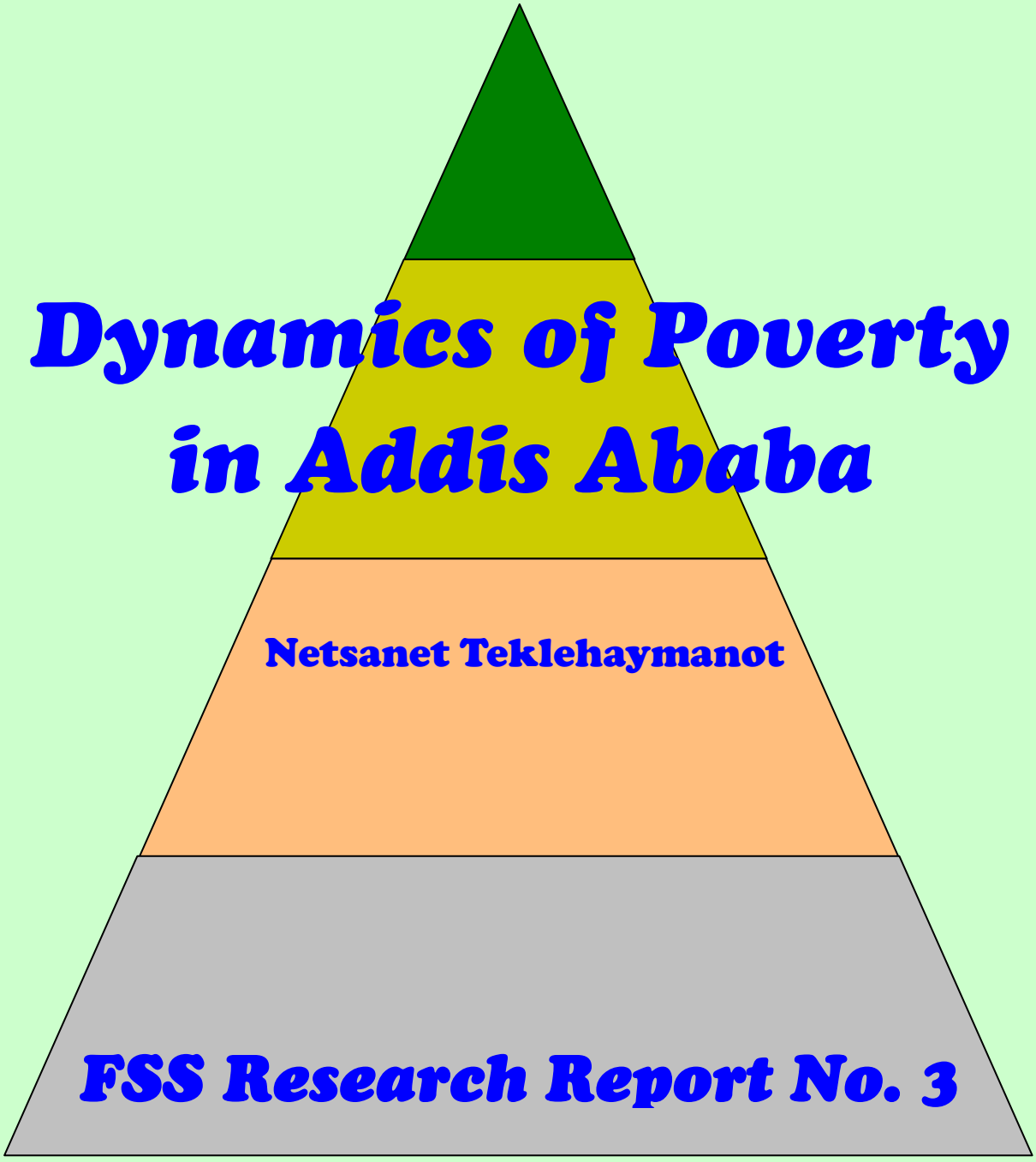
Dynamics of Poverty in Addis Ababa



Netsanet Teklehaymanot

FSS Research Report No. 3

Dynamics of Poverty in Addis Ababa

The Case of Arada, Addis-ketema and Lideta Sub-cities

Netsanet Teklehaymanot

FSS Research Report No. 3

Forum for Social Studies
Addis Ababa

Printed in Addis Ababa

ISBN 13: 978-99944-50-28-2

Forum for Social Studies (FSS)
P.O. Box 25864 code 1000
Addis Ababa, Ethiopia
Email: fss@ethionet.et
Web: www.fssethiopia.org.et

The views expressed in this report are those of the author and cannot be considered as reflecting the views or position of DFID or FSS.

Table of Contents

Acknowledgements

This study and the publication of the research report wouldn't have been possible without the financial support of the Department for International Development (DFID, UK). We would like to express our appreciation for this support. We are also deeply indebted to Addis Ababa University's Department of Economics for sharing with us the panel data of the 1995 - 2004 surveys, which served as the basis for the comparisons on some aspects of poverty over the years.

We also thank the officials, at various levels, of Arada, Addis-Ketema and Lideta sub-cities for their cooperation in facilitating the study. In particular, the administrators of the different Kebeles, from where the sampling units were selected, are deeply appreciated for their enthusiastic support in the data collection process. We are also grateful to the Central Statistical Authority, and especially to Ato Alemayehu Teferi, for their invaluable assistance.

List of Figures and Tables

1. Introduction

1.1. Background

Ethiopia, which is ranked 200th out of 206 countries according to the World Bank's GNP per capita (PPP) (World Bank, 2005), and 169th out of 177 countries based on UNDP's human development index (UNDP, 2007/08), is one of the poorest nations in the world. Poverty is a deep-rooted phenomenon in the country and is reflected in a range of well-being measures. For instance, life expectancy at birth is 51.8 years, which is significantly lower than the average of developing countries (66.1 years) as well as that of the least developed countries (54.5 years). The population with improved sanitation facility is only 13 percent, the second lowest under the group of low human development index. It is also only about the fifth of the population who have access to improved water sources, a very marginal proportion even as compared to the Sub-Saharan Africa's average (55 percent) (UNDP, 2007/08).

Poverty is much more pronounced in rural areas than in urban areas. According to a recent study by MoFED (2006), more than 39 percent of the rural population can't afford to buy basic food and non-food items necessary for survival and live in absolute poverty, while the absolute poor in urban areas account for 35.1 percent. Apart from this, the majority of the farming population is dependent on rain-fed agriculture, and hence, any agro-climatic distortion could threaten them with serious food shortages within a short time.

Even though different empirical findings indicate urban dwellers enjoy a relatively better quality of life than their rural counterparts, urban poverty is also one of the biggest challenges the nation faces. Factors that include migration, overcrowded living conditions, social fragmentation, crime and violence, aggravate the poverty situation in urban areas. Addis Ababa, like the other urban centers, shares the same underlying situations. Relative to the other urban areas, however, the capital also benefits from a higher concentration of facilities, infrastructure and industries, which have made the city a main destination for migrants from both rural and other urban areas. This in turn aggravates the problem of poverty in the metropolis and a significant proportion of its dwellers are believed to live in poverty. A study by Mekonnen (1999) estimated the level of poverty in the capital to be 51.4 percent in 1997. According to MoFED (2002), on the other hand, the poor accounted for 36.1 percent of the capital's population in 1999/00.

Cognizant of this, it is necessary that government and non-government actors exert greater effort and allocate more resources to address the problem of widespread poverty in Addis Ababa. To ensure and enhance the effectiveness of the poverty alleviation programs and initiatives of the various development actors, research needs to provide timely information about the nature, causes and scale of poverty in the city, type and responses to recent shocks, and suggest possible strategies for addressing the problem.

Accordingly, in 2008, the Forum for Social Studies (FSS), with the support of the Department for International Development (DFID, UK), launched a study focusing on the dynamics of urban poverty in selected kebeles of Addis Ababa during the period 1995-2008. The following report presents the findings of the study. It is hoped that the study will provide a better understanding of the dynamics and causes of urban poverty, and serve development actors as a basis for formulating development interventions aimed at significantly alleviating the poverty prevailing in the Ethiopia's capital.

1.2. Statement of the Problem

Poverty is one of the many challenges facing Addis Ababa. It is widely believed that the oldest parts of the city, which include Arada, Addis-Ketema and Lideta sub-cities, are the most deprived. Quite a significant proportion of the capital's population (30.7 percent) resides in these three sub-cities, and though, as compared to the other sub-cities of the capital, the sub-cities take the last three positions in terms of the size of their physical area, they are the first three with the highest population density.

The study conducted by FSS tries to address the following questions: What is the state of poverty in these sub-cities? Who are the poor in these sub-cities? What are their socio-economic characteristics? And, what are the factors that determine a household's poverty status? How have households been getting into and out of poverty during the period from 1995 to 2008? What kinds of shock have been encountered by

households, and which shocks have been the most important in affecting the wellbeing of the households?

1.3. Objective of the Study

The main objective of this study is to analyze the state of poverty in Addis-Ketema, Arada and Lideta sub-cities during the period from 1995 to 2008. More specifically, the study aims to:

- Assess the poverty level in selected kebeles of the three sub-cities;
- Analyze the inter sub-city difference in poverty level;
- Evaluate the movement in and out of poverty during the period from 1995 to 2008;
- Identify the various socio-economic factors that determine the poverty status of a household;
- Examine the different shocks households have been exposed to and establish a causal relationship between the shocks and their effect on the poverty status of a household;
- And finally, assess the coping mechanisms of the households.

1.4. Data and Methodology

The study makes use of a panel household data drawn from the Ethiopia Urban Socio-economic Survey conducted in 1995, 1997, 2000 and 2004 by the Department of Economics of Addis Ababa University in collaboration with other institutions. Most importantly, however, the study is based on similar categories of data collected by FSS in February

and March 2008, using a structured questionnaire, from 300 households who live in the above-mentioned sub-cities and had participated in the previous surveys conducted by the Department of Economics of Addis Ababa University.

Using stratified random sampling technique, the survey sample was selected from a population of households who reside in the three sub-cities and had participated in the Addis Ababa University's four consecutive surveys since 1995. The population was divided into three strata, based on the sub-city of residence, and the sampling units were selected using simple random sampling technique from each stratum (i.e., sub-city). In line with its share in the population, Addis-Ketema sub-city accounts for the relatively largest share in the sample (126 households) followed by Arada (87 households) and Lideta (87 households) with comparable sampling units. The sample is also slightly dominated by male-headed households, which account for 51 percent (153 households) of the sampling units. Female-headed households account for the rest 49 percent (147 households).

In addition to the primary data, secondary data obtained from different institutions including CSA, EHNRI, and other institutions has also been employed.

1.4.1 Descriptive Analysis

A common method of measuring poverty is using either income or consumption level. Provided information on consumption is detailed

enough, consumption-based measures have more advantages over income-based measures for different reasons. To start with, consumption is more closely associated with the well-being of a household in terms of meeting basic needs while income is just one element of acquiring consumption items. Moreover, in an agrarian economy where farmers consume a larger proportion of their produce and in urban areas, which have a sizable informal sector, consumption is much better measured than income. Finally, consumption reflects the household's ability to meet basic needs since it incorporates consumption smoothening techniques that include credit and savings. Therefore, consumption-based descriptive measures are employed for the analysis of poverty throughout this study.

1.4.2 Poverty Indicators

The most widely accepted indicators of poverty, and hence used by the study, are the family of P_α indices suggested by Foster, Greer and Thorbecke (1984).

$$P_\alpha = 1/n \sum_{i=1}^{q} \left((Z-X_i)/Z\right)^\alpha , \quad \alpha = 0,1,2$$

Where:

X_i = Consumption expenditure of household i.

Z = Poverty line.

n = The number of people in the sample.

q = The number of the poor.

α = A coefficient reflecting different degrees of importance (i.e., incidence, depth and severity of poverty).

P_0 (the head count index) indicates the share of the population whose consumption expenditure falls below the poverty line, and hence, identified as poor. P_1 (poverty gap index) provides information on how far off the households are from the poverty line and how much resource is needed to bring the poor to the poverty line level. And finally, P_2 (squared poverty gap) captures the inequalities amongst the poor.

In order to shed light on the causes of poverty, poverty profile by different socio-economic characteristics that include, employment status, education, marital status, sex, ethnicity and religion is also analyzed.

1.4.3. Econometric Analysis

The above-mentioned indicators provide a glimpse of the incidence, depth and severity of poverty, and the movement in and out of poverty over time. However, it is also equally important to identify the underlying factors that determine a household's probability of being poor or non-poor. Hence, the study estimates a logit function by identifying two cases for the dependent variable (poor and non-poor). The dependent variable takes a value of either one (when a household's total consumption expenditure is lower than the poverty line) or zero (when a household's total consumption expenditure is above the poverty line).

$$P_i = 1, \quad \text{if } TCE_i < PL$$
$$P_i = 0, \quad \text{if } TCE_i > PL$$

Where:

P_i = The probability household *i* is poor or otherwise.

TCE_i = Total expenditure of household *i*.

PL = The poverty line.

The independent variables, on the other hand, consist of demographic characteristics of the head, size and composition of its members, educational level and occupation of the head, physical capital, and sub-city of residence.

A separate regression analysis is also undertaken in an attempt to exhibit the impact of shocks on the consumption expenditure of a household, and hence, its poverty status. The dependent variable in this case is consumption expenditure per adult equivalent, and the covariates include household demographic characteristics, human capital, physical capital, sector of employment, sub-city of residence, and shocks experienced in a five-year period.

1.5. Scope and Limitation of the Study

The research deals with the incidence, depth and severity of poverty, and its change over time during the period from 1995 to 2008. The study also identifies the underlying factors that determine the poverty status of a household in Addis-Ketema, Lideta and Arada sub-cities in 2008.

The inherent problems of inconsistency, discrepancy, and high level of iteration both in household identity and values of variables observed in

the panel data (i.e., 1995, 1997, 2000 and 2004 survey), obtained from Addis Ababa University's Department of Economics, have been the major challenges in examining the dynamics of poverty for this study. The variables that were collected in different survey rounds lack consistency and vary from each other significantly. This in turn made the construction of comparable poverty indicators across the years very difficult. For instance, in 2008 and 2004 ten groups of consumption expenditure variables were available and used in the construction of the consumption expenditure aggregate of a household. However, in 1995, out of the ten, data was available for only four. In 1997, two and in 2000 three groups of the consumption expenditure variables were also missing. Though it was planned to make use of the nationally set absolute poverty line (i.e., Birr 1,075.03 at the 1995/96 constant price) in the poverty analysis of this study, the inconsistence and divergence of the variables made the comparison of the resulting indicators across the years impossible. Apart from this, the use of the absolute poverty line would also have made the categorization of households into poor or non-poor dependent solely on the availability of the variables. Hence, the study had to resort to use of the relative poverty line (2/3 of the mean consumption expenditure per adult equivalent).

Duplication of household identity is also another problem of the panel data. It is quite common to come across different values for a variable in a given year and for a given household. For instance, a household could be reported to have consumed a certain amount/ value of food items in a specific year at one point in the data set, and at another point in that same

year the same household could be reported to have consumed a different amount/ value of the same food items. The other setback in the panel data is the replication of values of a variable across the years. Households have been reported to have consumed the same amount/ value of food and non-food items across the years.

In addition to this, there is also a substantial discrepancy between the expected value of a variable and the actual figure in the data set. For instance, the gender variable is expected to be either female or male and should have been coded accordingly; however, there are eight different codes for gender with no description of the codes. Apart from this, there were also quite considerable cases where households have been wiped out from part of the data set.

Therefore, due to these major drawbacks in the panel data (i.e., 1995 - 2004) the only analysis that was possible, for the period prior to 2008, was the construction of the three Foster, Greer and Thorbecke poverty indices. Though it was planned to implement a dynamic model and construct a causal relationship between poverty and its covariates, the poor quality in the panel data has forced us to reorient the research agenda, and hence, restrict the cause and effect analysis to be based only on the 2008 data collected by FSS. Therefore, the research for the most part, especially the regression analysis and the socio-economic characterization, is based on the 2008 data.

2. Literature Review

2.1. Theoretical Literature

There are two main approaches in analyzing poverty, the welfarist and the non-welfarist approach. The welfarist approach refers to the concept of utility and compares economic welfare (standard of living) of individuals or households. The non-welfarist approach, on the other hand, is more social in character and has two currents: the basic needs approach and Sen's capability approach. The common point for these two schools of thought is that there is a certain "thing", which remains to be defined and has not reached the level regarded as a reasonable minimum (Boccanfuso, 2004). However, the schools diverge in defining this "thing" and in the methods of determining the minimum threshold (poverty threshold) below which households are categorized as poor.

2.1.1. The Welfarist Approach

For the welfarist, the missing "thing" that needs to be reached a reasonable minimum is economic welfare (Boccanfuso, 2004). But economic welfare is directly unobservable and preferences vary from one individual to the next. Hence, the welfarist reduces the concept of welfare either directly to utility or total consumption level is taken as economic welfare in determining utility. Therefore, the school often relied on consumption expenditure or income as indicators of economic welfare, and hence, a proxy for poverty level.

The approach is strongly related to the classical microeconomic postulate, which describes economic actors as rational and presumed to behave in a

way that maximizes their utility and happiness (Boccanfuso, 2004). The core argument of the postulate is that, given their initial endowment, individuals make production and consumption decisions using their set of preferences over bundles of production and consumption activities. A process of individual decision making and rational free choice will then maximize individual utility (Araar and Duclos, 2006). The welfarist school of thought also considers that the State should not intervene too extensively in the economy. What should be produced, how and by whom should be determined by the preference of individuals. The policies pursued by the government should be limited to increasing productivity, employment, etc., and thus income, so as to alleviate poverty. This approach is highly advocated by the leading international financial institutions such as The World Bank and IMF. This study also bases its analysis of poverty to a large extent on the welfarist consumption expenditure approach.

A pure welfarist approach, however, faces different practical difficulties. To be operational, pure welfarism requires the observation of sufficient information of revealed preference. In order to identify an individual as poor or non-poor, it is not enough to know the person's current income status; it is also important to infer from the individual's action whether he judges his poverty status above a certain poverty utility level (Araar and Duclos, 2006). A related problem with a pure welfarist approach is the need to assess levels of utility or "psychic happiness". It is also highly problematic to compare the level of utility across individuals. It is well known that such a procedure poses serious difficulties; preferences are

heterogeneous, personal characteristics, needs and enjoyment abilities are also diverse, households differ in size and composition, and prices vary across time and space. More generally, because economic well-being (in particular, utility) is typically seen as a subjective concept, it is believed that interpersonal comparisons of economic well-being do not make much sense (Araar and Duclos, 2006).

2.1.2. Non-welfarist Approach

The non-welfarist approach, unlike its counterpart, is more social and multi-dimensional in character. It has the basic needs and the capability schools as its adherents.

2.1.2.1. The Basic Needs Approach

This school considers a set of goods and services specifically identified and believed to meet the basic needs of all human beings as the “thing” that is lacking in the lives of the poor. The needs in question are called “basic” in the sense that their attainment is seen as a pre-requisite to quality of life. Instead of focusing on utility, the attention here is on individual requirements relative to basic commodities.

The basic need approach is linked to the concept of functionings developed by Sen. According to him,

> Living may be seen as consisting of a set of interrelated 'functionings', consisting of beings and doings. A person's achievement in this respect can be seen as the vector of his or her functionings. The relevant functionings can vary from such elementary things as being adequately nourished, being in good health, avoiding escapable morbidity and premature mortality, etc., to more

> complex achievements such as being happy, having self-respect, taking part in the life of the community, and so on (Sen 1992, 39).

Accordingly the advocates of the basic needs approach argue that an individual or a household will "live well" if it enjoys a certain level of functions (Boccanfuso, 2004), and hence, poverty is the result of a direct lack of functions.

Though functiongs and basic needs are closely related, one is not a synonym for the other. Basic needs can be understood as physical inputs that are required to achieve functionings. Hence, basic needs are usually defined in terms of means rather than outcomes. Functionings, on the other hand, go beyond the minimum vital needs. It focuses on the attainment of multiple specific and separate outcomes (Araar and Duclos, 2006). A part from this, basic needs depend on the characteristics of individuals, or households and the society in which they live, and favors selective interventions over more universal ones in the fight against poverty, whereas functions can be defined for the entire population (Boccanfuso, 2004).

The major criticism of this school is how to identify a set of basic needs and functions. It is only the individuals who know their basic needs and by no means does everybody in the population have the same set of basic needs. The thought is also criticized for aggregating different individuals and households with different characteristics and socio-economic

environment in order to provide a single dimension, poverty (Boccanfuso, 2004).

2.1.2.2. Capabilities Approach

The approach is relatively new and developed in opposition to the welfarist approach. The conceptual foundation of the capability approach is based on the criticisms and the weakness of the above-mentioned schools of thought, and incorporates some of their positive aspects as well. Hence, it is often argued that the capability approach is rich, broad, inclusive, open, and has a wide range of applicability.

The conceptual core of the capability approach is the idea that good life will be reached when human beings are free to choose and able to get what they have reasons to consider important to do or to be. The ultimate important issue here is that people have the freedoms or the capabilities to lead the kind of lives they want to lead, to do what they want to do and be the person they want to be (Robeyns, 2005). Once they effectively have these substantive opportunities, they can choose those options, which they value most.

For this school, the "thing" that is lacking refers neither to utility nor to the satisfaction of basic needs, but to human abilities, or capabilities. Accordingly, poverty means lack of basic freedoms to reach what is considered essential to do or to be. An individual cannot be considered poor, even if he decides not to achieve certain functions, provided that he has the possibility to select them from the total range of functions. The

approach also suggests poverty reduction policies to be based on humanitarian concerns (Boccanfuso, 2004). The school is criticized for being too individualistic and on a failure to embrace social structures and groups.

2.2. Empirical Literature

The analysis of the dynamics of poverty and its determinants is a very recent phenomenon in Ethiopia. It is highly associated with the availability of data, especially with the series of urban and rural household surveys undertaken since the mid 1990s by Addis Ababa University's Department of Economics in collaboration with other institutions. This section focuses on reviewing previous studies made in the areas of poverty dynamics and its determinants.

Mekonnen (1999) investigated the dynamics of urban poverty and its determinants based on the 1994, 1995 and 1997 Ethiopia Urban Socio-economic Survey. In constructing the food poverty line, he used the cost of basic needs approach and adopted Orshansky's method in giving allowance for the non-food items. However, the basket was valued by nominal price, which made his incidence, depth and severity of poverty analysis to a large extent dependent on the fluctuation in the price of food items, in particular cereals and pulses. Nonetheless, the study indicated that the incidence of poverty rose sharply in 1995 and fell back to its 1994 level in 1997.

Mekonnen (1999) also analyzed the movement in and out of poverty during the study period and found out that between 1994 and 1997, 14.8 percent of the sample households slipped into poverty while 15.2 percent escaped, thereby providing a 0.4 percent decline in the incidence of poverty. In analyzing the factors that determine changes in the standard of living and the mobility of households in and out of poverty, Mekonnen adopted Grootaert's (1995) dynamic model. He indicated change in the standard of living as a function of asset endowment, changes in asset endowment and characteristics of the economic environment in which households operate, and estimated the model using OLS. The regression result indicated that household composition and education were the most important variables affecting the welfare of a household. Mekonnen (1999) highlighted the importance of human resource development and family planning programs, as well as price stabilization policies in reducing poverty.

Bigsten et al (1999) investigated the extent and trend of poverty as well as its determinants in both rural and urban Ethiopia for the period 1994-1997. They used the cost of basic needs approach in estimating the poverty line and based their analysis of poverty on the Foster-Greer-Thorbecke indices. Their study indicated that poverty is a widely spread phenomenon in the nation and affects more or less at equal intensity and depth both rural and urban areas. The correlates of poverty for rural and urban areas were also examined separately using a probit model. In order to have an idea about the probability attached to a particular correlate, they computed a predicted probability of each household falling into

poverty and calculated the mean for the group of households with similar attributes. Accordingly, the highest probability of being in poverty is attached with human and physical capital. Hence, they suggested investment in human capital, improved economic infrastructures, price incentives, and reform in the areas of labor market as areas of intervention in speeding up the process of poverty reduction.

Tesfaye (2006) also examined the nature, extent and causes of urban poverty based on the 1994 and 2000 Ethiopian Urban Household Survey (EUHS). The study employed consumption-based measures in analyzing welfare at a household level and adopted the poverty line estimated by Mekonnen (1999). It also decomposed the change in poverty into growth and distribution effect using the technique in Kakwani (2000). In identifying the possible causes of poverty, poverty profile by different socio-economic characteristics was also constructed.

Accordingly, the study indicated that the incidence of poverty, as measured by the head count index, increased by about 2 percent in urban Ethiopia during the review period. Tesfaye (2006) attributed the rise in poverty level to a stronger, but adverse, growth effect, which overcame the re-distribution effect that was favorable to the poor. Hence, he emphasized the importance of pro-poor re-distribution to effectively abate poverty. The study also associated large household size, ethnic minorities, casual workers, the unemployed, and female-headed households with poverty.

The analysis in Bigsten and Abebe (2007), on the other hand, focused on the persistence of poverty in urban and rural Ethiopia. The study employed spell approach in identifying the poverty and non-poverty spells on a ten-year period (1994-2004). The results indicated that extreme poverty had declined during the decade, especially in rural areas. There was also a high rate of entry and exit into and out of poverty, though sensitive to the choice of poverty line, and adjustments made for random shocks, consumption and expenditure errors.

In order to capture the causes of poverty persistence, Bigsten and Abebe (2007) introduced a poverty model, in which they expressed the probability of a given household being poor or non-poor as a function of state dependence, covariates of poverty and heterogeneity of each household. In rural areas, the size of the household, educational level of the head or the wife, access to markets, and changes in rainfall levels and variability were statistically significant in either facilitating exit or preventing re-entry into poverty. In urban areas, on the other hand, household size, educational level of the head, town of residence, and to a certain degree ethnic background, tended to affect both exit and re-entry rates. The dynamic poverty model estimated by controlling the unobserved heterogeneity and serial correlation also indicated that, in Ethiopia, current poverty status is dependent on past history in poverty. Hence, they highlighted the importance of policies geared towards reducing risk, and safety net programs.

Though the series of urban and rural household surveys undertaken since the mid ’90s opened the opportunity for the analysis of poverty (i.e., both its static and dynamic aspects) in urban as well as rural Ethiopia, little has been done to reveal the situation in the capital city. The focus primarily has so far been on a macro level; and despite the availability of data, the micro aspect couldn’t stand a chance, and hence, has remained to be an area left almost untouched. Unlike the previous studies, however, the focus of this research is on selected sub-cities of Addis Ababa (i.e., Arada, Addis-ketema and Lideta sub-cities), and, hence, is believed to shade light on the micro aspects of poverty, and contribute its share in filling the research gap in this area.

3. Poverty in Addis-Ketema, Arada and Lideta Sub-cities

Addis-Ketema, Arada and Lideta sub-cities are found in the central part of the capital and are home for around 914,404 people (i.e., 30.7 percent of the capital’s population), even though they together account for only 5.3 percent of the capital’s total physical area (Addis Ababa City Administration, 2008). According to Addis Ababa City Administration around 320,389 people live in Addis-Ketema sub-city. Arada and Lideta sub-cities are also home for 297,942 and 296,073 people, respectively. As compared to the other seven sub-cities of the metropolis, the three sub-cities are the smallest in terms of the physical area they cover: Addis-Ketema holding the lead with a total physical area of 7.42 Sq. KM, followed by Arada and Lideta with 9.54 Sq. KM and 11 Sq. KM, respectively (Addis Ababa City Administration, 2008). Apart from this, though the sub-cities are believed to be as old as the capital itself, they are

known for being congested slums. As per the information obtained from Addis Ababa City Administration, in 2008 around 43,179 persons live per square kilometer in Addis-Ketema Sub-city - a very high population density level even as compared to the capital's average (15,196 persons per square kilometer) as well as that of Akaki-Kality sub-city (1,556 persons per square kilometer) and Bole sub-city (2,677 persons per square kilometer). The situation in Arada and Lideta is also not any different. The population density stands at a very high level of 31,231 persons per Sq. KM in Arada, and 26,916 persons per Sq. KM in Lideta.

3.1. State of Poverty

The aggregate level of poverty is often measured using a group of indices developed by Foster, Greer and Thorbecke, commonly known as FGT. The first index is the head count ratio (index), which provides the proportion of the population that are unable to afford the basic good and services needed for survival, and hence, identified as a poor. The second index in the group is the poverty gap index. It measures the mean aggregate income or consumption shortfall of the poor from the poverty line. It can also be interpreted as the total resource needed to bring all the poor to the poverty line level. The third index in the group is the poverty severity (squared poverty gap) index, which shows the inequality amongst the poor.

In this paper, the three FGT indices are estimated using relative poverty line (i.e., 2/3 of the real mean consumption expenditure per adult equivalent computed based on the expenditure pattern of the sample

households) and decomposed by sub-cities. As it is exhibited in table 1, in the year 2008, the head count ratio is around 44 percent, Lideta accounting for the highest concentration of the poor with a head count index of 53 percent and Arada sub-city the lowest with a head count ratio of 29 percent. The poverty gap index, which shows the amount of resources needed to lift up the poor to the poverty line level, indicates that Lideta sub-city is the most deprived. The average amount of resource required to eliminate poverty in Lideta sub-city is almost two fold of the amount required in Arada sub-city.

Table 1. Indices of Incidence, Depth and Severity of Poverty in 2008

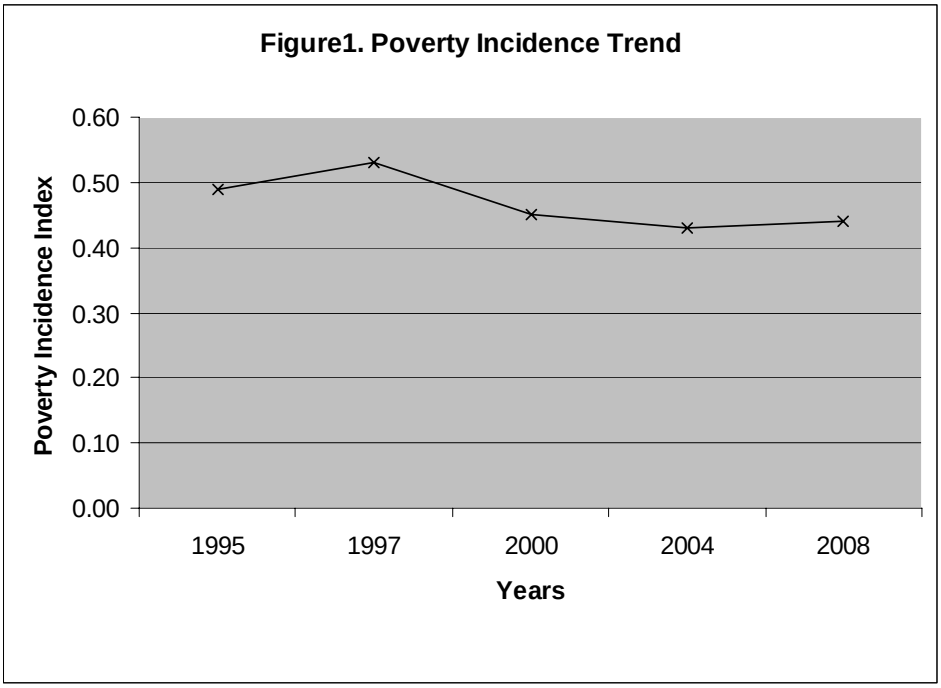
Sub-cities	**P_0**	**P_1**	**P_2**
Arada	0.29	0.10	0.05
Addis-Ketema	0.47	0.15	0.07
Lideta	0.53	0.20	0.09
Study Area	0.44	0.15	0.07

Note: Based on a relative poverty line of 2/3 of the mean consumption expenditure per adult equivalent.

3.2. Trend in the Incidence of Poverty

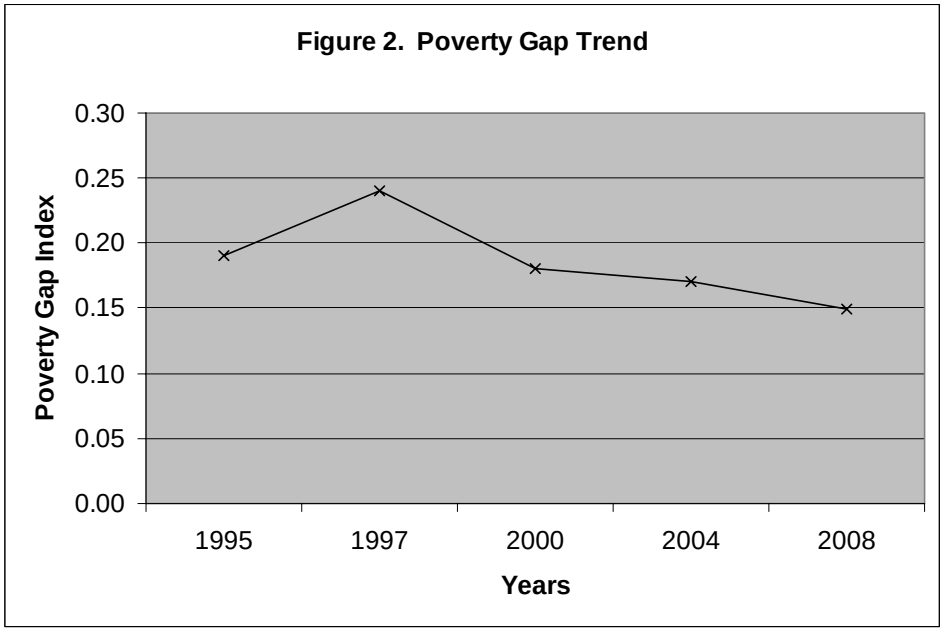
Based on a five-year data set, figure 1 shows the trend in the incidence of poverty in the three sub-cites and for the whole study area between 1995 and 2008. The head count ratio was around 49 percent in 1995 for the whole study area. In 1997 the head count ratio surged up by a further 4 percent to record the highest incidence of poverty (53 percent) of the study period. The poverty situation worsened in all the three sub-cities without exception. This could be due to the unfavorable agro-climatic

conditions that made production in the agricultural sector to drop by more than 20 percent and the accompanying rise in the price of food items, especially cereals. The inflation rate for cereals was 17.8 percent at a national level and 11.3 percent in Addis Ababa (NBE, 1998/99). The poverty situation was improved in the year 2000 as the head count ratio fell back to a level of 45 percent. The incidence of poverty continued to improve in 2004 as well, as the head count ratio further plummeted by 2 percent compared to the level four years earlier. The improvement in the poverty level during 2000 and 2004 could be attributed to a bumper production in the agricultural sector. The country also got relieved from the economic, social and political crisis inflicted by the 1998-2000 Ethio-Eritrean war. However, the declining trend in poverty level exhibited since 2000 was unable to replicate itself in 2008 as the head count ratio picked up by 1 percent from its level in 2004. This could be due to the fall in agricultural production especially in the “Belg” season, which made the price of food to soar and led to the starvation of millions. In addition to this, the year has also witnessed a record level rise in the price of food items and fuel both at the national and international levels.



3.3. Trend in the Intensity of Poverty

The poverty gap index indicates the mean per capita distance of the poor from the poverty line, and the amount of resource needed to get out all the poor from poverty. The index can also be interpreted as the minimum cost of eliminating poverty. By revealing the depth of poverty, the poverty gap index provides an insight on the poverty situation beyond the proportion of the poor, captured by the head count ratio.



As figure 2 above exhibits, the average amount of resource required to lift up the poor from poverty has been declining since 2000. It plummeted down from its highest level of 24 percent in 1997 to 18 percent in 2000 and reached the study period's lowest level (15 percent) in 2008. This implies that the amount of resource required to eradicate poverty from the study area has been declining since more and more of the poor are concentrating around the poverty line.

3.4. Trend in the Incidence and Depth of Poverty by Sub-city

The head count ratio, depicted in table 2, indicates that in 1995 more than 50 percent of the sample households in each Arada and Addis-Ketema

sub-cities were below the poverty line. Lideta was the only sub-city with a head count ratio of less than 40 percent. The sub-city also required the least amount of resource to lift up its poor. In 1997, when the poverty situation worsened in all sub-cities, Lideta still remained to be the relatively better off. The same situation continued in 2000 as well. However, in 2004, when the other two sub-cities exhibited a decline in their poverty level, Lideta experienced a substantial increment in its incidence of poverty and became the worst poverty affected sub-city. The poverty situation further deteriorated in the sub-city to record its highest poverty incidence level (53 percent) by 2008. The same holds true for the poverty gap index. The other sub-cities (i.e., Arada and Addis-Ketema), with the exception of Lideta, experienced a declining trend in their depth of poverty since 2000, implying ease in the burden of poverty reduction. However, Lideta, which happened to do well in the earlier periods of the study turned out to be the leading one in the intensity of poverty by 2008. On the other hand, Arada sub-city, which was one of the worst affected in 1995 and 1997, exhibited a remarkable achievement in its poverty reduction and cut the percentage of the population below the poverty line from a level of 56 percent in 1997 to only 29 percent in 2008. It is also the only sub-city to record a decline in the incidence of poverty by 2008. The sub-city also exhibited a significant achievement in the intensity of poverty. The poverty gap index in the sub-city has recorded a continues decline starting from the year 2000 and reached the lowest level of the study period by 2008 (10 percent).

Table 2. Poverty Incidence, Depth and Severity by Sub-city

Sub-cities	1995			1997			2000			2004			2008		
	P_0	P_1	P_2	P_0	P_1	P_2	P_0	P_1	P_2	P_0	P_1	P_2	P_0	P_1	P_2
Arada	0.53	0.22	0.13	0.56	0.27	0.17	0.44	0.18	0.09	0.35	0.16	0.09	0.29	0.10	0.05
Addis-ketema	0.54	0.21	0.11	0.55	0.25	0.14	0.47	0.19	0.10	0.42	0.17	0.09	0.47	0.15	0.07
Lideta	0.39	0.14	0.08	0.46	0.19	0.10	0.41	0.17	0.09	0.51	0.17	0.07	0.53	0.20	0.09
Study Area	0.49	0.19	0.11	0.53	0.24	0.14	0.45	0.18	0.10	0.43	0.17	0.09	0.44	0.15	0.07

Note: Based on a relative poverty line of 2/3 of the mean consumption expenditure per adult equivalent.

As explained in section 1.5 the problem in the panel data obtained from Addis Ababa University's Department of Economics inhibited the study from identifying the factors that are responsible for the up and down movement in the incidence of poverty in each of the sub-cities. In this section, however, we will try to assess the different efforts that have been undertaken by governmental and non-governmental institutions in an attempt to curb poverty in the sub-cities.

The most noticeable poverty alleviation effort that has been underway since 2003 in all the three sub-cities is the development of small and micro-enterprises (SME). It is part of the government's national development program, and focuses on the development of enterprises believed to be labor intensive, use local raw materials, enhance competition, and create greater inter and intra-sectoral linkages.

The enterprises are meant for the unemployed and are established on a voluntary basis. Depending on the choice of the target beneficiaries the enterprises can be set up as cooperatives, share companies, or private limited companies. Since their inception, the enterprises benefit from the assistance and close supervision of the government, which focuses on providing management and technical skill trainings, providing production and commercial premises, creating market linkage, and making available financial resources for loan.

In Lideta sub-city, since the launch of the program in 2003, 828 small and micro-enterprises were established, and created employment opportunity for 14,784 people. More than Birr 51 million was also made available for loan so as to deal with the issue of financial constraint, even though only 38 percent (Birr 19,398,272.00) was disbursed. According to the sub-city's officials, lack of awareness about the loan facility itself and the beneficiaries' fear of repercussion they believe they might face in case of loan default are the reasons behind such a low level of loan distribution.

In Arada sub-city, on the other hand, 253 cooperatives, 136 share companies and 2,762 private limited companies were established in a period of six years and absorbed 7,630 unemployed. A total of Birr 70,509,544.00 was also disbursed as loan in order to help them out with their financial problem. Lack of land that can be used for the construction of production and sales premises has been the major challenge that hindered the expansion of such enterprises in the sub-city.

A similar activity is underway in Addis-Ketema as well, though the sub-city couldn't make the details accessible despite repeated efforts on the side of FSS to reveal the achievements.

In both Arada and Lideta sub-cities, non-governmental institutions have been a close ally in the implementation of small and micro-enterprise (SME)

development program. Some have been engaged in the provision of management and technical skill trainings, and sponsoring the products of small and micro-enterprises at national and local trade fairs while others donated financial resources, equipment, and materials. Apart from this, in an attempt to make the sub-cities a better place to live, non-governmental institutions have also been pursuing various independent development projects; among others which include construction of public sanitation facilities, safe drinking water outlets, subsidiary roads, clinics and schools; sponsoring the education of vulnerable children, and organizing women and the unemployed in self-help projects.

3.5. Poverty and Socio-economic Profile

A poverty profile indicates how poverty varies across different socio-economic groups depending on educational level, occupation, marital status, sex and other characteristics of the household. A certain group of the society could be more vulnerable than the other and its identification helps to design the appropriate policies and programs.

In an attempt to provide a glimpse into how a certain part of the society is much more prone to poverty than the other, poverty profile using socio-economic characteristics is constructed. Accordingly, the decomposition by sex of household heads in the three sub-cities indicates that poverty is much

more pronounced in female-headed households than in the male-headed households, i.e., 51.1 percent (75 female-headed households) against 48.8 percent (74 male-headed households), respectively. The female-headed households are either widowed (72.2 percent or 106 female-headed households) or divorced (6.3 percent or 9 female-headed households) or separated (2.1 percent or 3 female-headed households). However, for male-headed households, the three categories together account for a bare 9.6 percent (15 male-headed households) as very few of the female household heads are have a formal public or private employment. The great majorities (42.1 percent or 62 female-headed households) are housewives or engaged in low-income activities such as making and selling local drinks, cooked food, charcoal, firewood and vegetables.

The other household characterization is the marital status of the head. The incidence of poverty is higher amongst widowed household heads, accounting for 43 percent of the aggregate poor (56 households). The situation of poverty gets even worse for married heads as the incidence of poverty for this group registered a staggering 50.8 percent (63 households). On the other hand, single household heads and those separated from their spouses are the least affected by poverty.

The decomposition by the occupation of the household head also indicates poverty is much more a phenomenon of the unemployed and the casual

workers, i.e., 51.1 (46 households) and 52.5 percent (52 households), respectively. This might be due to the unsteady nature of employment and income in the case of the casual workers, and not surprisingly for the unemployed, it is much more likely to be due to lack of the resource needed to support their families. The incidence of poverty is relatively less pronounced amongst civil servants, cooperative employees, and international organizations' employees.

The examination of poverty by the household head's educational level reveals that as the household head achieve a higher level of education, the incidence of poverty decreases. The incidence of poverty is less than 21 percent (14 households) for household heads with preparatory level education and above, and it gets decreases to 16.7 percent (one household) for heads with university education. The worst affected by poverty are those heads with no education (55 percent or 43 households) and traditional/religious education (66.7 percent or two households). This indicates that the education of the head improves the poverty situation of the household; hence, investment in human capital, especially in education, pays-off and has an important bearing on poverty alleviation.

Poverty by the religion and ethnicity of the household head was also analyzed. Households led by an Amhara, an Oromo or a Gurage head together account for around 86 percent of the poor (113 households).

However, this has to do mainly with the large representation of the three ethnic groups in the sample (86 percent) (258 households). The comparison within the ethnic groups, however, indicates poverty is much more pronounced amongst the Wolaitas, the Gurages and the Hadiyas. 75 percent (3 households), 65 percent (39 households) and 50 percent (one household), respectively, of the households from these ethnic groups live in poverty. It is 35 percent (45 households) of the Amharas and 22 percent (15 households) of the Oromos that are identified as poor. The decomposition by the religion of the head, on the other hand, indicates that 42.7 percent (103 households) of the Orthodox Christians, 52.7 percent of the Muslims (19 households) and 35.7 percent (5 households) of the Protestants are poor. This could be due to the fact that the Orthodox Christians and the Muslims tend to have a bigger household size and the incidence of poverty was computed based on consumption expenditure per adult equivalent, which doesn't capture the economies of scale. Thirty-five percent (84 households) of the Orthodox Christians and 38.9 percent (14 households) of the Muslims have got eight or more members in each household.

3.6. Determinants of Poverty: An Econometric Analysis

In an attempt to identify the correlates of poverty in the study area, a logit function was estimated. The dependent variable took a dummy so as to identify the poor from the non-poor. The independent variables, on the other hand, constituted age of the household head, age of the household head

square, mean age of the household, the household's mean age square, household size, dependency ratio (i.e., explained by a ratio of the number of household members aged 15 years or less and those aged 65 and above to the total household size), and number of durables the household owns and their value. In addition to this, a dummy variable was also introduced for the education level of the household head, female-headed households, and the sub-city the household resides in.

The estimation results are presented in table 3. The first column exhibits the different independent variables that affect a household's probability of being poor or otherwise. The figures under column "B", on the other hand, are the coefficients attached to the respective independent variables, indicating the type (negative or positive) and degree of association of a specific independent variable with the dependent variable, in this case the probability of being poor or not. Finally, the last column, represented by "Sig.", exhibits the level of significance of the estimates. Though 1 percent or 10 percent significance levels are used in some cases, the most commonly used significance level is the 5 percent, indicating a 95 percent certainty that the results have not occurred by chance.

For instance, the 0.578 coefficient attached with the independent variable "Household size" indicates a positive association between the size of a household and its probability of being poor. It also indicates the fact that as

the household size increases the household's probability of falling into poverty also increases. Apart from this, since the significance level attached to this specific independent variable (i.e., "Household size") is less than 5 percent (i.e., 0.000), we are more than 95 percent certain that the result didn't occur by chance.

Table 3. Estimates of the Logit Function

Covariates	**B**	**Wald**	**Sig.**
Addis-Ketema	-1.980	1.321	.250
Arada	-1.448	2.676	.102
Lideta	-.710	1.452	.228
Age of head	.087	1.447	.229
Age of head square	-.001	1.550	.213
Mean age	.170	1.358	.244
Mean age square	-.003	1.780	.182
Female-headed household	-.131	.466	.495
Number of durables	-.073	2.415	.120
Value of durables	.000	25.184	.000
Household size	.578	29.493	.000
Dependency ratio	1.816	2.526	.112
Head private business person	.113	.047	.829
Head civil servant	.364	1.300	.254
Head public sector employee	.138	.145	.704
Head casual worker	.050	.107	.744
Head unemployed	.066	.994	.319
Head private sector employee	.161	5.537	.019
Head has no schooling	1.133	4.134	.042
Head educated grade 1-10	.172	2.197	.138
Head has technical/ vocational education	-.465	.028	.867
Head has college diploma	-.051	.174	.676
Head has university education	.059	.116	.733
Constant	-5.077	2.502	.114

Notes:

-2Loglikelihood = 235.063

Cox & Snell R^2 = 0.431

Nagelkerke R^2 = 0.577

Hosmer and Lemeshow Test

Chi-square	df	Sig.
6.174	8	0.628

The sub-city in which the household resides doesn't seem to affect significantly the poverty status of a household. It is only at 10 percent level living in Arada sub-city is associated negatively with the incidence of being poor. Also, age of the head, mean age of the household or their respective squares, or being headed by a female don't seem to affect the probability of falling into poverty significantly.

On the other hand, households with large members are more likely to experience a higher incidence of poverty. However, it has to be recognized that consumption expenditure per adult equivalent was used to differentiate the poor from the non-poor, which doesn't capture the role of economies of scale. The effect of dependency ratio on the probability of falling into poverty is also insignificant up to the 11 percent significant level.

Though the value of durables the household owns is positively associated with poverty, the number it owns doesn't seem to affect significantly the household's poverty status. The sector of employment the household head is engaged in also doesn't seem to affect the household's probability to fall into poverty, with the exception of the private sector employees. Households

whose head is a private sector employee tends to experience a higher incidence of poverty. The incidence of poverty is also more pronounced in the households whose head has no education. However, for the educated heads, the level of their education doesn't seem to affect their households' poverty status significantly.

3.7. Poverty Dynamics: Transition and Persistence

The head count index has been swinging up and down at different points during the study period, thereby indicating the rise and fall in the poverty level. A change in the poverty level could be a net effect of the households' in and out movement along the poverty line (i.e., some poor households escaping poverty and some non-poor joining the already existing poor). For some households being poor at a certain point in time is a temporary phenomenon, while for others poverty is a way of life. The programs and policies required to address the issues of the permanently poor are quiet different from the transitory ones. In order to have the right mix of policies and programs, it is important to understand the extent of the chronic as well as the transitory poverty.

Table 4 exhibits the proportion of the sample households by poverty experience and sub-city. Around 11.2 percent (34 households) of the households have never been in a state of poverty in any one of the five observation years. The percentage of the households who have been under

persistent poverty accounts for 7.1 percent (21 households). Quite a large proportion, 76.6 percent (230 households), of the sample households have fallen into poverty at least once. A sub-city level comparison indicates that Arada has the largest proportion (13.1 percent) (11 households) of the *never poor* while Addis-Ketema leads the *always poor* by 9 percent (11 households). Though the percentage of the *always poor* is the lowest in Lideta, around 80 percent (70 households) of the households in this sub-city have experienced a state of poverty at least once in the five observation years.

Table 4. Poverty Experience by Sub-city

Sub-city	**Never Poor (%)**	**Always Poor (%)**	**Once Poor (%)**
Addis-Ketema	11.9	9.0	56.0
Arada	13.1	8.3	75.0
Lideta	6.8	2.7	79.5
Study Area	11.2	7.1	76.6

The distribution of movement out of poverty is in favor of those households closer to the poverty line. The average consumption expenditure shortfall from the poverty line for those who got out from a pervious poverty state is around 29 percent. On average around 50 percent and 46 percent of the households whose consumption expenditure shortfall was less than 5 percent and 10 percent, respectively, moved out from a previous state of poverty.

Among other things that affect the current as well as the future probability of being poor or slipping into poverty is the household's past history in poverty, which is commonly known as state dependence of poverty persistence or "scarring effect". A past experience of a poverty situation erodes the human and physical capital of the household, and hence, triggers the down ward spiral deep in to poverty.

The probability of movement from one state of poverty to the other or the probability of staying in the same poverty situation across different periods can be shown by the average transition matrix. The matrix indicates the average probability of being poor or non-poor depending on the poverty situation in the past period.

Table 5. Average Transition Matrix

	Status	**Status during time t**		**Sub-city**
		Poor	**Non-poor**	
Status during time t-1	Poor	62	35	Arada
	Non-poor	24	70	
	Poor	64	31	Addis-Ketema
	Non-poor	26	68	
	Poor	59	38	Lideta
	Non-poor	34	59	
	Poor	63	33	Study Area
	Non-poor	27	66	

It can be seen from the transition matrix (table 5), on average, 63 percent of the households who were poor in the previous round remained poor in the next round. On the other hand, 66 percent of the non-poor remained non-poor in the next round. This indicates that there is a state dependence in the dynamics of poverty for both the poor as well as the non-poor. The same holds for all the three sub-cities. The scarring effect, and hence, the persistence of poverty is quite stronger in Addis-Ketema and Arada sub-cities than in Lideta. The probability for a poor household to remain poor in the next round is around 62 percent in Arada, 64 percent in Addis-Ketema and 59 percent in Lideta. Non-poor households also remain non-poor with a high probability of 68 percent, 70 percent and 59 percent, in Addis-Ketema, Arada and Lideta sub-cities, respectively. The movement across different poverty situations also can be seen from the above matrix. The average probability of getting out from a previous poverty to a non-poverty status is around 33 percent while the probability of slipping into poverty from a non-poor status is 27 percent. A sub-city level comparison also exhibits the probability of slipping into a state of poverty or getting out of it is higher in Lideta sub-city than in Arada or Addis-ketema. Therefore, it can be inferred from the transition matrix that poverty is a much more persistent phenomenon in Addis-Ketema and Arada sub-cities than in Lideta.

3.8. Non-Income Dimension of Poverty

3.8.1 Food Security and Health

Food insecurity was one of the major problems reported by the respondents. A significant proportion of the food insecure is the female-headed households who cited a rise in the price of food items as a primary reason for their insecurity. Quite a significant proportion of the food insecure households reported to have cut down on the number of meals per day to 1 or 2, and reduced the quantity of food served per meal. Households also reported to have eaten foods that were not usually eaten. Some relied on friends and relatives, and others sold their possessions to overcome the problem. Quite a handful reported receiving food aid.

The sample households were also asked if any member of their household had been unwell in a recall period of a month and whether any medical treatment was sought for. The majority of the respondents who reported to being ill got some form of medical care in the nearest health center, or dispensary or hospital. Most of them reported to having their treatment in a government-owned health center due to a relatively “fair” cost. However, 11 percent of the households who reported being unwell couldn’t get any kind of medical treatment since they didn’t afford the cost.

3.8.2 Education

Most of the sample households' members reported having some form of education. However, the illiterates still account for around 10 percent. The highest level of education achieved by the gross majority is either 10^{th} grade or completion of a preparatory level education. It is only 12 percent of the respondents who are educated to a level of college diploma or above. The high school graduates failed to join the public higher education institutions since they couldn't score the minimum grade point needed to enroll in these institutions. Their financial constraint also denied them access to the private higher education institutions.

3.8.3 Housing

The majority of households reported living in a single or double room dwelling. More than 55 percent (165 households) of the respondents live in low-cost houses rented from the Kebele, and 27 percent (81 households) reported owning their house. The average monthly rent paid on all types of rented houses doesn't exceed Birr 19.00. It would have gone up to Birr 358.00 if they were to pay at the prevailing market price. The construction material of the wall is mainly wood and mud; and quite a considerable proportion of the dwelling's floor is either earth or covered with wood tiles. The roof for almost all houses is covered with corrugated iron sheet. The average floor area is around 37 square meters, but some households reported residing in houses as small as 4 square meters.

In most households, a single room is used for sleeping, eating and cooking. It is mainly large households that are crowded in single or double room dwellings. In some households, more than 12 people were reported to live in a single room.

The majority of the sample households enjoy safe drinking water; it is only 2 percent (6 households) that reported to use wells. More than 66 percent (198 households) use shared tap water. The type of lighting used by the gross majority is either a private or shared electric meter, with the exception of two households who use kerosene. Households also reported using different types of toilet that include flushed, dry pit, public, and the field. Around 66 percent (197 households) of the households reported using shared dry pit toilets, while 24 percent (72 households) reported having a private flushed or dry pit toilet. And 7 households don't have access to a toilet facility, and hence, use the field.

Shared traditional kitchen is the dominant type of cooking facility used by the sample households. Mainly, three stone fire, charcoal stove and kerosene stove. It is only a handful of the respondents that reported having a modern kitchen. 14 percent (42 households) of the households, however, don't have any kitchen, and cook either in their living rooms or in open areas. Kerosene, charcoal, firewood, and dung-cake dominate the choice of cooking fuel.

Availability of supply, cost, and effectiveness are the frequently cited reasons for the choice of such fuel.

4. Shock and Coping Mechanisms

4.1. Shock

Shock is an unexpected or unpredictable event that affects a specific household (idiosyncratic) or the entire community (covariate shock). Idiosyncratic shocks occur due to natural disasters, or socio-economic instability. Covariate shocks, on the other hand, arise due to illness, death, and displacement of a household member; or loss of job or property, or failure of business.

The sample households were asked to identify the type and number of shocks they have encountered in a period of five years back from 2008 and rank them by level of severity. Almost 45 percent (135 households) of them reported to have encountered one or more shocks in the past five years that ranged from a rise in the price of food and non-food items to shocks that affected the household's human capital, and hence, its income generating capacity. The average number of shock across all households is 0.69; conditional on experiencing a shock it is 1.5. Households in Arada and Addis-Ketema sub-cities appear to face a higher risk of shock as 47 percent

of the respondents in each of these sub-cities had at least one or more shocks in the past five years compared to 43 percent in Lideta sub-city.

As table 6 indicates, the most common type of shocks are the covariates, 80 percent (108 households) of the households, who experienced shock, reported to have faced either a rise in the price of food item, fuel, or utility. Amongst the covariate shocks an increase in the price of food items stand out to be the most important with 42 percent, followed by a rise in the price of fuel and utility charge with 28 percent and 8 percent, respectively. This is in line with the expenditure pattern of the households. Since food expenditure on average accounts for more than 50 percent of the total consumption expenditure of the sample households, shocks related to food items are felt more strongly than any other isolated unfortunate events. The decomposition by sub-city also indicates the same situation. Covariate shocks, especially a rise in the price of food items, remained to be the most dominant in all the three sub-cities.

Table 6. Shocks by Type and Incidence

Types of Shock	**Households Affected (%)**
Covariate Shocks	
An increase in the price of fuel	28.0
A general price rise in food items	41.5
A rise in utility (electricity, water and others) charge	8.2
Election 2005 (imprisonment)	1.9
Election 2005 (death)	0.5

Types of Shock	Households Affected (%)
Idiosyncratic Shocks	
Illness of primary income earner	3.9
Death of a household member other than primary income earner	5.8
Displacement or eviction from the house	1.0
Loss of primary income earner	1.9
Decrease in income	1.4
Failure of business (business slow down)	1.0
Loss of job	3.9
Others	1.0

Note: The percentage is computed on condition of experiencing a shock.

On the other hand, the household specific (idiosyncratic) shocks that range from illness and loss of a household member to loss of job and reduction in earning together are reported to have been faced by only 19.9 percent (27 households) of the shocks experienced households. Death of a household member other than primary income earner, illness of primary income earner and loss of job standout to be the dominant within the idiosyncratic shocks, with 5.8 percent, 3.9 percent and 3.9 percent, respectively. It is also important to note here that there isn't a single household that reported to have been affected by any shock (i.e., death or illness) related to HIV/AIDS. This might be because households prefer to disguise HIV/AIDS related shocks in other illness and death reasons because of the fear of the social repercussion they

might face if they identify their household member as a HIV/AIDS patient or state death due to illness related to the virus.

A sub-city level decomposition indicates though idiosyncratic shocks are limited to 10.6 percent and 12.2 percent of the shock affected households in Addis-Ketema and Arada sub-cities, respectively, it is quite important in Lideta as it is reported by about 44.2 percent of the shock experienced households. In this sub-city illness of primary income earner, death of a household member other than primary income earner and loss of job are the leading idiosyncratic shocks.

The relative impact of a shock on a household also varies depending on the household's poverty situation. Conditional on experiencing a shock, poor households are far more likely to suffer from health-related shocks (illness of a household member) than the non-poor while the later is more likely to suffer from economic shocks, especially a rise in the price of food items. It could be because poor households are more likely to lack access to better health service than the non-poor.

4.2. Shock: An Econometric Analysis

Though the descriptive analysis in section 4.1 above provides a detailed picture of the type of shocks experienced by the sample households and their relative importance, it doesn't show the consequence of these shocks and the

persistence of their consequence on the households' welfare. Hence, in order to supplement the descriptive analysis, this section deals with an econometric assessment of shocks. The impact of the different shocks is assessed on one measure of wellbeing, log consumption per adult equivalent. The log consumption per adult equivalent is expressed as a function of six sub-groups of variables: household demographic characteristics, human capital, and physical capital observed in 2008; shocks experienced in the past five years, sector of employment of the head and sub-city of residence in 2008.

The household's demographic characteristics include log age of the household head, log mean age of the household, log household size, dependency ratio, and a dummy variable for female-headed households. The physical capital, on the other hand, is expressed by the value and number of durables the household owns while a dummy variable is used for the educational status of the household head representing the human capital. In order to capture the effect of living in a certain sub-city on consumption expenditure level, a dummy variable is introduced for the sub-city the household resides in. The sector of employment of the head is also represented by a dummy variable.

The shock variables include a rise in the price of food items, fuel, and utility; shocks related to election 2005 (death or imprisonment), illness of primary income earner, death of a household member, eviction or displacement, loss

of primary income earner, decrease in income, failure of business, and loss of job.

The regression analysis in table 7 indicates that bigger household size and a larger mean household age are associated with lower log consumption expenditure level. However, the other household demographic characteristics- age of the household head, dependency ratio, or being headed by a female don't have a statistically significant effect on consumption expenditure. Physical capital as expressed by number and value of durables has a positive impact on consumption expenditure level. However, the effect of living in one of the three sub-cities, or having an educated head, or being employed in any of the sectors (with the exception of the casual workers) is not statistically significant.

In line with the finding in the descriptive analysis section, the most important shocks that affect the consumption expenditure level of a household are a rise in the price of food items and fuel. Experiencing a one unit rise in the price of food items decreases the elasticity of consumption expenditure per adult equivalent by 3.7 percent while a one unit rise in the price of fuel cut it by 7.7 percent. However, the effect of experiencing all the other shocks is found to be statistically insignificant.

Table 7. The Impact of Shock and Other Variables on Log Consumption per Adult Equivalent

Covariates	**Estimated Coefficients**	**Sig.**
Constant	3.915	0.000
Household is in Addis-Ketema sub-city	-0.005	0.963
Household is in Arada sub-city	0.059	0.335
Household is in Lideta sub-city	-0.004	0.921
Log age of the head	0.144	0.358
Log mean age of the household	-0.355	0.017
Log household size	-0.881	0.000
Dependency ratio	0.048	0.505
Female-headed household	0.001	0.920
Number of durables the household owns	0.020	0.000
Value of durables the household owns	0.000	0.003
Head has schooling	0.029	0.088
Head is private business person	0.011	0.779
Head is civil servant	0.000	0.989
Head is public sector employee	0.031	0.313
Head is cooperative employee	-0.030	0.578
Head is casual worker	-0.024	0.047
Head is international organization employee	-0.008	0.827
Head is unemployed	-0.003	0.605
Head is private sector employee	-0.004	0.462
Fuel price shock	-0.077	0.052
Food price shock	-0.037	0.024
Utility price shock	0.027	0.210

Covariates	Estimated Coefficients	Sig.
Election 2005 shock	-0.008	0.820
Illness of primary income earner shock	0.002	0.872
Death of a household member shock	-0.003	0.635
Eviction or displacement shock	-0.020	0.170
Loss of primary income earner shock	-0.007	0.533
Decrease in income shock	-0.019	0.101
Failure of business shock	-0.002	0.857
Loss of job shock	0.005	0.417

$R^2 = 0.556$

Sample size = 300

4.3. Coping Mechanisms

In the absence of a well functioning insurance and credit markets, households often resort to a combination of different self-insurance strategies and informal institutions in order to mitigate the impact of unforeseen calamities. This section attempts to explore the various coping strategies adopted by the sample households so as to deal with the hardship caused by the shocks.

The sample households have been using a combination of behavior, asset and assistant-based coping strategies so as to protect their consumption level. The choice of the strategies is dominated by the behavior-based coping mechanisms as 87.6 percent (118 households) of the shock affected

households resorted to such means. Most households reported cutting down the amount of their meal and the frequency of their eating. About 36.5 percent (49 households) resorted to consuming less expensive foods, and more than 18 percent (24 households) cut down the amount of their energy consumption. Engaging in additional income generating activities, engaging children in work, and eating foods that were not usually eaten were also the other behavior-based coping strategies adopted by the households. The decomposition by the household's poverty status indicates that the relatively better off resorted to less expensive food items and clothing as their primary coping strategies while the poor needed to be engaged in additional income generating activities and pull their children out of school on top of that. On the other hand, female-headed households, unlike their male counterparts, were forced to take up additional jobs and involve their children in income generating activities.

The asset-based coping strategies were used by a very marginal proportion (2.9 percent) (4 households) of the shock affected households. Borrowing accounted for 66.7 percent of the asset-based strategies, and it is mainly from the informal sector (i.e., from friends, relatives, neighbors and money lenders). Relying on available liquid asset and selling of non-liquid asset together accounted for 33.3 percent of the asset-based coping mechanisms. The comparison by household's poverty status, on the other hand, indicates that most of the asset-based mechanisms are more likely to be out of the

reach of the poor households. The only asset-based strategy reported to have been used by poor households is selling of non-liquid assets. It is counter intuitive as the asset base of poor households which can be used as collateral is already heavily eroded; access to credit facilities, even to the informal sector, is very difficult; and hence, poor households are systematically excluded from the credit market. It is also important to note here that the selling of assets by poor households, which is often used as a last resort survival strategy, further erodes their asset base and aggravates the households' downward spiral deep into poverty and forces them to remain in destitution.

On the other hand, it is only 3.3 percent (5 households) of the shock affected households that reported having used the assistance based strategies, of which 57 percent indicated relying on their social network. Very few (1.4 percent) showed to have either governmental or non-governmental support. The assistant-based strategies were relatively important for poor and female-headed households than they were for the non-poor and male-headed households. For female-headed households the use of social network and support from governmental and non-governmental institutions were equally important while poor households tended to rely more on their social network.

The respondents were also asked to indicate the most important improvements in government services that had been made in the past five

years and have been useful for their household. The gross majority (42.7 percent) (128 households) identified new and improved roads to be the most important. However, for quite a significant proportion (33 percent) (99 households) none of the service improvements have been useful for their household. The respondents also identified better service in health, education and housing; employment opportunity creation and cost of living reduction as priority areas that the government needs to focus on.

4.4. Conclusion and Recommendations

During a period of 14 years considered in this study, the available evidence indicates that the proportion of the households who live under a state of poverty ranges between 43-53 percent. In early years of the study, the level of poverty was relatively evenly distributed across all the three sub-cities, Arada and Addis-Ketema accounting for the relatively highest concentration of the poor while Lideta the lowest. However, since the year 2000, Arada has recorded a remarkable achievement in its poverty reduction and cut the incidence of poverty to only 29 percent in 2008 from a level of 53 percent in 1995 while Lideta plunged down to the worst level over the years. The gap between the two sub-cities, in number of poor people, reached its highest level (24 percent) in 2008. On the other hand, since the year 2000, more and more of the poor, especially in Arada, have been concentrating around the poverty line, implying a reduction in the amount of resource required to alleviate poverty from the study area.

The proportion of the population who has been under persistent poverty is relatively low in all the three sub-cities, especially in Lideta (2.7 percent). It should also be noted, however, that about 56 to 80 percent of the sample households experienced a poverty situation at least once in the period from 1995 to 2008; Lideta holding the lead with 80 percent. The scarring effect also indicates it is much more probable for households in Arada and Addis-Ketema than in Lideta to remain poor after experiencing a poverty situation in the previous period. The examination by the socio-economic characteristics of the households, on the other hand, reveals that bigger households and households led by uneducated heads are at a higher risk of falling into poverty.

Regarding the non-income dimension of poverty, food security has been one of the many challenges households in these three sub-cities have been encountered with; and the problem of food insecurity is much more pronounced in female-headed households. On the other hand, though a significant proportion of the sample households reported to have a relatively better access to health facilities, around 11 percent of them couldn't get medical attention due to cost-related issues. Evidences also indicate that around 10 percent of the population in these sub-cities is illiterate, and the highest educational level achieved predominantly is high school completion.

A relatively significant proportion of the households in the three sub-cities have access to safe drinking water and sanitation.

Around 45 percent (135 households) of the sample households reported having encountered one or more shocks in the past five years. Covariate shocks, especially a rise in the price of food items and fuel, standout to be the dominant shocks. The decomposition by poverty status reveals that poor households are more likely to suffer from health-related shocks while the non-poor from economic shocks. The econometrics analysis, on the other hand, indicates a rise in the price of food items and a surge in the cost of fuel are the only shocks that affect significantly the consumption expenditure level, and hence, the poverty status, of a household. The effect of all the other covariate as well as idiosyncratic shocks is found to be statistically insignificant.

In order to deal with the hardship inflicted by the shocks, households implemented various coping mechanisms. Around 88 percent of the shock-affected households resorted to behavior-based coping strategies, i.e., mainly cutting down the frequency of eating and the size of their meal, and shifting to less expensive foods. The use of the asset-based as well as the assistant-based coping strategies was kept at a very marginal level, 2.9 percent and 3.3 percent, respectively. The analysis by household's characteristics indicates that non-poor households resorted to a relatively cheaper food and non-food

items while poor households were forced to take up additional jobs and pull their children out of school. Female-headed households, on the other hand, were involved in additional income generating activities and engaged their children in work.

Therefore, in order to reduce poverty in the study area, based on the major findings discussed above, the following measures are recommended:

- Poverty reduction efforts should be strengthened in all the three sub-cities, with a special focus on Lideta.
- Appropriate monetary policies and price stabilization measures should be implemented so as to curb the price hike, especially the price of food items.
- Strengthen the development of small and micro-enterprises development program in Lideta sub-city, and ensure their labor intensiveness in Arada.
- Improve the gender equity amongst the beneficiaries of the small and micro-enterprise development program in both Arada and Lideta sub-cities.
- Insure the availability of safety net programs in all the three sub-cities, especially in Lideta.
- Provide micro-credit and micro-insurance facilities and make sure the poor have access to the services.

- Invest in employment creation, especially in Addis-Ketema and Arada sub-cities.
- Invest in family planning programs, and human development programs, particularly in education.
- Provide basic skill development trainings, especially for women.
- Improve access to tertiary level education and insure its quality.
- Encourage enrollment in primary education in all the three sub-cities, with a particular focus on Lideta.
- Expand adult literacy programs, particularly in Addis-Ketema and Arada sub-cities.
- Allocate more funds to the public health facilities and insure their accessibility to the poor, particularly in Lideta sub-city.
- Expand investment in low-cost houses and housing development programs.

References

Abebe Shimeles and Bereket Kebede. 1996. Issues in the measurement and dynamics of poverty: A survey. *Proceedings of the Fifth Annual Conference on the Ethiopian Economy.* Addis Ababa.

Araar, A., and Duclos, J. 2006. *Poverty and equity: Measurement, policy and estimation with DAD*. Boston: Kluwer Academic Publisher.

Bigsten, A., and Abebe Shimeles. 2008. Poverty transition and persistence in Ethiopia: 1994-2004. *World Development Report.* vol. 36, issue 9: 1559-1584.

Bigsten, Arne et al. 1999. Poverty and welfare in Ethiopia: Profile and determinants. *Ethiopian Journal of Economics.* vol. 8, no.1: 37-60.

Boccanfuso, D. 2004. A conceptual framework for approaches to poverty. Senegal. Unpublished.

Dercon, S. 1999. Ethiopia poverty assessment study. Oxford. Unpublished.

Foster, J., Greer, J., and Thorbecke, E. 1984. A class of decomposable poverty measures. *Econometricia,* vol. 52: 761 – 766.

Grootaert, C. 1995. Structural change and poverty in Africa: A decomposition analysis for Cote d'Ivoire. *Journal of Development Economics.* vol. 47: 375 - 400.

http:// www.addisababacity.gov.et. December 16th 2008.

Islam N., and Abebe Shimeles. 2007. Poverty dynamics in Ethiopia: State dependence and transitory shocks. *Working Papers in Economics*. no. 260.

Kakwani N., 2000, On measuring growth and inequality components of poverty with application to Thailand. *Journal of Quantitative Economics*. vol. 16, no.1: 67-79.

Mekonnen Tadesse. 1999. Determinants and dynamics of urban poverty in Ethiopia, *Ethiopian Journal of Economics.* vol. 8, no.1: 61-82.

Ministry of Finance and Economic Development. 2002. *Development and poverty profile of Ethiopia: Analysis based on the 1999/2000 HICE & WM survey results*. Addis Ababa.

_____. 2006. *Ethiopia: Building on progress: A plan for accelerated and sustained development to end poverty (PASDEP)*. Addis Ababa.

National Bank of Ethiopia. 1998/99. *Annual bulletin.* Addis Ababa.

_____. 2005/06. *Annual bulletin*. Addis Ababa.

Robeyns, I. 2005. The capability approach: A theoretical survey. *Journal of Human Development.* vol. 6, no.1:93-114.

Sen, A. 1992. *Inequality reexamined.* Oxford: Oxford University Press.

_____. 1999. *Development as freedom.* Oxford: Oxford University Press.

Tesfaye Alemayehu. 2006. The analysis of urban poverty in Ethiopia. Australia. Unpublished.

The World Bank. 2005. A better investment climate for everyone. *World Development Report.* Washington DC: The World Bank.

United Nation Development Program. 2007/08. Fight climate change: Human solidarity in a divided world. *Human Development Report*. New York: Palgrave Macmillan.

Annex: Living in Poverty: Experience of a Single Mother

Wro. Seble Lemma, a 30 year old single mother of two, holds a college diploma and until recently, she was also a civil servant. Wro. Sebele used to live in Arada Sub-city and has been one of the sample households since the data collection started in 1995.

Wro. Seble described herself as the poorest of the poor and claimed the living situation for her family and herself has never shown any sign of improvement over the years; rather, she said, it has been on a continuous downward spiral.

Wro. Seble claimed being a single mother and a female head contributed a lot for her deteriorating living condition; she explained the reasons that pushed herself and her family into poverty as follows.

"In the early days of my marriage, both my husband and myself used to work and lead quite a normal life. However, the happy family life didn't last long. Things around me started to crumble just right after my divorce from my former husband,the father of our children. The judicial system left the burden of raising our two children, both under the age of ten, on me with a monthly child support of only Birr 250 from my former husband, who earns Birr 1,500 a month."

According to Wro. Sebel, the situation for her and her two children went from bad to worse when she was forced to vacate her Birr 7.00 a month house rented from the kebele on the grounds of being not a legal tenant and moved to a Birr 300 a month rented house at the outskirt of Addis Ababa in a neighborhood commonly known as "Alem-Bank". Wro. Seble said, "Apart from a significant increment in my rental expense, the eviction made the transport cost to and from my new residence and work place located in 'Arat-Kilo' unbearable. After struggling for a while, I finally decided to quit my job."

With no other income, a monthly child support of only Birr 250 couldn't help much to make ends meet. In order to survive and keep her children in school, she started selling ice using her refrigerator, a treasury she earned from her former marriage. However, the refrigerator she had depended for her livelihood didn't last long. It was damaged by the constant power fluctuations in her neighborhood. So, selling "Injera" is her new line of business to keep her family together and to keep her children in school.