collected from households through structured interview schedule. The secondary data were collected on agro climatic conditions, social services, availability of production and marketing facilities and population statistics. The t-test and χ2 - test were employed to test continuous and discrete variables respectively. Cost of Basic Need (CBN)) approach was followed to set the poverty line in the district. The Foster-Greer-Thorbecke (FGT) measure was employed to compute head count index (P0), poverty gap index (P1) and poverty severity index (P2). Accordingly, the food poverty line was found to be 1817.88 Birr per adult equivalent per annum which represents 81.21 per cent of the total share of the poor and the total poverty line was 2244 Birr. Poverty incidence, depth and severity of the district were found to be 38.5, 11.88 and 5.5 percent respectively. With regard to consumption expenditure, the maximum and minimum household expenditure per adult equivalent per annum represents 6081 and 985.58 Birr respectively with an overall average expenditure of Birr 2650 in the study area. The mean expenditure of the poor households was 1413.83 Birr while it was 3015.63 Birr for the non-poor households.

Abbreviations: CBN- Cost of Basic Need, CBR- Crude Birth Rate, FGT- Foster-Greer-Thorbecke, WHO-World Health Organization.

INTRODUCTION

Poverty is an intractable challenge for most African countries. Ethiopia is basically a rural society with only a small percentage (15 per cent) of the population living in the capital city, secondary cities and small urban towns in different regions of the country. Moreover, the outskirts of so-called urban centers and their surrounding areas are commonly rural. The livelihood of the population in rural areas is mainly based on agriculture – typically mixed farming. Statistics on Ethiopian poverty shows that about 44 per cent of the total population (45% in rural and 37% in urban areas) is found to be below poverty line (MoFED, 2006). The country's manifestation of poverty phenomena could be seen by 85 per cent dependency ratio (which is every 100 persons in the productive ages had to support 85 dependents for their basic and other need) with crude birth rate (CBR) and crude death rate (of 39/100 and 15/100 respectively). The infant mortality rate (<1 year) is 673/100,000 live births which is high in sub-Sahara African (SSA) countries. The life expectancy at birth is 48 years for male and 50 years for female (CSA, 2006). Poverty in Ethiopia is, therefore, widespread and deep-rooted and constitutes the priority development challenge in the country. About 90 per cent of the population would fall under poverty line if the international poverty line of two dollar a day per person is used.

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Therefore, poverty in the country is mainly a rural phenomenon and a reflection of the underdeveloped nature of the agriculture sector. Typically, agriculture is characterized by small holder and subsistence farming which is highly dependent on rainfall. The urban livelihood is also highly dependent on the rural. Therefore, measuring the poverty status could help to design the intervention directions and inform policy options for tackling poverty in the study area.

There are at least four reasons to measure Poverty (World Bank, 2005). The first one is to keep the poor on the agenda. A credible measure of poverty can be a powerful instrument for focusing the attention of policy makers on the living conditions of the poor. Targeting interventions, domestically and worldwide is the second reason. One cannot help the poor without at least knowing who they are. This is the purpose of a poverty profile, which sets out the major facts on poverty and, typically, inequality, and then examines the pattern of poverty, to see how it varies by geography, by community characteristics, and by household characteristics.

In addition, there is a need to predict the effects of, and then evaluate, policies and programs designed to help the poor. Policies that look good on paper may, in practice, not work as well as expected. To judge the effects, one would ideally like to monitor the effects of a policy on the poor, and evaluate the outcomes in comparison with a control group. And finally, to evaluate the effectiveness of institutions whose goal is to help the poor. One cannot tell if a government is doing a good job of combating poverty unless there is good information on poverty. The institutions success in persuading this goal can only be judged if there are adequate measures of poverty. Accordingly, the working concept of poverty applied in this study is the absolute notion, which is defined by the World Bank (1990) as the inability to reach a minimal standard of living. Due to the robustness as well as consistency of the poverty profile that the method offers, Cost of Basic Need (CBN) method is employed in setting poverty line for Woliso District.

Statement of the Problem

Although governments and international organizations are implementing scaling up programs for the reduction of poverty, they have difficulties in reaching the poorest. The extreme poor suffer from many handicaps which have a mutually reinforcing impact, and often lead to social exclusion (World Bank, 2006). Poverty has registered as one of the most intractable economic and social problems in the twenty-first century. Problems related to increasing food availability, feeding the population, improving their nutritional status and reducing poverty levels continue to confront decision makers in these regions of the world. In many developing and developed countries, program managers and policy makers who constantly deal with design, implementation, monitoring and evaluation of food security, nutrition and poverty related interventions have to make best decisions from a wide range of program and policy options. Information for making such policy and program decisions must be based on sound data-based analysis. Studies after studies have suggested that poverty is not simply an economic problem but rather a complex social problem with various manifestations.

Alternative approaches have emerged as a result of the realization that poverty measurement outcomes cannot be accurate by looking simply at people's income or consumptive capacities. Poverty reduction is one of the most important goals of development efforts. A pro-poor development strategy not only focuses on economic growth, but it also needs to take distributional impacts into account (Arne *et al*, 2002). In all economies of contemporary developing world such as Ethiopia, now a days the serious objectives and priorities of public decision makers are to fight against poverty to improve the conditions of life of the people (World Bank, 2002). About 290 million people, who constitute about 46% of the total population of Africa region, live on less than one US$ per day per adult. Incomes, assets, and access to essential services are unequally distributed. This research paper further explains, a significant proportion of the population does not have access to safe water and has limited or no access to social services, such as education and health. Whether rural or urban, poverty is multifaceted and widespread in the country in which its dimensions are interlocked, as the courses of poverty also have national and international dimensions**.**

Apart from spatial variations, temporal variation in poverty situation is also worth considering. Bearing in mind poverty reduction is a long-term process and is not amenable to significant improvements in a short time; temporal variations of factors that can cause poverty situations also urge poverty diagnosis to be a continuous process in Ethiopia (MoFED, 2002). People in the rural areas of Ethiopia are exposed to poverty which needs area focused and context specific researches to examine and investigate factors causing poverty at community and grass root level.

Therefore, any strategy or plan that attempts to reduce or alleviate poverty in the district requires an in-depth area-focused research. Accordingly, this study was conducted with the main aim of measuring of poverty in the area. For the purpose of this study, poverty is defined in absolute term, as the extent to which household's consumption expenditure (food and non-food expenditure) per Adult Equivalent/annum which meets its subsistence requirement. Considering the above mentioned situation, this study was conducted with the objective of measuring the magnitude of household poverty in the study area.

MATERIALS AND METHODS

The study was conducted in Woliso District of South West Shoa zone which is   114 kms away from   Addis Ababa, towards the south west. Woliso district was purposively selected. On the second stage 37 kebeles of the district were divided in to two (Dega, 7 kebeles and Woinadega, 30 kebeles). Then using simple random sampling technique 5 kebeles were sampled (4 kebeles from Woinadega and 1 kebele from Dega). A total of 140 Households were selected from each sampled kebeles using probability proportional to size sampling method. Both primary and secondary data were used for the study. Primary data were collected from households through structured interview schedule. Secondary data were collected on agro-climatic conditions of the study area, the availabilities of production and marketing facilities, population

statistics etc. Such data were collected from reports of District Agricultural Development Office. Descriptive statistics such as frequency, minimum and maximum, mean, percentage, and standard deviation were calculated using SPSS software. Appropriate statistical tests such as t-test (continuous variables) and χ^2 -test (for discrete variables) were employed.

Poverty measurement

Setting poverty line

The consumption level that separates the poor from the rest of the population is called the poverty line. It is well known that if consumption is divided into two categories viz., food consumption and non-food consumption, the poorer the people are, the higher the proportion of their overall consumption that accounted for food consumption (MoFED, 2002). In determining consumption level that can be used to separate the poor from the non-poor, food consumption is the most significant measure. Thus a food poverty line (a minimum level of food consumption) is first calculated. A non-food minimum allowance is then calculated and added to the food poverty line to provide the total poverty line. In countries like Ethiopia where one can find diverse cultures and socio-economic conditions (MoFED, 2002), it is difficult to set up a single measure of poverty line. It might be better to make a separate regional, possibly district specific food baskets and derive regional or district level poverty line. Although food baskets vary across regions due to differences in relative prices, they may also vary due to tasks, income and the availability of particular food.

This study followed the costs of basic need methodology described by Ravallion (1998) to construct district specific poverty line. So using this approach the food poverty line (Z^F) and a non-food poverty line (Z^N) were calculated. The cost of basic needs approach to setting poverty line first estimates the cost of meeting calorie requirements and then includes a mark up for non-food needs (Ravallion, 1998). In order to calculate the food poverty line (Z^F,) the following steps were followed.

1. Calculate average household size
2. Find minimum requirements of daily per capita calories (2200Kcal) (WHO)
3. Find the typical food bundle of the relative poor household.
4. Calculate the calories of this food bundle.
5. Determine the cost of this food bundle.

$$Z^F= \frac{(WHOs\ Average\ Minimum\ Calorie\ requirement)*(Cost\ of\ average\ food\ bundle)}{Calories\ in\ Average\ food\ bundle\ for\ relatively\ poor\ household}$$

But, for the purpose of this study the food component was converted to monetary value as followed by Dercon and Mekonnen (1997) with price adjustments.

Calculating poverty index

Once poverty line has been set, to attain the measurement of poverty, the FGT poverty measurement was used. One of the most important jobs of poverty analysis is measuring the poverty. The poverty measure itself is a statistical function that translates the composition of the indicator of household

wellbeing and the chosen poverty line into one aggregate number for the population as a whole or a population subgroup (Foster et al. 1984). Many alternative measures exist, but the three classes of poverty measures described by Foster et al. (1984) were used in this study. These include the headcount index (which measures the incidence of poverty), the poverty gap (which measures the depth of poverty), and the squared poverty gap (which measures the severity of poverty). The empirical formula, FGT poverty measure is given below:

$$Pi= \frac{1}{n}\sum_{i=1}^{q}\left(\frac{Z-Yi}{Z}\right) \propto$$

Where, pi = poverty measure

Z = poverty line
Yi = income level of the ith poor
n = the total number of household sampled
q = the number of poor,
$\acute{\alpha}$ = the weight attached to the severity of the poor which takes 0, 1 and 2.

The measure is defined for $\acute{\alpha}$ greater than or equal to zero, and $\acute{\alpha}$ is a measure of the sensitivity of the index to poverty. As $\acute{\alpha}$ increases, the measure gives more weight to the poorest of the poor; $\acute{\alpha}$ takes a value zero for the head count, one for poverty gap, and two for the squared poverty gap (Foster et al. 1984).

The Head Count Index

In the first place, poverty incidence is measured by the head count index. The most widely used measure is the headcount index, which simply measures the proportion of the population that is counted as poor, often denoted by Po, Formally,

$$Po = Np/N$$

Where Np, is the number of poor and N is the total population (or sample). It is often helpful to rewrite as

$$Po=1/N\sum_{i=1}^{N} I(yi, Z),$$

Here, I (.) is an indicator function that takes on a value of 1 if the bracket expression is true and 0 otherwise. So, if expenditure (Yi) is less than the poverty line (z), then I (.) equal to 1 and the household would be counted as poor, Np is the total number of the poor. The greatest virtues of the headcount index are that it is simple to calculate and easy to understand. But the headcount index does not take the intensity of poverty in to account.

The Poverty Gap Index

A poverty gap measure provides information regarding how far off households are from the poverty line. This measure captures the mean aggregate income or consumption short fall relative to the poverty line across the whole population. This adds up the extent to which individuals on average fall below the poverty line, and express it as a percentage of the poverty line. More specifically, define the poverty gap (Gi) as the poverty line (Z) less actual income (yi) for poor individuals; the gap is

considered to be Zero for everyone else. Using the index function,

Gi = (z-yi).I(yi<z).

Then the poverty gap index (P1) may be written as

$$P1 = 1/N\sum_{i=1}^{N} G1/Z$$

It is obtained by adding up all the shortfalls of the poor (assuming that the non poor have a shortfall of zero) and dividing the total by the population (Ravallion, 1998). In other words, it estimates the total resources needed to bring all the poor to the level of the poverty line (divided by the number of individuals in the population). This measure can also be used for non-monitory indicators, provided that the measure of the distance is meaningful.

Squared Poverty Gap (Poverty Severity) Index

This takes into account not only the distance separating the poor from the poverty line (poverty gap), but also the inequality among the poor. That is a higher weight is placed on those household further away from the poverty line (Foster *et al*, 1998 cited in Solomon, 2005).

$$P1 = 1/N\sum_{i=1}^{N} (G1/Z)^{\alpha}, (\alpha >\_0)$$

This can be rewritten as $P1 = 1/N\sum_{i=1}^{N} (G1/Z)^{2}$

RESULTS AND DUSCUSSION

In this chapter, the findings from the study are presented. The results of poverty index are well illustrated in the following paragraphs.

Status of Poverty in Woliso District

Poverty line and the minimum food basket (per adult per annum)

To determine the level (incidence) of poverty (number of poor) there is a need to establish a poverty line, a threshold level of per capita income or consumption below which an individual is considered to be poor. Establishing the poverty line starts with defining and selecting a "basket" of food items typically consumed by the poor. The quantity of the basket is determined in such a way that the given food basket meets a predetermined level of minimum calorie requirement i.e. 2200 Kcal per adult equivalent per day. This minimum food basket was adopted from Dercon and Mekonnen (1997) with price adjustments. The basket of goods was valued at local representative prices to reach at a consistent poverty line across the study area. The food poverty line calculated was found to be 1817.88 Birr per year per adult equivalent. Once this was done, an allowance was made for the non-food component consistent with the spending patterns of the poor. The food share of the poor in the district is 81.21 %. Lanjouw and Ravallion (1994) revealed that in poor countries a large share of the budget is devoted to food. The total poverty line is calculated by dividing the food poverty line by the food share of the poor. The total poverty line of the district is then found to be 2244 Birr per year per adult equivalent.

The magnitude of total poverty

Poverty incidence of the district was found to be 38.5 per cent, which is lower than the average rural poverty of Ethiopia 51.6 per cent in 1995/6, 41.1 per cent in 1999/2000 but almost similar to 38.7 in 2004/5 and higher than the estimate of MoFED (29.2 per cent) in 2009/10 (MoFED, 2010).

Table 1. Poverty index in Woliso district (n = 140)

Head Count Index (Po)	Poverty Gap Index(P1)	Poverty Severity Index (P2)
0.385	0.1188	0.055

Source: own computation based on the survey.

Table 2. Consumption expenditure of households in Woliso district (n = 140)

Variables	Poor (n=54)		Non poor (n=86)		
	Mean	Std	Mean	Std	t –value
Expenditure/adult Equivalent/year	1413.83	347.79	3015.63	904.32	12.438***
Standard Deviation for the total sampled households					938.30
Mean Difference					1601.80757

*** Significant at 1% probability level.
Source: Own computation based on the survey.

Table 3. Socio-economic profile of sample household heads (n = 140)

Variables	Poor(n=54)		Non poor(n=86)		N=140
	Mean	Std	Mean	Std	t –value
Age	58.9	13.7	43.7	11.8	6.97***
Family Size	5.4	2.11	4.7	1.8	2.3**
Dependency Ratio	1.98	1.32	1.81	1.27	741
Educational Status	2.7	4.6	5.83	3.9	4.2***

***, ** significant at p<0.01 and p<0.05.
Source: Own computation based on survey.

It is also observed that it was less than the National average of 47.5 per cent in 1996 and 39.3 per cent in 2005. The poverty gap of the district (11.88 per cent) was found to be less than the average rural poverty of Ethiopia which was 15.2 per cent in 1995/6, and 12.1 per cent in 2004/5 and but higher than 10.3 per cent in 1999/2000 (MoFED, 2007). While compared with the findings of Metalign (2005) in Kersa Kondaltit, Poverty Gap of the study area was found to be lower. Poverty Severity Index of Woliso District was found to be 5.5 per cent which is higher while compared with Rural Ethiopia in 2004/05 which was 4.9 per cent (MoFED, 2006/07). The poverty index for the district is given in Table 1.

Consumption expenditure of the District

The distribution of households by consumption expenditure per adult equivalent per year was calculated from the survey data (Table 2). The maximum and minimum household consumption expenditure per adult equivalent per year was 6081 and 985.58 Birr respectively with an overall average expenditure of 2650 Birr. There is a significant difference between the mean expenditure of poor household and non poor household in the study area. The mean expenditure of the households was 1413.83 Birr for the poor and 3015.63 Birr for the non-poor households. Based on the t value (12.438) which is significant at 1% significance level, it could be inferred that there is a significant difference between the mean expenditure of the poor and non-poor.

Demographic factors

Household demographic factors are important determinants of poverty. Therefore, comparison of poverty among households with different characteristics such as age of household head, family size, dependency ratio, education, marital status of the household head, and sex of the household head were made using descriptive and inferential statistics.

Socio-economic profile of sample household heads

The result of the survey shows that there is a significant difference between the age of poor household heads and non-poor household heads in the study area. In other words, members of poor households tend to have older household heads compared to the non-poor ones. The mean age of poor household heads was 59 years of age with standard deviation of 14 while that of the non-poor was 44 years of age with standard deviation of 11.8. The mean age of the overall sampled household was 50 years of age (Table 3).

According to the survey results, the average family size was 5.4 for the poor and 4.7 for the non-poor in adult equivalent units. There was statistically significant difference between poor and non poor with regard to family size (Table 3). The overall mean family size for the sampled household in the study area was 4.96 persons in adult equivalent unit per household which is a slightly higher than the national average family size of Ethiopia

Table 4. Marital Status of the Household heads (n=140)

Variables	Poor (n=54)				Non-poor (n=86)			
	Married		Not Married			Married	Not Married	
Marital Status	No.	%	No.	%	No.	%	No.	%
	44	81.50	10	18.50	74	86.00	12	14.00
	Total							
Marital Status	Married				Not Married			
	No.		%		No.		%	
	118		84.30		22		15.70	
Chi – Square Value	0.552							

Note: M stands for Married and N.M for non married.
Source: Own computation based on survey.

Table 5. Sex of the household heads (n = 140)

Sex of household head	Poor (n=54)			non poor(n=86)		Total	
	Number %	%	Number	%	Number	%
Male	44	81.48	81	94.18	125	89.28
Female	10	18.52	5	5.82	15	10.72
Total	54	100	86	100	140	100
Chi – square Value	4.597[**]					

** Significant at p<0.05%,
Source: Own computation based on survey.

Table 6. Farm resources and access to irrigation of households (n = 140)

Variables	Poor (n=54)		Non poor (n=86)		n=140
	Mean	Std	Mean	Std	t –value
Land size	1.131	0.86	1.7	1.09	2.23**
Livestock Holding	2.91	1.76	7.09	7.43	4.05***
Access to irrigation	0.4	0.47	0.4	0.45	2.5

Note ***, ** significant at P<0.01 and P<0.05 Source:
Source: Own computation based on survey.

Table 7. Participation in non/off farm income (n = 140)

Participation in non/off-farm activities	Respondents			
	poor	non-poor	Total	%
Yes	18	18	36	25.71
No	36	68	104	74.29
Total	54	86	140	100
χ^2				2.671

Source: Own computation based on survey.

which was 4.9 persons in adult equivalent unit per household (MoFED, 2002). When poor households compared with the non-poor ones, poor households have had larger family size than the non-poor households. In general, poor households in the study areas have a larger family size than their counterparts. Such a difference in family size itself reflects the variation in the average dependency ratio which was 1.98 for the poor and 1.8 persons for the non-poor in adult equivalent unit even though there is no statistically significant difference between the two groups with regard to dependency ratio (Table 3).

It could be seen from Table 3 that in the study area poor households were headed by non-educated or lower schooling household heads. The mean schooling for the poor is 2.73 while it is 5.83 for the non-poor household. The t value of 4.2 which is significant at 1% level shows that there is statistically significant difference between poor households and non-poor households with respect to education. It is in line with MoFED (2006/7) which concludes as poverty incidence, depth and severity decrease with increase in the level of education (schooling) of the household head.

Marital status of the household head

The result from the study shows that the difference between poor and non-poor households in marital status is not significant. Out of the sampled households, 118 household heads were married while 22 were non-married. The non-married category represents only 15.7 per cent of the total sampled households (Table 4).

Sex of the household head

Female headed households represent 10.72 per cent or 15 out of 140 sampled households. That was based on the probability proportional to size. Out of the sampled female headed households, 66.7 per cent were poor where as it was only 35.2 per cent for male headed households. This shows that there is a significant difference between male and female headed households at (P<0.05).

Economic factors

The main means of livelihood of the sampled households in the study area is agriculture. Under such circumstances, therefore, land ownership, livestock holding (oxen for traction power) and accessibility to irrigation facilities for multiple productions per year are important determinants of poverty. Diversified source of income i.e. involvement in off/non-farm income in addition to farm income is an important determinant of rural poverty. These economic factors were considered for the study and the results are presented below.

Farm resources and access to irrigable land of households

According to MoFED (2002), land ownership in rural area is an important determinant of poverty in Ethiopia. This document further shows that almost all (97.6%) of households in the rural area of the country own some amount of land. But the difference among households in the rural area with regard to land is the accessible area or size.

Table 6 elicits that in the study area, there is a significant difference between the mean land size of poor and the non-poor households. The results indicate that the mean land size of poor was 1.13 ha while it was 1.7 ha for the non poor. The t value is 2.23 which is statistically significant at 5% significant level (p<0.05). Hence, it could be concluded that there is significant difference between poor and non poor households with regard to mean land size.

Another important input in agricultural production is the availability of traction power. The use of oxen is predominant in the study area. Thus, households owning oxen are advantageous in cultivating the land. The survey indicated that all the sampled households had access to some number of livestock. But there is a significant difference between the poor and non poor with regard to livestock size at 1% significant level (P<0.01). The mean livestock holding of the poor was 2.91 in tropical livestock unit (TLU) per household while it was 7.09 TLU units for the non poor. The total mean of livestock holding of the sampled households was 5.48 in TLU. Finally, the total irrigated land for the poor and non-poor is equal in mean. In other words there is no statistically significant difference between poor and non-poor in terms of their access to irrigation (Table 6). This is because; all of the sampled households have equal access to irrigation and is equally distributed for the poor as well as for the non-poor. The result of the survey conducted by the researcher confirms that there is no difference between poor and non-poor with regard to access to irrigation.

When the members were asked about whether their access to irrigation favor them than their counterparts, they answered as "Yes", because they can grow vegetables throughout the year and generate a lot of income while those who don't have access to irrigation can't do it. Those who have no access to irrigation grow only crops once in a year during summer season. As a result, their income is low. Again while irrigation users were asked whether there is a difference in utilization of irrigation between the poor and non poor, their answer was no. Because each member of the irrigation user has equal contribution on any work related to irrigation canal or diversion of the river. And all the members equally use it whether he or she is poor or not once they fulfill the rules and regulations of the association. In their case each member of the user has 4 hours time per week (2hrs day and 2 hrs night) to use irrigation.

Participation in non/off-farm activities

Off/non-farm activity represents the involvement of household head in an additional income generating activities other than the sale of farm products (crops, livestock etc.). From the sampled 140 households only 36 household heads participated in off/non-farm activities. Therefore, it is possible to understand from the table 7 that there is no statistically significant difference between poor and non poor based on their involvement in off/non- farm activities.

Poverty and institutional factors

Extension service, access to credit and distance from market center

For the purpose of this research report, frequency of extension visit is defined as the number of contacts per year that the

respondents make with development agents. It was hypothesized that the effort to disseminate improved production practices is a factor of the frequency of contact between farmers and development agents (DAs). In the study area, the mean number of contacts of poor household heads with DAs per year was 1.12 while this figure was to 5.82 contacts per year for the non poor. This shows that there is a significant difference between poor and non-poor in terms of their frequency of contacts with development agents per year at 1% significant level (p<0.01) (Table 8).

Poverty Severity Index of Woliso District was found to be 5.5 per cent which is higher while compared with Rural Ethiopia in 2004/05 which was 4.9 per cent. There is a significant difference between the mean expenditure of poor household and non poor household in the study area.

Members of poor households tend to have older household heads compared to the non-poor ones. The overall mean family size for the sampled household in the study area was 4.96 persons in adult equivalent unit per household which is

Table 8. Extension service, access to credit and distance from market center or district capital (n = 140)

Variables	Poor(n=54)		Non poor(n=86)		
	Mean	Std	Mean	Std	t –value
Extension Visit	1.12	1.55	5.82	7.44	4.568***
Access to Credit	462	87	1010.46	156	2.8**
Distance from market	10.1	5	9.35	4.36	0.76

***, ** significant at p<0.01 and p<0.05
Source: Own computation based on survey

In addition it is a fact that access to working capital is an important determinant of the ability of poor households to adopt new technologies, experiences and production (MoFED, 2008). In order to observe its effect vividly, credit is defined in this research report, as a continuous variable represented by the amount of money that a household received from formal credit institutions in the last two years. Table 8 shows that the mean of credit received by the poor in the last two years was 462 Birr and 1010.46 Birr for the non-poor with standard deviation of 87 and 156 for poor and non poor respectively. This table also shows that mean of credit received in Birr in the last two years is smaller for the poor than for the non-poor. This is because the poor are allowed to take small amount of money due to insufficient collateral requirement plus the poor fear failure of paying back. As a result, only 11 households from 54 were availed credit. Even though the non-poor are not interested to take credit, 34 households took credit in the last two years. The mean of credit taken by the non-poor was high because those who took credit were allowed to take high amount of money because they can fulfill the requirements of the lenders.

Therefore, it is possible to understand from Table 8 that there is a significant difference between poor and non-poor with regard to availing of credit at 5% significant level (p<0.05). Those households who have access to credit may have better possibilities to invest in agricultural and non-agricultural activities to improve their income position. Finally distance from market center is defined as continuous explanatory variable designating households proximity to the market center measured in kilometer. The survey result shows that there is no statistically significant difference between poor and non poor interms of distance from market center and districts capital. The mean distance of poor from market center and district capital is 10.1 Km while it is 9.35 Km for the non poor (see table 8).

Conclusion

Poverty incidence of the district was found to be 38.5 per cent, which is higher than the estimate of MoFED (29.2 per cent) in 2009/10. The poverty gap of the district (11.88 per cent) was found to be higher than 10.3 per cent in 1999/2000.

slightly higher than the national average family size of Ethiopia which was 4.9 persons in adult equivalent unit per household. Such a difference in family size itself reflects the variation in the average dependency ratio which was 1.98 for the poor and 1.8 persons for the non-poor in adult equivalent unit. There is statistically significant difference between poor households and non-poor households with respect to education, mean land size, livestock holding, frequency of contacts with development agents per year and availing of credit.

Recommendations

The mean livestock holding of the poor was 2.91 in tropical livestock unit (TLU) per households. Therefore, encouraging farmers to enhance the productivity of their livestock through good management and replacing unproductive animals with the improved one through time is expected from farmers and responsible bodies.

The result of poverty measure vividly indicates that the overall magnitude of poverty is quite high and worthy of serious attention. Therefore, the following gaps are needed to be filled by appropriate measures. Family size was found to be a significant determinant of rural poverty in the study area. Average household size was 5.15, 5.4 and 4.9 in adult equivalent units for the whole sampled households, for the poor, and for the non-poor respectively. Bearing in mind this concept, expansion of family planning education and improving access to family planning programme supported by demonstration at grass root level are amongst areas deserving prime attention.

In the result and discussion part it was discussed that credit is an important determinant of the ability of poor to adopt new technologies. In other words lack of finance is amongst the major bottle necks that constrained the rural people from engaging in productive activities. In addition only giving money to the poor is not enough but training them on how to use it, and encouraging them to save deserve prime attention. Because, saving habit has a significant contribution in reducing poverty.

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