POVERTY PROFILE OF ETHIOPIA:

Analysis based on the 1999/00 HICE & WM Survey Results

Welfare Monitoring Unit (WMU)

Ministry of Finance and Economic Development (MOFED)

Federal Democratic Republic of Ethiopia

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Foreword

Understanding the magnitude, scope, depth, and severity of the different dimensions of poverty is a central policy tool in the Government's endeavor towards poverty reduction and ultimate eradication. To this end, the Government launched the Welfare Monitoring System (WMS) program in 1996, with the objective of monitoring the impact of Government policies and reform programs introduced since 1992 on the poor. The system is meant to provide household and micro-level data to assess the impacts of policies and on-the-ground implementation of programs at various levels.

This assessment helps influence policies and intervention modalities in the Government's effort to tackle the many dimensions of poverty. The Welfare Monitoring Unit (WMU) of MOFED and the Central Statistical Authority (CSA) have been the key actors of the WMS program: the latter through collecting household-level data, and the former via undertaking in-depth analysis of the data and providing inputs for policy decisions and interventions.

As part of the WMS program, the Household Income Consumption Expenditure (HICE) and Welfare Monitoring (WM) surveys have been conducted to enhance the Government's understanding of poverty in Ethiopia.The HICE surveys were conducted in 1995/96 and 1999/00, and WM survey data has been collected by the CSA in 1995/96, 1997/98, 1998/99 and 1999/00. The results of the HICE in the main provide indicators on consumption expenditure (income) measures of welfare while the WM survey results complement this data with information on the social dimensions of poverty: education, health and sanitation facilities; and access to physical infrastructures at national, regional, and reporting levels.

This Report entitled **"Poverty Profile of Ethiopia",** which followed the 1995/96 HICE and WM surveys based Report entitled **"Poverty Situation in Ethiopia, March 1999"**; provides indicators at National, Rural versus Urban, Regional, major urban and "other" urban centers in each regional state and city administration, and group of zones levels. The availability of the two surveys data sets also enabled us to undertake inter-temporal analysis of the various dimensions of poverty measures. MOFED would like to alret readers that the indicators provided in the annex for lower levels of administrations are not meant to be used for any meaningful analytical work. Their inclusion in this report only signifies our future intention (desire) to providing indicators at sub-

national level (provided that reliability is not compromised) in line with the Government's on-going decentralization endeavor. This time, a great deal of improvement has been achieved in terms of clearly articulating methodologies adopted, making utmost use of the available survey data sets, handling the data, undertaking the analysis work and issuing the results within the time frame set in the Analysis Plan.

The preparation of the 1999/00 HICE & WM based poverty profile report is made at the backgrounds of the lessons learned from the first report issued in March 1999. I believe this Report will be extremely useful for development actors, policy makers and our development partners alike in the endeavor to enhancing growth   and poverty reduction effectively.

Acknowledgements

This report, an important input in the preparation of the full Poverty Reduction Strategy Paper (PRSP), is the outcome of an impressive process coordinated by the Welfare Monitoring Unit (WMU) of the Ministry of Finance and Economic Development (MOFED). Helpful hands have been extended throughout the whole process and need to be recognized and duly acknowledged. The present report, which represents a significant departure from the previous one, was made possible thanks to the commitment of many people both from within and outside of the WMU.

First, the WMU would like to acknowledge the efforts put into this report by the members of the Study Team. The Team is comprised of WMU's Core Group including those seconded from MOFED's other departments and two local consultants from the Economics Department of Addis Ababa University.

We also would like to extend our thanks to Dr. Stefan Dercon and Mr. Pieter Serneels of the Center for the Study of African Economies (CSAE); Oxford University, for their valuable and constructive comments that helped improve the report.

Thanks are also due to the Central Statistical Authority (CSA) for opening its doors to WMU inquiries in the course of data cleaning as well as for producing a data set, which proved to be of a high standard. The CSA also assigned one of its senior staff to participate in the core group of trainees during the launching workshop, which helped facilitate the first phase of the data analysis work (data cleaning).

Last but certainly not least; special thanks are due to staff members of the World Bank, both at the local resident office in Addis Ababa, and at Headquarters in Washington, D.C., for working closely with the WMU, being supportive of our initiatives, and responding promptly to our requests while undertaking this study. We also would like to extend our gratitude to the World Bank and the Kingdom of Norway for their financial support to the Welfare Monitoring System (WMS) Program.

Members of the Study Team

Name	Department	Position
Ato Getachew Adem	Economic Policy and Planning Department (Welfare Monitoring Unit), (MOFED)	Head, Economic Policy and Planning Department (Welfare Monitoring Unit), Coordinator
Dr. Tekie Alemu	Department of Economics, Addis Ababa University	Assistant Professor of Economics, Consultant
Dr. Tassew Weldehanna	Department of Economics, Addis Ababa University	Assistant Professor of Economics, Consultant
Ato Ermiyas Tenkir	Economic Policy and Planning Department (Welfare Monitoring Unit), (MOFED)	Expert, Economic Policy and Planning Department (Welfare Monitoring Unit)
W/t Frehiwot Yirsaw	Economic Policy and Planning Department (Welfare Monitoring Unit), (MOFED)	Expert, Economic Policy and Planning Department (Welfare Monitoring Unit)
Ato Berhanu Legesse[1]	Regional Planning (MOFED), currently transferred to the Ministry of Capacity Building (MCB)	Team Leader (while he was in MOFED)
Ato Fikru Dibissa[2]	Central Statistical Authority (CSA)	Team Leader, CSA

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[1] He participated on the workshop launched to kick-start the poverty analysis work. He was also on the Advisory Team that was set up to follow up the analysis work and was also involved in discussions during the early stage of the analysis work which mainly focused on strategies to undertake data cleaning activities and comments on the work schedule prepared by the WMU of MOFED.He was also involved in some of the sessions during the early stage of the poverty analysis work along with the Core WMU analysis team.

[2] He participated on the workshop launched to kick-start the poverty analysis work. He was also involved in discussions on data cleaning during the early stage of the analysis work.

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Abbreviations

AAU	Addis Ababa University
CSA	Central Statistical Authority
FDRE	Federal Democratic Republic of Ethiopia
HICE	Household Income Consumption Expenditure
HIPC	Highly Indebted Poor Countries
IMF	International Monetary Fund
MEDaC	Ministry of Economic Development and Cooperation
MOFED	Ministry of Finance and Economic Development
PPA	Participatory Poverty Assessments
PRSP	Poverty Reduction Strategy Paper
I-PRSP	Interim-Poverty Reduction Strategy Paper
WB	World Bank
WM	Welfare Monitoring
WMS	Welfare Monitoring Surveys
WMU	Welfare Monitoring Unit

Explanatory Notes

(1) "**Birr**": refers to Ethiopian Currency Unit equivalent to 100 cents denominations

(2) **Meher (Main) Season Crop**: is any crop harvested from September to February.

(3) **Belg Season Crop**: Any type of crop harvested during the months of March to August.

(4) **G.F.Y:** Gregorian Fiscal Year is a period covering a twelve-month period running from July 8 to July 7 of the following year.

(5) **E.F.Y:** Ethiopian Fiscal Year is a period covering Hamele 1 of the given year to Sene 30 of the following calendar year. For example, the 1992 Ethiopian Fiscal Year covers Hamele 1, 1991 to Sene 30 1992.This is equivalent to the 1999/00 G.F.Y.

(6) **"1999/00"**: stands for "1999/2000"

(7) **Enumeration Areas (EA):** is a unit of land delineated for the purpose of enumerating housing units and population without omission and duplication. An EA in rural areas usually consist of 150 - 200 households. On the other hand, an EA in urban centers constitutes 150 - 200 housing units.

(8) **Urban Dwellers' Association (Kebele)**: is the lowest administrative unit in urban center with its own jurisdiction. It is an association of urban dwellers (commonly known as kebele) formed by the inhabitants, and usually constitutes a part of the urban center.

(9) **Farmers' Association Area:** is the lowest administrative unit in a settled rural area with its own jurisdiction. It is an association of rural dwellers formed by the inhabitants of a given area whose members are engaged either in agricultural and/or non-agricultural activities.

(10) **Major Urban Centers**: Large urban centers in the country as designated by the Central Statistical Authority (CSA) for the conduct of the Population and Housing Census of Ethiopia

(11) **"Other" Urban Centers:** urban centers in the country other than those designated "major" urban centers by the CSA.

(12) **Household:** Constitutes a person or group of persons, irrespective of whether related or not, who normally live together in the same housing unit or group of housing units who have common cooking arrangements.

(13) **Domestic Expenditure:** is defined as total expenditure incurred by the household or any of its members and includes expenditure on consumption as well as non-consumption items.

(14) *Idir:* is traditional community based insurance scheme in which a household head contributes a predetermined amount of money to the membership in order to be insulated from cash shortfalls in the event of death of a specified member of his family or himself.

(15) *Iqub:* Type of saving or revolving fund arranged by members of a community

(16) **Region:** represents the second tier of government in the administrative structure of the Federal Democratic Republic of Ethiopia (FDRE)

(17) *Woreda***:** The fourth tier of elected government in the administrative structure of the Federal Democratic Republic of Ethiopia (FDRE)

(18) *Zone***:** The third tier of government in the administrative structure of the Federal Democratic Republic of Ethiopia (FDRE). This structure has not been explicitly recognized as an administrative

18) **Reporting Level:** refer to an administrative entity (rural or urban) or any other entity representing group of zones in larger regions (Oromiya, Amhara, and SNNPR) or major urban center or 'representatives' of 'other' urban areas in each regional state for which it is deemed relibale to generate and report indicators based on the national sample (HICE survey data sets).

Poverty Profile of Ethiopia:

Executive Summary

This analysis is primarily based on the 1999/2000 Household income consumption and Expenditure (HICE) and welfare monitoring (WM) survey results. Attempts have also been made to compare with the 1995/96 HICE and WM survey results wherever feasible. The report encompasses both the income and non-income dimension of poverty, based on consumption, education, health and mal-nutrition. Besides, the inter-temporal and spatial dimension of poverty is also discussed with focus at regional (state) level.

The 1999/00 was affected by a number of factors compared to 1995/96 by all measures. Sporadic drought incidences were recorded in Somalie, Tigray and some parts of Oromiya regional states in 1999/00. More importantly agricultural output particularly crop production was affected by weather related factors during the two consecutive years preceding 1999/00. Besides, the Ethio-Eritrean border conflict was also at its climax in 1999/00. Thus, the outcomes of the 1999/00 HICE and WM survey results need to be seen against this background.

One should also not lose sight of the impact on poverty of external shocks transmitted through prices of exportable, particularly coffee. Ethiopia's coffee prices on the international market have been plummeting since 1995/96 and are still on the decline.

Trends in Consumption Poverty: Inter-temporal and Spatial Dimensions

Trends in Per Capita Real Consumption Expenditure

According to the HICE survey results, the per capita consumption expenditure of Ethiopia for the year 1999/00 is estimated at 1057 Birr in constant prices of 1995/96. The real per capita consumption expenditure of rural people was 995 Birr and that of urban people 1453 Birr. These levels of real per capita, consumption expenditure are equivalent to 139,131, and 191 USD at national, rural, and urban levels, respectively in 1999/00.

The levels of poverty in rural and urban areas are reflections of the level of per capita spending in the respective areas. Poverty incidence is much higher in rural than in urban areas as revealed in subsequent sections, poverty head count index being 45.4 and 36.9 percent, respectively in 1999/00.

Per capita calorie intake increased by a little over 40% in rural areas and declined by about 9% in urban areas. The increase in calorie intake in rural areas in 1999/00 compared to 1995/96 is not inconsistent with the level of per capita spending on consumption.

For one thing rural people spend (use their produce) more on food than on non-food items. The food share in rural areas has increased from 60% in 1995/96 to 67% in 1999/00 while on the other hand food share in urban areas declined from 56% to 53% during the same period.

The complement of this is that non-food share in rural areas declined from nearly 40% in 1995/96 to 33% in 1999/00 while the non-food share in urban areas has increased modestly. The other point that needs to be underlined is that a basket with high calorie does not necessarily mean high quality basket (in terms of nutrient or vitamin content). The higher calorie intake along with the disproportionately larger shares of spending on food is still an indication that people in rural areas are food insecure (Engel's Law).

Some non-food expenses such as transport are more binding in urban than rural areas irrespective of level of poverty of the individual or household. The decline in poverty head count index in rural areas and the modest increase in urban areas of the same as indicated in subsequent sections is consistent with the trend in calorie in take (rural versus urban).

Given that Ethiopia is a country with significant agro-ecological and cultural differences, substantial variation would be expected in terms of areas of economic activity, sources of income (subsistence or cash income), patterns of consumption expenditure, distribution of income, incidence, and depth and severity of poverty.

Comparisons among urban areas indicate that Addis Ababa has had the highest per-capita consumption expenditure closely followed by Afar and Benshangul-Gumuz3 in 1999/00. Taking each region by its own, Tigray has recorded the lowest per capita consumption expenditure in the country. Compared to the year 1995/1996, the per capita consumption level for 1999/00 has

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[3] The relatively high per capita expenditure figures for smaller regions could largely be attributed to population (sample) size and the levels should not be taken at face value and calls for careful interpretation. One should make note of the fact that these results are based on sampled households.

declined in Tigray, Afar, Somalie, Oromiya, Benshangul-Gumuz, Gamebella, and Harari. On the other hand, Addis Ababa, Amhara, SNNPR (though marginally), and Dire Dawa have witnessed increases in per capita real expenditure.

Overall, urban areas witnessed an increase in per capita real consumption expenditure between the two survey years. Income distribution in Ethiopia seemed to be more even in both rural and urban areas compared to other Sub-Saharan Africa (SSA) countries. The Gini coefficient for 1999/00 is found to be 0.28. The income inequality as measured by Gini coefficient is higher in urban areas (0.38) than in rural areas (0.26). The egalitarian land holding system might have contributed to a more equal income distribution in rural Ethiopia. Compared to 1995/96, Gini coefficient has declined in rural areas while it slightly increased in urban areas. Overall, Gini coefficient has declined between the two surveys years (1995/96 and 1999/00).

Trends in the Level of Consumption Poverty

To determine the level (incidence) of poverty (number of poor) one has 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. This basket is valued at nationally representative average prices to reach at a consistent poverty line across regions and groups. Once this is done, an allowance is made for the non-food component consistent with the spending patterns of the poor. This method yields a representative poverty line as it provides a monetary value of a poverty line that accounts for the food and non-food components.

Accordingly, the food poverty line based on the 1995/96 HICE stood at Birr 647.81. After adjusting for the non-food component the total poverty line (both food and non-food) was estimated at Birr 1075.03 in 1995/96. This same poverty line is used in 1999/00 to maintain comparability between the two survey years (Note that the "basket" for 1995/96 and 1999/00 is the same).

The proportion of people in Ethiopia who are absolutely poor (unable to meet their basic needs) during the year 1999/00 was 44.2 percent. The proportions of people who are absolutely poor are 37% in urban areas and 45% in rural areas indicating that rural poverty is higher than urban poverty by 23%.

Consumption poverty head count index has declined by about 3 percent at national level and by over 4 percent in rural areas while it increased by about 11 percent in urban areas. Given the extent and depth of poverty in Ethiopia, the indicated modest decline in consumption poverty clearly shows the challenge ahead towards reducing poverty in Ethiopia. The trend, however, is an indication that the government's development strategy is pro-poor (as poverty is still a rural phenomenon) and poverty reducing.

The levels of consumption poverty also show significant variation among rural areas across regional states. By 1999/00, the highest poverty incidence was recorded in rural Afar followed by Tigray and Benishangul-Gumuz Regional states and the lowest poverty incidence in Harari regional state followed by Addis Ababa and Dire Dawa.

Among the urban areas, the highest poverty was recorded in Tigray followed by SNNPR, Gambella, and Addis Ababa. The lowest poverty incidence (among urban areas) was indicated in Somalie followed by Afar and Benishangul-Gumuz regional states. In general, consumption poverty is higher in rural than urban areas of the country. While there is an improvement in the depth and severity of rural and national poverty in 1999/00 compared to 1995/96, poverty incidence has not improved much between the two survey years.

By 1999/00, a decline in poverty incidence has been witnessed in most of the major towns of Ethiopia. Gonder Town (Amhara) had the lowest poverty incidence followed by Bahir Dar town. The highest poverty incidence was observed in Mekele town (Tigray) followed by Jimma town in the same year. Poverty incidence, depth, and severity seem to have substantially declined in Gonder, Dessie, Bahir Dar, and Debere Zeit towns. A modest decline in poverty incidence, depth and severity has been indicated in Mekele and Nazreth towns. On the other hand, Jimma, Harar, Addis Ababa and Dire Dawa are urban areas where poverty incidence, depth and severity were pronounced by 1999/00.

Although urban areas in general witnessed an increase in consumption poverty head count index, there has not been significant increase in the depth and severity of poverty between the two periods. As is already indicated, income inequality measured by the Gini coefficient declined for rural areas and increased for urban areas while the per capita consumption of both urban and rural areas have not shown statistically significant changes (increase). The improvement in the incidence, depth and severity of poverty in rural areas might have to do with the egalitarian type of land holding system.

Trends in the Level of Food Poverty

Seen in terms of food poverty incidence, the ranking of rural and urban areas has reversed compared to that of 1995/96. The food poverty head count index was found to be less than the overall consumption poverty head count index in rural areas and greater than the same in urban areas. One possible explanation could be that spending in rural areas may be lopsided to food items compared to the spending pattern of people in urban areas.

The proportion of the population under food poverty in rural areas is about 42% where as the corresponding figure for urban areas stood at approximately 47% by 1999/00. Compared to 1995/96, the national and rural food poverty head count index declined by 6.7% and 12.6%, respectively. The urban food poverty head count index increased by 43.7% percent.

The food poverty head count index has increased in all regions except in Amhara, Tigray, Oromiya and Dire Dawa. A slightly different pattern has been observed among regions when we examine the regional rural-urban changes in food poverty. By 1999/00, urban food poverty head count index has increased compared to that of 1995/96 across regions save Dire Dawa. Among the rural areas, food poverty has declined in Tigray, Amhara, Oromiya, Addis Ababa and Dire Dawa.

Amhara and SNNP regional states contributed to more than 50 percent to national poverty in 1995/96.This time (1999/00) overall consumption poverty head count index declined in these regions by 23 and 9 percent, respectively (Table 2.3). The estimate of the national poverty head count index has been lower in 1999/00 than 1995/96. The influence of these two regions on the national consumption poverty is self-evident given their weight in total population and agricultural production. As indicated in Table 2.3, consumption poverty head count index has declined in

Amhara, SNNP, Addis Ababa, and Dire Dawa regions (rural) and increased in the rest of the rural regions. Among urban areas, it is only Amhara, Benshanguel-Gumuz, SNNP regional states where consumption poverty witnessed a decline. The rest of the urban areas in the remaining regions have witnessed an increase in urban poverty.

The analysis on the income dimension (both consumption poverty and food poverty) indicates that poverty is still a rural phenomenon as indicated by the contribution of rural areas to poverty head count index. Rural areas altogether contribute about 85 percent to total population while their contribution to total poverty head count index stood at about 88 percent in 1999/00. Urban areas altogether accounted for about 15 percent of total population while its contribution to total poverty head count index was a little over 11 percent in 1999/00. The contribution to total poverty head count index has slightly increased in urban areas (about 1.3 percentage points) while it decreased by the same magnitude (1.3 percentage points) in rural areas in 1999/00 as compared to 1995/96.

Household Characteristics and Poverty

The analysis on the main household characteristics of the population was based on the results from responses of households common to the HICE and WM surveys. According to the survey results, the average family size for Ethiopia stood at 4.9 persons per household. When we compare poor households with the richer ones, we observe that poorer households have had larger family sizes (5.8 & 5.4 individuals per household in the 1st and 2nd quintiles, respectively), which stood in contrast to 4.7 and 3.9 per household in the 4th and 5th quintiles. In general, poorer households in rural areas have a larger family size than their counter parts in the urban centers.

Such a difference in family size itself reflects the variation in the average dependency ratio[4]. Poorer households tend to have larger proportion of dependents: 134 per hundred for the 1st quintile and 89 per 100 for the 5th quintile. Though the ratios show the same trend in both rural and urban areas, they are larger for the former for each quintile. The differences between the rural and urban areas in this regard should; however, be interpreted cautiously as younger members of rural households are more likely to be engaged in productive activity.

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[4] Defined as household members older than 65 and younger than 15 divided by the complement of this set in sampled households.

Members of poorer household tend to have older household heads compared to richer ones. Females head 26 percent of the households in the country. This feature, however, is more dominant in urban than in rural areas. According to the 1999/00 HICE & WM survey results, female-headed households are 41 and 23 percent in urban and rural areas, respectively.

In rural and urban areas alike, there has been a clear tendency that poorer households have on average a larger family size and are headed by illiterate and older heads.

Results also indicate that poverty indices are larger for households with larger family size and smaller when family size decreases. Poverty incidence, depth and severity also decrease with increases in the level of education (schooling) of the head of the household. We have not seen any significant difference in income poverty between male and female-headed households in rural areas. In urban areas, however, female-headed households have been found to have higher poverty incidence, depth and severity than their male counterparts.

Household Vulnerability to Shocks and Vulnerability Dimensions

An attempt has also been made to assess vulnerability of individuals as well as the profile of shocks that hit households in 1999/00. It is found that 1999/00 was a year where there was some shock in terms of sudden change in well being in some regions such as Tigray, SNNP, and Somalie regional states. It was also indicated that urban households were more vulnerable than rural households. This might be because rural households are more endowed with assets such as land and livestock. The analysis carried out based on responses from the WM survey indicate that households in Tigray, SNNP and Somalie regions have perceived 1999/00 as a slightly abnormal year. This might indicate that living conditions were lower compared to a normal year as perceived by the respondent.

The mean monthly rainfall was also lower and the rainfall was more erratic in 1999/00 than 1995/96 at national level as well as in some of the regions[5].

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[5] At the time of writing this report, it was difficult to identify the regional states where the meteorology stations are located. Hence we only provide the meteorology regions, which follows the previous administrative setup.

According to the survey results, the majority of rural households were able to cope up with the shocks of 1999/00 while the ability of urban households was indicated to be somewhat limited. The major ex *post* risk coping mechanism of rural people is the sale of animal products and other agricultural outputs and loan from relatives, while urban peoples' main ex post coping instrument is own reserve money and loan from relatives. The role of modern banks as well as traditional sources of finance such as *Idir* and *Iqub* has been found to be very much limited in the provision of security for both rural and urban households.

Temporal and Spatial Dimensions of Non-Income Poverty

Nutrition, Health and Literacy

Nutrition (Child Wasting and Stunting)

While the proportion of severely wasted children at national level was 1.8 percent, the proportion of wasted children stood at 9.6 percent. In general, child wasting is found to be higher in rural areas than in urban areas. Although wasting has increased, severe wasting has declined significantly (47 percent) in 1999/00 compared to 1995/96. The improvement in severe wasting is for rural and urban areas alike but more pronounced for rural areas. The deterioration in wasting in 1999/00 compared to 1995/96 is only for rural areas. Wasting has declined by 10% in urban areas.

For Ethiopia as a whole, prevalence of stunting which is a reflection of long-run malnutrition is 57 percent by 1999/00 while severe stunting stood at 31.3 percent during the same year. Both Stunting and severe stunting are higher in rural areas than in urban areas. When compared between males and females, females registered lower than average stunting figures. Both stunting and severe stunting in 1999/00 have witnessed tremendous decline (by 15-34 percent) compared to that of 1995/96 indicating an improvement in the long run measure of malnutrition.

Access to Health Services

Another important aspect of human capital is the health status of individuals in society. Besides having a direct impact on welfare of individuals, their health status has repercussions on their potential productivity. The WM Survey questionnaire has recorded responses by household members about their health status in the two months prior to the interview.

According to the results, a quarter of the population in the country reported to have been sick in the two months prior to the administration of the WM Survey questionnaire. In terms of gender disaggregation, the results indicated that 24.2 percent of males are reported to have been sick. The figure for females was about 26 percent. On the other hand, while around 27 percent of the rural population reported to have been sick, only 19.3 percent of their urban counterparts reported the same.

Over 60 per cent of those reported to have been ill stated that they did not seek any form of medical treatment. This figure is only around 38 per cent in urban areas whereas it is about 62 per cent in rural Ethiopia. In terms of gender disaggregation, too, we see that males fare better in both urban and rural areas. Thus, while only 29 per cent of males who reported to have been ill sought no treatment in urban areas, the figure for their female counterparts is about 38 per cent. Around 40 per cent of the males residing in rural areas sought some form of medical treatment while only a third of the females did so.

The largest proportion of those who seek treatment did so in publicly owned facilities. While some 19 per cent of those who sought treatment went to public health facilities, only 13 per cent went to private facilities and around 7 per cent went to traditional healers.

The distribution by expenditure quintile shows interesting association between health care use and level of expenditure. As expenditure increases from the first to the fifth quintile (poor to rich), those who reported to have sought treatment increases. This is true for all categories except for males residing in urban areas, where the association is positive in all ranges. There is also a similar association between the proportion of individuals getting treatment in private facilities and level of expenditure.

Literacy

The over all literacy rate6 in Ethiopia for 1999/00 is 29.4 percent. Females have lower literacy rate (19.5 percent) than that of males (40 percent). The literacy rate is much higher in urban areas (70.4 percent) than in rural areas (21.8 percent). The literacy rate has increased from 27.4 percent in

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6 Adult literacy in this study is defined as the percentage of population aged ten years and over who can both read and write with understanding a short and simple statement in the course of his or her daily life

1995/96 to 29.4 percent in 1999/00. The increment in literacy rate has been more pronounced for males than for females. The female literacy rate has stagnated at around 18 percent.

Enrolment

In 1999/00 the gross and net primary enrollment rate stood at 59 and 34 percent, respectively. The gross and net secondary enrollment rate was 15.5 and 11.5 percent, respectively during the same year. In general, enrollment rates are higher for urban than for rural areas. In 1999/00 both gross and net primary and secondary enrollments rates have witnessed improvement compared to that of 1995/96. In 1999/00, the gross and net primary enrollment rates increased by 66 and 75 percent, respectively. The improvement has been more in favor of rural areas and females.

Housing and Household Durables

About 85% of the households in Ethiopia are living in low quality houses made of wood and mud and 65% of the houses are grass-roofed houses. Urban houses are relatively better quality than rural houses. 90% percent of house- roofs in urban areas are made of corrugated iron sheets. In rural Ethiopia, about 15% of the houses are made of corrugated iron sheets. For the country as a whole, only 17 percent of the households use latrine and 81.7 percent use open field for toilet indicating poor sanitation.

The average number of rooms per household is 1.6. The average number of rooms per household is larger for urban than for rural households. Addis Ababa is by far better than other regions in terms of the number of rooms available for living. The proportion of households possessing TV set was less than 2 percent. Moreover, they are concentrated in Addis Ababa and Dire Dawa. There has been a wider coverage of radio and about 18 percent of the households in the country own radio.

Ownership of Farm Assets

The main means of livelihood in rural Ethiopia is agriculture. Thus, land ownership in rural areas becomes an important determinant of welfare. The WM survey has had information on whether households own land or not. Unfortunately, however, it has not informed us on the amount of land owned by households. Based on the available information, almost all households in the rural areas

of the country own some amount of land. However, more male-headed households (98.3 percent) own land than their female-headed counterparts (95.3 percent).

Another important input in agricultural production in the Ethiopian setting is the availability of traction power. This is mainly done with the use of oxen in the country. Thus, a household owning oxen would be in a better position in cultivating its land. The WM survey has not had information on the ownership of oxen. But it has had information on the availability of cattle, which could serve as a proxy.

According to the survey results, about 80 percent of the households in the country own cattle. However, the proportion has been skewed against female-headed households. While only 64 percent of the female-headed households own cattle, 83 percent of their male counterparts do so. At national level, fewer numbers of households in the lowest quintile own cattle as compared to the other four quintiles.

Rural households on average own 4.1 cattle per household. This average ranges between 14.1 for Afar, which is a cattle raising region, and 3.6 in Amhara. The average number of cattle owned by the poorest households, as represented by the 1st quintile in the consumption expenditure distribution, is only 3.9.

Access to Public Services and Economic Infrastructure

Access to public services is an important precondition for the public in general and the poor in particular to utilize them. An important measure of access to public services is the distance between the residence of households and the facility at hand. This measure is particularly useful for large countries like Ethiopia where the transport networks and efficiency is quite low.

The WM Survey questionnaire recorded information on the distance between various facilities and the residence of households. However, there was a large variation in the responses obtained for the estimated distance for a facility within a village. Thus, the median distance to each service in each village was taken as a basis for calculating the reported mean distances.

The average distance to elementary schools for the country as a whole is three kilometers. About three-quarters of the population live some 4 or more kilometers away from the nearest primary schools. The figures are higher for rural areas compared to urban areas.

There is a marked improvement in terms of average distance to public services compared to the results in 1995/96(Dercon, 1997). The average distance to reach a primary school in 1995/96 for the whole country was 3.8 Km, while for rural areas the figure was 4.3 Km.Besides, a quarter of the total population in Ethiopia was living 6 or more kilometers away from primary schools. Compared to 1995/96, mean distance to secondary schools has gone down: it was 23.7 km for the country as a whole, 26.9 km for rural areas, and 3.7 km for urban centers.

By 1999/00, for the country as a whole, the average distance households have to travel in order to obtain water varies between 0.36 km during the rainy season and 0.74 during dry season. Urban centres face better situations in this regard as well. On the average, they have to travel less than a hundred meters to obtain water in both seasons, while their rural counterparts have to travel more than 400 metres in the rainy season and 850 metres in the dry season. A quarter of the total population fetches water from sources that are at least one km away from their residence.

In general, we observe improvements in the provision of education and health facilities to the rural areas. This is reflected in the reduction of the distance required to reach these facilities. However, the information made available has not permitted us to analyze changes in the quality of these provisions.

For the country as a whole, average distance for households to reach food markets was 5.19 km. While rural households have to travel 5.88 km on average to reach a food market, their urban counterparts travel only 1 km for the same. Postal and telephone services are, on the average, more than 20 km away from rural households. Comparing the 1999/00 results with those of 1995/96 for which information is available, improvements have been witnessed in the distance to reach basic facilities for rural areas. Urban areas, however, do not show much improvement and in some cases even witnessed deterioration. This could be as a result of new settlements in the outskirts of towns, which would increase the average distance to existing infrastructures.

Access to Water and Energy Sources

Although information on access to important utilities in terms of the distance existing between the source of the utilities and households' residence provides important insights about the welfare of household members, it may not tell us much about the quality of the services obtained by households.

Over all, drinking water from protected sources (tap and protected wells or springs) is a 'luxury' of only a quarter of the population and in the rural areas the figure is only around 15 per cent. On the other hand, more than three-quarters of the population in urban areas obtain drinking water from protected sources. There is a positive relationship between obtaining protected water and consumption expenditure quintiles implying that households in the richer quintiles have relatively better access to safe drinking water.

There is little variation in the sources of drinking water between the rainy and dry season. Amhara region has had the smallest proportion of its population accessing relatively safe drinking water (19.17 per cent). It is closely followed by Somalie, Benshangul-Gumuz, and Oromiya with 21.6, 21.87 and 22.93 per cent respectively of their population having access to safe drinking water. Relatively better off regions in this regard are Addis Ababa, Dire Dawa and Harar with 98.33, 86.25 and 75.87 per cent of their population, respectively, having access to safe drinking water.

Biomass is the main source of energy in Ethiopia. Most of the energy sources are not obtained from the market. Freely collected firewood remains to be the main energy source. Overall, 67.78 percent of the households in the country use collected firewood as source of energy. Urban centers use more purchased firewood: 41.22 per cent of their energy use has been obtained from purchased firewood. Rural households, however, obtain 76 per cent of their energy sources from collected firewood.

Electricity is used as a source of energy for cooking by only 0.38 per cent of the households in the country and it is largely used by urbanites. In urban areas kerosene is an important source of energy for cooking (21.78 per cent). The use of the various sources of energy does not show significant variation across regional states. The exception is Addis Ababa where more than 65 per cent of households use kerosene as their source of energy for cooking.

Introduction

The Report entitled "**Poverty Situation in Ethiopia**" was prepared based on the 1995/96 Household Income Consumption Expenditure (HICE) and Welfare Monitoring (WM) Surveys conducted by the Central Statistical Authority (CSA) during 1999/00. The Welfare Monitoring Unit (WMU) of the then Ministry of Economic Development and Cooperation (MEDaC) published the report and it was the first poverty report based on surveys of national scope. According to the Report, 45.5% of the population of Ethiopia was under absolute poverty, meaning unable to meet the minimum requirement for subsistence in 1995/96. The report also showed that, for the same period, more than 2/3 of the children appeared stunted (low height to age ratio) and close to one in ten showed signs of wasting (low weigt to height ratio). Literacy rate for persons aged 10 years and above was very low with 27% of the persons above 10 years old could read and write during the reference period (1995/96).

The HICE & WM surveys have been conducted as part of the Welfare Monitoring System (WMS) Program launched by the Government of Ethiopia since 1996. The WMS Program was introduced with the objective of assessing and monitoring the impact on the poor and vulnerable of the package of reform programs launched since 1992. This is a clear testimony to the Government's claim that poverty reduction has been at the centre of the overall development agenda and reform programs pursued since 1992.

Understanding the magnitude, scope, depth, and severity of the different dimensions of poverty is a central policy tool in the Government's endeavour towards poverty reduction and ultimate eradication. It is with this objective that the second HICE & WM surveys were conducted during 1999/00.The 1999/00 HICE and WM surveys results along with the 1995/96 has helped assess the trends in the various dimensions of poverty between the two survey years. Two WM surveys have also been conducted in between the two survey years (1995/96 & 1999/00). The outcomes of the analysis based on the two survey results are believed to be important inputs in the preparation of the full Poverty Reduction Strategy Paper (PRSP), which is currently in progress. Inter-temporal analyses of these survey results help understand the dynamics of poverty over time.

This second Report has used HICE and WM survey data sets conducted in 1999/00 by the CSA. In this report, the various dimensions of poverty: consumption, education, health, etc have been addressed. These are assessed for the year 1999/00 and poverty measures (indices) for 1999/00 have been compared with that of 1995/96, 1997/98 and 1998/99.

This report does not fully address the security/vulnerability and empowerment dimension of poverty as the HICE and WM surveys have not been primarily designed to deal with these issues. The analysis and inter-temporal comparison in this report is based on two reports: The Poverty Situation of Ethiopia (MEDaC 1999) and Poverty and Deprivation in Ethiopia (Dercon 1997). The two reports are based on the same HICE and WM data sets for 1995/96.The former was prepared by the Welfare Monitoring Unit (WMU) of MEDaC and the latter by an independent consultant commissioned by the World Bank. These two reports are consistent in reporting most of the poverty measures. We have also reported figures for the year 1995/96 from 1995/96 HICE and WM survey data sets for poverty indicators that ought to have been provided in the two reports.

This report entitled **"Poverty Profile of Ethiopia"** is set out as follows. Chapter one provides the overview of recent socio-economic trends by way of putting the poverty issue in to the macro context by way of providing a background before directly embarking on the poverty analysis per se. This Chapter, apart from providing a macro view of the socio-economic conditions and trends in Ethiopia during the 1990s has also helped assess the compatibilities and/or complementarities of macro and micro level indicators. Chapter two reviews the approaches to the measurement of poverty and overview of the profile of HICE & WM surveys. Chapter three analyzes and reviews temporal and regional dimension of consumption poverty as well as the characteristics of consumption-poor households. Chapter four analyzes vulnerability of households in Ethiopia: the existence of shock that affects household income and households decision, rainfall pattern and trend as well as ex post risk coping strategies. Human capital achievement (such as education, nutrition and health) and access to public utilities and infrastructure are assessed in Chapter five. In this Chapter, accesses and achievements in human capital have been discussed and analyzed by regions, household characteristics, and quintiles. Examining indicators of non-income (consumption) dimensions of poverty by income quintiles is one way of an integrated look at the different dimensions of poverty.

Comparison of 1999/00 with that of the 1995/96(where-ever feasible) both at national and regional levels will also provide indications on how the poverty situations in Ethiopia in all its dimensions evolve over time. Chapter six, by articulating what emerged out of the whole analysis work, provides concluding remarks. The Appendix to this report accommodates details on sampling design, conceptual framework, and formulas used for the calculation of price and poverty indices. The appendix to this report also provided various poverty/welfare indicators at lower levels of administrations. However, the indicators at those levels are not to be used for any meaningful analytical work as they are based on sample sizes that are not deemed reliable for reporting at those levels. The inclusion of the results at these levels in this report only signifies our future intention (desire) to providing indicators at sub-national level (provided that reliability is not compromised) in line with the Government's on-going decentralization endeavor. The results in the appendix are also appropriately cross-referenced with discussions on the main body of this report.

I. Macroeconomic Conditions & Trends in Ethiopia During the 1990s

Ethiopia is located in the horn of Africa bordering Eritrea in the North, Djibouti and Somalia in the East, Kenya in the South and Sudan in the west. With a land area of about 1.1 million square kilometer and a population size of about 62 million persons in 1999, it is one of the largest and populous countries in Africa. It stood third in terms of population size and 9th in terms of geographic area in the whole of Africa.

With a per capita GDP of USD 120 in 1995, Ethiopia has still remained to be one of the poorest countries in the world. Given the significant proportion of arable land and its huge population size, the potential for growth is believed to be immense. The critical role of agriculture in the Ethiopian economy is well known. Agriculture on average has accounted for about 50 % of GDP and forms a means of livelihood for over 85% of the population, and on average accounted for over 90% of Ethiopia's foreign exchange earnings.

However, development policies and strategies pursued by previous regimes had not given agriculture the emphasis that it deserved. During the time of the Derg, preoccupation with the socialization of agriculture had geared every effort towards state farms that accounted for about 2% of agricultural output. Extension of agricultural credit, allocation of foreign exchange, distribution of fertilizer and improved seeds had been deliberately lopsided to state farms while all available studies indicated that productivity of state farms had been consistently lower than productivity of private smallholder farmers that accounted for well over 95% of agricultural production. The extensive marginalization of small holders in the allocation of farming land coupled with the misguided grain pricing and marketing policies of the Derg were factors behind smallholders' encourachment in to marginal lands, which in turn has resulted in to degradation of natural resources which has had implications on vulnerability to a variety of shocks.

Poverty reduction has been and still is the overriding development agenda of the government since it assumed power in 1991. Poverty reduction has been embedded with in the over all development agenda of the country: ADLI strategy, reform measures (the liberalization and stabilization efforts and prudence exhibited in macroeconomic management) and development programs (sector development programs) that have been pursued by the Government.

Following the launching of the package of reform programs since 1992, the Ethiopian economy successfully recovered from the consistently deteriorating trends of the late 1980s and the two transition years preceding the reform. GDP Per Capita at 1980/81 constant factor cost has been increasing at less than 3 % per annum during the period 1992/93 to 1999/00. Its performance, however, has not been even owing to the irregularities witnessed in the performance of agriculture. It reached its peak (since the reform) in 1995/96 and the following year and hit its trough in 1997/98. The 1993/94 was not a good year either for agriculture. Thus, agriculture has witnessed at least three shocks during the eight years ending in 1999/00(1993/94,1997/98,and 1999/00) attributed in the main to weather related factors.

Population has been on average increasing at a little less than 3% during the same period while GDP growth averaged about 6% during the same period. However, the contribution of agriculture to over all growth has been limited owing in the main to the factors just cited despite government's efforts to revitalize the sector. Agriculture value added per capita has been declining at the rate of 0.8 % per annum during the eight years ending in 1999/00. Comparison of the performance of Agriculture value added per capita during the two survey years (1999/00 versus 1995/96) has revealed a significant short fall of about 13.4%. This level of performance is likely to be attributed to the uneven distribution (in some cases undesirable) of rainfall across the country. The 1995/96 is a bumper harvest year while 1999/00 witnessed a shock (rain failures). Hence, we are not here referring to a single year incident rather a cumulative impact on problems of food insecurity.

Inflation based on the CSA's Consumer Price Index has been on average checked with in single digits during the reform years. The only year (since the reform) that inflation exceeded single digit was in 1994/95, which in the main was attributed to the lingering effect of crop failure during the previous fiscal year (1993/94). Prudent macro economic management has helped maintain such a level of inflation. The prudence exhibited in the management of the foreign exchange market and the fiscal disciplines being observed in such a decentralized setting such us ours even under difficult circumstances has helped stabilize the macro economy. The dividend from a stable macro economy in the endeavor towards poverty reduction is well recognized.

On the fiscal front, government expenditure has been rationalized with due emphasis accorded to economic and social infrastructure sectors (road, education, health, clean water) in line with the

new role of government as a facilitator of economic activity rather than being the main actor. Expenditure on social and economic infrastructure is believed to have a direct impact on poverty reduction. Government expenditure on Roads, Natural Resources, Water, Education, and Health has been at best increasing or at least maintained over time both in relative (relative to total public spending & GDP) as well as in per capita terms as indicated in Table 1.1 as well as Figure 1.1.

Education, Health and Road Expenditure as a share of Total Expenditure
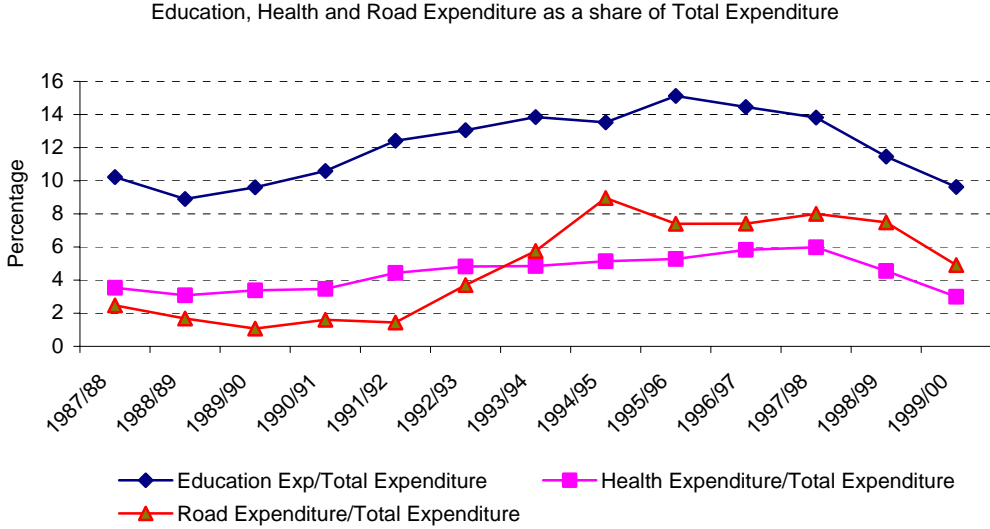
Figure 1.1: Share of Education, Health and Road in total Government Expenditure

Table 1.1: Selected Socio-Economic Indicators

Indicators	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00
GDP[7] Per Capita	209.9	228.7	226	231.6	248	253.2	242.8	250.6	256.7
% Change in GDP Per Capita (%)		9	-1.2	2.5	7.1	2.1	-4.1	3.2	2.4
Agricultural value added Per Capita (Birr)	118.5	122.3	114.5	115.1	127.8	128.3	111	111.9	111.1
% Change in Agric. value added Per Capita (%)		3.2	-6.4	0.5	11	0.4	-13.5	0.8	-0.7
Non Agricultural GDP per Capita (Birr)	91.4	106.4	111.5	116.5	120.2	125	131.8	138.7	145.7
% Change in Non-Agricultural GDP (%)		16.4	4.8	4.5	3.2	4	5.4	5.2	5
Inflation (%)[8]	21	10	1.2	13.4	0.9	-6.4	2.33	4.8	4.2
Mid-Year Population Growth Rate (%)		2.8	2.9	2.9	3	3.2	3	3.1	3
Per Expenditure Capita on Education (Birr)	14.7	18.4	21	21.2	23	24.6	25.9	27.7	25.9
Per Capita Expenditure on Health (Birr)	3.8	5	6.6	7.9	8.5	9.6	11.2	11	8.4
Per Capita Expenditure on Road (Birr)	1.2	3.8	7.8	13.7	12	16.2	16.5	19.3	14
Tot.Edu. Exp % of GDP	3.5	3.6	3.9	3.4	3.4	3.4	3.5	3.5	3.2
Total Health Expenditure as % of GDP	0.9	10	1.2	1.3	1.3	1.3	1.5	1.4	1
Total Road Expenditure as % of GDP	0.3	0.7	1.5	2.2	1.8	2.3	2.2	2.5	1.7
Defense Expenditure as % of GDP	3	2.6	2.3	2.2	2	2	4.9	8.7	13.1
Recurrent Exp as % of GDP	15.9	13.2	15.9	16.9	15.5	13.8	15.8	20.8	26.4
Capital Expenditure as % of GDP	4.6	6.7	9.5	9.3	9.4	10.1	9.2	9.8	6.6
Total Expenditure as % of GDP	20.5	19.9	25.4	26.2	24.9	23.9	25	30.6	33
Total Agriculture Expenditure as % of GDP	1.8	1.9	2.2	1.9	1.9	3.1	2.7	3.2	2.5

Source: Ministry of Finance and Economic Development (MOFED), various issues

On the other hand, the share of expenditure on defense has been declining significantly up until 1997/98, after which it increased following the border conflict with Eritrea. However, budget allocation to these poverty-oriented sectors has been maintained even under these difficult

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[7] Gross Domestic Product (GDP) by Industrial Origin @ 1980/81 Constant Factor Cost.

[8] Inflation measures were computed based on the monthly Addis Ababa Retail Price Index with base year (weights derived) from the 1963 Addis Ababa Household Expenditure Survey until 1995/96. This was later replaced by the 1995/96 HICE, which covers both rural and urban areas of the country. This has provided a more reliable and nationally representative inflation measure.

circumstances. For instance, according to the Mid Term Review of the ESDP & HSDP implementation, overall budgetary allocation to the social sectors (Education & Health) witnessed an increase over the three years since 1997/98.

II. Overview of Ethiopia's HICE & WM Surveys and Approaches to Measurement of Poverty

2.1. Overview of the HICE & WM surveys

The Central Statistical Authority (CSA) has been conducting HICE and WM surveys since 1995/96. The HICE is conducted in the main to provide data on the levels, distribution and pattern of household income, consumption, and expenditure which can be used for the analysis of changes in the living standard (poverty) of household over time for various socio-economic groups and geographical areas. It provides information on the consumption of food and non-food items, household expenditure, payments, receipts and income, and household characteristics such as family size and composition, education, and occupation. The WM survey has been conducted mainly for the purpose of assessing the non-income dimensions of poverty such as the status of education, health and vulnerability. It provides extensive information on the different dimension of poverty and welfare such as access to education and health facilities, achievements in education, anthropometrics measures, and underlying asset bases of the poor and on the opportunities available to households.

The WM survey is conducted every year while the HICE has been conducted every five years. The WM survey covers household that are covered by HICE and some additional households. Thus, the HICE survey is a sub-sample of the WM survey. While the WM survey represents administrative zones, HICE represents rural and urban areas and major urban centers. In 1999/00, the WM survey was conducted on 25,917 households and the HICE on 17,332 households. Both surveys match for about 16,672 households.

The coverage and quality of the 1999/00 HICE survey has improved compared to the HICE conducted in 1995/96. The 1995/96 HICE covered about 12,000 households and represent 9 regions and two city administrations including a group of zones in Amahara, Oromiya and SNNPR, 11 major urban areas, and one reporting level representing all 'other urban' areas. In total it had 32 reporting levels. The 1999/00 HICE covered 15 major urban centers, 11 rural regions and 9 other urban areas. The 1999/00 HICE has improved on the coverage of urban areas more than the coverage of rural areas. Hence users need to be cautious when using the data to

produce estimates at zonal level. For detail of sample sizes & distribution of samples of households across reporting levels see Annex Table A1.1.

Basically WM and HICE surveys cover the sedentary population of Ethiopia. It excludes the non-sedentary population of Afar and Somalia. Residence of collective quarter, homeless persons, and foreigners are not covered in these surveys.

The HICE and WM surveys help collect data at both household[9] and individual levels. While data on income, receipts, payments, expenditures, housing and other household characteristics are collected at household level, anthropometrics measurement, educational attainments, age and other attributes of family members are collected at individual level. The HICE survey data was collected in two rounds. The first round took two months from 11th of June 1999 to 11th of August 1999. The second round of HICE survey was conducted for two months: January and February 2000.

2.2. Approaches to the Measurement of Poverty: Overview of the Conceptual Framework

Different approaches may be pursued in measuring well being at an individual level. The conceptual distinction that underlies the measurement of well being is between welfaristic approach and non-welfaristic approach. The distinction between these approaches is well documented in Ravallion (1992). The welfaristic approach compares welfare and public policy decisions based on the preference (utilities) of individuals. This approach avoids making subjective judgements that are not compatible with individual behavior. The value attached to commodities by the consumer himself and the subsequent preference ordering is sufficient for assessing a person's well being. This approach is well developed both in theory and in practice. The non-welfaristic approach, on the other hand, attempts to assess the well being of an individual based on certain elementary achievements such as being adequately nourished, clothed and sheltered. It pays little or no attention to information on utilities of the individual alone.

The non-welfaristic ideas have been more diverse. Some are based on identifying specific form of material deprivation, which may be absolute deprivation (nutrition and other basic needs) or

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[9]The CSA defines 'household' as a collection of persons who normally live together in the same housing unit or group of housing units and who have common cooking arrangements.

relative deprivation. The arbitrariness element that creeps in to this approach has direct bearings on how one should value one good or service against the other.

Sen (1980, 1985 and 1987) has taken a different view of well being in line with the non-welfaristic approach that does not rely on the command of commodities as such. He rejected both the utilities as a metrics of welfare as well as the non-welfaristic commodity based formulation of the nature of individual welfare. He defined poverty as lack of capability taking capability to mean to be able to live longer, to be well nourished, to be healthy, and to be literate, etc. The value of living standard lies in the living, not in the possession of commodities. Hence according to Sen, the task of poverty analysis is to determine what those capabilities are in specific society, and who fails to reach them. This idea has started to attract widespread attention by policy makers, NGO and internationals organizations alike. The definition of poverty in the World Development Report (2001) seems to have already embraced the ideas of Sen and his non-welfaristic approach.

According to the World Bank Report (World Bank, 2001), the many faces of poverty extending beyond the low level of income or consumption have been well articulated. The first dimension refers to lack of access material goods or services (lack of opportunity), which is measured by a certain threshold level of real income or consumption as appropriate. The second dimension is low achievement in education and health (low capabilities). The first and the second dimensions of poverty have been already recognized by the World Development Report 1990. The third and the fourth dimensions of poverty are vulnerability (exposure to risk or low level of security) and voiceless (powerlessness), respectively (World Bank, 2000). The World Development Report 2000 recognizes these last two dimensions of poverty.

The four dimensions of poverty just cited reinforce each other (World Bank, 2001). Education and health can interact with material deprivation (World Bank, 1990). Low level of education and health can lead to low level of income and hence might lead to material deprivation. Reducing vulnerability may allow people to take advantage of higher-risk, higher-return opportunities thereby decreasing material deprivation by increasing income and welfare.

2.2.1. Income (Consumption) Poverty

Income or consumption has been traditionally used as measures of material deprivation. Consumption is viewed as the preferred welfare indicator than income as the former is believed to capture long-run welfare level than current income. Consumption may better reflect households' ability to meet their basic needs. Income is one of the factors that enable consumption. Consumption reflects the ability of a given household's access to credit and saving at times when their income is too low. Hence, consumption is better measured than income. Moreover, in a developing country setting, households are likely to underreport their income level more than they do with their consumption level. However, for consumption to be an indicator of household's welfare it has to be adjusted for the age composition of each household via an adult equivalent scale that best reflects the nutritional requirement of each family member taking each one's age in to account. The adult equivalent scale must therefore be different for different age groups and the gender of adult members. Therefore, many of the income poverty measure (such as the head count ratio, poverty gap ratio, and the squared poverty gap ratio) are based on household consumption level rather than their income level.

In order to formulate a program aimed at combating poverty, information on the number of the poor is of paramount importance. It is also desirable to measure the intensity and severity of their poverty. Poverty measurement assumes that there is a predetermined and well-defined level of standard of living – called "poverty lines" below which a person is deemed to be under poverty. That is, there exist a level of consumption of various goods (food and non-food) below which the very survival of an individual is threatened. In fact, in most societies (especially poorest societies) the notion of what constitutes poverty might go beyond the attainment of the absolute minimum needed for a mere survival. Hence, a poverty line exists but values differ based on their location and the type of society in which people live.

For the purpose of measuring poverty, the welfaristic framework does not provide a well-defined poverty line. The non-welfaristic approach, often used for drawing poverty line is based on the basic needs or minimum caloric requirement. There are three methods of setting poverty lines that use caloric requirement: *direct calorie intake*, *food energy intake*, and *cost of basic need* methods. In the case of direct calorie intake method, a poverty line is defined as the minimum calorie requirement for survival. Individuals who consume below a predetermined minimum

level of calorie intake are deemed to be under poverty. Hence, this method equates poverty with malnutrition. The draw back of this method is that it does not take into account the cost of getting the basic calorie requirement. It totally overlooks the non-food requirement. If poverty has to be measured by a lack of command of basic goods and services, measuring poverty by calorie intake only is unlikely to reveal the extent of impoverishment of a given society.

The second non-welfaristic method of setting a poverty line is the food energy intake method. The basic idea in this method is to find the per capita consumption at which a household is expected to fulfill its calorie requirement. In this case, the poverty line is then defined as the level of per capita consumption at which people are expected to meet their pre-determined minimum calorie requirement. It is estimated by regressing the per capita consumption expenditure on calorie intake. Then the predicted value of the per-capita consumption expenditure at the pre-determined calorie intake is taken as the poverty line. This method is an improvement over direct calorie intake method in terms of the representative ness of the poverty line as it now provides a monetary value rather than a purely nutritional concept of poverty. However, if this method is applied to different regions and periods with in the same country, the underlying consumption pattern of the population group just consuming the necessary nutrient amount will vary. Hence, this method yields differentials in poverty line in excess of the cost of living facing the poor. In other words, this method does not yield a consistent threshold (poverty line) across groups, regions and periods.

The third method of setting poverty line is the cost of basic need method. First, the food poverty line is defined by 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 bundle meets the predetermined level of minimum caloric requirement. This 'basket' is valued at local prices or at national prices if the objective is to arrive at a consistent poverty line across regions and groups. Then a specific allowance for the non-food   component consistent with the spending patterns of the poor is added to the food poverty line.

To account for the non-food expenditure, the food share of the poorest quartile or quintile divides the food poverty line. This method yields a representative poverty line in the sense that it provides a monetary value of a poverty line that accounts for the food and non-food components. Unlike the food energy intake method, the latter does provide consistent poverty lines across

regions. Adjustments for spatial and inter-temporal variations could be made to establish a poverty line that is consistent across regions, groups and periods. These adjustments include using common bundle of food items for the whole country, using national average price, and deflating each region's consumption expenditure by the relative (relative to the national average) price index. Many countries often use this method to set their poverty line. This method has also been adopted in this study (a detail on the procedures adopted in establishing the poverty line is relegated to Appendix A2.

2.2.2. Non-income Dimensions of Poverty

a) Education

As indicated above, by 1990 the World Development Report expanded the traditional income based definition of poverty to further include capabilities such as health, education, and nutrition. This report has explicitly acknowledged the interaction and relationships among these dimensions. Education is an input in well being since it provides a means of earning a higher income via enhancing one's earning capabilities. It is also a welfare outcome in itself as it allows individuals to participate in decision-making that determines the well being of societies in which he or she lives including him or herself. Hence, literacy, the highest level of education attained (or primary completion rate), gross enrolment ratio, net enrolment ratio can be used in defining these dimensions of poverty.

In most cases, literacy is calculated for people above 15 years of age. Literacy is not normally measured below the 10 years of age. Adult literacy rate in this report is defined as the percentage of population aged 10 years and over who can both read and write with understanding a short simple statement on his/her everyday life. Literacy is a good measure of educational achievement as it reflects successful completion of a minimum level of schooling. Dividing the number of literates in that age group by the corresponding population in that age group and multiplying the result by 100 gives rise to literacy rate.

The gross enrolment ratio is defined as the total enrolment in a specific level of education (regardless of age) expressed as a percentage of the official school-age population corresponding to the same level of education in a given school year. It shows the general level of participation

in a given level of education and the capacity of the education system to enroll students of a particular age group.

Net enrolment ratio is the enrolment of the official age group for a given level of education expressed as a percentage of the corresponding population in that age group. The difference between gross and net enrolment gives an indication of wrong-age school enrolment. Other school related variables such as the reason for not attending school; distance to elementary school can provide additional information on education poverty.

b) Nutrition & Health Achievements

The health status of a household can also be taken as an indicator of well-being. Focus could be on the nutritional status of children, incidence of specific diseases (such diarrhea, malaria and respiratory diseases), life expectancy and fertility rate, nutrition, and health and could be taken as indicators of health poverty. If data on such characteristics are not available, proxies such as the number of visits to hospitals and health centres, access to medical services, distance to the nearest health facilities, and the extent to which children receive vaccination can be used to indicate health poverty.

Health status of households could also be assessed by infant mortality rate, under five-mortality rate and life expectancy. Infant mortality rate is the number of deaths to children under 12 months of age per 1000 live births. Under five-mortality rate is the number of deaths to children under five years of age per 1000 children of their ages. Life expectancy is a key measure of welfare and it is the number of years someone is expected to live when he is born given the prevailing socio-economic conditions.

Anthropometrical indicators can also be used to assess the nutritional status at individual and at the level of overall population. It requires weight and height measurements over time so that the growth velocity can be measured. A decline in an individual's anthropometrical index from a given point in time to another could indicate illness, and/or nutritional deficiency that may have serious consequences. At the level of over all population, data are commonly available from cross section surveys. Thus, at this level, determining the proportion of the population below a cut-off point can help assess the prevalence of anthropometrical indices. These indices could help compare nutritional status among regions and between time periods.

Stunting, wasting, and body mass indices (BMI) are anthropometrical indices that are put to use to show long and short run malnutrition. Wasting and stunting are mostly used as measures of malnutrition for children up to the age of 5 years. Body mass index is more appropriate for adults. Low height to age ratio is an indicator of stunting (shortness). It is associated with overall poor socio-economic conditions and or repeated exposure to adverse conditions. An individual is *stunted* when he is shorter than he/ she should be at his/her current age. Specifically a person is stunted when the height/age ratio is less than the mean of height/age ratio minus two times the standard deviation of the standardized distribution. A person is severely *stunted*, when the height/age ratio of an individual is less than the mean of the ratio minus three times the standard deviation of the standardized distribution. Stunting is interpreted in general as a measure of long-term malnutrition since malnutrition causes slow growth. This measure is relevant especially for children up to five years of age.

Low weight to height ratio is an indicator of wasting (thinness). *It is associated with a failure to gain weight or a loss of weight.* **Wasting** refers to the magnitude of the weight (kilo grams) to height (meters) ratio of a person. A person is wasted when the weight/height ratio is less than the mean of the ratio minus two times the standard deviation of the standardized distribution. An individual is severely *wasted* if the ratio is less than the mean ratio minus three times the standard deviation. Wasting indicates short-term malnutrition. To make the figures of stunting and wasting comparable across countries, we use global distributions of the required ratios. The statistical package "*Epi Info*" is the recommended package to calculate the wasting and stunting indices.

Body Mass Index (BMI) is a measure of adult malnutrition. It is defined as weight in kilogram divided by the square of height in meters. It is not calculated for pregnant and lactating women. A person is considered normal if his/her BMI is greater than 18.4. A person is grade 1 chronic energy deficient if his/her BMI is between 17 and 18.4. A person is grade 2 chronic energy deficient if his or her BMI is between 16 and 17. A BMI of 16 is a threshold for grade3 chronic energy deficient.

The HICE and WMS data sets could also be intelligibly put to use to address some dimensions of insecurity and lack of empowerment.

III. Consumption Poverty Indicators

3.1. National Consumption-Poverty Indicators

3.1.1. Consumption Expenditure and Calorie In-take

The 1999/00 HICE survey data set includes, among others, expenditure on various food and non-food items. Almost all food items have both quantity and expenditure figures while only values of expenditures were recorded for most of the non-food items. The food items included in the HICE data set are grouped into 15 categories while non-food items are grouped in to 10 categories (Table 3.1)[10].

Table 3.1 summarizes the share of various foods and non-food items groups in total expenditure. As indicated in Table 3.1, a significant proportion of household expenditure goes to spending on food. Food expenditure on average accounted for about 61% of households' budget. Rural households spend a little over 68% of their budget on food while spending by their urban counterparts stood at about 55%(Table 3.1). With in the food category, cereals followed by pulses accounted for a larger proportion of total expenditure at national level.

The third most important food item for rural households is the item group "potatoes and other tubers". Rural households spend about 33 percent of their budget on cereals while their urban counterparts spend only 20 percent. With in the non-food category, item group "house rent, construction materials, water, fuel and power" accounted for a greater share of total expenditure. This item category accounted for 16% and 19% of expenditure of households in Rural and Urban areas, respectively.

The magnitude of expenditure for "house rent, construction materials, water, fuel and power" for rural areas seems to be on the high side. This might be partly attributed to imputing values for the non-purchased items such as rents, construction materials, water, and fuel wood gathered from community forest. The share of expenditure in education and health is very low as

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[10] Items of the food group include: cereals, pulses, oil seeds, cereals preparations, bread and other prepared foods; meat, fish, milk, cheese and egg, oils and fats, vegetables & fruits, spices; potatoes and other tubers, coffee, tea and buck thorn leaves, salt, sugar and others, food taken away from home and milling charges. Items of the non-food group include: beverages, cigarette and tobacco, clothing and footwear, house rent, construction materials, water fuel and power, furniture, furnishing, household equipment, medical care and health, transport and communication, recreation, entertainment and education, personal care and effects, and miscellaneous non-food items.

indicated by the contribution (1.5%) of the item group "recreation, entertainment and education". At national level, the item group "medical care and health" accounted for about one percent of households' total expenditure.

Table 3.1: Expenditure Shares of Food & Non-food Items in Total Budget (1999/00 HICE Survey)

Item Group	Rural	Urban	Total
Food			
Cereals	32.60	19.80	25.07
Pulses	6.90	4.40	4.99
Oil seeds	0.20	0.10	0.14
Cereals preparations	0.02	0.40	0.31
Bread and other prepared foods	0.30	5.40	3.51
Meat	2.16	3.96	3.04
Fish	0.03	0.05	0.22
Milk, cheese and egg	2.17	1.27	2.24
Oils and fats	1.46	4.27	3.02
Vegetables & fruits	2.82	3.46	3.54
Spices	3.47	2.72	2.93
Potatoes and other tubers	8.95	1.73	4.14
Coffee, tea and buck thorn leaves	4.70	3.23	4.37
Salt, sugar and others	1.19	2.39	2.13
Food taken away from home & milling charges	1.39	1.85	1.83
Food Total	**68.4**	**55.0**	**61.5**
Non-Food			
Beverages	0.28	0.26	0.29
Cigarette and tobacco	0.39	0.28	0.57
Clothing and footwear	8.03	10.02	8.97
House rent, construction materials, water fuel and power	15.69	19.42	18.26
Furniture, furnishing, household equipment	2.67	5.59	4.23
Medical care and health	0.86	1.22	0.91
Transport and communication	0.76	3.45	1.81
Recreation, entertainment and education	0.59	2.57	1.46
Personal care and effects	0.65	1.16	1.03
Miscellaneous non-food goods	1.69	1.07	0.99
Non-food Total	**31.6**	**45.0**	**38.5**
Total	**100.0**	**100.0**	**100.0**

The national average calorie in-take in 1999/00 is 2606 kilocalorie per day per adult, which is above the recommended norm of 2200 kcal per day per adult (Table 3.2)[11]. As rural households spend most of their income on food, calorie in-take is higher for rural households than for urban households. Individuals in rural areas consume 2723 kcal per day per adult while their urban

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[11] As almost all food items have quantity figures for consumption this enables us calculate the amount of calorie consumed by individual households.

counterparts consume 1859 kcal per day per adult. This falls short of the threshold level of 2200 kcal per day per adult by 15 %. The calorie in-take differential between rural and urban areas does not seem to be compatible with per capita consumption levels[12]. The level of food expenditure per adult equivalent in rural and urban areas is almost the same. One possible explanation for such calorie in-take differential between rural and urban areas could be that rural households consume cheaper calorie sources than their urban counterparts.

Table 3.2 summarizes comparison of real consumption expenditure per capita and per adult equivalent and calorie in-take for the 1999/00 and 1995/96 survey years.

 By 1999/00, real Per capita consumption expenditure stood at 1057 Birr at the 1995/96 constant prices which is equivalent to USD $139 at the prevailing official exchange rate[13]. Real per capita consumption in urban areas is 46% higher than that of rural areas. By 1999/00, real per capita consumption expenditure of rural areas stood at Birr 995 (131 USD) while their urban counter part averaged Birr 1453 (USD $191) per annum. Non-food consumption expenditure in urban areas was on average higher than that of rural areas. However, per capita real consumption expenditure on food in rural areas was very close to that of urban areas. The share of consumption expenditure on food in total expenditure is higher in rural areas (68%) than in urban areas (55%). The pattern of per adult equivalent real food and non-food consumption expenditures between rural and urban areas is the same as that of per capita food and non-food expenditures.

National real per capita and per capita adult equivalent consumption expenditure has not shown a significant difference between 1995/96 and 1999/00. Real per capita consumption expenditure estimated at Birr 1088 in 1995/96 stood at Birr 1064 in 1999/00. The level of real consumption expenditure per adult equivalent estimated at Birr 1322 in 1995/96 stood at Birr 1327 by 1999/00. In 1999/00, real per capita consumption expenditure falls short of the 1995/96 level by about 2 percent while real per adult equivalent consumption expenditure has increased

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[12] Besides the mean, median calorie in-take was calculated for rural and urban areas to check whether calorie in-take is more skewed in urban areas than in rural areas. The results are still the same in that urban calorie in-take is lower than that of rural areas. However, the median calorie in-takes are lower than the mean calorie in-takes for both rural and urban areas indicating to a right- skewed distribution of calorie in-take for both rural and urban areas.

[13] The average official exchange rate during the months of the HICE survey is one USD=7.61 Birr.

marginally (by a mere 0.4 % only) from its 1995/96 level. Average family size seems to have declined recently as indicated in Table 3.2.

This trend was also assessed against the trends in per capita agricultural GDP, which was found to be in line with the trend in real per capita consumption expenditure. The 1999/00 real per capita agricultural GDP fell short of 1995/96 by about 13 percent (see Table 1.1). Comparison of the 1999/00 consumption expenditure per capita with private final consumption expenditure per capita from the national accounts was not possible, as computation of the latter has been hindered by lack of appropriate deflators to present it in real terms. The decline should not come to our surprise, as the 1995/96 was a year of bumper harvest while 1999/00 had experienced rain failures across pocket areas of the country (see section 4 on Vulnerability). As shown in Table 3.2, by 1999/00 real per capita consumption expenditure in rural is lower than it was in 1995/96 while the opposite is true in the case of urban areas.

Overall, the 1999/00 calorie in-take has been higher than the 1995/96 averages by about 33%. However, in urban areas, the 1999/00 calorie in-take was on average lower than the 1995/96 level while rural areas have witnessed an increase in calorie in-take over 1995/96. This trend seems to be consistent with trends in real food consumption expenditure per adult equivalent which increased by 11 % over 1995/96 in rural areas and decreased by 19% in urban areas. However, the pattern of rural-urban calorie intake has changed between the two survey years. In 1995/96, the average calorie in-take was higher for urban areas than for rural individuals while the opposite is true by 1999/00. One possible explanation for such deviations in calorie in take seems to be the increase in food share in rural areas by 11.7% while food share has declined by 5.4% between the two survey years in urban areas. This may have resulted in an increase in food consumption expenditure per adult equivalent in rural areas and a decline in urban areas[14].

According to the survey results, income inequality seems to be relatively lower for both rural and urban Ethiopia compared to other developing countries. This, in the main, has to do with the egalitarian type of land distribution pursued by the Government of Ethiopia.

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[14] Units and calorie conversion rates used in 1995/96 and 1999/00 are checked to be the same.

Income inequality, measured by the Gini coefficient, is found to be 0.28 in 1999/00, which is quite low, by the standard of other developing countries (Table 3.2). Moreover, inequality has also declined marginally as compared to 1995/96(Gini coefficient in 1995/96 was 0.29). Income inequality was higher in urban areas (Gini coefficient 0.38) than in rural areas (Gini coefficient 0.26). The differential in income inequality between rural and urban areas could largely be attributed to an egalitarian type land distribution and the insignificant skill differential among the rural population.

Landlessness is no more an issue in Ethiopia. On the other hand, people in urban areas do not directly depend on land for their livelihood. Besides, there is more skill differentials among people in urban areas than in rural areas. Comparison of the Gini coefficient for the two survey years shows that it has decreased by 3.7% in rural areas and increased by 11.8% in urban areas between the two survey years. At country level, Gini coefficient has decreased by 3.5% from 1995/96 through 1999/00 indicating that income inequality has been more pronounced in urban than rural Ethiopia.

Table 3.2: Comparison of Real Consumption Expenditure & Calorie in-take for 1999/00 & 1995/96

Item	1995/96			1999/00			% Change		
	Rural	**Urban**	Total	**Rural**	**Urban**	Total	**Rural**	**Urban**	Total
Real Food Expenditure Per Capita	577	790	607	609	631	612	5.55	-20.13	0.82
Real Non-Food Expend. Per Capita	466	625	488	392	830	451	-15.88	32.80	-7.58
Real Total Expend. Per Capita	1035	1411	1088	995	1453	1057	-3.86	2.98	-2.85
Real Food Expend. Per Adult Equivalent	697	947	732	774	767	773	11.05	-19.01	5.60
Real Non-Food Expend. Per Adult	561	750	588	495	993	562	-11.76	32.40	-4.42
Real Total Expend. Per Adult Equivalent	1250	1693	1312	1261	1751	1327	0.88	3.43	1.14
Kcal Consumed Per Day Per Adult Equivalent	1938	2050	1954	2723	1861	2606	40.51	-9.22	33.37
Share of Food in Total Expend.	0.60	0.56	0.60	0.68	0.55	0.62	11.67	-5.36	8.33
Average Household Size	5.1	4.7	5.0	4.9	4.6	4.9	-3.92	-2.13	-2.00
Adult Equivalent Household Size	4.2	3.9	4.2	3.9	3.8	3.9	-7.14	-2.56	-7.14
Gini Coefficient	0.27	0.34	0.29	0.26	0.38	0.28	-3.70	11.76	-3.45

Table 3.3[15] summarizes household income at country level by source and rural and urban areas. The main sources of income in order of importance are: own agricultural enterprises in rural areas and wages & salaries as well as overtime payments in urban areas (Table 3.3). According to the 1999/00 HICE survey, own agricultural enterprises accounted for about 73% and 5% of total income in rural and urban areas, respectively. At country level, this enterprise accounted for about 63% of total income in 1999/00.

Table 3.3: Sources of Income in Rural and urban Ethiopia (%)(1999/00)

Sources of Income	Rural	Urban	Total
From Own Agricultural Enterprise (Source 1)	72.53	4.6	63.33
From Household Enterprise Other than Agric. (Source 2)	5.37	30.3	8.74
Wages & Salaries, Bonus, Overtime And Allowances (Source 8)	2.86	41.15	8.04
Income From House Rent & Other Rent (Source 13 to14)	0.22	0.46	0.25
From Saving, Bank, Saving Account (Source 10)	0.01	0.03	0.02
Dividends, Profit Share (Source 12)	3.89	8.67	4.53
Gift And Remittance (Source 3 to 6)	3.53	8.05	4.14
Other Receipts (Source 7, 9, 11, and 15 to 16)	11.59	6.74	10.94

3.1.2. Profile of Consumption Poverty

Measures of consumption poverty are estimated and discussed in this sub- section. We followed the Foster, Greer and Thorbecke (19984) P_α-measures of additively decomposable poverty measures to explain consumption poverty in Ethiopia. Poverty indices and their 95% confidence intervals are calculated based on three alternative poverty lines.

The basic concepts and definition of consumption /income poverty are already discussed in section 2 above. The procedures followed and the formulae employed are also detailed in Appendix A2. The main objective here is to compare the 1999/ 00 poverty level with that of 1995/96, given the 1995/96 fixed basket of goods and services (MEDaC, 1999)[16].

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[15] Sources of household consumption at regional and reporting levels are provided in Table A 6.7, A 6.8, and A 6.9 in Appendix A6

[16] To check if the 1999/00 poverty line has changed relative to that of 1995/96, we have calculated a poverty line for 1999/00 at constant 1995/96 prices. We found that the poverty line in 1999/ 00 is slightly lower than that of 1995/96 (see Tables A5.1a and A5.1b in Appendix A5). Households might have shifted to cheaper calorie sources .The food share of the first two-income quartiles has increased. However, since our objective is to compare the poverty levels of 1999/ 00 with that of 1995/96, we use the poverty line estimated in 1995/96 (which is 1075 Birr) to calculate the consumption poverty indices in 1999/ 00.

Poverty indices are calculated based on the minimum calorie required for subsistence (2200 kcal and 1075 Birr when non-food is included) and we call these indices absolute poverty indices. Moderate poverty indices are based on a food poverty line of 2750 kcal (which is 125% of the 2200 kcal) and extreme poverty indices are food poverty line based on 1650 kcal. In all the three alternative poverty indices, the poverty lines are adjusted for the non-food expenditure (Table 3.4).

Table 3.4: Alternative Poverty Lines

Alternative Poverty Lines	Food Poverty Line Per Adult Equivalent Per Annum (Birr)	Kcal Per Adult Equivalent /Day	Total Poverty Line Per Adult Equivalent Per Annum (Birr)
Poverty line	647.81	2200	1075.03
Moderate poverty line	809.76	2750	1343.78
Extreme poverty line	485.86	1650	806.27

Source: Extracted from Dercon, 1997

The resulting poverty estimates for rural and urban areas are summarized in Table 3.5. According to the 1999/00 HICE[17] survey, absolute head count index stood at about 44% indicating that on average 44% of the Ethiopian population is under absolute poverty. That is, they are unable to meet the minimum required calorie in-take, which is 2200 kcal per adult per day. The 95% confidence interval of the head count index is between 41.9% and 46.5%. The normalized poverty gap index -the average consumption short fall needed to bring the entire population (those below the poverty line) up to the poverty line- is 12%. The confidence interval ranges from 11.1 to 12.8. The severity of poverty is 0.045, which ranges from 0.040 to 0.049. Rural poverty is higher than urban poverty by 23%.

The proportions of people who are absolutely poor are 36.9% in urban areas and 45.4% in rural areas. The result that rural areas experience more poverty than their urban counter parts is statistically significant at 1% level[18]. The stochastic dominance analysis also shows that rural poverty is unambiguously higher than urban poverty (Figures 3.1, 3.2, and 3.3). The incidence, depth and severity of poverty are drawn across multiples of poverty lines (0.5, 0.75, 1, 1.25 , and 1.5) for both rural and urban areas in one graph to conduct first, second and third order stochastic dominance analyses and there by check the robustness of poverty comparison between rural and

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[17] The 1999/ 00 consumption expenditures have been deflated by the temporal deflator for 1999/00 to arrive at consumption expenditure of 1999/00 at 1995/96 constant prices.

[18] The test statistics "t" for the difference in poverty incidence between rural and urban areas is calculated to be 4.62. Since it is greater than the absolute value of Z score at 1% level of confidence (2.58), poverty is significantly higher in rural than in urban areas.

urban areas. At all levels of multiples of poverty lines, the incidence, depth and severity of poverty indices of urban areas are far below that of rural areas verifying that consumption poverty is consistently lower in urban than in rural areas.

Table 3.5: Poverty Indices based on HICE 1999/00

Poverty Indices	Sub pop.	Moderate poverty			Absolute poverty			Extreme poverty		
		Index	Std. Err.	95%C.I.	Index	Std. Err.	95%C.I.	Index	Std. E.	95%C.I.
P_0	Rural	0.658	0.012	0.633 0.682	0.454	0.013	0.428 0.480	0.230	0.011	0.208 0.251
	Urban	0.526	0.013	0.501 0.551	0.369	0.013	0.344 0.394	0.193	0.011	0.172 0.214
	Total	0.640	0.011	0.618 0.661	0.442	0.012	0.419 0.465	0.225	0.009	0.206 0.243
P_1	Rural	0.211	0.006	0.198 0.223	0.122	0.005	0.112 0.132	0.048	0.003	0.042 0.054
	Urban	0.171	0.006	0.159 0.183	0.101	0.005	0.092 0.111	0.041	0.003	0.035 0.047
	Total	0.205	0.006	0.194 0.216	0.119	0.004	0.111 0.128	0.047	0.003	0.041 0.052
P_2	Rural	0.090	0.004	0.083 0.097	0.046	0.003	0.041 0.051	0.015	0.001	0.013 0.018
	Urban	0.074	0.004	0.067 0.081	0.039	0.002	0.034 0.043	0.013	0.001	0.011 0.016
	Total	0.088	0.003	0.081 0.094	0.045	0.002	0.040 0.049	0.015	0.001	0.013 0.017

P_0 =head count index; P_1 = normalized poverty gap; P_2 = squared poverty gap index (or poverty severity); Seder. = Standard error of the index; C.I= confidence interval. Standard errors are corrected for stratification and clustering effects in which reporting levels are strata for samples and the primary sampling units (clusters) are enumeration areas.
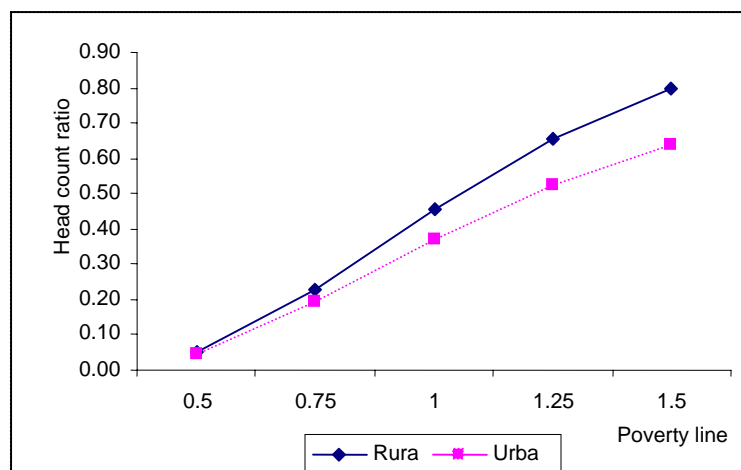
Figure 3.1 Comparison of Poverty incidences between rural and urban areas in 1999/00
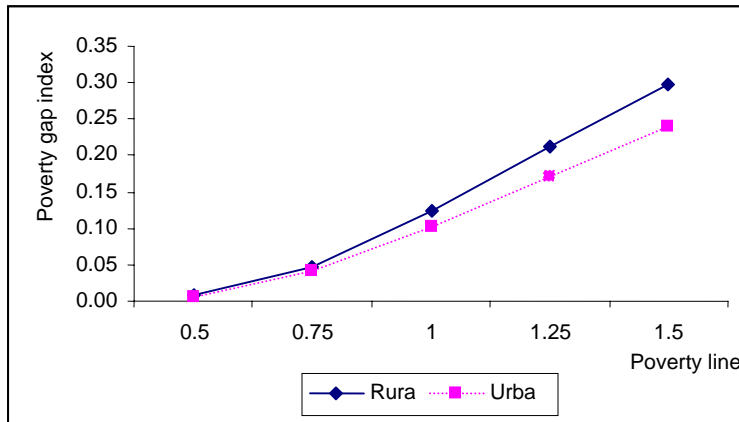
Figure 3.2 Comparison of poverty Intensity between rural and urban areas in 1999/00
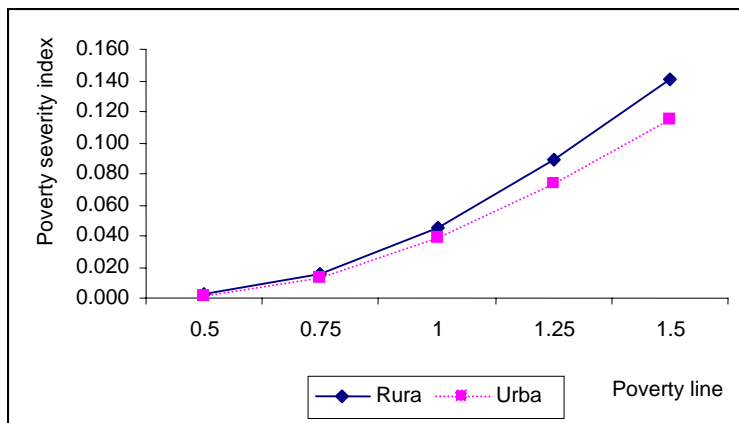
Figure 3.3 Comparison of poverty severity between rural and urban areas in 1999/00

Seen in terms of poverty incidence, poverty has not declined significantly since 1995/96. Poverty head count ratio in 1999/00 showed a 3% decline from its level in 1995/96[19]. The decline in the head count index has been more pronounced in rural than urban areas. In 1999/00, the head count ratio for rural areas has declined by over 4% from its 1995/96 level while the head count ratio for urban areas has increased by a little over 11% from its 1995/96 level.

For both rural and urban areas, the changes in the head count ratio between the two periods have not been found statistically significant. What is still encouraging is that the 1999/00 poverty gap

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[19] The consumption elasticity of poverty (percent change in poverty head count ratio divided by the percent change in consumption per adult equivalent) is equal to -2.51 at country level and -5.02 for rural areas. This shows that when consumption per adult equivalent increases by one percent poverty head count ratio decreases by 2.51 % at national level and by about 5% in rural areas. This shows that a small increase in income help reduce poverty faster in rural than in urban areas indicating to a high-income elasticity of poverty in rural areas.

and squared poverty gap for rural areas as well as at country level is significantly lower than that of the 1995/96 levels. The changes are statistically significant at 10% level for poverty gap and at 5% level for the squared poverty gap. The changes in the poverty gap and squared poverty gap for urban areas are not statistically significant at the 10% level of significance.

Table 3.6: Comparison of Rural and Urban Poverty between 1995/96 and 1999/00

Index		1995/1996		1999/2000		%Change in index	Z-statistics of (Change in head count index
		Index	Se (index)	Index	Se (index)		
Head count index (P$_0$)	Rural	0.475	0.012	0.454	0.013	-4.42	-1.187
	Urban	0.332	0.025	0.369	0.013	11.14	1.313
	Total	0.455	0.011	0.442	0.012	-2.86	-0.799
Poverty gap index (P$_1$)	Rural	0.134	0.005	0.122	0.005	-8.96	-1.697
	Urban	0.099	0.009	0.101	0.005	2.02	0.194
	Total	0.129	0.004	0.119	0.004	-7.75	-1.768
Squared poverty gap (P$_2$)	Rural	0.053	0.003	0.046	0.003	-13.21	-1.650
	Urban	0.041	0.005	0.039	0.002	-4.88	-0.371
	Total	0.051	0.002	0.045	0.002	-11.76	-2.121

<u>NB:</u> *P$_0$=head count index; P$_1$=poverty gap index; P$_2$=squared poverty gap index; se (index) is standard error of the index. Z score for 1%, 5%, and 10% level is 2.58, 1.96 and 1.64, respectively for a two-tailed test. Standard errors are corrected for stratification and clustering effects in which reporting levels stratifies the samples and primary sampling units (enumeration areas) are clusters. The 1, 5 and 10 % critical z-statistics are given by 2.56, 1.96 and 1.65, <u>respectively.</u>*

Stochastic dominance analyses for poverty indices of 1995/96 and 1999/00 are plotted in Figures 3.4 through 3.6 against the multiples of poverty lines for poverty comparisons at all country level; Figures 3.7 through 3.9 against the multiples of poverty lines for poverty comparisons in rural Ethiopia; Figures 3.10 through 3.12 against the multiples of poverty lines for poverty comparisons in urban Ethiopia, respectively. The results of this stochastic dominance analysis are consistent with that of the statistical test.
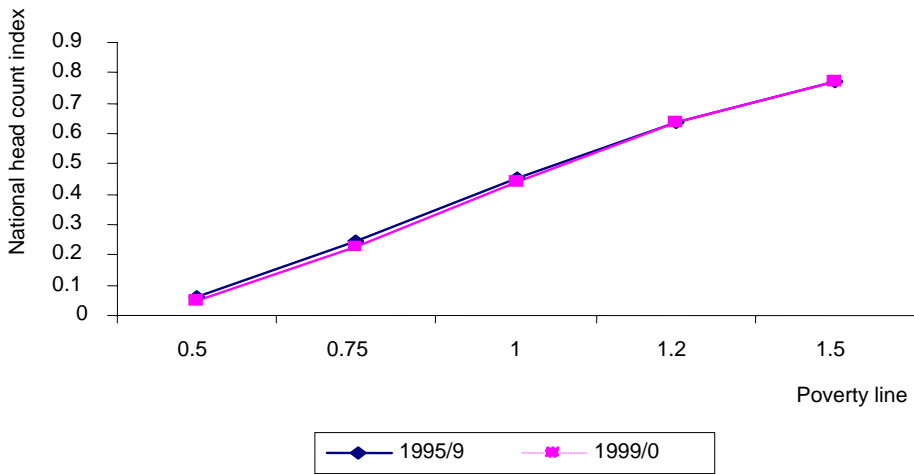
Figure 3.4 Stochastic dominance analyses for national head count index, 1995/96 & 1999/00
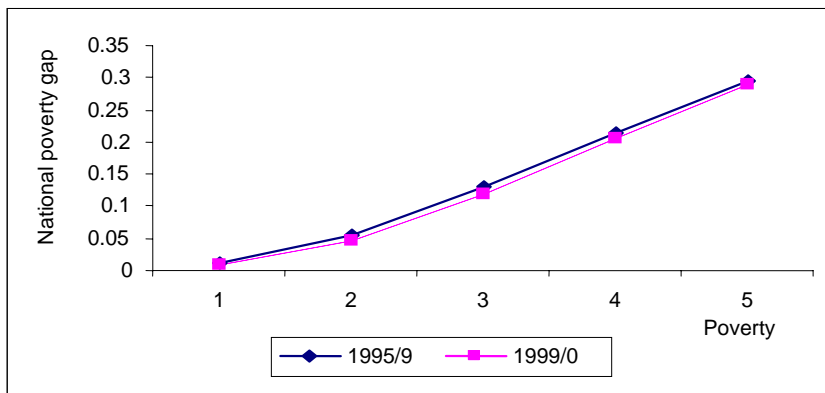
Figure 3.5 Stochastic Dominance Analysis for National Poverty Gap Index, 1995/96 & 1999/00
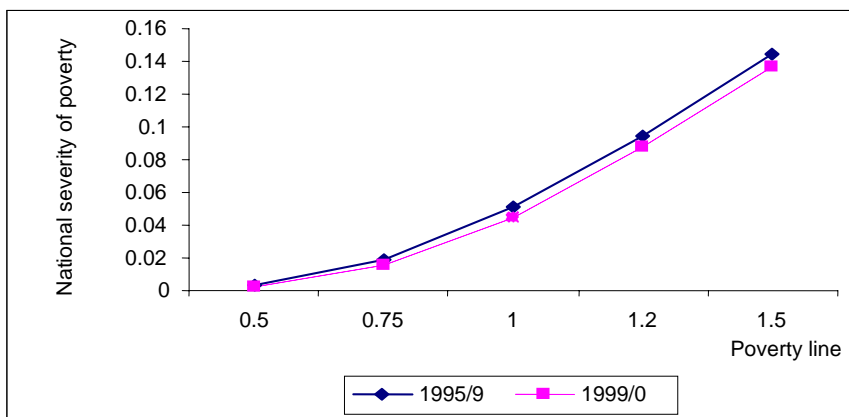
Figure 3.6 Stochastic dominance analyses for severity of poverty at national level, 1995/9 & 1999/00
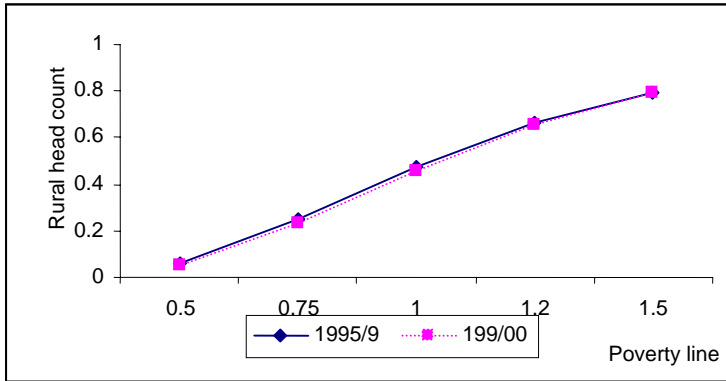
Figure 3.7 Comparison of head count index for rural Ethiopia, 1995/96 and 1999/00
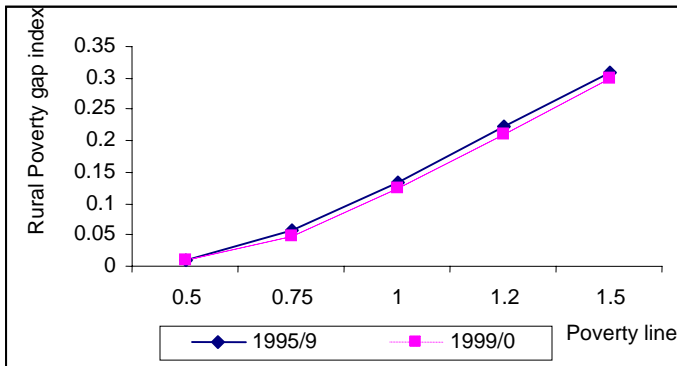
Figure 3.8 Comparison poverty gap Index for rural Ethiopia, 1995/96 & 1999/00
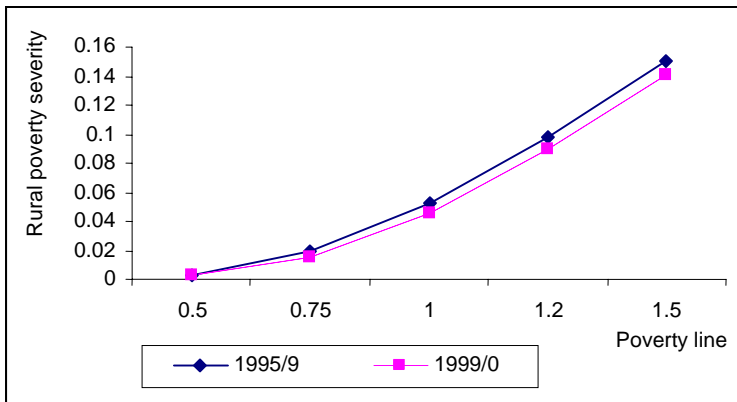
Figure 3.9 Comparison severity of rural poverty (squared poverty gap index), 1995/96 & 1999/00
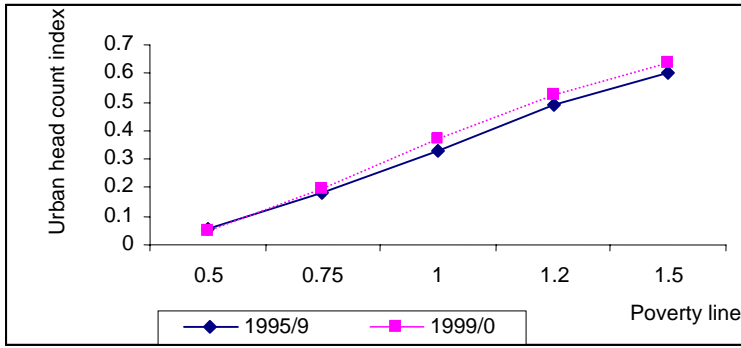
Figure 3.10 Comparisons of urban poverty head count index, 1995/96 & 1999/00
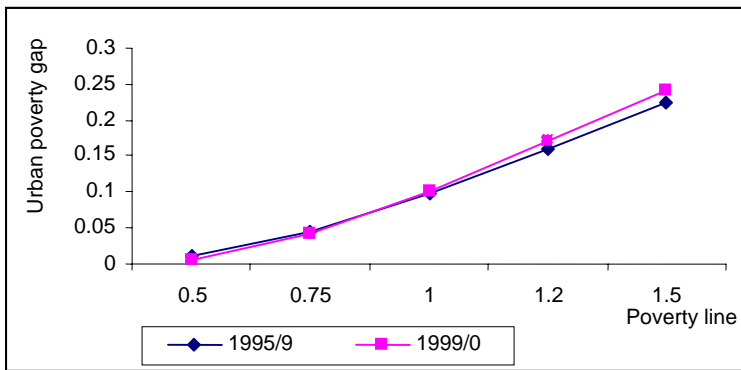
Figure 3.11 Comparison of urban poverty incidence, 1995/96 and 1999/00
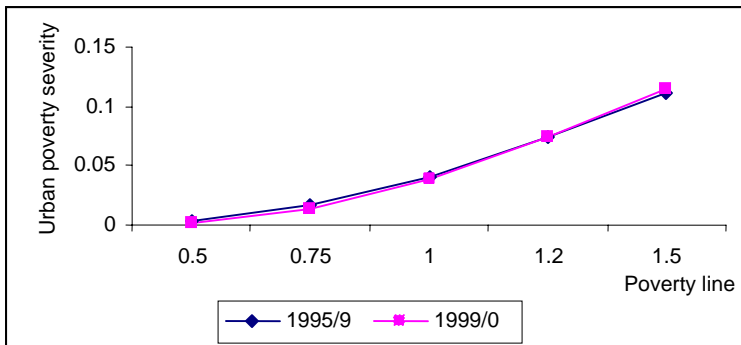
Figure 3.12 Comparison of urban poverty severity, 1995/96 & 1999/00

The head count index for 1999/00 at all-country level and for rural areas is not lower than that of 1995/96 across all multiple of poverty lines. However, the national and rural poverty gap and squared poverty gap indices for 1999/00 are lower than that of 1995/96 at the multiples of poverty lines .The lines also do not intersect each other, indicating that the depth and severity of national and rural poverty are unambiguously lower than that of 1995/96. For urban areas, all

types of poverty indices in 1999/00 seem to be higher than that of 1995/96. However, the result is not robust and the same holds true when we conducted sensitivity analysis (i.e. at various poverty lines). This may be an indication that poverty has not improved much in urban areas between 1995/96 and 1999/00.

The analysis so far boils down to the following: overall (at national level), by 1999/00 there has been an improvement in the depth and severity of poverty as compared to 1995/96. However, no significant improvement has been observed in the incidence of poverty at national level (45.5% in 1995/96 versus 44.2% in 1999/00). The decrease in the incidence of poverty has been pronounced in rural than urban areas. On the other hand, not much change has been observed in the incidence, depth and severity of poverty over the two periods in urban areas. It is also worth noting that income inequality has narrowed for rural areas and showed a modest increase in urban areas. Thus, the improvement in the depth and severity of poverty in rural areas, stagnation in overall poverty incidence, and the relative increase in the depth and severity of poverty in urban areas might be attributed to the shift in income distribution between the two periods in favor of the rural areas.

The over all result has been consistent with our expectation. The decrease in poverty incidence of rural areas has been in line with the Government's Agricultural Development Led Industrialization (ADLI) strategy, which is believed to be pro-rural with particular emphasis on the development of smallholder peasant farmers. However, a few points are in order here before embarking on comparisons of the two survey results. To start with, the year 1999/00 stands in sharp contrast with that of 1995/96. The 1995/96 was a year of bumper harvest where crop production (major crops) hit one of its highs in Ethiopia. This was also a year where inflation measured by the consumer price index reached its lowest (0.9%) in which real per capita consumption expenditure is expected to be high. On the other hand, the year 1999/00 was a relatively drought year where rain failure (small season or 'Belg') experienced in pocket areas of Tigray, Soma lie, some parts of Oromia, and SNNP regions. By the end of 1999/00, inflation (the change in the general consumer price index) averaged over 4 %.

Apart from the quality of data in the 1995/96 analyses, these factors need to be taken in to consideration while comparing the poverty situation between these two survey years. The 1999/00 was also a year where the war between Ethiopia and Eritrea was at its climax. The

impact of the war, particularly in those areas directly affected by the conflict (Tigray and Afar), is obvious. Thus, had it not been for the drought and the war, Ethiopia would have registered a substantial reduction in consumption poverty by 1999/00.

3.2.   Regional Dimension of Consumption Expenditure and Poverty Indicators

3.2.1.   Regional Comparison of Calorie In-take and Income Distribution

With a land area of over 1.1 million square kilometer, Ethiopia stood 9th in terms of geographic area and third in terms of population size in Africa. As per the current administrative set up, the country is divided in to 9 federal states and two city administration:Addis Ababa and Dire Dawa Council. Each regional state or city administrations are in turn sub-divided in to zonal and Wereda(district) level administrations. The country is divided in to 69 zones and 560 weredas. Weredas are the lowest level of adminisration with elected government.

The country is characterized by diverse natural, social, and cultural conditions which in turn results in to significant variations in the means of livelihood , consumption patterns, vulnerability factors. The divergence in the standard of living among regions can be expressed in terms of differences in the level of consumption expenditure. The variation in the level of consumption expenditure among regions of Ethiopia is enormous (Table 3.7)[20]. According to the survey results in rural Ethiopia, Harari Regional State has the highest per capita consumption expenditure followed by Addis Ababa. With in urban areas, the highest per capita consumption is observed in Addis Ababa followed by Afar and Benshangul -Gumuz Regional states.

With in both urban and rural areas, Tigray Regional state has the lowest per capita consumption followed by Gambella, Benshangul- Gumuz and SNNPR. Addis Ababa followed by Harari are the two areas where per capita consumption level is higher than the national average. The SNNPR, Benshangul-Gumuz, and Gabmella Regional states are among regional states with per capita consumption levels below the national average. The relative divergences in consumption levels between rural and urban areas and among regions have been narrowed when consumption level is expressed in terms of per adult equivalent rather than per capita consumption expenditure.

By 1999/00, Tigray, Afar, Oromia, Benshangul-Gumuz, Gamebella, and Harari regional states have recorded per capita consumption levels lower than that of 1995/96 where as Addis Ababa,

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[20] The per capita consumption and the consumption expenditure per adult for the 45 reporting levels are given in Table A 6.1 in the Appendix 6.

Amhara, and Dire Dawa witnessed an increase in per capita consumption levels over the 1995/96 level. The SNNPR and Somalia have witnessed no change in per capita consumption level.

Table 3.7: Comparison of Rural-Urban Real Total Expenditure Per Capita for 19995/96 and 1999/00

Region	1995/96			1999/00			% Change		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tigray	903.60	1113.46	935.18	828.90	995.92	853.77	-8.27	-10.56	-8.71
Afar	1105.62	2464.69	1595.21	997.81	1618.13	1178.28	-9.75	-34.35	-26.14
Amhara	917.23	1271.08	960.70	1046.54	1490.06	1087.74	14.10	17.23	13.22
Oromiya	1183.95	1498.39	1215.86	1020.46	1354.00	1055.05	-13.81	-9.64	-13.23
Somalie	1166.42	2079.07	1268.13	1070.81	1476.47	1210.83	-8.20	-28.98	-4.52
Benshanguli	1026.81	1641.79	1063.51	925.32	1513.43	965.40	-9.88	-7.82	-9.23
SNNPR	945.48	1180.63	961.95	933.43	1348.80	962.26	-1.27	14.24	0.03
Gambella	1223.47	1354.22	1279.95	900.83	1222.70	981.20	-26.37	-9.71	-23.34
Harari	1768.36	1459.68	1599.45	1394.74	1349.78	1370.46	-21.13	-7.53	-14.32
Addis Ababa	1113.20	1568.96	1560.34	1214.10	1711.66	1701.21	9.06	9.10	9.03
Dire Dawa	1054.29	1397.06	1259.26	1068.56	1359.81	1274.52	1.35	-2.67	1.21
Total	1035.33	1411.32	1087.83	994.73	1452.54	1056.71	-3.92	2.92	-2.86

A significant variation in calorie intake has been observed among regions of Ethiopia. The SNNPR followed by Oromiya and Benshanguli-Gumuz Regional states have the highest calorie intake during 1999/00 (Table 3.9)[21.] Afar regional state closely followed by Addis Ababa has registered the lowest calorie in take during 1999/00. On average, by 1999/00, the highest increase in calorie intake has been observed in Tigray, Amhara, Oromia, Benshangul-Gumuz, SNNPR, Gambella and Dire Dawa regional states compared to that of 1995/96. While Somalie and Harari witnessed a marginal increase in calorie in take, Addis Ababa city administration has recorded a decrease in calorie intake. Calorie intake has decreased in all urban regions except in Tigray, Gambella and Dire Dawa, while it has increased in all rural regions except Afar Region. The changes in calorie in take are correlated with the regional food share pattern. A food shares in total consumption expenditure increased in all rural regions except Harari, Addis Ababa, & Dire Dawa. On the other hand, food share has decreased in all urban areas except Diredawa, SNNPR, and Tigray (Table 3.10).

A change in calorie intake and total consumption per adult equivalent have exhibited inverse relationships in all regions save SNNPR, Dire Dawa and Amhara where both calorie intake and

consumption per adult equivalent have witnessed an increase. Both witnessed a decrease in Afar Region. In urban areas like Addis Ababa, calorie intake has declined by 4.3 % while consumption per adult equivalent increased by 6% between 1995/96 and 1999/00(Tables 3.8 & 3.9). Food and non-food expenditures have exhibited inverse relationships while food share and calorie intake moved in the same direction (Table 3.10).

Table 3.8: Comparison of rural-urban real total expenditure per adult equivalent for 19995/96 and 1999/00

Region	1995/96			1999/00			% Change		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tigray	1095.73	1326.79	1130.5	1060.21	1246.79	1087.99	-3.24	-6.03	-3.76
Afar	1309.53	2862.97	1869.15	1243.51	1907.13	1436.57	-5.04	-33.39	-23.14
Amhara	1101.97	1515.66	1152.79	1317.23	1821.50	1364.08	19.53	20.18	18.33
Oromiya	1430.71	1802.48	1468.43	1299.67	1658.04	1336.83	-9.16	-8.01	-8.96
Somalie	1452.45	2590.65	1579.29	1344.30	1790.88	1498.45	-7.45	-30.87	-5.12
Benshanguli	1223.47	1869.51	1262.03	1176.19	1869.43	1223.44	-3.86	0.00	-3.06
SNNPR	1140.85	1428.78	1161.02	1182.73	1638.11	1214.33	3.67	14.65	4.59
Gambella	1423.29	1625.08	1510.46	1116.94	1496.18	1211.63	-21.52	-7.93	-19.78
Harari	2151.01	1738.77	1925.43	1777.72	1616.59	1690.71	-17.35	-7.03	-12.19
Addis Ababa	1355.08	1882.46	1872.48	1476.19	1995.48	1984.57	8.94	6.00	5.99
Dire Dawa	1286.09	1679.78	1521.51	1333.95	1657.89	1563.02	3.72	-1.30	2.73
Total	1249.6	1692.71	1311.47	1260.93	1750.66	1327.22	0.91	3.42	1.20

Table 3.9: Comparison of Calorie intake per adult per day in Rural & Urban Ethiopia between 1995/96 and 1999/00

Region	1995/1996			1999/00			% Change		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tigray	1902.01	1734.71	1876.83	2529.52	1811.18	2422.56	33.0	4.4	29.1
Afar	2055.24	2569.97	2240.67	1852.56	1990.53	1892.70	-9.9	-22.5	-15.5
Amhara	1957.32	2107.89	1975.82	2613.65	1929.83	2550.11	33.5	-8.4	29.1
Oromiya	2004.53	2126.84	2016.94	2798.49	1736.27	2688.35	39.6	-18.4	33.3
Somalie	2109.76	2417.84	2144.09	2272.94	1991.59	2175.83	7.7	-17.6	1.5
Benshanguli	1767.09	2341.48	1801.38	2665.77	2110.41	2627.91	50.9	-9.9	45.9
SNNPR	1800.36	2039.68	1817.12	2815.66	1915.14	2753.17	56.4	-6.1	51.5
Gambella	1917.06	1650.45	1801.89	2563.18	1981.60	2417.97	33.7	20.1	34.2
Harari	2488.75	2085.48	2268.08	2759.59	1882.69	2286.06	10.9	-9.7	0.8
Addis Ababa	2014.82	1993.12	1993.53	2409.14	1906.81	1917.37	19.6	-4.3	-3.8
Dire Dawa	1814.74	1831.01	1824.47	2528.18	1929.61	2104.91	39.3	5.4	15.4
Total	1938.38	2050.01	1953.97	2722.87	1860.93	2606.18	40.5	-9.2	33.4

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[21] Calorie intake per day per adult equivalent and household size for the 45 reporting levels is given in Table A 6.2 in Appendix A 6.

Table 3.10: Comparison of mean food share for 1995/96 and 1999/00

Region	1995/96			1999/00			% Change		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tigray	0.57	0.52	0.56	0.7	0.57	0.68	22.81	9.62	21.43
Afar	0.6	0.56	0.58	0.67	0.56	0.63	11.67	0.00	8.62
Amhara	0.63	0.59	0.63	0.71	0.56	0.69	12.70	-5.08	9.52
Oromiya	0.59	0.54	0.58	0.66	0.51	0.64	11.86	-5.56	10.34
Somalie	0.62	0.63	0.62	0.65	0.56	0.62	4.84	-11.11	0.00
Benshanguli	0.6	0.5	0.6	0.64	0.49	0.63	6.67	-2.00	5.00
SNNPR	0.58	0.51	0.57	0.63	0.53	0.63	8.62	3.92	10.53
Gambella	0.59	0.57	0.58	0.6	0.53	0.59	1.69	-7.02	1.72
Harari	0.66	0.6	0.63	0.65	0.56	0.6	-1.52	-6.67	-4.76
Addis Ababa	0.62	0.55	0.55	0.6	0.51	0.51	-3.23	-7.27	-7.27
Dire Dawa	0.74	0.6	0.65	0.73	0.66	0.68	-1.35	10.00	4.62
Total	0.6	0.56	0.59	0.67	0.53	0.65	11.67	-5.36	10.17

Regional income inequality disaggregated into rural and urban areas of Ethiopia for 1995/96 and 1999/00 is presented in Table 3.11. For 1999/00, income inequality as measured by the Gini Coefficient decreased in Oromia, SNNPR, Gambella and Harari Regions while it exhibited an increase in Afar, Amhara, Somalia, Benshanguli-Gumuz, Addis Ababa and Dire Dawa Regions. Inequality has increased in all urban regions save Harari. Inequality has also decreased in all rural regions save Afar, Amhara, Somalia and Benshangul-Gumuz (Table 3.11).

Table 3.11: Population weighted Gini Coefficient of inequality in rural and urban Ethiopia in 1995/96 and 1999/00

Region	1995/96			1999/00			% Change		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tigray	0.26	0.29	0.27	0.25	0.35	0.27	-3.85	20.69	0.00
Afar	0.31	0.19	0.34	0.38	0.34	0.40	22.58	78.95	17.65
Amhara	0.25	0.34	0.27	0.27	0.36	0.28	8.00	5.88	3.70
Oromiya	0.27	0.33	0.28	0.24	0.34	0.26	-11.11	3.03	-7.14
Somalie	0.25	0.21	0.27	0.27	0.34	0.31	8.00	61.90	14.81
Benshanguli	0.26	0.3	0.27	0.28	0.33	0.30	7.69	10.00	11.11
SNNP	0.28	0.32	0.29	0.26	0.35	0.27	-7.14	9.37	-6.90
Gambella	0.3	0.22	0.27	0.23	0.32	0.26	-23.33	45.45	-3.70
Harari	0.29	0.32	0.31	0.22	0.30	0.27	-24.14	-6.25	-12.90
Addis Ababa	0.26	0.35	0.35	0.23	0.43	0.42	-11.54	22.86	20.00
Dire Dawa	0.22	0.28	0.27	0.21	0.32	0.30	-4.55	14.29	11.11
Total	0.27	0.34	0.29	0.26	0.38	0.28	-3.70	11.76	-3.45

3.2.2. Regional Profile of Consumption Poverty

Regional poverty indices are summarized in Table 3.12. Poverty incidence is highest in the Tigray followed by Afar and Benshanguli Gumuz Regions. The proportion of people in absolute poverty is 61% in Tigary, 56% in Afar and 54% in Benshangul-Gumuz regional states. Harari region has the lowest poverty incidence followed by Dire Dawa and Addis Ababa. As per the 1999/00 HICE survey results, the head count index for Harari, Dire Dawa and Addis Ababa is 25.8%, 33.1% and 36.1%, respectively.

When we compare rural areas across regions, Afar has the highest rural poverty incidence followed by Tigray and Benshanguli Gumuz Regions. The lowest rural poverty incidence has been observed in Harai region followed by Addis Ababa and Dire Dawa. The comparison is robust in the sense that the ranking of regions in poverty is the same when the poverty line multiples of poverty lines i.e. when the poverty line rises or falls in magnitude. Tables 3.12 through 3.14 provide poverty measures at lower and higher poverty lines, respectively. In all cases, the highest poverty incidence is observed in Tigray region and the lowest in Harari Region.

With in urban areas, the highest poverty incidence is observed in Tigray Region followed by SNNPR, Addis Ababa, and Oromiya; the lowest in Somalie followed by Afar and Benshangul-Gumuz Regional states. Poverty estimates of major towns of Ethiopia are summarized in Table 3.15.

Table 3.12: Absolute poverty indices of rural and urban Ethiopia in 1999/00

Region	Head count index			Poverty gap index			Poverty severity index		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	National
Tigray	0.616	0.607	0.614	0.185	0.199	0.187	0.072	0.086	0.074
Afar	0.680	0.268	0.560	0.203	0.065	0.163	0.081	0.022	0.064
Amhara	0.429	0.311	0.418	0.110	0.085	0.108	0.040	0.032	0.039
Oromiya	0.404	0.359	0.399	0.103	0.098	0.102	0.037	0.037	0.037
Somalie	0.441	0.261	0.379	0.096	0.060	0.083	0.032	0.021	0.028
Benshanguli	0.558	0.289	0.540	0.166	0.067	0.159	0.067	0.022	0.064
SNNPR	0.517	0.402	0.509	0.150	0.103	0.147	0.060	0.038	0.058
Gambella	0.546	0.384	0.505	0.144	0.115	0.137	0.054	0.048	0.052
Harari	0.149	0.350	0.258	0.017	0.079	0.050	0.003	0.025	0.015
Addis Ababa	0.271	0.362	0.361	0.059	0.097	0.096	0.020	0.036	0.036
Dire Dawa	0.332	0.331	0.331	0.065	0.082	0.077	0.019	0.028	0.025
Total	0.454	0.369	0.442	0.122	0.101	0.119	0.046	0.039	0.045

Table 3.13: Moderate poverty indices of rural and urban Ethiopia in 1999/00

Region	Head count index			Poverty gap index			Poverty severity index		
	Rural	Urban	National	Rural	Urban	National	Rural	Urban	National
Tigray	0.805	0.700	0.789	0.292	0.291	0.292	0.133	0.145	0.135
Afar	0.819	0.412	0.701	0.316	0.123	0.260	0.147	0.048	0.118
Amhara	0.637	0.484	0.623	0.197	0.147	0.192	0.081	0.063	0.079
Oromiya	0.616	0.514	0.606	0.186	0.166	0.184	0.076	0.072	0.075
Somalie	0.707	0.548	0.652	0.190	0.132	0.170	0.072	0.047	0.063
Benshanguli	0.727	0.423	0.706	0.265	0.126	0.255	0.121	0.049	0.116
SNNPR	0.705	0.552	0.694	0.244	0.180	0.239	0.110	0.076	0.108
Gambella	0.759	0.565	0.711	0.245	0.187	0.230	0.105	0.085	0.100
Harari	0.318	0.507	0.420	0.059	0.150	0.108	0.015	0.057	0.038
Addis Ababa	0.485	0.516	0.516	0.126	0.166	0.165	0.046	0.071	0.070
Dire Dawa	0.615	0.489	0.526	0.149	0.148	0.148	0.051	0.060	0.057
Total	0.658	0.526	0.640	0.211	0.171	0.205	0.090	0.074	0.088

Table 3.14: Extreme poverty indices of rural and urban Ethiopia in 1999/00

Region	Head count index			Poverty gap index			Poverty severity index		
	Rural	Urban	National	Rural	Urban	National	Rural	Urban	National
Tigray	0.374	0.392	0.376	0.079	0.097	0.082	0.025	0.036	0.026
Afar	0.373	0.125	0.301	0.088	0.022	0.069	0.031	0.006	0.024
Amhara	0.198	0.162	0.194	0.041	0.034	0.040	0.012	0.011	0.012
Oromiya	0.188	0.187	0.188	0.036	0.040	0.037	0.012	0.013	0.012
Somalie	0.156	0.098	0.136	0.031	0.022	0.028	0.009	0.007	0.008
Benshanguli	0.320	0.114	0.306	0.075	0.020	0.071	0.025	0.006	0.023
SNNPR	0.296	0.190	0.288	0.065	0.041	0.064	0.022	0.013	0.022
Gamble	0.254	0.207	0.242	0.056	0.053	0.056	0.018	0.020	0.018
Harare	0.016	0.146	0.086	0.001	0.022	0.012	0.000	0.005	0.003
Addis Ababa	0.088	0.186	0.184	0.020	0.038	0.038	0.007	0.012	0.012
Dire Dawa	0.094	0.168	0.147	0.017	0.028	0.025	0.004	0.007	0.006
Ethiopia	0.230	0.193	0.225	0.048	0.041	0.047	0.015	0.013	0.015

Urban areas across regional states can be categorized into major urban areas and other urban areas. The results show a remarkable difference in poverty indices across major towns of Ethiopia. By 1999/00, the absolute poverty head count index is the lowest in Gonder Town (17.5 %), closely followed by Assosa Town (18.1%). Bahir Dar Town has the third lowest head count index (22.3%). The highest poverty incidence is found in Mekelle Town with a head count index of 42.8%. The second and the third highest poverty head count indices are found in Jijiga (39.9%) and Jimma town (37.4%), respectively. The pattern of poverty among other-urban areas across regions (Table 3.16) is similar to that of total urban where poverty incidence is the highest in Tigray other-urban and the lowest in Somalia.

Table 3.15: Poverty Indices of Major Towns of Ethiopia in 1999/00

Major Town	Moderate poverty			Absolute poverty			Extreme poverty		
	P_0	P_1	P_2	P_0	P_1	P_2	P_0	P_1	P_2
Mekellee town	0.589	0.203	0.090	0.428	0.124	0.048	0.246	0.052	0.016
Aysaeta town	0.485	0.151	0.060	0.351	0.082	0.028	0.140	0.027	0.008
Gonder town	0.321	0.092	0.037	0.175	0.048	0.018	0.107	0.019	0.005
Dessie town	0.422	0.139	0.060	0.313	0.082	0.030	0.163	0.032	0.009
Bahir Dar town	0.368	0.096	0.037	0.223	0.048	0.017	0.090	0.017	0.005
Debrezeit town	0.508	0.166	0.071	0.367	0.099	0.036	0.199	0.039	0.011
Nazreth town	0.430	0.143	0.065	0.285	0.090	0.036	0.178	0.040	0.013
Jimma town	0.535	0.176	0.077	0.370	0.105	0.041	0.192	0.044	0.015
Jijiga town	0.572	0.187	0.082	0.399	0.112	0.043	0.217	0.047	0.014
Assosa town	0.311	0.080	0.029	0.181	0.039	0.012	0.070	0.010	0.003
Awasa town	0.451	0.149	0.067	0.323	0.092	0.036	0.178	0.041	0.013
Gambela town	0.549	0.171	0.078	0.347	0.102	0.044	0.179	0.048	0.020
Harar town	0.507	0.150	0.057	0.350	0.079	0.025	0.146	0.022	0.005
Addis Ababa town	0.516	0.166	0.071	0.362	0.097	0.036	0.186	0.038	0.012
Dire Dawa town	0.476	0.142	0.057	0.315	0.078	0.027	0.157	0.027	0.006

P_0= head count index; P_1= normalized poverty gap index; P_2 = squared poverty gap.

Table 3.16: Comparison of Consumption Poverty among other-urban areas of Ethiopia in 1999/00

Other urban	P0	P1	P2
Tigray other urban	0.663	0.223	0.098
Afar other urban	0.244	0.06	0.02
Amhara other urban	0.332	0.093	0.035
Oromia other urban	0.363	0.099	0.037
Somalia other urban	0.199	0.036	0.011
Benshangul other urban	0.341	0.081	0.026
SNNPR other urban	0.413	0.104	0.038
Gambela other urban	0.439	0.134	0.054
Dire Dawa other urban	0.518	0.137	0.045

Figures 3.13 through 3.15 summarize stochastic dominance analysis to check the robustness of poverty comparisons among regions. Regions could be grouped in to six categories in descending order of the consumption poverty indices based on our observation from the stochastic dominance curves: (1) Tigray Region; (2) Afar and Benshangul-Gumuz Regions; (3) SNNPR and Gambella Regions; (4) Amahara, Oromiya and Addis Ababa Regions; (5) Somalia and Dire Dawa Regions; and (6) Harari Region. If lines cross each other, then comparison of poverty between regions whose poverty estimates cross each other is ambiguous. Hence, Tigray Region has had unambiguously the highest poverty incidence, depth and severity of poverty while Harari has had the lowest. The curves representing these regions do not cross with that of other regions. Poverty gap and severity has been unambiguously lower in Gambella than in SNNPR, but not the incidence of poverty. Oromia has lower incidence, depth and severity of

poverty than Amhara, and Addis Ababa has lower poverty incidence, depth and severity than Both Amhara and Oromiya. However, we cannot say poverty in Somalia Region is lower than that of Dire Dawa and Addis Ababa. Comparison of poverty incidence between Afar and Benshangul-Gumuz regions is also ambiguous. Comparing Dire Dawa and Addis Ababa is also ambiguous, because the lines cross each other at higher levels of poverty line.
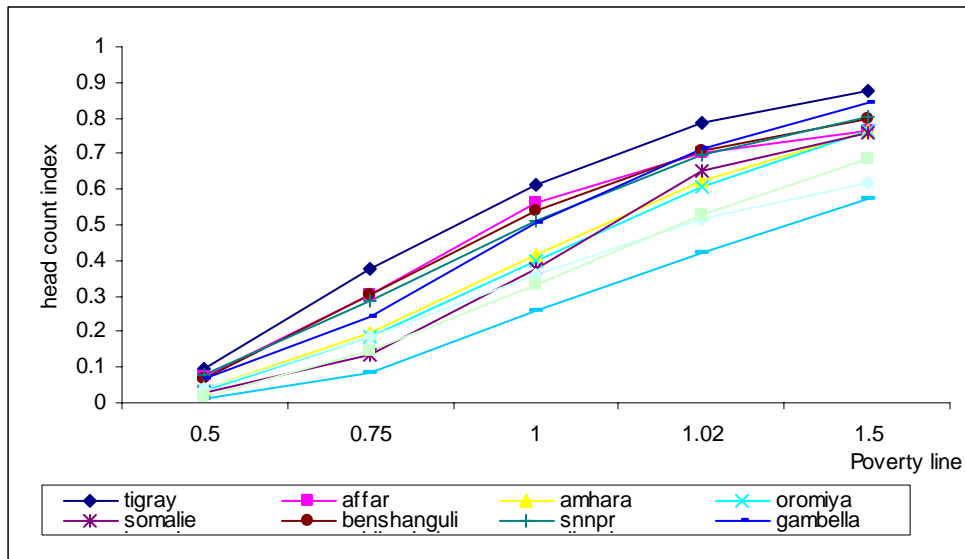
Figure 3.13: First Order Stochastic Dominance to Compare Poverty Among Regions
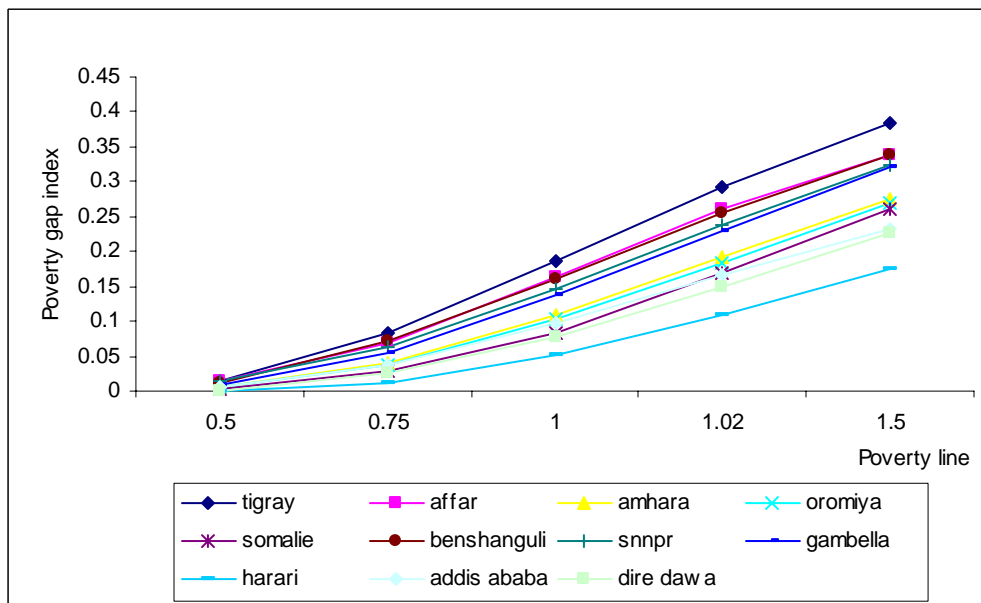
Figure 3.14: Second order stochastic dominance to compare poverty among regions
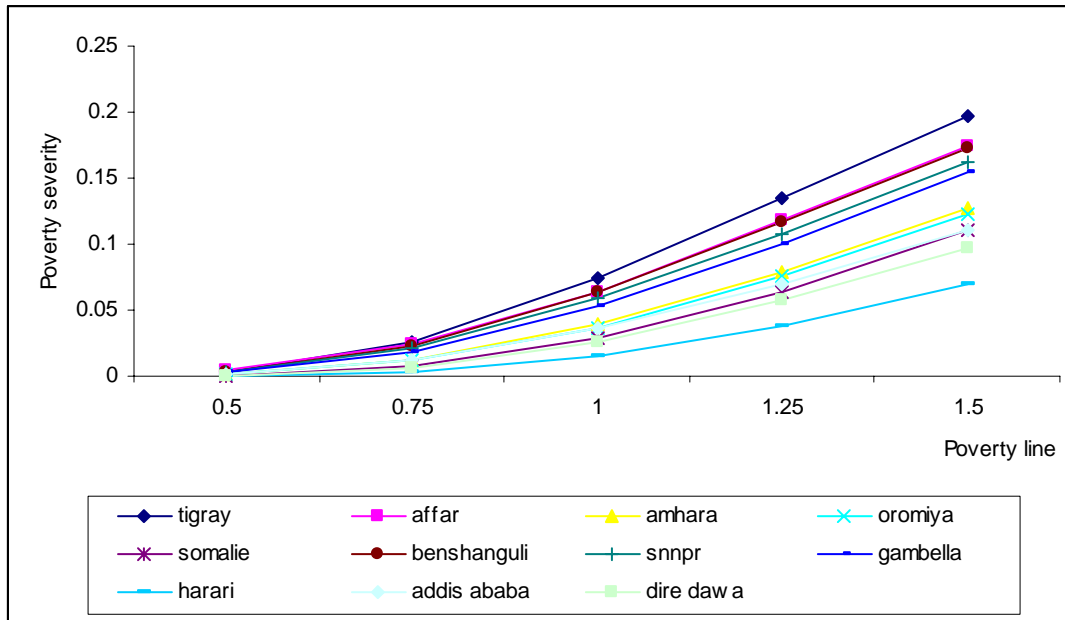
Figure 3.15: Third Order Stochastic Dominance to Compare Poverty Among Regions

Estimates of poverty measures at various poverty lines are also provided for 45 reporting levels in Appendix (Table A6.3.1, Table A6.3.2, and Table A6.3.3). Among the 45 reporting levels, Harrai rural has the lowest head count index (14.9%). Gonder Town has the second lowest head count index. The highest incidence of poverty is found in Rural Afar followed by Tigray Other Urban where the head count indices are estimated at 68% and 66.3%, respectively.

3.2.3. Changes in Regional Consumption Poverty

Changes in poverty indicators (indices) have been mixed between survey years 1995/96 and 1999/00. The 1999/00 poverty head count index has been higher than its level in 1995/96 for all regions save Amhara and SNNPR. Amhara and SNNPR contributed for more than 50% to total poverty incidence. The modest decline in the over all head count index in 1999/00 compared to 1995/96 seemed to be due in the main to the impact of these two regions. A slightly different pattern is observed when we see the changes in poverty incidence between the two periods for rural and urban areas. Among the rural regions, poverty head count has declined in Amhara, SNNPR, Addis Ababa and Dire Dawa while it increased in the remaining rural regions. Amhara, Benshangul-Gumuz and SNNPR urban areas witnessed a decline in poverty incidence while in the rest of the urban regions, poverty has increased.

Table 3.17: Comparisons of Poverty Head Count Indices between 1995/1996 and 1999/00

Region	1995/1996			1999/2000			% Change in Po		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tigray	0.579	0.457	0.561	0.616	0.607	0.614	6.39	32.82	9.45
Afar	0.518	-	0.331	0.680	0.268	0.560	31.27	-	69.18
Amhara	0.567	0.373	0.543	0.429	0.311	0.418	-24.34	-16.62	-23.02
Oromiya	0.347	0.276	0.340	0.404	0.359	0.399	16.43	30.07	17.35
Somalie	0.346	0.016	0.309	0.441	0.261	0.379	27.46	1531.2	22.65
Benshangul	0.476	0.345	0.468	0.558	0.289	0.540	17.23	-16.23	15.38
SNNP	0.565	0.459	0.558	0.517	0.402	0.509	-8.50	-12.42	-8.78
Gambella	0.418	0.244	0.343	0.546	0.384	0.505	30.62	57.38	47.23
Harari	0.133	0.291	0.220	0.149	0.350	0.258	12.03	20.27	17.27
Addis Ababa	0.404	0.300	0.302	0.271	0.362	0.361	-32.92	20.67	19.54
Dire Dawa	0.366	0.246	0.295	0.332	0.331	0.331	-9.29	34.55	12.20
Ethiopia	0.475	0.332	0.455	0.454	0.369	0.442	-4.42	11.14	-2.86

Table 3.18: Comparisons of poverty gap indices between 1995/1996 and 1999/00

Region	1995/1996			1999/2000			% Change in Po		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tigray	0.177	0.127	0.169	0.185	0.199	0.187	4.52	56.69	10.65
Afar	0.157		0.100	0.203	0.065	0.163	29.30		63.0
Amhara	0.166	0.122	0.160	0.110	0.085	0.108	-33.73	-30.33	-32.50
Oromiya	0.082	0.085	0.082	0.103	0.098	0.102	25.61	15.29	24.39
Somalie	0.077	0.003	0.069	0.096	0.060	0.083	24.68	1900.0	20.29
Benshanguli	0.137	0.039	0.131	0.166	0.067	0.159	21.17	71.79	21.37
SNNP	0.178	0.130	0.175	0.150	0.103	0.147	-15.73	-20.77	-16.00
Gambella	0.124	0.047	0.090	0.144	0.115	0.137	16.13	144.68	52.22
Harari	0.020	0.074	0.050	0.017	0.079	0.050	-15.00	6.76	0.00
Addis Ababa	0.108	0.087	0.087	0.059	0.097	0.096	-45.37	11.49	10.34
Dire Dawa	0.085	0.056	0.068	0.065	0.082	0.077	-23.53	46.43	13.24
Ethiopia	0.134	0.099	0.129	0.122	0.101	0.119	-8.96	2.02	-7.75

Table 3.19: Comparisons of squared poverty gap indices between 1995/1996 and 1999/00

Region	1995/1996			1999/2000			% Change in Po		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tigray	0.075	0.049	0.071	0.072	0.086	0.074	-4.00	75.51	4.23
Afar	0.064		0.041	0.081	0.022	0.064	26.56		56.10
Amhara	0.066	0.057	0.065	0.040	0.032	0.039	-39.39	-43.86	-40.00
Oromiya	0.028	0.035	0.029	0.037	0.037	0.037	32.14	5.71	27.59
Somalie	0.026	0.001	0.023	0.032	0.021	0.028	23.08	2000.0	21.74
Benshanguli	0.055	0.011	0.052	0.067	0.022	0.064	21.82	100.00	23.08
SNNPR	0.074	0.050	0.073	0.060	0.038	0.058	-18.92	-24.00	-20.55
Gambella	0.050	0.011	0.033	0.054	0.048	0.052	8.00	336.36	57.58
Harari	0.004	0.025	0.016	0.003	0.025	0.015	-25.00	0.00	-6.25
Addis Ababa	0.040	0.035	0.035	0.020	0.036	0.036	-50.00	2.86	2.86
Dire Dawa	0.029	0.020	0.024	0.019	0.028	0.025	-34.48	40.00	4.17
Ethiopia	0.053	0.041	0.051	0.046	0.039	0.045	-13.21	-4.88	-11.76

Poverty seems to have declined in most of the major towns of Ethiopia. Poverty incidence, depth and severity have substantially declined in Dessie, Gonder Bahir Dar and Debrezeit towns while

marginal changes in poverty incidence, depth and severity have been registered in Mekelle Town. Nazareth town poverty has witnessed a marginal decline in poverty incidence while the depth and severity of poverty has substantially increased. Jimma, Harar, Addis Ababa and Dire Dawa towns have witnessed remarkably high incidence, depth and severity of poverty during the period.

Table 3.20: Comparison of Poverty among Major Towns of Ethiopia

Major Town	1996/1996			1999/2000			% Change in		
Major towns	P_0	P_1	P_2	P_0	P_1	P_2	P_0	P_1	P_2
Mekellee town	0.464	0.137	0.054	0.428	0.124	0.048	-7.8	-9.5	-11.1
Gonder town	0.339	0.106	0.045	0.175	0.048	0.018	-48.4	-54.7	-60.0
Dessie town	0.719	0.292	0.150	0.313	0.082	0.030	-56.5	-71.9	-80.0
Bahir Dar town	0.382	0.093	0.032	0.223	0.048	0.017	-41.6	-48.4	-46.9
Debrezeit town	0.442	0.140	0.058	0.367	0.099	0.036	-17.0	-29.3	-37.9
Nazreth town	0.290	0.070	0.024	0.285	0.090	0.036	-1.7	28.6	50.0
Jimma town	0.292	0.077	0.029	0.370	0.105	0.041	26.7	36.4	41.4
Harar town	0.291	0.074	0.025	0.350	0.079	0.025	20.3	6.8	0.0
Addis Ababa town	0.300	0.087	0.035	0.362	0.097	0.036	20.7	11.5	2.9
Dire Dawa town	0.246	0.056	0.020	0.315	0.078	0.027	28.0	39.3	35.0

P_0= head count index; P_1= normalized poverty gap index; P_2 = squared poverty gap.

Poverty incidence has not declined by much by 1999/00 owing in the main to the drought experienced in some pocket areas of Soma lie, Tigray, and Oromiya coupled with the spill over effect of the war with Eritrea. The two regions Amhara and SNNPR, which registered a decline in poverty, are relatively least affected by drought. However, the war has affected both rural and urban areas. As a result, most of the urban areas have registered a substantial increase in poverty.

3.2.4. Regional Contribution to Consumption Poverty

The contribution of a particular sub group (area) to national poverty depends up on the size of population and the magnitude of poor people living in the area. The contribution of regions (rural and urban) to national poverty and population is summarized in Tables3.21 and 3.22, respectively. Rural areas have had larger contribution to national poverty than to the national population. Where as, urban areas have lower contribution to national poverty than to the national population. While the contribution of rural areas to poverty is 88.7%, the contribution of urban areas is 11.3%. The contribution of rural and urban areas to national population, on the other hand, is 86.5% and 13.5%, respectively. These indicate that poverty is higher in rural areas than in urban areas. A Table that summarizes the contribution of reporting levels to total poverty and population is given in the Appendix Table A6.6.

The differences among regions in terms of their share to total population and contribution to poverty and is remarkable. The contribution of a region to total poverty is dependent up on the incidences of poverty and the region's share in population. Of the 11 regions, the five poorer regions have contributed more to total poverty incidence than to the overall population. These regions include Tigray, Afar, Benshagul-Gumuz, SNNPR, and Gambella Regions. The relatively less poor regions such as Amhara, Oromia, Somalie, Harari, Addis Ababa and Dire Dawa have had relatively smaller contribution to total poverty incidence than to total population.

Table 3.21: Contribution of Rural and Urban Areas to Total Poverty by Region (1999/00)

Region	Number of poor people			Contribution to national poverty			Contr. to the rural poverty	Contr. to the urban poverty
	Rural	Urban	Total	Rural	Urban	Total		
Tigray	1895330	326669	2221999	7.66	1.32	8.98	8.63	11.70
Afar	120794	19562	140356	0.49	0.08	0.57	0.55	0.70
Amhara	5773459	428683	6202142	23.33	1.73	25.06	26.29	15.35
Oromia	7654820	786498	8441318	30.93	3.18	34.11	34.86	28.17
Somalie	185431	57766	243197	0.75	0.23	0.98	0.84	2.07
Benshangul Gumuz	342548	12956	355505	1.38	0.05	1.44	1.56	0.46
SNNP	5877490	341116	6218607	23.75	1.38	25.13	26.77	12.22
Gambella	60041	14067	74108	0.24	0.06	0.30	0.27	0.50
Harari	10047	27591	37638	0.04	0.11	0.15	0.05	0.99
Addis Ababa	11476	715992	727467	0.05	2.89	2.94	0.05	25.64
Dire Dawa	25535	61434	86969	0.10	0.25	0.35	0.12	2.20
Total	21956971	2792335	24749305	88.72	11.28	100	100	100

Table 3.22: Contribution of Rural and Urban Areas to Total Poverty by Region (1995/96)

Region	Rural population	Urban population	Rural +urban pop	Share of rural pop in national total	Share of urban pop. National total	Share of regional pop. In national total
Tigray	3077636.35	538450.45	3616086.8	5.50	0.96	6.46
Afar	177584.69	72861.19	250445.88	0.32	0.13	0.45
Amhara	13469696.2	1379713.99	14849410.19	24.07	2.47	26.54
Oromiya	18958449.55	2193129.72	21151579.27	33.88	3.92	37.80
Somalie	420673.54	221742.44	642415.98	0.75	0.40	1.15
Benshanguli	613457.47	44873.64	658331.11	1.10	0.08	1.18
SNNPR	11365236.67	847555.65	12212792.32	20.31	1.51	21.83
Gambella	110016.79	36609.09	146625.88	0.20	0.07	0.26
Harari	67228.68	78924.36	146153.04	0.12	0.14	0.26
Addis Ababa	42396.67	1975153.24	2017549.91	0.08	3.53	3.61
Dire Dawa	76978.38	185869.09	262847.47	0.14	0.33	0.47
Ethiopia	48379354.99	7574882.86	55954237.85	86.46	13.54	100.00

3.2.5. Consumption Gap of the Poor

The idea of measurement of poverty indices is not only of help to be informed of the sheer number of poor people and how deep poverty is, but also have an idea of how much income or budget is need to bring the poor people out of poverty. This is particularly useful for governments that have enough resources to provide support to the poor. For poor governments, knowing the average income gap of poor helps to design an income scheme that would help poor people generate enough income to fill the gap. The average income of the poor and the mean poverty gap by rural and urban areas are summarized in Table 3.22. Surprisingly, the average income gap of the poor people is slightly higher in urban areas than in rural areas. The national average income gap of the poor stood at Birr 289.5 while average income gap has been estimated at Birr 289.4 & 295.1 in rural and urban areas, respectively. Poor people in Tigray have the highest average income gap followed by Benshangul-Gumuz. The lowest average income gap of the poor is observed in Harari Region, closely followed by Somalia Region.

Table 3.23: Average income per adult and mean poverty gap of the Poor in rural and urban Ethiopia (1999/00)

Region	Mean income per adult of the poor			Mean poverty gap		
	Rural	Urban	Total	Rural	Urban	Total
Tigray	752.03	721.77	747.58	322.97	353.23	327.42
Afar	754.54	814.18	762.85	320.46	260.82	312.15
Amhara	799.51	779.98	798.16	275.49	295.02	276.84
Oromia	801.08	780.41	799.16	273.92	294.59	275.84
Somalie	840.79	829.33	838.07	234.21	245.67	236.93
Benshangul Gumuz	755.85	825.21	758.38	319.15	249.79	316.62
SNNP	762.57	800.26	764.63	312.43	274.74	310.37
Gambella	791.42	753.31	784.18	283.58	321.69	290.82
Harari	953.76	832.21	864.66	121.24	242.79	210.34
Addis Ababa	841.02	786.51	787.37	233.98	288.49	287.63
Dire Dawa	864.26	807.23	823.98	210.74	267.77	251.02
Ethiopia	785.64	779.89	784.99	289.36	295.11	290.01

3.2.6. Regional Profile of Food Poverty

The national and regional profiles of food poverty (hunger) are summarized in Table 3.24. The proportions of people who are under food poverty (unable to get 2200 kcal per adult) are 42%, which is less than the proportion of people who are under total poverty. The proportion of people under food poverty in rural areas is 41% & approximately 47% in urban areas. Hence, the food

poverty estimates is less than that of total poverty in rural areas and greater than total poverty in urban areas. This is because rural areas spend most of their income on food items compared to their counterparts in urban areas.

Since we have scaled up the food poverty line by a common food share for all region and areas of residence, the food poverty line used is too high for rural areas. To check if this is due to the use a common food share, for all regions, we have calculated a poverty indices based on regional poverty lines (obtained as dividing the food poverty by the regional (reporting level) food shares) (see Table A6.4 in the Appendix). The poverty line decreased for rural areas and increased for urban areas compared to the common poverty line (1075 Birr). Hence, the results of poverty estimates (indices) based on the regional poverty line has become lower and closer to the food poverty line calculated based on a common food share (see Table A 6.5 in the Appendix).

Table 3.24: Absolute food poverty indices for rural & urban Ethiopia (1999/00)

Region	Food head count index			Food poverty gap			Food poverty severity		
	Rural	Urban	National	Rural	Urban	National	Rural	Urban	National
Tigray	0.517	0.647	0.537	0.123	0.200	0.135	0.042	0.082	0.048
Afar	0.635	0.289	0.534	0.187	0.066	0.152	0.076	0.023	0.060
Amhara	0.323	0.354	0.325	0.076	0.087	0.077	0.026	0.031	0.027
Oromiya	0.367	0.491	0.380	0.081	0.138	0.087	0.027	0.051	0.030
Somalie	0.469	0.342	0.425	0.117	0.077	0.103	0.041	0.026	0.036
Benshangul-Gumuz	0.562	0.409	0.552	0.158	0.106	0.154	0.059	0.039	0.058
SNNPR	0.548	0.541	0.547	0.164	0.169	0.164	0.067	0.068	0.067
Gambella	0.618	0.433	0.572	0.180	0.130	0.167	0.073	0.055	0.069
Harari	0.155	0.477	0.328	0.020	0.110	0.068	0.004	0.036	0.021
Addis Ababa	0.359	0.478	0.475	0.072	0.119	0.118	0.023	0.042	0.041
Dire Dawa	0.253	0.285	0.276	0.046	0.060	0.056	0.013	0.017	0.016
Total	0.411	0.467	0.419	0.103	0.127	0.107	0.038	0.047	0.039

The 1999/00 All-Country and rural food poverty head count index has declined by 6.7% and 12.6%, respectively, while the urban food poverty head count index increased by 43.7 percent compared to that of 1995/96. The food poverty head count index has increased in all regions except in Amhara, Tigray, Oromia and Dire Dawa Regions. Slightly different pattern is observed among regions when we are looking at the regional rural-urban pattern of changes in food poverty. Except Dire Dawa urban, food poverty in urban regions has increased by 1999/00 compared to that of 1995/96. Among the rural regions, food poverty has declined in only the larger rural regions such as Oromiya, Amhara, Tigray, and Addis Ababa & Dire Dawa Rural

regions. This difference in patterns of poverty between rural and urban regions is due in the main to their difference in food share in total expenditure.

Table 3.25: Comparison of Food Poverty Head Count Index for 1995/96 and 1999/00

Region	1995/96			1999/00			% Change		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tigray	0.599	0.440	0.573	0.517	0.647	0.537	-13.69	47.05	-6.28
Afar	0.462	0.000	0.297	0.635	0.289	0.534	37.45	-	79.80
Amhara	0.552	0.322	0.518	0.323	0.354	0.325	-41.49	9.94	-37.26
Oromiya	0.392	0.310	0.383	0.367	0.491	0.380	-6.38	58.39	-0.78
Somali	0.383	0.000	0.334	0.469	0.342	0.425	22.45	-	27.25
Benshangul	0.537	0.269	0.514	0.562	0.409	0.552	4.66	52.04	7.39
SNNPR	0.457	0.421	0.454	0.548	0.541	0.547	19.91	28.50	20.48
Gambella	0.329	0.192	0.283	0.618	0.433	0.572	87.84	125.52	102.12
Harari	0.136	0.211	0.179	0.155	0.477	0.328	13.97	126.07	83.24
Addis Ababa	0.369	0.307	0.308	0.359	0.478	0.475	-2.71	55.70	54.22
Dire Dawa	0.256	0.293	0.281	0.253	0.285	0.276	-1.17	-2.73	-1.78
Total	0.470	0.325	0.449	0.411	0.467	0.419	-12.55	43.69	-6.68

3.3. Consumption Poverty and Household Characteristics

Comparison of poverty among households with different characteristics such as gender of the household head, literacy, schooling, family size, and occupation is discussed in this section. This type of comparison helps understand the associated characteristics of poverty and policy actions that may be required to reduce income poverty.

According to the 1999/00 surveys results, the average family size in Ethiopia is 4.9 person or 3.9 adults(adult equivalent family size). There may be slight demogrphic differences among rural and urban areas of Ethiopia. The average family size is slightly higher in rural areas than in urban areas while adult equivalent family size is almost the same between ruraland urban areas indicating that urban areas are on average more aged than rural areas. There is also a slight difference in family size among regions. Oromiya, SNNPR and Somalie Regions have the largest family size (5.1 persons). According to the 1999/00 survey, average family size has declined by 2% compared to that of 1995/96. Average family size has also declined in all regions except in Afar and SNNP regions.

Table 3.26: Comparison of average household size between 1995/96 and 1999/00

Region	1995/96			1999/00			% Change		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tigray	5.0	4.5	4.9	4.8	4.2	4.7	-4.00	-6.67	-4.08
Afar	4.2	4.3	4.3	4.9	3.7	4.5	16.67	-13.95	4.65
Amhara	4.7	3.8	4.6	4.6	4	4.5	-2.13	5.26	-2.17
Oromiya	5.3	4.9	5.3	5.1	4.6	5.1	-3.77	-6.12	-3.77
Somalie	6.1	5.2	6.0	4.9	5.4	5.1	-19.67	3.85	-15.00
Benshangul-Gumuz	4.9	3.4	4.7	4.7	4.2	4.6	-4.08	23.53	-2.13
SNNPR	5.1	5.3	5.1	5.1	4.8	5.1	0.00	-9.43	0.00
Gambella	4.2	6.4	5.0	4.3	4.9	4.4	2.38	-23.44	-12.00
Harari	5.4	4.8	5.1	4.9	4.1	4.4	-9.26	-14.58	-13.73
Addis Ababa	6.0	5.6	5.6	5.8	5	5	-3.33	-10.71	-10.71
Dire Dawa	6.5	4.8	5.4	5.2	4.4	4.6	-20.00	-8.33	-14.81
Total	5.1	4.7	5.0	4.9	4.6	4.9	-3.92	-2.13	-2.00

Table 3.27: Comparison of average adult equivalent household size for 1995/96 and 1999/00

Region	1995/96			1999/00			% Change		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tigray	4.1	3.7	4.1	3.7	3.4	3.7	-9.76	-8.11	-9.76
Afar	3.6	3.7	3.7	3.9	3.1	3.6	8.33	-16.22	-2.70
Amhara	3.9	3.2	3.8	3.7	3.2	3.6	-5.13	0.00	-5.26
Oromiya	4.4	4.1	4.4	4	3.7	4	-9.09	-9.76	-9.09
Somalie	5.0	4.2	4.9	4	4.4	4.1	-20.00	4.76	-16.33
Benshangul-Gumuz	4.1	2.9	4.0	3.7	3.4	3.7	-9.76	17.24	-7.50
SNNPR	4.2	4.4	4.3	4	3.9	4	-4.76	-11.36	-6.98
Gambella	3.6	5.3	4.2	3.5	3.9	3.6	-2.78	-26.42	-14.29
Harari	4.5	4.0	4.2	3.8	3.4	3.6	-15.56	-15.00	-14.29
Addis Ababa	4.9	4.7	4.7	4.8	4.3	4.3	-2.04	-8.51	-8.51
Dire Dawa	5.3	4.0	4.5	4.1	3.6	3.8	-22.64	-10.00	-15.56
Total	4.2	3.9	4.2	3.9	3.8	3.9	-7.14	-2.56	-7.14

Tables 3.28 through 3.32 present estimates of poverty indices (for both 1995/96 and 1999/00) of household with different characteristics: gender of the household head, schooling, family size and occupation.

The results indicate that in urban areas the poverty head count index is higher for female-headed households than for male-headed households while there is no significant difference in poverty incidence between female headed and male-headed households in rural areas (Table

3.28) [22]. One would expect that female-headed households would have higher poverty incidence in both rural and urban areas because female are more illiterate and endowed with less physical and human capital. In Ethiopia, however, most of the female-headed households in rural areas have land, which they can rent or plow themselves. In urban areas females can be engaged in income generating activities such as petty trade, but they are usually involved in low paying activities. The fact the literacy rate is lower for females than for males indicate that the capacity of females to generate income is still low.

By 1999/00 poverty incidence has declined for males and increased for females compared to that of 1995/96. However, the depth and severity of poverty has declined for both male and female-headed households. In terms of both rural urban perspectives, poverty incidence, depth and severity have declined in rural areas for both male and female-headed households. In urban areas poverty incidence has increased for both male and female-headed households. But the extent in the increase in poverty incidence is higher for female-headed than for male-headed households. The depth and severity of poverty have declined for male-headed households and increased for female-headed ones in urban areas. The results as a whole indicate that a change in poverty between 1995/96 and 1999/00 was in favor of male-headed households particularly in rural areas. In urban areas, the depth and severity of poverty for female-headed households has deteriorated.

Table 3.28: Comparison of Poverty for 1995/96 and 1999/00 by gender and Areas of Residence

Survey Year	Poverty index	Sex of Household Head	National		Rural		Urban	
			Index	SE	Index	SE	Index	SE
1995/96	P0	Male headed	0.461	0.012	0.477	0.013	0.329	0.026
		Female headed	0.425	0.016	0.460	0.019	0.337	0.030
	P1	Male headed	0.131	0.005	0.135	0.005	0.096	0.009
		Female headed	0.123	0.006	0.129	0.007	0.106	0.013
	P2	Male headed	0.051	0.002	0.053	0.003	0.039	0.004
		Female headed	0.049	0.003	0.051	0.004	0.046	0.008
1999/00	P0	Male headed	0.444	0.013	0.455	0.014	0.339	0.020
		Female headed	0.434	0.015	0.447	0.019	0.492	0.014
	P1	Male headed	0.120	0.005	0.123	0.005	0.086	0.006
		Female headed	0.115	0.006	0.118	0.007	0.134	0.006
	P2	Male headed	0.045	0.002	0.046	0.003	0.030	0.003
		Female headed	0.043	0.003	0.044	0.004	0.051	0.003

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[22] The test statistics for the difference in poverty between male and female-headed household is calculated as 0.393, which is less than the z-score (1.96) at 5% level of significance.

There is also significant variation in poverty incidence among households who are engaged in various occupations such as farming and non-farming activities. Comparing the two Surveys, 1995/96 & 1999/00, the incidence, depth and severity of poverty has increased for those engaged in non- farming activities and declined for those engage in farming activities. The decline in poverty incidence, depth and severity is statistically significant at 5% level. The result is consistent with what one would expect in Ethiopia as the Government puts agriculture at the center of the overall development agenda (Table 3.29).

Table 3.29: Poverty by Type of Employment for 1995/96 and 1999/00

Year	Occupation	P0	SE (P0)	P1	SE (P1)	P2	SE (P2)
1995/96	Farmers	0.475	0.013	0.135	0.005	0.053	0.003
	Non farmers	0.348	0.024	0.104	0.008	0.043	0.004
1999/00	Farmers	0.452	0.014	0.121	0.005	0.045	0.003
	Non farmers	0.405	0.015	0.112	0.005	0.043	0.003
% Change in p	Farmers	-4.84		-10.37		-15.09	
	Non farmers	16.38		7.69		0.00	
Z for a change in p	Farmers	-1.20		-1.98		-1.89	
	Non farmers	2.01		0.85		0.00	

NB: P0 = head count index, P_1 = normalized poverty gap, P_2 = squared poverty gap, SE (.) is standard error of the index.

There have been significant differences in poverty indices between literate and illiterate households (Table 3.30). By 1999/00, poverty incidence, depth and severity have been higher for illiterates than for the literates in both rural and urban areas. Poverty incidence has been higher for illiterates than literates by 53%, 45%, and 84% at all country, rural, and urban levels respectively. This is a clear indication that poverty differential across literacy is higher in urban areas and level of education is more important for the generation of income in urban areas. The result is statistically significance at 1% level. Stochastic dominance analysis shows also that the result is robust.

Table 3.31 presents the estimates of poverty indices across various level of education. The result clearly shows that consumption poverty incidence, depth and severity sharply declined as the level of education of the household head increases both in 1995/96 and 1999/00. Compared to the 1995/96, estimates of poverty indices for 1999/00 declined for primary and secondary school. This is a clear testimony to the importance attached to primary education in the effort towards reduction of poverty in Ethiopia.

Table 3.30: Poverty, Literacy and Gender of the Household Head

Survey Year	Type of Index	Education	Rural		Urban		Total	
			Index	SE	Index	SE	Index	SE
1995/96	P0	Literate	0.384	0.018	0.235	0.019	0.344	0.015
		Illiterate	0.505	0.013	0.457	0.036	0.501	0.012
	P1	Literate	0.098	0.006	0.062	0.006	0.088	0.005
		Illiterate	0.146	0.005	0.148	0.015	0.146	0.005
	P2	Literate	0.036	0.003	0.024	0.003	0.033	0.002
		Illiterate	0.058	0.003	0.065	0.009	0.059	0.003
1999/00	P0	Literate	0.3388	0.0199	0.2790	0.0133	0.3220	0.0147
		Illiterate	0.4923	0.0139	0.5143	0.0187	0.4939	0.0129
	P1	Literate	0.0864	0.0062	0.0702	0.0041	0.0819	0.0046
		Illiterate	0.1341	0.0056	0.1516	0.0088	0.1354	0.0052
	P2	Literate	0.0302	0.0027	0.0250	0.0019	0.0287	0.0020
		Illiterate	0.0510	0.0029	0.0607	0.0044	0.0517	0.0027

NB: $P0$ = head count index, P_1 = normalized poverty gap, P_2 = squared poverty gap, SE is standard error corrected for stratification and primary sampling units. The test statistics for the difference in poverty between literate and illiterate people is calculated as 12.20, which is greater than the absolute value of the z- score (2.58) at 1% level of significance.

Table 3.31: Poverty by Education Level of the Household Head

Schooling	1995/96			1999/00			% Change in		
	P0	P1	P2	P0	P1	P2	P0	P1	P2
No grade	-	-	-	0.451	0.117	0.042			
Grade 1 - 3	0.422	0.112	0.042	0.360	0.093	0.033	-14.7	-17.0	-21.4
Grade 4 – 7	0.335	0.084	0.031	0.314	0.079	0.027	-6.3	-6.0	-12.9
Grade 7 – 8	0.275	0.063	0.020	0.290	0.070	0.024	5.5	11.1	20.0
Grade 9 – 11	0.224	0.048	0.014	0.236	0.067	0.025	5.4	39.6	78.6
Grade 12	0.112	0.028	0.011	0.119	0.029	0.010	6.2	3.6	-9.1
Certificate	0.066	0.013	0.003	0.110	0.018	0.004	66.7	38.5	33.3
Higher education	0.033	0.005	0.001	0.042	0.006	0.001	27.3	20.0	0.0

P_0 = head count index, P_1 = normalized poverty gap, P_2 = squared poverty gap, se (.) is standard error.

The estimates of poverty incidence, depth and severity by family size are presented in Table 3.32. As one would normally expect, we found that incidence, depth and severity of poverty is increasing with increasing family size in both 1995/96 and 199/00[23]. Since no adjustment has been made to account for the economies of scale, the increment in poverty estimates as family size increases may be over estimated. However, the trend in poverty estimates would be the same even if we adjust for economies of scale. Hence, we can safely conclude that family planning might be one way to reduce poverty in Ethiopia. In general, the poor in Ethiopia are

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[23] Note that the consumption expenditure we use to generate poverty indices is not adjusted for the economies of scale, but it is adjusted for adult equivalent.

illiterate, uneducated and have larger family size. Furthermore, poverty is more prevalent in rural areas and among farming communities.

Table 3.32: Comparison of poverty for 1995/96 and 1999/00 by Family Size

Household size	1995/96			1999/00		
	P0	P1	P2	P0	P1	P2
One	0.167	0.038	0.014	0.126	0.027	0.010
Two	0.209	0.056	0.022	0.198	0.043	0.014
Three	0.323	0.079	0.028	0.269	0.063	0.021
Four	0.368	0.106	0.042	0.338	0.084	0.030
Five	0.439	0.120	0.048	0.411	0.101	0.035
Six	0.454	0.129	0.051	0.491	0.126	0.047
Seven	0.509	0.153	0.064	0.549	0.152	0.057
Eight to 11	0.574	0.165	0.064	0.549	0.166	0.067
Greater or equal to 12	0.526	0.181	0.080	0.599	0.200	0.086

P_0 = head count index, P_1 = normalized poverty gap, P_2 = squared poverty gap

IV. Vulnerability of Households in Ethiopia

4.1. Vulnerability Perspective

Vulnerability is one of the dimensions of welfare and refers to all forms of household's insecurity. It measures the degree to which households, individuals, or communities are exposed to risks or shocks that threaten well-being. Vulnerability is a combination of shocks and the ability of household to cope up with shocks (coping strategy) *ex ante* and *ex post*. Shocks could be common or idiosyncratic to individuals. Common shocks include regular and predictable events such as seasonal changes in food supply or non-predictable events like drought, war and macroeconomic shocks such as inflation. Shocks that are idiosyncratic to a household include bouts of sickness, death, fluctuation of household's income, personal accidents such as fire and sudden loss of assets such as death of livestock, etc.

Vulnerability can be defined as the probability or the risk of being in poverty or the risk of falling into deep poverty in the future. It is a very important dimension of well being as the risk of abrupt changes in income may lead households to lower investment in productive asset (households hold only some reserves in liquid asset) and human capital. Moreover, larger risks force households to diversify their income sources at the cost of specialization. This lowers their return. For example, the fear of bad weather conditions may deter households from investing in a relatively more risky but higher productivity crops and affect their capacity to generate higher income that helps them escape from poverty.

It is more difficult to measure vulnerability than the other dimensions of well being such as capabilities and economic opportunities. Variability of consumption can be used as a proxy to measure vulnerability. However, this requires time series panel data on households. In the absence of panel data, one can resort to qualitative information such as the perception of individuals on their ability to obtain cash in a short period of time. This may shade some light on the extent of vulnerability of households (individuals) to various shocks and the level of current and expected income compared to the past and ex *ante* and *ex post* risk coping mechanisms.

The 1999/00 WMS has had a number of questions that help identify households' vulnerability to shocks, and the ability of households to withstand these shocks and households' *ex post* coping mechanisms. This section assesses the perception of households based on their responses to

questions on whether 1999/00 was good year or bad year compared to a normal year as well as the vulnerability of households during the survey year 1999/00. Hence, first, the existence of shocks in 1999/00 is assessed based on individuals' current and future income perceptions and rainfall records. Second, how long subsistence farming households can live from own harvest is analyzed. Third, households' ability to cope up with shocks (whether a household is able to get 100 Birr in a week for unforeseen problems) and their coping mechanisms (or source of the 100 Birr) are assessed.

4.2. Profile of Shocks

Households were asked about their current living conditions compared to 12 months prior to the survey and the expected living condition compared to 12 months after the survey. Based on these two pieces of information, we attempted to identify whether 1999/00 was an exceptionally bad year or not. The identification method is illustrated in the Table 4.1. If the current living (income) condition is indicated to have declined while the expected living condition (income) believed to have improved, we identify the current year as an exceptionally bad year. On the other hand, if the current living (income) condition is indicated to have improved and the expected living condition (income) is believed to have fallen we identify the current year as exceptionally good year. If the past and the expected living condition (income) are found to be the same, the current year is believed to be not exceptional.

Table 4.1. Inferring the Relative Goodness of 1999/00 Compared to a Normal Year

Current living (income condition compared to 12 months ago	Expected living (income) condition for the coming 12 months	Inferred situation of the current year (1999/00) compared to other years
Increase	Increase	Good year but not exceptional
Decreases	Decreases	Bad year but not exceptional
Decreases	Increase	Exceptionally bad year
Increase	Decreases	Exceptionally good year
The same	Decreases	The same but expected to be worst
Decreases	The same	Bad, will be the same in the future
The same	The same	Normal year

The households' response is summarized in Table 4.2. For the nation as a whole, most households indicate that 1999/00 was good year, but not exceptionally good followed by bad year, but not exceptionally bad. Therefore, households feel that the current year (1999/00) was good but not exceptionally good for the country as a whole. However, we found that for most households the 1999/00 was an exceptionally bad year for Tigray. It was also a bad year but not

exceptionally bad for Soma lie and SNNPR. This result is consistent with our observation regarding the 1999/00 situation that some parts of Tigray, Somalie and pocket areas of SNNPR were hard hit by drought.

Table 4.2. Evaluation of the Relative Goodness of 1999/00 by region

Region	Situation in 1999/2000	
	Rank 1	Rank 2
Rural National	Good, but not exceptional	Bad but not exceptional
Urban National	Good, but not exceptional	The same but expected to be better
Over all National	Good, but not exceptional	Bad but not exceptional
Tigray	Exceptionally bad year	Bad but not exceptional
Afar	Normal year	Bad but not exceptional
Amhara	Good, but not exceptional	Bad but not exceptional
Oromia	Good, but not exceptional	Bad but not exceptional
Somalia	Bad but not exceptional	Good, but not exceptional
Benshanguli	Good, but not exceptional	Bad but not exceptional
SNNPR	Bad but not exceptional	Good, but not exceptional
Gambella	Good, but not exceptional	The same but expected to be worst
Harari	Good, but not exceptional	The same but expected to increase
Addis Ababa	Good, but not exceptional	The same but expected to increase
Dire Dawa	Good, but not exceptional	Normal year

The country's rainfall records show that the national monthly average rainfall was lower in 1999/00 than 1995/96 and the standard deviation was higher in 1999/00 than in 1995/96 (Figure 4.1). These indicate that rainfall was lower and more erratic in 1999/00 than in 1995/96 and as result agricultural production could potentially be lower in 1999/00 than in 1995/96. Regional rainfall records also show the same pattern for some of the regions[24]. For SNNP (Gamu Gofa and Sidamo Metrology Regions) and Somlaie (part of the Hararghe Metrology Region) regions the monthly average rainfall in 1999/00 was lower than that of 1995/96 and Tigray had rainfall with higher standard deviation in 1999/00 than in 1995/96 (see Tables A7.1 & A7.2 in the Appendix for the distributions of rainfall by meteorological regions).

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[24] At the time of writing this report, it was very difficult to identify the administrative regions (the regional states) where the meteorology stations are located. Hence, we only provide the meteorology regions, which follows the previous administrative set up.
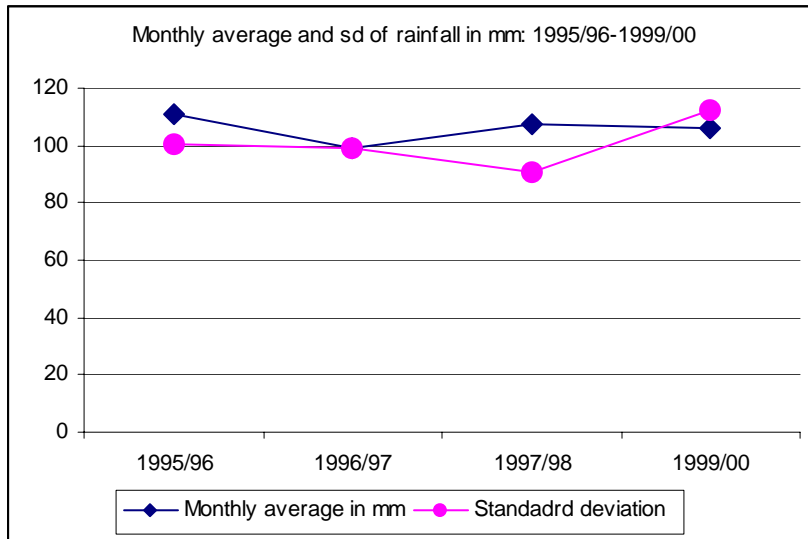
Figure 4.1 Monthly Averages and Standard Deviation of Rainfall in mm

At least two pieces of conclusions follows from the above analyses. First, as households lack the ability to smooth out their consumption, poverty situations of the three regions (Tigray, SNNPR and Somalie) could be higher in 1999/00 than the poverty situations (indices) in 1995/96. Second, most households have been hit by shocks in 1999/00 and they could be vulnerable if their *ex post* risk coping mechanism is very much limited.

4.3. Household Ability to Cope up With Shocks/Risks

Household's ability to cope up with shocks is evaluated based on the information derived from the WMS questionnaires. Households were asked whether they could find 100 Birr within a week for unforeseen problem. Their response is summarized in Table 4.3. Most households (67%) in rural areas can find the 100 Birr in a week. The proportion of households who can find 100 Birr in a week is slightly lower in urban areas (62%) than in rural areas, indicating that households in urban areas are more vulnerable than households in rural areas. One of the possible reasons for urban households to be more vulnerable is that they do not own asset such as livestock. Thus, urban households are more borrowing-constrained than rural households. Almost all rural households are endowed with land and most of them own livestock against which they can borrow. The social capital (such as family ties and friendship and helping each other during shocks) is also stronger in rural areas than in urban areas.

When we see the regional distribution of ability of individuals to cope up with shocks (vulnerability), Benshangul-Gumuz and Amhara are most vulnerable, and SNNPR, Addis Ababa

followed by Harari are least vulnerable among the rural areas. Among the urban areas of regions, Tigray followed by Afar and Gambella are the most vulnerable, while Harari followed by SNNPR and Somalie are the least vulnerable regions.

Table 4.3. The proportion of households who can get 100 Birr in a week for unforeseen Problems

Region	Rural	Urban	Total
Tigray	60.91	38.21	57.16
Afar	63.08	47.61	57.67
Amhara	58.73	64.53	59.34
Oromia	67.34	65.74	67.16
Somalia	68.06	66.04	67.40
Benshangul-Gumuz	53.71	61.67	54.31
SNNPR	79.16	67.24	78.28
Gambella	61.02	47.91	58.03
Harari	74.28	69.81	71.66
Addis Ababa	77.90	62.37	62.66
Dire Dawa	66.21	44.50	50.20
National	66.85	61.95	66.14

To assess vulnerability of households engaged in agriculture, particularly those engaged in subsistence farming, households engaged in agricultural activities were asked for how many months they could live from own harvest. The summary of the results is given in Table 4.4 for those engaged in agriculture and in subsistence farming separately. On the average, subsistence framers can live from own harvest for only seven months.

Table 4.4. Average Months Households Can Live From the Harvested Crop if They Are Engaged In Agricultural Activities

Region	Those engaged in Agriculture			Subsistence Farmers		
	Rural	Urban	Total	Rural	Urban	Total
Tigray	6.0	6.0	6.0	5.9	6.6	5.9
Afar	8.2	9.9	8.3	8.4	9.8	8.5
Amhara	7.7	8.0	7.7	7.9	8.1	7.9
Oromiya	7.0	6.9	7.0	7.2	7.3	7.2
Somalie	5.4	6.9	5.5	5.7	4.9	5.7
Benshangul-Gumuz	8.3	7.2	8.3	8.6	8.6	8.6
SNNPR	5.7	4.7	5.6	5.8	5.1	5.8
Gambella	5.8	7.7	5.8	6.1	2.6	6.1
Harari	5.7	5.4	5.7	5.9	7.1	5.9
Addis Ababa	8.7	14.5	10.1	8.9	6.0	8.7
Dire Dawa	5.1	5.2	5.1	5.4	5.7	5.4
National	6.8	6.8	6.8	7.0	7.0	7.0

This indicates that the majority of subsistence farmers are vulnerable to hunger if they do not have other sources of income. Given that subsistence farmers in the main consume from their own harvest, and are less involved in the sale and purchase of other products, vulnerability of

households to hunger is very high. Based on these criteria, households in Dire D awa, Harari, SNNPR, Somalie and Tigray Regions are found to be the most vulnerable. They can only subsist for about half a year from own annual harvest. Given the fact that farmers from Harari and SNNPR have had other sources of income (such as sale of cash crops – "chat" and coffee), vulnerability of households to hunger seem to be more serious in Dire Dawa, Tigray and Somalie.

4.4. Household Ex-Post Risk Coping Mechanisms

There are differences in households' *ex post* risk coping mechanisms (sources where households get the 100 Birr within a week for unforeseen problems) between rural and urban areas. Ex post coping mechanisms of rural and urban areas are summarized in Table 4.5 (the regional distribution is given in the Appendix A 5.3-A 5.5). The main sources of 100 Birr for unforeseen problems (ex post risk coping mechanism) in their order of importance are: sale of animal products (26.1%) followed by the sale of agricultural products (16.2%) and loans from relatives (12.7%) for rural areas. In the case of urban areas, the major ex *post* risk coping mechanism is loan from relative followed by own saving (reserved money). The role of banks, *Iqub*, and *Idir* in absorbing shocks is quite negligible.

The regional distribution of the sources of the 100 Birr for rural areas is more or less the same as that of the national pattern (Table A 5.1, A 5.2 and A 5.3 in the Appendix). In all rural regions (except Gambella), the sale of animal products is the main source of getting 100 Birr within a week. In Gmabella, the main source of getting such cash is the sale of agricultural products. This may be due to the fact that Gambella is relatively more remote, hence the market for livestock products is very thin and the price of animal products is very low. The second main source is the sale of agricultural products in all rural regions except in SNNPR and Dire Dawa Rural Regions. The second main source in SNNPR and Dire Dawa Rural Regions is loan from relatives followed by loans from non-relatives.

Table 4.5. Sources to Get 100 Birr for Unforeseen Circumstances in a Week

Source to get the 100 Birr	Rural	Urban	Total
Sale of animal product	26.10	2.94	22.74
Sale of agricultural product	16.22	1.77	14.13
Sale of forest product	0.61	0.09	0.54
Reserved money	2.45	16.49	4.48
Bank or saving account	0.08	2.59	0.44
Iqub	0.16	0.78	0.25
Idir	2.87	1.60	2.69
Bank equivalent loan	0.15	0.70	0.23
Loan from relatives	12.74	17.88	13.49
Gift from relatives	0.59	3.96	1.08
Loan from non relatives	2.95	7.75	3.65
Gift from non relatives	0.09	0.33	0.12
Sale of household asset	0.42	1.85	0.63
"Others"	**34.57**	**41.29**	**35.54**
Total	100.00	100.00	100.00

The regional pattern *of ex post* risk coping mechanisms in urban areas is slightly different from that of the pattern at all-country level. In many of the urban regions such as Afar, Oromiya, Somalie, Benshangul-Gumuz, SNNPR, Gambella, Harai, and Dire Dawa, the main source ex post risk coping mechanism is own money (reserved money) followed by loans from relatives. In the rest of the urban regions (Tigray, Amhara and Addis Ababa), loan from relatives is the main *ex post* risk coping mechanism indicating that social capital (particularly family tie) is very important in Northern Ethiopia. The second type of coping mechanism in these three urban regions is reserved money.

So far attempts have been made to assess the existence of shocks that affected households in 1999/00. It was found out that there has been some shock in 1999/00 in few regions such as Tigray, SNNPR and Somalie. Households in Tigray, SNNPR and Somalie regions perceived that living conditions have slightly deteriorated in 1999/00 compared to a normal year. The mean monthly rainfall was lower and was more erratic in 1999/00 compared to 1995/96 at national level and in some regions. The majority of rural households were able to cope up with shocks in 1999/00, while the ability of urban households was somewhat lower. This is an indication of the fact that urban households were more vulnerable than rural households. This could be because rural households are more endowed with assets (such as land and livestock). While the main *ex post* risk coping mechanism for the rural population is the sale of animal products and other agricultural outputs and loan from relatives, urban peoples' main ex post coping mechanism is own reserve money and loan from relatives.

The role of formal and informal banks as well as *Idir* and *Iqub* (social organizations) are weaker in the provision of security for both rural and urban areas. If households face shocks (such as drought and war) now and then, vulnerability will remain to be a serious problem because shocks deplete household's asset base, which is the main ex post coping instrument. Thus, for Ethiopia to get out of all type of poverty, some kind of sustainable means of earning livelihood has to be designed. Perhaps moving from rain-fed agriculture to irrigation agriculture and the diversification of income and means of livelihood are some of the solutions to minimizing vulnerability of households to shocks in Ethiopia.
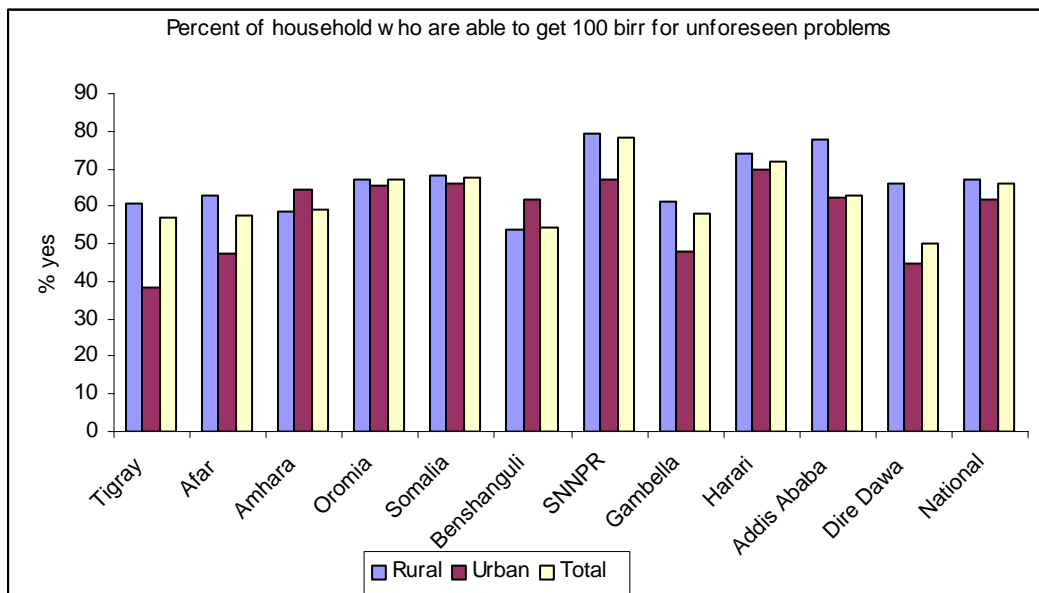
Figure 4.2 The proportion of households who can get 100 Birr within a week in case of unforeseen problems
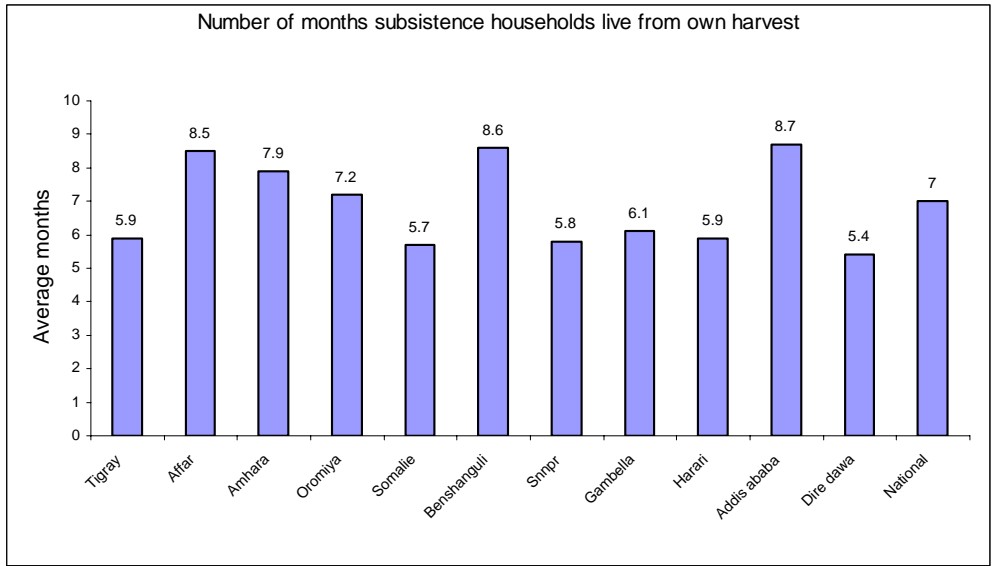
Figure 4.3 Average Number of Months a Subsistence Farmer Can Live From Own Harvest
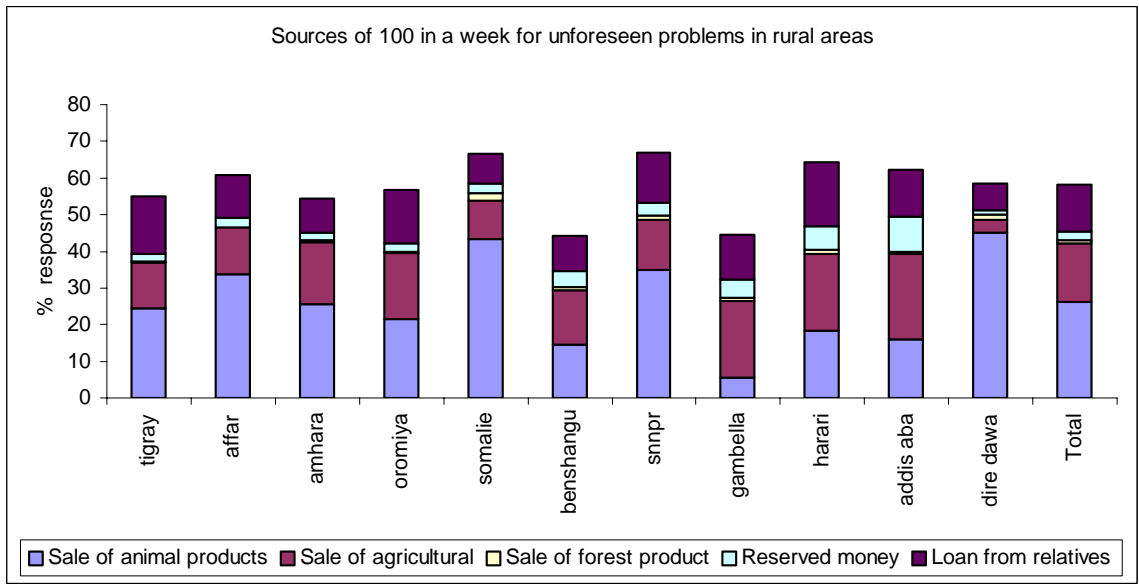
Figure 4.4 Sources to get 100 Birr in a week in case of unforeseen problems in rural People (%)
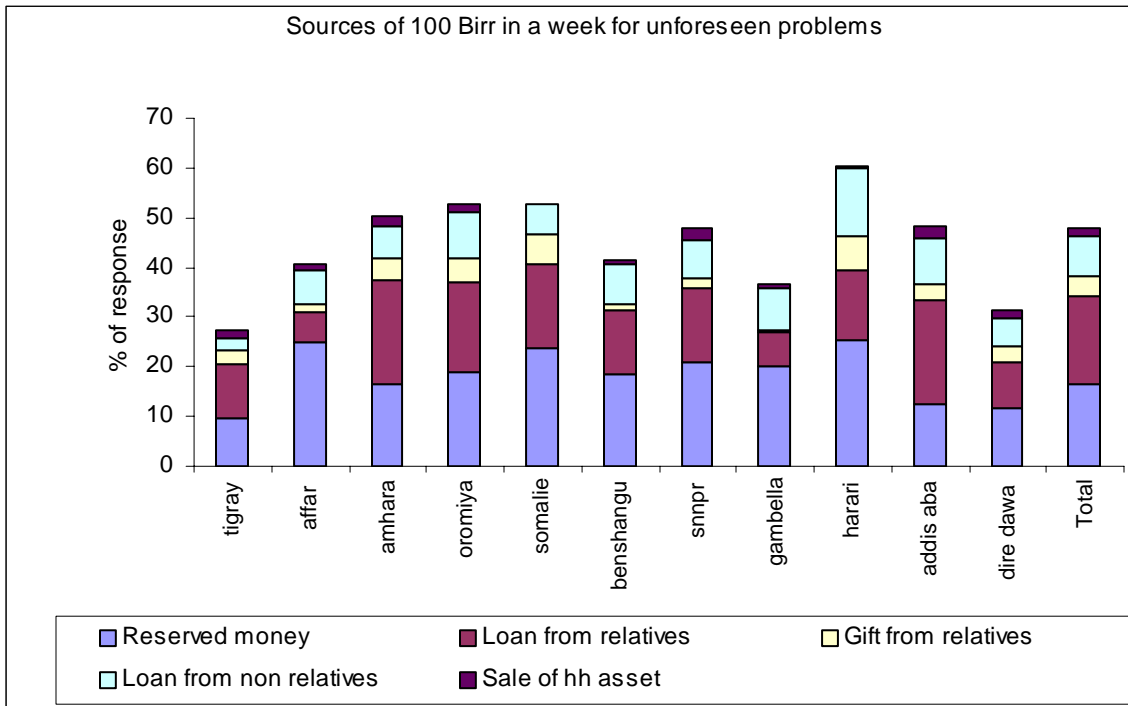
Figure 4.5 Sources to get 100 Birr in a week in case of Unforeseen Problems for Urban people (%)

V. Nutrition, Literacy, Health and Access to Public Utilities

5.1. Nutrition

Using relative height and weight measures of children we can generate both short and long run indicators of their nutritional status. Their nutritional status, in turn, reflects the extent to which the welfare situation of children has been affected and the degree of their vulnerability. In what follows we present the two commonly used measures to compare nutritional status of children to some world standard: wasting and stunting. The discussion is based on results from data obtained from the 1999/2000 Welfare Monitoring Survey (WMS). We relate these to the results obtained by Dercon's 1997 from the 1995/96 WMS.

5.1.1. Wasting

This measure takes weight over age of children between the ages of 3 and 60 months and relates it to an international standard[25]. This is a short-term indicator of malnutrition since the weight of a child easily fluctuates with immediate changes in nutrient intakes. The percentages of children that are wasted and severely wasted are presented in column two of Table 5.1.

The national percentage for severely wasted children in 1999/00 is 1.8. The figure for urban children is relatively lower (1.5 percent) than their counterparts in the rural areas (1.8 percent). The percent of wasted children follows more or less the same pattern. Thus, while the national percentage for wasting is 9.6 percent, that for rural areas and urban areas is 9.9 and 6.1 percent, respectively. Gender disaggregation indicates that the proportion of male children is higher than their female counterparts in terms of both wasting and severe wasting.

Severe wasting improves for the country in 1999/00 by 47 percent as compared to the one prevailing in 1995/96. Improvements in this regard are recorded for both the urban and rural areas. The percentage of rural children who are severely wasted is 1.8 as compared to 3.6 percent in 1995/96, showing a reduction by 50 percent, while reduction for urban children is around 35 percent.

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[25] If a z score of less than -2 is obtained for the weight for height variable, a child is classified as wasted and if a z score of less than -3 is obtained it is classified as severely wasted.

In contrast to the results for 1995/96, where severe wasting show a slight bias in favor of males when the data is classified by gender, the data for 1999/00 shows a slight bias in favor of females. The urban-rural classification of males and females shows a similar variation. A difference to note is the one for urban areas where severe wasting is only one percent for females while it is two percent for males.

Table 5.1: Child wasting in Ethiopia in percent (children aged between 6-59 months)

Location		1995/96			1999/2000			Per cent change for All
		Male	Female	All	Male	Female	All	
Ethiopia	Wasted	8.9	9.4	9.2	10.2	9.0	9.6	4.3
	Severely Wasted	3.3	3.6	3.4	1.9	1.6	1.8	-47.1
Rural	Wasted	9.3	9.8	9.5	10.5	9.3	9.9	4.2
	Severely Wasted	3.4	3.8	3.6	1.9	1.7	1.8	-50.0
Urban	Wasted	6.5	7.2	6.8	6.5	5.6	6.1	-10.3
	Severely Wasted	2.3	2.4	2.3	2.0	1.0	1.5	-34.8

NB: wasting when weight for height's z score is less than –2. Severe wasting when weight for height's z score is less than –3.
Source: Dercon, 1997; WMS; 1999/00.

Wasting, however, shows a slight increment in 1999/00 compared to the results in 1995/96. A national increment of around 4 percent in the proportion of wasted children is recorded between the two periods. Children in rural areas seem to account for the larger proportion of this increment. Thus, while there are only 6.1 percent wasted children in urban canters, the figure for rural areas is almost 10 percent.

The above results are consistent with the conditions that prevailed in 1999/00. This was a drought period in Ethiopia. Coupled with this phenomenon was the war with Eritrea, which may have not completely dried up, but at least did not help in the flow of aid from the international community. The result of these was reduced nutritional intake to all members of society and is reflected in the short run measure of child malnutrition: wasting.

Table 5.2: Child wasting in Ethiopia by expenditure quintile in percent (6-59 months age) (1999/00)

Status of Children	Expenditure quintile					
	1	2	3	4	5	Correlation
Wasted	9.47	10.34	10.12	7.84	9.53	-0.38383
Severely wasted	1.49	2.59	2.58	1.57	1.93	-0.03924

There is a negative relationship between child wasting and expenditure, though it seems weak for the latter. The last column in Table 5.2 is the correlation coefficient between expenditure quintile and the percent of wasted and severely wasted children in each quintile[26]. The largest percentage of wasted and severely wasted children is found in the second and third expenditure quintiles, while the lowest one is in the 4th quintile. We present the regional profile for wasting and severe wasting in Table 5.2. A more detailed regional profile based on reporting level of the sample is presented in Appendix Table A8.1 for interested readers.

The regional profile shows that Dire Dawa has the largest proportion of severely wasted children (3.1 percent) followed by Tigray (2.3 percent). Amhara, Benshangul-Gumuz and Somalie stood third with 2.2 percent of their children in this category. On the other hand, the largest proportion of wasted children is observed in Gambella (13 percent) followed by Dire Dawa (12.3 percent). Afar and Tigray follow with 11.8 and 11.7 percent of children being wasted. The region with least occurrence of child wasting is Addis Ababa with only 4.8 percent in this category. Note also that, by international standards, it is only Addis Ababa that shows a low prevalence of wasting; i.e., a percentage of less than 5. Three regions: Harari, Oromiya and SNNPR, indicate a modest prevalence of wasting (5-10 percent), while the rest show a high incidence. While the remaining regions have high occurrence of wasting, no region has recorded prevalence of wasting higher than 15 percent.

Gender classification of severe wasting by region indicates that females account for a larger proportion in Afar, Amhara, Somalie and Gambella regions while the reverse have been observed in the remaining regions (males account for a larger proportion). The picture is the same when we consider wasting except for the fact that in this case Amhara has a larger proportion of male wasted children (Table 5.3).

Compared to results obtained for 1995/96, the 1999/00 WMS indicate that wasting has increased for the urban areas of Tigray, Amhara and SNNPR while it has gone down for those of Oromiya, Addis Ababa, Dire Dawa, and Harar. It is also only in rural areas of Oromiya where the

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[26] Correlation coefficients for expenditure quintiles, on the one hand, and wasting and severe wasting were calculated using the raw data and were found to be -0.0194 and -0.0065, respectively. While the former was statistically significant, the latter was not. Thus, severe wasting and expenditure are not statistically related.

percentage of malnourished children goes down during this period. In all other regions, the proportion has gone up (Table 5.4).

Table 5.3: Regional Profile of Wasting by Gender (1999/00)

Region	Wasted			Severely wasted		
	Males	Females	All	Males	Females	All
Tigray	12.2	11.1	11.7	3.3	1.2	2.3
Afar	9.4	14.2	11.8	1.7	2.2	1.9
Amhara	11.2	10.7	10.9	2.1	2.3	2.2
Oromia	9.8	7.7	8.8	1.4	1.3	1.3
Somalie	9.0	14.3	11.7	1.9	2.5	2.2
Benshangul	10.8	11.9	11.4	2.5	1.9	2.2
SNNP	9.7	8.6	9.1	2.2	1.5	1.9
Gambella	9.7	16.0	13	1.8	2.4	2.1
Harari	4.9	5.9	5.4	1.0	1.5	1.2
Addis Ababa	5.8	3.8	4.8	2.9	1.0	2
Dire Dawa	13.8	10.6	12.3	3.3	2.9	3.1

Table 5.4: Comparison of Geographic Profile of Wasting (1999/00)

Location	Region	1995/96	1999/00
Urban	Tigris	6.4	6.5
	Amphora	4.4	5.6
	Oromia	9.5	5.8
	SNNP	4.3	5.1
	Harar	6.7	5.7
	Addis Ababa	5.9	4.7
	Dire Dawa	11.2	10.3
Rural	Tigris	9.6	12.3
	Amphora	10.1	11.2
	Roomy	9.6	9.0
	SNNP	6.3	9.3

Source: Dercon, 1997; WMS, 1999/2000

5.1.2 Stunting

In measuring relative stunting, we standardize the height for age variable and compare it to international values. If the Z score so obtained is less than –2 the child is classified as stunted and if the figure is less than –3 it is severely stunted. Stunting is used as a measure of long run malnutrition prevailing in a country. The results of this exercise for the data from the 1999/00 WMS are presented in Table 5.5.

When the percentage of stunted children exceeds 40 percent, the prevalence of stunting is said to be high relative to the international standard. Irrespective of how we classify the data, stunting is very high in Ethiopia. The national prevalence of stunting is around 57 percent. The figure for rural areas is 58 percent and for urban centres it is 45 percent. Thus, long run child malnutrition is prevalent in both urban and rural areas but is more pronounced in the latter. A similar picture is obtained when one considers severe stunting as well. The rural areas, with 32 percent severely stunted children, fare by far worse than the urban centres (only 21 percent). Gender disagregation of both stunting and severe stunting shows that females fare better in the sense that the prevalence of these phenomena is less severe.

Table 5.5: Child stunting in Ethiopia (for children aged 6-59 months)

Location		1995/96			1999/00			%Change
		Male	Female	All	Male	Female	All	for all
Ethiopia	Stunted	68.1	65.1	**66.6**	58.1	55.5	**56.8**	-14.7
	Severely stunted	45.2	42.2	**43.7**	32.0	30.6	**31.3**	-28.3
Rural	Stunted	70.0	66.7	**68.4**	59.4	56.4	**57.9**	-15.3
	Severely stunted	47.4	43.8	**45.6**	32.9	31.6	**32.3**	-29.2
Urban	Stunted	56.6	55.2	**55.9**	44.0	45.0	**44.5**	-20.4
	Severely stunted	32.1	31.9	**32.0**	21.5	20.4	**21.0**	-34.4

Table 5.6: Child stunting in Ethiopia by Expenditure Quintile (for children aged 6-59 months) (1999/00)

Status of Children	Expenditure Quintile					
	1	2	3	4	5	Correlation
Stunted	58.83	57.94	56.56	56.81	47.43	-0.82074
Severely stunted	36.32	33.31	30.20	28.45	23.48	-0.98968

Stunting and severe stunting are strongly correlated with expenditure quintiles[27]. Thus, households with larger expenditures have lower proportions of stunted and severely stunted children. A comparison of the 1999/00 WMS results with the results obtained for 1995/96, however, shows a marked improvement in all aspects. The percentages for both stunting and severe stunting have gone down by 15 to 34 percent. Thus, the data reveal that there is improvement in the long run measure of child malnutrition.

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[27] Correlation coefficients for expenditure quintiles and stunting and severe stunting were calculated using the raw data and were found to be -0.0778 and -0.0922, respectively. Both coefficients were found to be statistically significant.

Table 5.7: Regional profile of Stunting by Gender (1999/00)

Region	Stunted			Severely stunted		
	Male	Female	**All**	Male	Female	**All**
Tigray	57.9	59.8	**58.9**	29.7	34.1	**31.8**
Affar	36.8	46.9	**41.8**	17.5	30.1	**23.8**
Amhara	66.2	63.0	**64.6**	38.6	36.4	**37.5**
Oromiya	54.9	52.2	**53.6**	27.9	27.3	**27.6**
Somalie	50.3	45.6	**48.0**	31.4	28.4	**29.9**
Benshanguli	53.3	49.6	**51.4**	29.6	25.0	**27.2**
SNNP	58.8	54.1	**56.5**	35.6	31.1	**33.4**
Gambella	42.5	38.0	**40.2**	19.8	15.7	**17.7**
Harari	49.5	44.1	**46.9**	26.1	18.6	**22.5**
Addis Ababa	34.4	39.5	**36.9**	15.4	18.4	**16.8**
Dire Dawa	39.3	39.4	**39.3**	16.6	16.5	**16.6**

The regional comparison of stunting presented in Table 5.7, reveals that households in the Amhara Regional State have the largest proportion of stunted (64.6 percent) and severely stunted (37.5 percent) children. Distant followers in this case are Tigray, with 58.9 percent stunted children, and SNNPR with 33.4 percent severely stunted children. In regard to wasting, Addis Ababa fares well in the stunting category. Thus, only 36.9 percent of children are stunted. However, there are less severely stunted children in Dire Dawa (16.6 percent) compared to Addis Ababa (16.8 percent). Note also that the best performers in this respect (Addis Ababa and Dire Dawa) still account for more than 30 percent of stunted children, which by international standards is considered as high occurrence of stunting.

Table 5.8: Comparison of Geographic Profile of Stunting

Location	Region	1995/96	1999/00	Percent Change (%)
Urban	Tigray	69.6	41.3	-40.7
	Amhara	63.4	56.3	-11.2
	Oromiya	56.9	46.2	-18.8
	SNNP	55.3	42.3	-23.5
	Harari	43.2	37.5	-13.2
	Addis Ababa	45.7	36.6	-19.9
	Dire Dawa	47.7	36.2	-24.1
Rural	Tigray	74.5	61.1	-18.0
	Amhara	73.4	65.1	-11.3
	Oromiya	61.9	54.2	-12.4
	SNNP	69.0	57.3	-17.0

In general, rural areas have a larger share of stunted children in the country. Thus, while the figures for the rural areas in the selected four regional states (Table 5.8) are between 65 and 57

percent, the figure for the urban centres are all below 57 percent (Table 5.8). Nevertheless, comparison overtime for stunting between 1995/96 and 1999/00 shows marked improvement, ranging from a reduction of around 41 percent in urban Tigray and 20 percent in Addis Ababa. Rural areas, too, have shown a modest improvement in this respect, ranging between 11 and 18 percent. A more detailed regional poverty profile by reporting level is presented in Appendix Table A8.2.

5.2 Literacy

Another important indicator of welfare is the level of illiteracy prevalent in a country. In what follows, literacy rates are presented based on data from the 1999/00 Welfare Monitoring Survey (WMS). An illiterate is defined as an individual who is years old or more 10 and cannot read and write a simple statement. Table 5.9, presents the literacy rate in the country categorized by urban rural and gender. The overall literacy rate in the country is 29.4 percent. Females have attained a much less level of literacy (19.5 percent) as compared to their male counterparts (40 percent). Similarly, the urban population is much more advantaged (70.4 percent) than the rural one (21.8 percent). The rural female population is the most disadvantaged segment of society in terms of illiteracy; only 11 percent of this category of the population is able to read and write simple statements.

Table 5.9: Literacy Rate in Ethiopia (199596-1999/00)

Sex	1995/96			1997/98			1998/99			1999/00		
	Urban	Rural	All	Urban	Rural	All	Urban	Rural	All	Urban	Rural	All
Male	82.3	29.2	36.5	81.0	25.1	33.4	81.0	28.8	36.3	82.1	33.0	40.0
Female	60.4	9.2	18.1	60.8	7.3	16.5	59.0	8.8	17.1	61.2	11.0	19.5
Total	70.0	19.4	27.3	70.0	16.2	24.8	69.0	18.8	26.6	70.4	21.8	29.4

Source: WMS 1997, 1998 and 1999/2000, Dercon 1997

Table 5.9 also shows the trend in literacy between 1995/96 and 1999/00. Comparison of the results of the 1995/96 and 1999/00 shows a rise in the literacy rate from 27.3 percent 1995/96 to 29.4 percent 1999/00. However, the years in between show a relative decline. Female literacy rates tend to be stable around 18 and 19 percent, while the figures for their males' counterparts have been moving between 33.4 percent and 40 percent. On the other hand, rural areas seem to fare better relative to urban areas, while urban literacy shows stagnancy around 69 and 70 percent, shifting up and down between 16 and 21 percent.

Literacy achievements vary significantly across regions (Table 5.10). Addis Ababa stands in sharp contrast with other regions with a 79 percent literacy rate for its population aged 10 years and above. Harari and Dire Dawa follow, whereby literacy attains a level of 50 percent. We should, however, take note of the fact that that these are urban centres.

Gambella and Benshangul-Gumuz, classified as emerging regions, have achieved an impressive level of literacy. Thus, they record a literacy rate of 46.3 and 31.8 percent, respectively. Notice also that their achievements are by far better than the national average of 29.4 percent. The Afar regional state has the least level of literacy of only 18.6 percent.

In all regions, urban areas fare by far better than their rural counterparts, but the difference is most glaring in Afar, where the urban population has attained a 60.9 percent literacy rate compared to only 6.7 percent in its rural counter parts. Females also fare worse than their male counterparts in all regions. Here, too, however, the Afari females have attained the least level of literacy rate (only 2.1 percent). Compare this figure to the Afari urban females literacy rate of 48.5 percent. The details are presented in Appendix Table A8.3.

Table 5.10: Literacy Rate by Region and Gender (1999/00)

Region	Gender	Rural	Urban	Total
Tigray	Male	30.8	79.7	38.0
	Female	15.8	52.8	22.7
	All	22.8	63.3	29.6
Afar	Male	10.4	75.3	22.7
	Female	2.1	48.5	13.8
	All	6.7	60.9	18.6
Amhara	Male	26.3	80.8	31.2
	Female	9.8	57.5	15.7
	All	18.1	67.2	23.3
Oromia	Male	33.9	79.1	38.6
	Female	10.0	59.4	16.1
	All	21.7	68.2	27.1
Somali	Male	17.9	62.4	34.0
	Female	3.0	35.3	14.6
	All	10.5	48.9	24.3
Benshangul-Gumuz	Male	46.1	74.5	48.2
	Female	13.1	55.0	16.4
	All	29.1	64.1	31.8
SNNP	Male	40.8	76.9	43.5
	Female	13.1	57.0	16.6
	All	26.6	66.5	29.8
Gambela	Male	57.5	81.6	62.8
	Female	22.8	57.7	30.9
	All	39.6	68.9	46.3
Harari	Male	37.0	90.0	67.7
	Female	11.7	66.4	45.0
	All	23.4	76.5	55.0
Addis Ababa	Male	39.1	90.3	89.4
	Female	26.2	71.6	71.1
	All	33.1	80.0	79.3
Dire Dawa	Male	21.3	83.9	64.7
	Female	4.2	59.8	46.8
	All	13.2	70.3	55.1
Ethiopia	Male	33.0	82.1	40.0
	Female	11.0	61.2	19.5
	All	21.8	70.4	29.4

5.3. Household Characteristics of the Poor

This section highlights the main household characteristics of the Ethiopian population based on the households common to the HICE and WM surveys. We classify the data in terms of location (urban and rural) and poverty (quintiles of household expenditures) and present the results in Tables 5.11, 5.12 and 5.13.

According to the survey results, the average family size for Ethiopia is 4.9 persons per household. When we compare poor households with the richer ones, we observe that poorer households have larger family sizes; 5.8 & 5.4 individuals per household in the 1st and 2nd quintiles, in contrast to 4.7 and 3.9 per household in the 4th and 5th quintiles. The difference gets larger when the data is split in terms of location. Thus, poorer households in rural areas have a larger family size than their counter parts in the urban centres. Contrast the 5.6 individuals per household for the urban centres' 1st quintile to the 5.9 per household in rural areas.

Such discrepancy in family size itself reflects the variation in the average dependency ratios defined as household members older than 65 and younger than 15 divided by the complement of this set present in the households. Thus, poorer households tend to have larger proportion of dependents, 1.34 for the 1st quintile as opposed to 0.89 for the 5th quintile. Though the ratios show the same trend in both rural and urban areas, they are larger for the former for each quintile. The differences between the rural and urban areas in this regard should; however, be interpreted cautiously as younger members of a rural household may be engaged in productive activity.

Members of poorer household tend to have older household heads compared to richer ones. Whereas the average age of household heads in the country is 44 years, households in the 5th quintile exhibit an average age of only 42 years while the average age of those in the 1st quintile is 47 years. The split in terms of urban-rural households does not show any marked difference in this regard.

Females head 26 percent of the households in the country. This feature, however, is more dominant in urban than in rural areas. While females head 41 percent of the households in urban areas, the figure for rural areas is only 23 percent.

Table 5.11: Characteristics of Households (Urban)

Household Characteristics	Quintile					All
	1	2	3	4	5	
Household size	5.6	5.3	5.0	4.5	3.8	4.5
Dependency ratio	1.13	1.03	1.00	0.90	0.65	0.86
Age of household head	47	46	44	45	41	44
Household head is female	42	44	41	43	39	41
Divorced female household head	74	77	78	70	74	74
Widowed female household head	7	6	8	10	9	8
Illiterate household head	64	55	47	42	28	42
Head completed grade 1 to 3	6	6	6	6	3	5
Head completed grade 5 to 6	8	9	12	10	6	8
Head primary complete	4	4	4	5	5	5
Head in junior high school	5	8	8	9	12	9
Head in high school	6	9	13	17	24	17
Head in post secondary	0	3	5	6	17	9
% Illiterate in household (older than 9)	42	41	39	33	28	34
% Female illiterates in household (older than 9)	55	53	50	42	37	45
% Wasted children in household (6 to 59 mo. old)	6	8	6	4	5	6
% Stunted children in household (6 to 59 mo. old)	49	45	43	45	32	41

Table 5.12: Characteristics of Households (Rural)

Household Characteristics	Quintile					All
	1	2	3	4	5	
Household size	5.9	5.4	5.0	4.7	3.9	4.9
Dependency ratio	1.37	1.32	1.24	1.13	0.96	1.19
Age of household head	47	45	44	43	42	44
Household head is female	21	23	22	22	28	23
Divorced female household head	84	81	86	83	83	83
Widowed female household head	4	6	5	2	3	4
Illiterate household head	85	80	78	71	69	76
Head completed grade 1 to 3	3	5	6	8	6	6
Head completed grade 5 to 6	3	3	4	5	7	4
Head primary complete	1	2	2	3	4	2
Head in junior high school	1	2	3	2	3	2
Head in high school	1	1	0	2	4	2
Head in post secondary	0	0	0	0	1	0
% Illiterate in household (older than 9 years old)	83	80	79	76	75	79
% Female illiterates in household (older than 9)	93	91	90	89	87	90
% Wasted children in household (6 to 59 mo. old)	9	9	10	9	10	9
% Stunted children in household (6 to 59 mo. old)	57	58	57	57	51	56

Table 5.13: Household Characteristics (Total)

Household Characteristics	Quintiles					
	1	2	3	4	5	All
Household size	5.8	5.4	5.0	4.7	3.9	4.9
Dependency ratio	1.34	1.29	1.22	1.11	0.89	1.15
Age of household head	47	45	44	43	42	44
Household head is female (%)	23	25	24	25	30	26
Divorced female household head (%)	82	80	85	81	80	81
Widowed female household head (%)	4	6	6	4	5	5
Illiterate household head (%)	83	77	74	68	60	71
Head completed grade 1 to 3(%)	4	5	6	8	6	6
Head completed grade 5 to 6(%)	3	4	5	5	6	5
Head primary school complete (%)	2	2	2	3	4	3
Head in junior secondary school (%)	1	2	4	3	5	3
Head in high school (%)	1	1	2	3	9	4
Head in post secondary school (%)	0	0	1	1	5	2
% Illiterate in household (older than 9 years old)	79	76	75	71	64	72
% Female illiterates in household (older than 9 years old)	88	87	86	84	76	84
% Wasted children in household (6 to 59 months old)	8	9	10	8	9	9
% Stunted children in household (6 to 59 months old)	57	57	56	56	48	55

There is no clear trend (relationship) between poverty and gender of the head of the household at country level. Thus, while 30 percent of the households in the 5th quintile are female headed, the figure for the 1st quintile is 23 percent, 25 percent for the 2nd and 4th quintile and for the 3rd quintile it is 24 percent. Such lack of trend is also observed when we split the data in urban and rural categories. The main reason for observing a female-headed household is the prevalence of divorce. Thus, for the country as a whole, 81 percent of the female-headed household heads are divorced while only 5 percent are widowed. There is a marked difference in this regard when we classify our data by urban and rural areas; while 83 percent of the female-headed households are divorced, the figure for urban centres is 74 percent.

Seventy-one percent of the household heads in the country are illiterate in the sense that they report not being able to read or write a simple statement. Urban centres fare by far better in this regard where only 42 percent of the household heads are illiterate, while the figure for the rural areas is 76 percent. Splitting illiteracy in the country in terms of quintiles there is a clear tendency for poorer households to be headed by illiterate heads. Thus, we observe that 83 percent of all the household heads in the 1st quintile cannot either read or write a single statement, while the figure for the 5th quintile is only 60 percent. Categorizing the data into

urban-rural reveals the same trend, though illiteracy is a more common phenomena in the rural areas. Such a trend also holds for educational attainment of households (Tables 5.11-5.13 for a detailed description of these features).

5.4 Housing and Household Durables

Yet another indicator of the well being of members of society is their status of shelter. The WM survey questionnaire contains a number of variables relating to the dwellings of households in the country. In what follows, we report the findings for these variables.

The first important piece of information we have is about the ownership of the dwellings where households currently reside. As could be seen from Table 5.14, a total of 86 percent of the households in the country live in dwellings they themselves own. However, this figure is very much influenced by the figure of 92.5 percent of personal ownership in the rural areas. In urban areas, the personal ownership of dwelling houses is only 48 percent. Such a figure in rural areas is not surprising given the structure of ownership prevailing in the country. Rural households build their own *tukuls* in the existing setting. Regional variation in this respect is not very much different from the national data (Appendix Table A8.4).

The figures in Table 5.14, however, could be misleading if taken separately. One has to look into the types of houses that the households own before passing judgments on the effects of such an ownership pattern on household welfare. Thus, as could be seen from Table 5.15, the average number of rooms available for the average household in the country is only 1.6 per household. Recalling the fact that the average family size of the country is 4.9 persons the average number rooms per household is very low. The same table gives us the distribution of rooms available per household by quintiles. As expected, the country level figures indicate that the richer the household is the more rooms available to the household. Again recalling the fact that household size and expenditure are inversely related, we see that poorer households have to live in much more crowded dwellings than richer ones.

Regional comparisons indicate that Addis Ababa is doing by far better than the other regions with 2 rooms per household and Somalie with only 1.2 rooms per household is in the worst situation. The other regions are in between. We also note that the positive relationship between

expenditure and number of rooms per household in the regionally disaggregated data prevails in most cases.

Table 5.14: Ownership Structure of Households' Dwellings

Kind of Ownership Of Dwelling	Urban	Rural	Total
Owned	48.2	92.5	86.2
Subsidized employer-part	2.0	4.7	4.3
Subsidized by relatives	3.0	1.8	2.0
Subsidized by organization	0.2	0.0	0.0
House renting enterprise	1.2	0.0	0.2
Rented from kebele	24.5	0.1	3.5
Private renting organization	0.4		0.0
Rented from relatives	1.3	0.0	0.2
Rented from non relatives	18.0	0.4	2.9
Others	1.2	0.4	0.5

Table 5.15: Mean Number of Rooms of Household Dwellings by Quintiles

Region	Quintiles					
	1	2	3	4	5	All
Tigray	1.6	1.6	1.7	1.7	1.8	1.7
Afar	1.5	1.7	1.7	1.6	1.6	1.6
Amhara	1.4	1.5	1.4	1.5	1.7	1.5
Oromia	1.5	1.6	1.7	1.7	1.8	1.7
Somali	1.2	1.1	1.1	1.3	1.4	1.2
Benshangul	1.5	1.6	1.7	1.8	1.8	1.7
SNNP	1.5	1.4	1.4	1.5	1.7	1.5
Gambela	2.0	1.7	1.9	2.0	2.0	1.9
Harari	1.6	1.7	1.6	1.6	1.9	1.7
Addis Ababa	2.0	2.2	2.2	2.4	3.1	2.6
Dire Dawa	1.3	1.3	1.3	1.3	1.6	1.4
Total	1.5	1.5	1.6	1.6	1.8	1.6

The positive relationship between consumption expenditure and number of rooms available per household is even more vivid when we categorize the data in terms of residence. This could be seen in Table 5.16, where the households in the 1st quintile reside in only 1.5 rooms as compared to the average of 1.8 rooms for the 5th quintile. We also note that the average number of rooms for urban centres is larger for households as compared to their rural counter parts for all quintiles. Thus, though urban residents do not own as much as the rural ones, they relatively have more living space.

Table 5.16: Mean Number of Rooms of Household Dwellings by Residence and Quintiles

Residence	Quintile					
	1	2	3	4	5	All
Urban	1.8	2.1	2.1	2.4	2.6	2.3
Rural	1.5	1.5	1.5	1.5	1.6	1.5
Total	1.5	1.5	1.6	1.6	1.8	1.6

Important indicators of the quality of the houses in which people live are the materials with which they are constructed. The information depicted in Table 5.17 – 5.20 does precisely this. We have also presented the same data categorized by regions and by residence in Appendix Table A8.5 –A8.8.

Thus, 84.8 percent of the houses in the country are made of wood and mud-low quality houses. Brick and well-constructed stone walled (using cement) houses are a luxury of only 0.4 percent and 3.3 percent of households residing in urban centres, respectively (Table 5.17).

Table 5.17: Type of material most of the walls is made up of (1999/00)

Types	Total	Urban	Rural
Wood and mud	74.8	83.4	73.3
Wood and cement	9.7	1.0	11.1
Bamboo or reed	2.1	0.3	2.4
Mud and stone	8.3	5.1	8.8
Cement and stone	0.6	3.3	0.1
Hollow block bricks	0.5	3.6	0.0
Bricks	0.1	0.4	0.0
Others	3.9	2.8	4.1
Not stated	0.0	0.0	0.0

Only a quarter of the households in the country live in houses with corrugated iron sheet roofed houses. A large proportion of 65.7 percent of the households live in grass roofed houses (Table 5.18). It is also worth noting that there is almost a clear categorization of roofing in rural and urban areas: ninety percent of the roofs of the houses in urban areas are corrugated iron sheet while three quarters of them in rural areas are grass roofed.

Table 5.18: Type of Materials most of the Roof is made up of

Types of roof	Total	Urban	Rural
Corrugated iron sheet	25.5	90.6	14.8
Grass	65.7	6.3	75.5
Others	8.8	3.1	9.7

Kerosene is the single most important source of lighting for lighting by households. It accounts for 68.7 percent of the households. This is particularly true for rural areas where more than three-quarters of the population uses kerosene for lighting. In urban areas electricity is the major source of lighting with 69.8 percent of the population using it. But private connections account for only 45 percent of those that use electricity. Use of electric light in rural areas is virtually nonexistent (Table 5.19).

Table 5.19: Type of Lighting the Household Uses Now

Type of Lighting	Total	Urban	Rural
Kerosene	68.7	28.9	75.2
Electric-private	4.9	31.6	0.6
Electric-shared	5.8	38.2	0.4
Wood	20.2	1.0	23.3
Candle	0.0	0.2	0.0
Others	0.4	0.2	0.5
Not stated	0.0	0.0	0.0

The final indicator of the quality of housing available in the data set is the type of toilets used by households in the country. The available data indicates that only 17 percent of the households use some form of latrine. The largest proportion, 81.7 percent, uses open fields for such purposes. The situation in rural areas is worse (90.7%) than that of the urban areas (27.1 percent). Thus, not only are the houses where people live crowded, but they are also of low quality. Moreover, the quality of housing in rural areas is by far lower than that of the urban areas.

Table 5.20: Type of Toilet the Household Uses Now

Type	All Ethiopia	Urban	Rural
Flush toilet private	1.0	3.5	0.6
Flush toilet shared	0.7	3.4	0.2
Pit latrine private	9.9	35.0	5.8
Pit latrine shared	5.8	29.4	1.9
Bucket	0.1	0.7	0.0
Field forest	81.7	27.1	90.7
Others	0.7	0.8	
Not stated	0.0	0.0	0.7

5.5 Ownership of Household Durables

Ability of obtaining information and improved mobility of people are two important indicators of the level of poverty in a society. Households with access to information can use it to improve their welfare. Improved means of mobility enhance the welfare of the household as well. As a proxy to the availability of information, the WMS contains information on the ownership of television and radio sets. It also contains information on the ownership of rudimentary means of transportation such as bicycles and motorcycles, which is presented in Table 5.21.

The data shows that a very small proportion of the population (1.6 percent) owns TV sets. This, however, tremendously varies across regions. While around 29 and 17 percent of the households in Addis Ababa and Dire Dawa, respectively own TV sets, only 0.17 and 0.46 percent of the households in Benishangul-Gumuz, and Amhara, respectively, do so. Notice also that regions with larger ownership of these durables are cities, implying that the vast majority of the rural areas have little access to such resources. In fact, since all rural areas have little access to electric power, it is not surprising to observe such a minuscule percentage of rural population owning TV sets.

We have had a better picture when we come to ownership of radio sets. More than 18 percent of the households in the country own radio sets. However, in this regard too, the distribution is highly skewed in favor of urban areas. Thus, as a whole almost 80 percent of the households in Addis Ababa and 64 percent of those living in Harari own at least one radio set. On the other hand, less than 10 percent of those in the Amhara region do so.

Table 5. 21: Ownership of Sources of Information and Mobility

Region	TV	Radio	Bicycle	Motorcycle
Tigray	1.30	17.97	0.73	0.02
Afar	2.82	27.95	1.77	0.07
Amhara	0.46	9.88	0.25	0.01
Oromiya	1.24	20.09	0.97	0.02
Somali	3.41	20.76	0.84	0.03
Benshangul	0.17	19.46	0.63	0.05
SNNP	0.48	15.47	1.37	0.02
Gambela	1.77	23.21	2.21	0.18
Harari	15.47	63.67	0.43	0.11
Addis Ababa	29.19	78.97	1.08	0.41
Dire Dawa	16.81	51.80	4.79	0.87
Total	1.96	18.41	0.86	0.04

Overall, ownership of mechanical and motorized means of transportation is at its infancy in Ethiopia. Only 0.86 percent of the households in the country own at least one bicycle. The region with high percentage of cycle ownership is Dire Dawa where around 5 percent of the households own one. The figure for motorized cycles is even worse and is better to say that they do not exist.

5.6. Farm Assets in Rural Ethiopia

The main means of livelihood in rural areas of Ethiopia is agriculture. Under such circumstances, therefore, land ownership in rural areas becomes an important determinant of welfare. The WM survey asks households on whether they own land or not. Unfortunately, however, it does not inform on the amount of land owned by such households. Nonetheless, we have presented the available information in what follows.

Almost all (97.6 percent) households in the rural areas of the country own some amount of land. However, more male-headed households (98.3 percent) own land than their female-headed counterparts (95.3 percent). There is, however, some regional variation in this regard as well. Thus, while 98.7 percent of the households in the SNNP region own land, in the Afar region it is only 91.9 percent that do so. Yet a larger proportion (93.2 percent) of the female-headed households in the Afar region own land compared to their male-headed counterparts (91.6 percent). Land ownership (the right to use land) seems to be widespread in the rural areas. However, we cannot tell about the distribution of land ownership from this dataset.

Table 5.22: Percentage of Households that Own Land

Region	Total	Male	Female
Tigray	93.5	93.3	94.1
Afar	91.9	91.6	93.2
Amhara	97.8	98.1	97.0
Oromiya	97.7	98.9	93.9
Somali	95.6	96.4	93.5
Benshangul-Gumuz	96.6	98.4	91.5
SNNP	98.5	99.1	96.6
Gambela	91.4	91.7	90.5
Harari	98.3	99.2	95.2
addis ababa	93.1	92.4	95.0
Dire Dawa	97.6	97.8	96.8
Total	97.6	98.3	95.3

Another important input in agricultural production in the Ethiopian setting is the availability of traction power. This is mainly done with the use of oxen in the country. Thus, a household owning oxen would be in a better position in cultivating its land. The WM survey does not have information on the ownership of oxen, but it has had information on the availability of cattle. This variable can be used as a proxy in this regard. Table 5.23 depicts the percentage of households owning cattle in the country by region and by gender.

Table 5.23: Percentage of households that own cattle

Region	All	Male	Female
Tigray	74.7	86.7	51.8
Afar	79.1	79.9	74.6
Amhara	78.5	86.4	49.1
Oromiya	79.9	81.8	73.5
Somalie	77.2	82.9	62.0
Benshangul-Gumuz	55.0	61.8	35.5
Snnpr	81.0	83.0	74.1
Gambela	21.1	24.7	10.4
Harari	78.7	81.2	69.9
Addis Ababa	80.0	83.3	70.6
Dire Dawa	85.4	87.4	77.3
Total	78.9	83.4	64.0

As can be seen from the Table, 78.9 percent of the households in the country own cattle. However, the percentages are skewed against female-headed households. Thus, while only 64 percent of the female-headed households own cattle 83.4 percent of their male counterparts do so. Gambella Region registers the least ownership of cattle in the country where only 21.1 percent of rural households own this asset. On the other hand, 81 percent of the households in the SNNP region own cattle.

Table 5.24 gives the percentage of households that own cattle by their consumption expenditure quintiles. At national level, we observe that fewer percentages of the households in the lowest quintile own cattle as compared to the other four quintiles. This percentage increases with quintiles up to the 4th quintile and falls down for the 5th quintile, but is still higher than the 1st quintile.

Table 5.24: Percentage of Rural Households Owning Cattle by Quintile

Region	Quintile				
	1.0	2.0	3.0	4.0	5.0
Tigray	76.0	77.6	77.8	72.2	65.3
Afar	80.6	75.7	76.5	79.8	84.6
Amhara	69.9	76.4	80.4	85.1	78.1
Oromiya	71.4	77.7	80.5	84.7	80.7
Somalie	66.8	85.6	82.8	75.3	72.2
Benshangul-Gumuz	53.7	62.4	57.3	46.9	52.9
SNNPR	78.9	85.0	82.8	81.1	77.6
Gambela	10.1	24.5	18.1	34.6	12.6
Harari	62.9	95.0	82.9	81.3	74.3
Addis Ababa	60.4	76.3	84.7	77.4	84.3
Dire Dawa	74.1	80.6	84.2	94.3	82.8
Total	73.2	78.6	80.4	82.8	78.2

Regional disaggregation of the available information reveals a similar mixed relationship between cattle ownership and consumption expenditure with the exception of Oromiya region. Thus, from this data, one cannot infer a strictly positive relationship between poverty and cattle ownership.

Table 5.25 depicts the average number of ownership of cattle. Rural households on average own 4.1 cattle per household. This average ranges between 14.1 for Afar, which is a cattle raising region and 3.6 in Amhara. We have left out Harari, Dire Dawa and Addis Ababa, where the number of rural population is relatively small.

Table 5.25: Average Number of Cattle Owned by Households by Region and Quintile

Region	Quintile					
	1	2	3	4	5	All
Tigray	4.3	4.2	4.6	4.0	5.4	4.4
Afar	20.0	15.0	7.3	7.7	14.6	14.1
Amhara	2.8	3.2	3.4	4.2	4.2	3.6
Oromiya	4.3	4.7	4.3	5.0	4.5	4.6
Somali	5.5	4.9	6.6	6.1	5.8	5.8
Benshangul	4.7	3.0	3.4	5.8	5.7	4.4
SNNPR	3.8	3.5	3.6	3.7	3.8	3.7
Gambela	10.9	2.8	3.5	3.5	7.8	4.4
Harari	2.0	2.4	2.7	2.4	2.5	2.5
Addis Ababa	2.6	6.7	5.7	5.4	6.8	6.0
Dire Dawa	4.0	3.1	4.2	3.4	3.9	3.7
Total	3.9	4.0	3.9	4.4	4.3	4.1

The average number of cattle owned by the poorest households, as represented by the 1st quintile in the consumption expenditure distribution, is only 3.9. The average increases to 4.4 for the 4th quintile and declines to 4.3 for the 5th quintile. Similar pattern is observed for most regions (Table 5.25).

5.7. Access to Human Capital

Two important aspects of access to human capital are access to education and health facilities. The WM survey data set provides information on these variables for which the outcomes are presented in this section.

5.7.1. Enrolment Rates

In light of limited access to physical assets, education can be a means of improving ones productivity and raise incomes of individuals. Current education levels of children born into poverty could be indicative of the possible escapes from poverty in the future. In what follows we use the data available on school enrolment in Ethiopia.

Table 5.26: Gross and Net Primary Enrolment Rate By Gender and Residence (1995/96 & 1999/00)

	GPER			NPER		
	1995/96					
Location	Male	Female	All	Male	Female	All
Urban	98.2	94.6	96.4	65.5	62.0	63.7
Rural	35.1	17.0	26.3	16.1	9.2	12.8
Ethiopia	43.0	27.6	35.5	22.3	16.4	19.4
Location	1999/00					
Urban	103.1	107.6	105.4	74.1	74.8	74.5
Rural	62.7	41.4	52.4	30.7	25.2	28.0
Total	67.4	50.0	58.9	35.8	31.6	33.8

Source: Dercon 1997, and WM Survey 1999/00

Gross Primary Enrolment Rate (GPER), calculated as the percentage of enrolled students to the total number of children in the primary school-age bracket, is 58 percent. This figure is biased in favor of urban (105.4 percent) and males (67.4 percent) compared to rural (52.4 percent) and females (50 percent). The same bias is observed in the net enrolment rate in the country. Net Primary Enrolment Rate (NPER), calculated as the percentage of students in the school-age bracket to the total number of school-age bracket children, shows similar compositions. The

NPER for the country as a whole is 33.8 percent. This rate is higher for urban areas, around three quarters of the school-age children, than rural areas (only 28 percent). Similarly, male NPER is higher (35.8) percent than female NPER (31.6 percent)(Table 5.26).

Comparing the 1999/00 results with those obtained by Dercon (1997) for 1995/96 indicate a marked improvement in both the gross and net enrolment rates in the country between the two periods (Table 5.26). Moreover, the improvements seem to be biased in favor of rural areas and females. Thus, gross enrolment for the country increased by 67 percent. The improvement is even more impressive for net enrolment rate, which rose by almost 75 percent. More importantly, increment in GPER for rural areas is almost 100 percent while that in urban areas is just around 8 percent. In terms of NPER the improvements for urban centers is only 17 percent, while for rural areas it is an impressive 119 percent. Moreover, the GPER rose by 57 percent for males while it did so by 81 percent for females. There is also bias in favor of female NPER (93 percent) compared to improvements in male NPER (61 percent).

Table 5.27: Gross and Net Primary Enrolment Rate by region, residence and Gender (1999/00)

Region	GPER					NPER				
	Urban		Rural			Urban		Rural		
	Male	Female	Male	Female	All	Male	Female	Male	Female	All
Tigray	108.51	113.74	49.62	51.22	59.57	75.28	74.62	22.89	29.71	33.59
Afar	98.23	112.35	16.70	21.81	31.60	70.47	68.67	5.22	13.89	17.94
Amhara	103.00	114.41	48.47	43.93	51.91	74.78	82.35	28.08	31.71	34.25
Oromiya	104.41	110.03	67.98	38.17	59.02	76.12	77.10	32.17	22.63	32.44
Somali	76.21	55.52	21.92	6.60	33.35	40.15	43.06	9.30	3.80	19.06
Benshangul-Gumuz	120.42	130.97	110.07	52.37	84.04	83.07	85.82	54.36	28.78	44.68
SNNPR	95.70	89.22	73.80	41.69	60.37	70.00	57.61	33.65	21.17	29.99
Gambela	117.78	129.26	145.34	105.72	124.86	73.95	79.32	74.39	60.68	69.62
Harari	118.74	109.66	116.26	62.63	101.46	86.40	83.71	57.58	38.28	66.57
Addis ababa	107.64	113.74	58.58	56.68	109.62	78.41	79.43	32.08	35.45	77.89
Dire Dawa	106.39	82.53	57.53	21.04	75.75	78.52	59.74	26.61	10.05	51.76

The 1999/00 GPER and NPER are presented in Table 5.27 by region and Rural-Urban areas. Enrolment rates (both gross and net) are higher for urban areas than rural areas across regions. Gender classification, however, shows mixed results. In some regions (Tigray and Afar) female gross enrolment rates are higher in both rural and urban areas. In Amhara, Oromiya, Benshangul-Gumuz, Gambella and Addis Ababa female GPER is higher than their male counterparts in urban areas only. High GPER is not indicative of best performance since it includes children that

go to school at older ages than the upper limit of the school-age bracket. It is, however, indicative of a tendency to catch up, for those who could not make it at the 'right age'.

The NPER is highest for Addis Ababa (77.9 percent), which is closely followed by Gambela (69.6 percent) and Harari (66.6 percent). In the lower echelon is Afar with only 17.94 NPER, followed by Somali (19.06 percent). Female NPER are higher in urban centres of five regions (Amhara, Oromiya, Benshangul Gambela and Addis Ababa), while it is higher for rural children only in Tigray and Amhara.

Table 5.28: Gross and Net Primary Enrolment Rate by Region and Quintile (1999/00)

Region	GPER					NPER				
	Expenditure quintiles					Expenditure quintiles				
	1	2	3	4	5	1	2	3	4	5
Tigray	66.08	63.38	77.41	85.00	109.98	40.26	38.79	44.58	49.78	51.01
Afar	23.52	54.36	74.57	73.92	72.84	4.37	42.45	45.79	59.76	47.93
Amhara	52.81	58.58	55.35	56.00	67.30	31.39	35.71	39.33	37.03	52.57
Oromiya	60.48	59.78	60.60	66.58	75.85	28.36	33.59	37.03	39.93	53.90
Somali	29.57	30.81	43.19	47.25	73.86	15.19	19.68	23.33	23.04	47.10
Benshangul-Gumuz	76.34	75.91	94.25	96.45	95.87	36.00	44.22	46.73	51.84	63.48
SNNPR	62.88	68.35	69.58	78.22	75.85	28.45	34.73	31.35	45.47	48.34
Gambela	133.02	126.87	122.73	136.32	117.09	67.06	68.02	77.42	79.24	51.99
Harari	120.37	105.27	85.90	96.01	111.65	83.54	61.90	63.18	60.15	73.39
Addis Ababa	112.27	109.44	110.65	110.76	106.97	76.87	79.57	78.64	77.44	77.21
Dire Dawa	92.83	65.63	64.14	88.37	86.03	51.03	41.44	47.38	63.12	68.04
Ethiopia*	61.84	63.44	64.00	69.34	78.69	32.56	36.81	39.14	42.80	55.69

*The aggregate figures presented in this table are based observations that appear both in the HICE and WMS, which resulted in discrepancy with table 5.26, which is calculated based on the observations from the whole WMS.
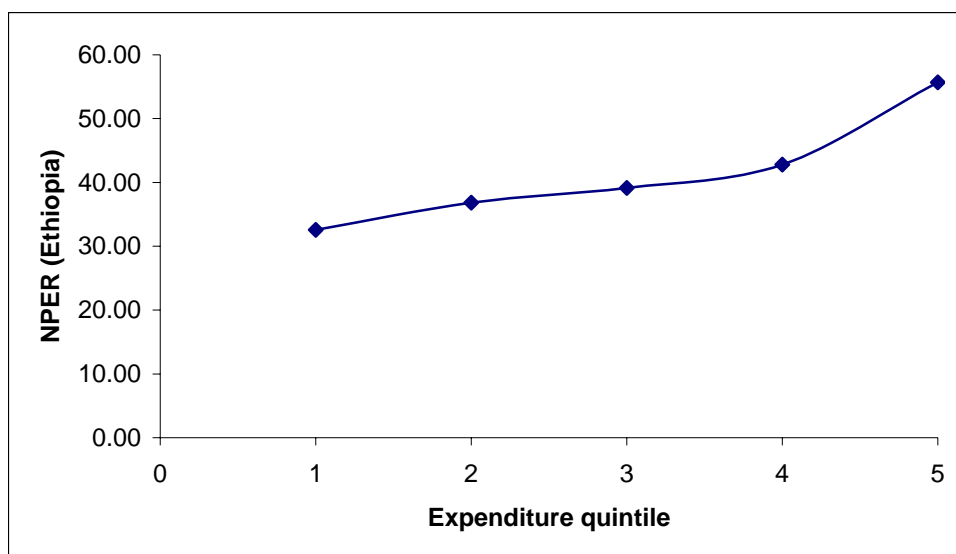
Figure 5.1: Net primary enrollment by Quintile (Ethiopia)

In general, access education by poorer households tends to be less than the richer ones. However, in some regions (notably Addis Ababa and Gambela) the poor tend to have higher GPER. There are two possible explanations for this. Either poverty tends to force households not to send their children to school at the right school age because they cannot afford to pay for the basic school materials. Thus, they make it up at latter ages. Or even after joining school, they may be forced not to temporarily interrupt classes and search for income generating activities and help their poor families. NPER, however, clearly shows that poorer households do not benefit from education as much as the rich ones (Figure 5.1 above).

The gross secondary enrolment rate for the country for the survey year is 15.5 percent (Table 5.29). Here, too, we observe biases against the rural areas and females. Thus, while rural areas record only a 5.9 percent GSER, their urban counterparts show a GSER of more than 60 percent. In terms of net secondary enrolment rate, we see that the figure for the whole country is 11.5 percent. NSER is as low as 3.9 percent in rural areas whereas it is 47.7 percent in urban areas. Female NSER is only ten percent while that of males is 12.3 percent.

Table 5.29: Gross and net secondary enrolment rates by areas and gender (1999/00)

	GSER			NSER		
Location	Male	Female	All	Male	Female	All
Urban	67.9	56.6	61.6	51.6	44.6	47.7
Rural	8.1	3.4	5.9	5.2	2.5	3.9
Total	17.2	13.8	15.5	12.3	10.7	11.5

Table 5.30: Gross and net secondary enrolment rate by region, urban-rural areas, and Gender (1999/00)

| | GSER | | | | | NSER | | | | |
| | Urban | | Rural | | | Urban | | Rural | | |
Region	Male	Female	Male	Female	All	Male	Female	Male	Female	All
Tigray	69.35	58.57	12.76	10.70	22.25	54.62	49.13	8.92	8.94	17.63
Afar	64.43	32.89	1.51	0.00	12.21	45.15	28.74	1.29	0.00	9.54
Amhara	70.75	61.21	3.08	2.21	10.63	52.64	49.17	1.78	1.37	7.83
Oromiya	63.81	52.57	7.83	2.78	11.87	50.53	40.31	5.16	2.30	8.90
Somalie	28.71	25.51	0.72	0.39	10.85	21.83	21.65	0.72	0.39	8.71
Benshangul-Gumuz	72.73	38.29	16.63	4.21	13.72	45.81	25.58	10.38	2.83	8.75
SNNPR	59.00	50.59	12.90	4.19	12.99	43.29	40.96	7.97	2.67	8.82
Gambela	89.11	46.91	32.05	8.28	33.62	56.70	25.80	20.47	3.51	20.30
Harari	81.28	79.06	8.06	3.85	49.85	61.90	59.35	5.60	1.55	37.28
Addis Ababa	78.47	61.95	21.47	9.52	68.15	58.63	48.10	14.94	7.99	51.95
Dire Dawa	64.47	53.50	1.66	0.00	41.77	47.90	40.55	1.66	0.00	31.42

Thus, in addition to being relatively small, participation in secondary education is far more biased towards urbanites and males compared to primary education. However, there are still some variations among regions. For instance, in Tigray we observe that male and female enrolment rates are similar in both urban (54.6 and 49.1 per cent, respectively) and rural (8.92 and 8.94). Disproportions exist in terms of residence not gender in such cases (Table 5.30).

Table 5.31: Gross and Net Secondary Enrolment Rate by Region and Quintile (1999/00)

| | GSER | | | | | NSER | | | | |
| | Expenditure quintiles | | | | | Expenditure quintiles | | | | |
Region	1	2	3	4	5	1	2	3	4	5
Tigray	28.04	24.06	30.88	38.86	56.37	23.29	18.92	26.22	24.93	41.00
Afar	4.77	17.31	16.77	35.87	38.64	3.81	14.66	13.17	29.16	23.54
Amhara	11.42	12.65	16.14	17.01	38.73	8.61	8.98	12.72	13.30	26.80
Oromiya	11.70	15.04	18.93	23.28	38.37	9.49	11.21	14.27	16.18	29.36
Somali	15.65	6.97	13.70	16.22	24.77	9.89	5.43	10.99	13.56	23.73
Benshangul-Gumuz	7.72	17.73	15.88	19.52	29.16	4.37	12.16	9.56	15.69	18.86
Snnpr	9.28	18.24	18.75	20.94	30.44	6.33	14.13	11.87	15.62	18.60
Gambela	35.86	35.02	28.64	34.39	47.56	25.46	20.42	12.48	19.23	21.63
Harari	58.51	44.93	42.96	45.13	59.41	47.33	35.62	37.48	30.73	38.47
Addis Ababa	67.19	64.56	70.89	66.63	70.00	50.33	52.18	52.26	53.42	51.61
Dire Dawa	29.52	36.19	31.66	47.79	69.16	26.55	25.23	23.78	37.94	46.98
Ethiopia*	17.01	19.58	22.77	24.76	44.79	13.05	14.94	16.95	18.35	32.27

* The aggregate figures presented in this table are based observations that appear both in the HICE and WMS, which resulted in discrepancy with table 5.29, which is calculated.

Table 5.31 shows the GSER and NSER by region and expenditure quintiles. Both show a strong association between expenditure quintiles and rate of enrolment. Thus, smaller proportions of enrolment prevail for poorer households compared to richer ones. Thus, the NSER for children of households within the first quintile is only about 13.1 percent while that of the fifth quintile is about 32.3 percent. Moreover, the regional picture is similar to the overall picture although there still were some irregularities.

Thus, while there is an impressive improvement in the coverage of primary education the levels are still very low and indicate that efforts to increase the coverage of primary education needs to be further enhanced. The figures for secondary enrolment rates also indicate that the country has to put much more effort in the factors that still enhances increases enrolment.

5.7.2. Health

Another important aspect of human capital is the health status of individuals in society. Besides having a direct impact on welfare of individuals, their health status has repercussions on their potential productivity. The WM Survey asks household members their health status in the two months prior to the interview. The summary of these results is presented following Table 5.32.

Table 5.32: Self reported illness in the last 2 months prior to the WM Survey by quintile (1999/00)

Quintile	All	Male	Female
1	24.3	24.2	24.4
2	25.0	23.7	26.4
3	25.2	24.4	26.0
4	24.4	23.5	25.4
5	26.4	25.4	27.4
All	25.0	24.2	25.9
Urban	18.1	16.6	19.3
Rural	26.1	25.2	27.0

Table 5.33: Health Care Use Conditional on Reported Illness (1999/00)

		Urban			Rural		
	Total	Male	Female	All Urban	Male	Female	All rural
Ill But No Treatment	60.65	29.29	37.83	33.27	59.85	66.81	61.74
Treated In Public Facility	19.38	38.49	33.7	34.23	19.6	15.82	17.05
Treated In Private Facility	13.38	23.71	20.52	21.19	13.38	11.63	12.13
Treated by Traditional Healer	6.59	8.5	7.96	7.98	7.17	5.74	6.014

A quarter of the population in the country reported to have been sick in the two months prior to the administration of the WM Survey questionnaire. In terms of gender disaggregation, the data shows that 24.2 percent of males reported to have been sick, the figure for females was about 26 percent. On the other hand, while around 27 percent of the rural population reported to have been sick, only 19.3 percent of their urban counterparts reported the same. Thus, illness seems to be biased against the rural and female population in the country.

Over 60 per cent of those reported to have been ill stated that they did not seek any form of medical treatment. Note, however, that this figure is only around 38 per cent in urban areas whereas it is about 62 per cent in rural Ethiopia. In terms of gender disaggregation, too, we see that males fare better in both urban and rural areas. Thus, while only 29 per cent of males who reported to have been ill sought no treatment in urban areas, the figure for their female counterparts is almost 38 per cent. Similarly, around 40 per cent of the males residing in rural areas sought some form of medical treatment while only a third of the females did so.

The largest proportion of those who seek treatment did so in publicly owned facilities. Thus, while some 19 per cent of those who sought treatment went to public health facilities, only 13 per cent went to private facilities and around 7 per cent went to traditional healers. Classifying the data in terms of residence does not change the structure in this regard.

Table 5.34: Health care use conditional on reported illness by quintile and urban/rural (1999/00)

	Expenditure Quintiles				
Urban male	1	2	3	4	5
Ill but not treatment	33.90	34.92	29.54	30.74	24.34
Treated in public facility	41.81	36.28	39.23	38.20	36.37
Treated in private facility	17.54	19.64	22.94	20.01	31.33
Traditional healer	6.75	9.15	8.29	11.06	7.97
Urban female	1	2	3	4	5
Ill but not treatment	45.47	41.67	38.64	35.97	32.60
Treated in public facility	30.37	33.02	38.67	32.55	33.69
Treated in private facility	12.16	16.32	19.40	21.94	26.52
Traditional healer	12.01	8.98	3.29	9.54	7.19
Rural male	1	2	3	4	5
Ill but not treatment	68.37	60.73	60.68	55.04	54.03
Treated in public facility	16.37	21.47	19.72	20.55	21.80
Treated in private facility	8.68	13.10	14.50	15.97	15.35
Traditional healer	6.58	4.71	5.10	8.44	8.81
Rural female	1	2	3	4	5
Ill but not treatment	73.93	69.07	67.32	64.32	61.70
Treated in public facility	12.26	16.52	15.45	16.13	16.71
Treated in private facility	9.90	10.44	12.35	11.52	13.85
Traditional healer	3.92	3.96	4.87	8.04	7.74

As shown in Table 5.34, the distribution by expenditure quintile of these variables shows interesting association between health care use and level of expenditure. As expenditure increases from the first to the fifth quintile (poor to rich), those who reported to have sought treatment increases. This is true for all categories except for males residing in urban areas, where the association is positive in all ranges. There is also a similar association between the proportion of individuals getting treatment in private facilities and expenditure (Table 5.34).

5.8. Access to Public Services and Economic Infrastructure

5.8.1. Access to Public Services

Access to public services is an important precondition for the public, including the poor, to utilize them. An important measure for the access to a service is the distance existing between the residence of households and the facility at hand. This measure is particularly useful for large countries like Ethiopia where the transport networks and efficiency is quite low.

The WM Survey collected information on the distance between various facilities and the residence of households. However, there was a large variation in the responses obtained for the estimated distance for a facility within a village. Thus, the median distance to each service in each village was taken as a basis for calculating the reported mean distances as shown in Table 5.35.

The average distance to elementary schools for the country is three kilometers. A quarter of the population lives some 4 or more kilometers away from the nearest primary schools. The figures are higher for rural areas compared to urban areas. Regional variation, as shown in Table 5.36, is relatively small. The exceptions are Afar and Somalie regions where the mean distance from primary schools to household residences is 4.6 and 3.93 Km, respectively. In the lower end we have Addis Ababa and Harari and Dire Dawa, with a mean distance of around one kilometer. However, compared to the figures for 1995/96, reported in Dercon (1997), there is a marked improvement in this regard. The average distance to reach a primary school in 1995/96 for the whole country was 3.8 Km, while for rural areas the figure was 4.3 Km, and a quarter of the total population in Ethiopia was living 6 or more kilometers away from primary schools.

Table 5.35: Distance to Reach Public Services (in KM) (1999/00)

Distance to Reach:	Percentiles of individuals					
All Country	**5**	**25**	**50**	**75**	**95**	**Mean**
Primary school	0	1	2.5	4	8.5	3.00
Secondary school	1	6	14.5	29.5	54	19.25
Health centre	0	2.5	6	10	18	7.01
Drinking water in rainy season	0	0	0	1	2	0.36
Drinking water in dry season	0	0	0	1	3	0.74
Rural	**5**	**25**	**50**	**75**	**95**	**Mean**
Primary school	0	1	3	4.5	9	3.38
Secondary school	3	9	18	31	57	21.90
Health centre	1	3	6	11	20	7.98
Drinking water in rainy season	0	0	0	1	2	0.41
Drinking water in dry season	0	0	0	1	3	0.85
Urban	**5**	**25**	**50**	**75**	**95**	**Mean**
Primary school	0	0	1	1	2	0.73
Secondary school	0	1	1	3	18	3.47
Health centre	0	0	1	2	3.5	1.17
Drinking water in rainy season	0	0	0	0	1	0.09
Drinking water in dry season	0	0	0	0	1	0.08

The distance from the nearest secondary schools is much further: households in the country reside 19.25 km away from secondary schools on the average. The situation in rural areas is worse than that of urban areas. They reside almost 22 km away from secondary school facilities in contrast to the 3.47 km in urban areas. The distance to secondary schools is highest for Afar region (29.4 km) and lowest for Addis Ababa (1.93 km). In most regions the measure is between 20 and 22 kilometers (for reporting level variations, see Appendix A8.15). Half of the country's population resides in places that are located 14.5 or more kilometers away from secondary schools. The figure for rural areas is even worse (18 or more kilometers away from such facilities). Compared to 1995/96, mean distance to secondary schools has gone down: it was 23.7 km for the country as a whole, 26.9 km for rural areas, and 3.7 km for urban centres.

The average distance from households' residence to the nearest health centre in the country is 7.01 km. This is again outweighed by the magnitude of indicators in rural areas since the average distance from rural areas is 7.98 km while that for urban centres is only 1.17 km. Around 50 percent of the population in the country resides at least 6 km away from the nearest health centres. This figure is only one km or more in urban centres. The population in many of the regions (Benshangul-Gumuz, Oromiya, Amhara, Tigray, Afar, and SNNP) resides 6 to 7 km

away from the nearest health centres. It is only in the relatively urbanized centres of Addis Ababa, Harar and Dire Dawa that people reside within two km away from health centres (Table 5.36 for details in regional variation). See also Appendix Table A8.15 for variation across reporting levels. Nonetheless, we have improvements in this regard as well since the average distance for this variable was 3.8 km for the country and 10 km for rural areas in 1995/96.

Table 5.36: Mean Distance (in KM) to Reach Public Services by Region

Region	Mean Distance (KM) to the Nearest:				
	Primary school	Secondary school	Health centre	Drinking water in rainy season	Drinking water in dry season
Tigray	3.44	20.89	6.74	0.44	0.69
Afar	4.60	29.41	7.12	0.22	1.66
Amhara	3.23	22.69	7.48	0.28	0.52
Oromiya	3.16	20.46	7.87	0.46	0.97
Somali	3.93	20.95	5.67	0.94	1.91
Benshangul	3.13	20.92	7.89	0.12	0.12
Snnpr	2.63	15.10	6.18	0.35	0.76
Gambela	2.43	12.03	5.81	0.31	0.52
Harari	0.93	5.05	1.88	0.13	0.18
Addis Ababa	0.86	1.93	1.01	0.03	0.03
Dire Dawa	1.14	7.64	1.87	0.06	0.14
Total	3.00	19.25	7.01	0.36	0.74

The average distance households have to travel in order to obtain water varies between 0.36 km in the rainy season and 0.74 in the dry season. Urban centres face better situations in this regard as well. On the average, they have to travel less than a hundred meters to obtain water in both seasons, while their rural counterparts have to travel more than 400 metres in the rainy season and 850 metres in the dry season. A quarter of the total population fetches water from sources that are at least one km away from their residence.

In general, we observe improvements in the provision of education and health facilities to the rural areas. This is observed by the reduction in the distance required to reach these facilities. However, the data does not permit us to consider changes in the quality of these provisions. Moreover, as can be seen in Appendix Table A8.16, the distribution of the mean distance for these variables does not show a marked difference when classified by expenditure quintile. This could partly be explained by the fact that residence and poverty within a community are not correlated. The "poor" and " rich" reside in the same neighborhood, particularly in the rural areas.

5.8.2. Access to Economic Infrastructure

Meaningful participation in economic activities is largely dependent on the availability and access that people have to economic infrastructure. The WM Survey records the distance to the various institutions and infrastructure facilities and the results are summarized in Table 5.37.

Table 5.37: Access to Various Economic Infrastructures (in KM) in 1999/00

Infrastructure	Percentage of population					
All Country	**5**	**25**	**50**	**75**	**95**	Mean
Food market	0	1.5	4	7	15	5.19
Post office	1	6	14	27	55.5	18.81
Means of transport	0	2	9	19	50	14.95
All weather road	0	0	4	13.5	42	9.77
Dry weather road	0	0	3	10	30	7.17
Telephone booth	0	6	12.5	24	56.5	18.44
Milling house	0	1	2.5	5.5	12	3.74
Cooking fuel	0	0	0.5	2	6	1.49
Rural	**5**	**25**	**50**	**75**	**95**	**Mean**
Food market	0	2.5	5	8.5	15	5.88
Post office	3	9	17.5	30	56.5	21.20
Means of transport	0	5	12	21.5	56.5	17.14
All weather road	0	1	6	16	42	11.35
Dry weather road	0	1	3.5	12	35.5	8.03
Telephone booth	3	9	15.5	28.5	59.5	20.95
Milling house	0	1.5	3	6	12	4.31
Cooking fuel	0	0	1	2.5	6	1.66
Urban	**5**	**25**	**50**	**75**	**95**	**Mean**
Food market	0	0	1	2	3.5	1.04
Post office	0	0	1	3	30	4.64
Means of transport	0	0	0	1	3	1.90
All weather road	0	0	0	0	1	0.30
Dry weather road	0	0	0	0	1.5	1.55
Telephone	0	0	0	2	32	3.62
Milling house	0	0	0	0	1.5	0.32
Cooking fuel	0	0	0	1	2	0.43

For the country as a whole, average distance for households to reach food markets is 5.19 km. While rural households have on average to travel 5.88 km to reach a food market, their urban counterparts travel only 1 km for the same. Postal and telephone services are, on the average, more than 20 km away from rural households. This measures the average distance of rural households from urban centres, since these facilities are mainly available in urban centres. Transport services, defined as bus and taxi services in the survey, are available only after traveling for 17.14 km on foot. On the average, rural households have to travel 11.35 and 8.03 km, respectively, before they can access all and dry season roads. Combining the information on

transport facilities and roads together tells us that having access to roads does not necessarily imply that transport facilities are available. That is, even though roads may be closer to households and transport facilities may use these roads, passengers may not be able to access the latter.

Comparing the 1999/00 results with those of 1995/96 for which information is available shows that there are improvements in the distance to basic facilities for rural areas. Urban areas, however, do not show improvements and in some cases we have even witnessed deterioration. This could be as a result of new settlements in the outskirts of towns, which would increase the average distance to existing infrastructures.

5.8.3. Access to Water, Energy and Waste Disposal Facilities

In the aforementioned sections, we have outlined access to important utilities in terms of the distance existing between the source of the utilities and households' residence. Though this provides important insights about the welfare of household members, it does not tell us much about the quality of the services obtained by households. In what follows, we provide the information available in the survey about the quality of the sources of some utilities used by the population.

Table 5.38 informs us about the quality of the sources of drinking water available in the country during the rainy season by expenditure quintiles. Over all, drinking water from protected sources (tap and protected wells or springs) is a 'luxury' of only a quarter of the population and in the rural areas the figure is only around 15 per cent. On the other hand, more than three quarters of the population in urban areas obtains drinking water from protected sources.

There is a positive relationship between obtaining protected water and consumption expenditure quintiles implying that households in the richer quintiles have relatively better access to safe drinking water. On the other hand, we observe an inverse relationship between consumption expenditure and proportion of households using unprotected sources of drinking water such as unprotected well or spring and river/lake/pond. Therefore more prosperous households, tend to access cleaner water sources in terms of expenditure.

As could be observed in Table 5.39, there is little variation in the sources of drinking water between the rainy and dry season. Exceptions are recorded only for the case of other sources of drinking water, which includes rain as a source of drinking water. Therefore, we use the rainy season sources to analyze existing regional and reporting level variation in quality of sources of drinking water. As shown in Table 5.39, Amhara Region has the smallest proportion of its population accessing relatively safe drinking water (19.17 per cent). It is closely followed by Somalie, Benshangul-Gumuz and Oromiya, with 21.6, 21.87 and 22.93 per cent of their population respectively, having access to safe drinking water. Relatively better off regions in this regard are Addis Ababa, Dire Dawa and Harar with 98.33, 86.25 and 75.87 per cent of their population, respectively, having access to safe water.

Table 5.38: Source of Drinking Water by Expenditure Quintiles

Sources of Drinking Water	In rainy season						In dry season					
	All Country											
	Expenditure Quintile						Expenditure Quintile					
	1	2	3	4	5	All	1	2	3	4	5	All
Private tap	1.10	1.55	1.93	2.7	6.9	3.14	1.19	1.63	1.79	2.65	7.05	3.17
Public tap	12.99	11.89	10.89	10.26	15.6	12.47	13.91	13.91	12.80	12.32	18.74	14.58
Protected well/ spring	8.88	9.26	9.96	10.95	11.73	10.31	9.53	9.62	10.86	12.73	11.95	11.09
Unprotected well/spring	36.01	39.07	39.65	35.72	34.07	36.71	38.03	39.38	39.85	36.98	33.98	37.38
River/lake/pond	38.97	35.83	34.67	36.98	28.64	34.55	37.06	35.06	34.47	35.02	28.18	33.53
Others	2.03	2.40	2.90	3.38	3.05	2.82	0.28	0.40	0.23	0.30	0.10	0.25
	Rural											
	1	2	3	4	5	All	1	2	3	4	5	All
Private tap	0.26	0.10	0.45	0.34	0.21	0.23	0.22	0.10	0.25	0.22	0.31	0.22
Public tap	15.05	15.03	4.73	3.71	4.36	4.87	6.90	7.49	6.55	5.59	7.84	6.87
Protected well/spring	39.80	43.08	10.27	11.48	13.4	10.87	9.68	9.91	10.95	13.38	13.24	11.59
Unprotected well/spring	1.36	2.11	44.01	39.96	43.31	42.09	41.94	43.51	44.16	41.45	43.12	42.84
River/lake/pond	43.32	39.56	37.93	41.17	35.74	39.35	40.97	38.57	37.85	39.03	35.35	38.20
Others	0.21	0.12	2.61	3.34	2.98	2.60	0.29	0.42	0.24	0.33	0.14	0.28
	Urban											
	1	**2**	**3**	**4**	**5**	**All**	**1**	**2**	**3**	**4**	**5**	**All**
Private tap	9.00	14.24	14.86	20.90	29.86	21.16	8.73	14.23	15.24	21.35	30.20	21.40
Public tap	65.30	62.91	64.52	60.62	54.23	59.52	68.48	66.70	67.21	64.08	56.14	62.24
Protected well/spring	8.30	7.83	7.23	6.92	6.00	6.90	8.35	7.17	10.10	7.74	7.52	7.99
Unprotected well/spring	6.58	6.04	1.69	3.08	2.36	3.47	7.62	5.43	2.38	2.57	2.60	3.63
River/lake/pond	5.16	5.17	6.22	4.76	4.27	4.88	6.62	6.22	5.06	4.14	3.54	4.65
Others	5.65	3.82	5.49	3.73	3.29	4.07	0.20	0.25	0.01	0.12	0.00	0.09

Table 5.39: Sources of Drinking Water during the Rainy Season by Region

Region	1 Private tap	2 Public tap	3 Protected well/spring	4 Unprotected well/ spring	5 River/lake/ pond	6 Others	7=1+2+3 Safe water	8=4+5+6 Unsafe water
Tigray	2.31	16.13	11.61	27.81	36.85	5.3	30.05	69.96
Afar	6.35	33.25	5.23	12.3	41.64	1.24	44.83	55.18
Amhara	1.53	8.57	9.07	49.94	27.03	3.87	19.17	80.84
Oromiya	2.68	9.98	10.27	36.68	37.64	2.75	22.93	77.07
Somali	1.9	12.95	6.75	16.63	55.11	6.67	21.6	78.41
Benshangul	0.18	3.59	18.1	19.97	55.36	2.79	21.87	78.12
Snnpr	1.17	11.01	12.84	31.11	42.89	0.98	25.02	74.98
Gambela	2.07	15.18	15.43	24.95	40.93	1.43	32.68	67.31
Harari	12.39	43.95	19.53	19.32	3.13	1.67	75.87	24.12
Addis Ababa	34.72	63.21	0.4	0.78	0.36	0.53	98.33	1.67
Dire Dawa	8.59	63.83	13.83	10.01	2.96	0.77	86.25	13.74

Biomass is the main source of energy in Ethiopia. Most of the energy sources are not obtained from the market. Freely collected firewood remains to be the main contributor. Thus 67.78 percent of the households in the country use collected firewood. Of course, urban centres use more purchased firewood: 41.22 per cent of their energy uses is obtained from purchased firewood. Rural households, however, obtain 76 per cent of their energy sources from collected firewood.

Electricity is used as a source of energy for cooking by only 0.38 per cent of the population in the country, and is largely used by urbanites (2.19 per cent). In urban areas kerosene is an important source of energy for cooking (21.78 per cent). As could be seen in Table 5.41, the importance of the various sources of energy does not show much variation across regions. What is stated at the national level holds for each region except for Addis Ababa, where more than 65 per cent of households use kerosene as their source of energy for cooking (Appendix Table A8.9 for details).

Table 5.40: Type of Cooking Fuel the Household Uses Now by Expenditure Quintile (% of HHs)

All Country	Expenditure Quintiles					
	1	2	3	4	5	All
Collected firewood	74.91	72.52	69.13	68.45	58.13	67.78
Purchased firewood	5.02	5.40	6.07	7.78	12.25	7.69
Charcoal	0.52	0.72	0.85	0.89	2.46	1.19
Kerosene	1.92	1.77	2.23	2.17	6.99	3.28
Butane gas	0.05	0.03	0.04	0.20	0.62	0.22
Electric	0.15	0.18	0.18	0.34	0.86	0.38
Leaves/dung cake	14.44	16.88	17.77	16.20	14.81	15.99
Others	2.98	2.49	3.73	3.96	3.88	3.47
Urban	1	2	3	4	5	All
Collected fire wood	30.65	21.17	18.61	13.45	11.61	16.84
Purchased fire wood	37.52	41.67	41.92	48.91	38.76	41.22
Charcoal	4.47	6.16	7.78	7.29	10.10	7.97
Kerosene	14.03	16.36	20.57	18.81	27.89	21.78
Butane gas	0.44	0.28	0.36	0.87	2.33	1.25
Electric	0.39	0.87	1.74	2.21	3.40	2.19
Leaves/dung cake	10.08	10.29	7.68	6.89	3.13	6.38
Others	2.42	3.22	1.34	1.58	2.78	2.38
Rural	1	2	3	4	5	All
Collected fire wood	80.61	78.76	74.92	75.60	71.64	76.00
Purchased fire wood	0.84	0.99	1.96	2.44	4.55	2.28
Kerosene	0.36	0.00	0.13	0.01	0.92	0.30
Leaves/dung cake	15.00	17.68	18.93	17.41	18.21	17.54
Others	3.18	2.57	4.06	4.54	4.68	3.88

Table 5.41: Source of Energy for Cooking in the Household by Region (% HHs)

Region	Collected fire wood	Purchased fire wood	Charcoal	Kerosene	Butane gas	Electric	Leaves	Others	Not stated
Tigray	56.78	10.36	0.25	0.33	0.07	1.02	28.46	2.57	0.16
Afar	73.67	13.09	10.72	1.35		0.16	0.09	0.86	0.06
Amhara	63.65	8.20	0.48	0.30	0.15	0.14	25.50	1.52	0.07
Oromiya	69.09	7.06	1.34	1.47	0.09	0.36	15.28	5.20	0.11
Somali	66.73	14.21	13.26	0.28	0.06	0.08	5.22	0.17	
Benshangul	88.92	4.12	1.76	0.05	0.06	0.03	0.04	5.00	0.03
SNNP	84.71	6.15	0.51	0.65	0.23	0.04	4.29	3.35	0.07
Gambela	82.17	11.66	4.86	1.14	0.12	0.05			
Harari	40.92	19.98	6.90	22.69	0.60	0.89	4.31	3.70	
Addis Ababa	3.17	10.57	4.25	65.49	2.55	3.58	7.58	2.68	0.14
Dire Dawa	34.78	15.36	9.05	37.53	0.56	1.52	0.08	1.12	

Table 5.42: Type of Waste Disposal Used by Households (Urban)(% of HHs)

Waste Disposal Facility	Expenditure Quintiles					All urban
	1	2	3	4	5	
Container	13.33	13.14	16.66	16.63	20.99	17.49
Dug/outs	7.68	9.23	11.24	13.61	14.40	12.19
Throw away	54.81	50.66	42.96	43.86	36.48	43.14
Burn the waste	6.50	6.46	7.46	6.36	4.08	5.62
Others	17.68	20.51	21.68	19.54	24.05	21.57

Table 5.43:Type of Waste Disposal the Household Uses Now by Reporting Level Towns (% of HHs)

Reporting level	Container	Dug/outs	Throw away	Burn the waste	Others
Mekellee	31.09	27.85	25.33	1.65	14.07
Tigray other urban	23.27	11.88	62.02	0.74	2.08
Aysaeta	2.08	0.69	44.03	1.54	51.66
Afar other urban	2.23	6.16	67.25		24.36
Dessie	31.37	6.11	39.86	3.78	18.88
Bahir Dar	52.88	7.74	30.56	1.21	7.61
Amhara other urban	3.36	12.42	68.25	4.25	11.73
Debrezeit	6.47	25.17	47.19	1.00	20.18
Nazreth	19.14	22.88	13.31	1.01	43.67
Jimma	9.16	11.95	31.53	19.88	27.47
Oromia other urban	4.34	14.13	50.92	11.49	19.12
Jijiga	33.93	6.71	33.12	1.38	24.85
Somalia other urban	0.92	9.14	49.90	0.88	39.16
Assosa	4.03	43.25	35.07	9.81	7.83
Benshangul other urban	2.07	19.57	56.85	7.51	14.01
Awasa town	3.26	38.68	14.43	1.06	42.57
SNNPR other urban	2.04	21.69	41.69	14.49	20.08
Gambela town	1.72	12.45	64.85	0.97	20.01
Gambela other urban		5.09	83.45	4.48	6.98
Harar	33.47	16.45	38.12	5.07	6.88
Addis Ababa	42.40	4.19	16.96	0.41	36.04
Dire Dawa	39.35	7.35	45.94	0.29	7.07
Dire Dawa other urban		0.47	88.75	3.42	7.35

Means of waste disposal facilities in urban centres and rate of utilization by households are reported in Table 5.42. A large proportion of households (43.14 per cent) does not use safe means of waste disposal and simply throws it away. As shown in Table 5.43, all major towns the country seem to have instituted some form of container disposal system. Bahir Dar followed by Addis Ababa seems to use the system more properly, with 52.88 and 42.4 per cent of households, respectively using the system. Most of the populations in most urban centres do not seem to use safe methods of disposing waste.

VI. Conclusions: What Has Emerged from the Analysis?

It should be noted that poverty reduction is a long-term process of sustained growth and is not amenable to significant improvements in a short period of time. All the same one has still to monitor changes over time to assess whether there is a positive direction and gains in poverty reduction.

Accordingly, the 1999/00 HICE and WM based poverty analysis shows that overall consumption poverty measured by the head count ratio has witnessed a 1.3 percentage point decline (2.9 percent) between 1995/96 and 1999/00. With regard to rural areas consumption poverty has declined by 4.2 percent while urban areas witnessed an 11 percent increase during the same period. Depth and severity of consumption poverty has also witnessed improvement in rural areas while a slight deterioration has been observed in urban areas. The egalitarian type of land distribution, access to extension and social investment in rural areas might have contributed to a decline in consumption (income) inequality.

Although poverty has declined modestly in rural areas (by 4.4 percent), it still has remained to be a rural phenomenon as the rural areas harbor the bulk of the poor in Ethiopia. By 1995/96 rural areas accounted for over 86 percent of the total population while their contribution to poverty stood at 90 percent (i.e. more than the share in population). By 1999/00 the contribution to rural poverty has declined by a little over 1.3 percentage points while their population contribution declined by 1.5 percentage points. The cumulative impact of weather related factors coupled with the border conflict with Eritrea (via dislocation of people in war affected areas) is likely to have constrained the positive impact that would have been realized (reduction in consumption poverty incidence, depth and severity).

Ethiopia has made a remarkable progress in terms of indicators of non-income dimensions of poverty between the two survey years. There has been a substantial improvement in long-run (stunting) malnutrition and literacy. Although there still is a challenge to narrow regional disparities and gender gaps as well as maintaining quality, gross and net primary and secondary enrollment have also shown substantial improvement. Access to human capital has also

improved. The improvement in enrollment rate is higher for rural areas and females than for urban areas and their male counterparts.

Notwithstanding these positive achievements, the analysis has brought out the following issues /challenges for future consideration in the fight against poverty in Ethiopia:

a) Despite the improvements, rural areas are still center of mass poverty, requiring continued priority action.

b) Food insecurity as reflected in the magnitude of food poverty head count index is still a major contributor to poverty in Ethiopia. The challenge here is to expedite the implementation of food security strategy.

c) Households with larger family size, less literate, and older household heads are likely to fall in poverty than those with smaller family size, more literate, and younger house hold heads;

d) No significant difference in consumption poverty incidence, depth and severity has been observed between female-headed and male-headed households in rural areas in 1999/00. On the other hand, there has been a sharp contrast in poverty incidence depth and severity between female and male-headed households in urban areas in 1999/00 (Table 2.8). According to the results in the Table, the number of people below the poverty line for male-headed households stood at about 34 percent in urban areas while the incidence for female-headed households was a little over 49 percent. Depth and severity of poverty have also been consistently higher for female-headed households than male-headed households in urban areas in 1999/00.

e) Access to public services and economic infrastructure has, on average, improved between the two survey years (1995/96 to 1999/00). For instance, average distance to reach primary school, which stood at 3.8 Kilometer, has declined to 3 kilometer by 1999/00. The same is true for secondary school, health center, drinking water, etc. This obviously plays an important role in poverty reduction;

f) In rural areas sale of animals, animal products and agricultural products; in urban areas reserved money and loan from relatives constitute important risk coping instruments for poor households in Ethiopia. The analysis shows a growing urban poverty, and as such requires due attention.

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Appendix A1: Distribution of Primary and Secondary Sampling Units of HICE and WM Surveys for 1999/00 and 1995/96

Table A1.1: Comparision of Sampling Units between HICE 1999/00 and 1995/96 by Reporting Level

Reporting levels	Households and Enumeration Areas Covered in 1999/00		Households and Enumeration Areas Covered in 1995/96		Changes (1999/00 Versus 1995/96)	
	HHs	Eas	HHs	EAs	HHs	EAs
Tigray Rural	564	47	403	35	161	12
Mekellee Town	368	23	222	15	146	8
Tigray Other Urban	320	20			320	20
Afar Rural	392	33	162	14	230	19
Aysaeta Town	240	15			240	15
Afar Other Urban	160	10			160	10
Gonder Town	368	23	224	15	144	8
Dessie Town	368	23	217	15	151	8
Bahir Dar Town	368	23	197	14	171	9
Amhara Other Urban	496	31			496	31
Debrezeit Town	368	23	225	15	143	8
Nazreth Town	368	23	299	20	69	3
Jimma Town	564	23	195	13	369	10
Oromia Other Urban	800	50			800	50
Somalia Rural	372	31	24	2	348	29
Jijiga Town	368	23			368	23
Somalia Other Urban	112	7			112	7
Benshangul Gumuzu Rural	516	43	177	15	339	28
Assosa Town	240	15			240	15
Benshangul Gumuzu Other Urban	160	10			160	10
Awasa Town	368	23			368	23
Snnp Other Urban	400	25			400	25
Gambela Rural	360	30	153	13	207	17
Gambela Town	240	15			240	15
Gambela Other Urban	144	9			144	9
Harari Rural	360	30	108	9	252	21
Harar Town	368	23	223	15	145	8
Addis Ababa Rural	300	25	83	7	217	18
Addis Ababa Town	1200	75	1107	75	93	0
Dire Dawa Rural	360	30	42	4	318	26
Dire Dawa Town	368	23	298	20	70	3
Dire Dawa Other Urban	112	7			112	7
North And South Gonder	348	29	436	37	-88	-8
North Wollo And Wag Himra	516	29	363	32	153	-3
East And West Gojjam And Agewawi	348	43	418	35	-70	8
North And South Gonder South Wollo Oromia And North Shoa	528	44	455	39	73	5
Total AMHARA Rural	**1740**	**145**	**1672**	**143**	**68**	**2**
East And West Wellega	300	25	472	40	-172	-15
Illubabor And Jimma	264	22	464	39	-200	-17
North And West Shoa	324	27	457	39	-133	-12
East Shoa Arsi Bale And	624	52	457	39	167	13

Reporting levels	Households and Enumeration Areas Covered in 1999/00		Households and Enumeration Areas Covered in 1995/96		Changes (1999/00 Versus 1995/96)	
	HHs	Eas	HHs	EAs	HHs	EAs
Borena						
East And West Harerghe	312	26	467	40	-155	-14
Total Oromia Rural	**1824**	**152**	**2317**	**197**	**-493**	**-45**
Gurage Hadiya And Kemebata Na Aleba	528	44	409	35	119	9
Sidama Gedo Gurgi And Amaro	468	39	386	33	82	6
North And South Omo Derashe And Konso	492	41	405	34	87	7
Yem Kefa-Shekich And Bench Maji	384	32	367	31	17	1
Total SNNP Rural	**1872**	**156**	**1567**	**133**	**305**	**23**
Other Urban National	2704		1526		1178	
Total	17332	1264	11441	892	5891	372

HH=household, EA= enumeration area,

Table A1.2. Comparison of Sampling Units between WM Survey 1999/00 and 1995/96 by Reporting Level

Reporting level	Households and Enumeration areas Covered in 1999/00		Households and Enumeration areas Covered in 1995/96		Changes (1999/00 Versus 1995/96)	
	HHs	EAs	HHs	EAs	HHs	EAs
Tigray Rural	1196	100	396	34	800	66
Mekellee Town	366	23	213	15	153	8
Afar Rural	699	59	179	15	520	44
Aysaeta Town	240	15			240	15
North And South Gonder	720	60	443	38	277	22
North Wollo And Wag Himra	660	55	400	34	260	21
East And West Gojjam And Ag	1020	85	462	39	558	46
South Wollo Oromia And North	993	83	468	40	525	43
Total AMHARA Rural	**3393**	**283**	**1773**	**151**	1620	132
Gonder Town	368	23	214	15	154	8
Dessie Town	368	23	172	14	196	9
Bahir Dar Town	368	23	219	15	149	8
East And West Wellega	720	60	440	37	280	23
Illubabor And Jimma	720	60	469	40	251	20
North And West Shoa	719	60	449	38	270	22
East Shoa Arsi Bale And Bore	1440	120	447	38	993	82
East And West Harerghe	719	60	447	40	272	20
Total Oromiya Rural	**4318**	**360**	**2282**	**193**	2036	167
Debrezeit Town	368	23	208	15	160	8
Nazreth Town	368	23	294	20	74	3
Jimma Town	368	23	207	14	161	9
Somalia Rural	670	56	165	14	505	42
Jijiga Town	368	23			368	23
Benshangul Gumuzu Rural	900	75	154	13	746	62
Assosa Town	224	14			224	14
Gurage Hadiya And Kemebata	1079	90	387	34	692	56
Sidama Gedo Gurgi And Ama	1317	110	390	33	927	77
North And South Omo Derash	1320	110	391	33	929	77
Yem Kefa-Shekich And Bench	1008	84	394	33	614	51
Total SNNP Rural	**4724**	**394**	**1562**	**133**	3162	261
Awasa Town	368	23			368	23
Gambela Rural	360	30	177	15	183	15
Gambela Town	240	15			240	15
Harari Rural	360	30	119	10	241	20
Harar Town	368	23	220	15	148	8
Addis Ababa Rural	288	24	108	9	180	15
Addis Ababa Town	1200	75	1073	73	127	2
Dire Dawa Rural	360	30	95	8	265	22
Dire Dawa Town	368	23	299	20	69	3
Other Urban National	2694	169	1440	99	1254	70
Total Rural	**17268**	**1441**	**7010**	**595**	**10258**	**846**
Total Urban	**8644**	**541**	**4559**	**315**	**4085**	**226**
Total	**25912**	**1982**	**11569**	**910**	**14343**	**1072**

Appendix A 2: Conceptual Framework

A 2.1: Measurements of Poverty

There are different conceptual approaches in measuring well being at the individual level. The conceptual distinction that underlies the measurement practices is between welfare approach and non-welfare approach. The distinction between these conceptual approaches is documented in Ravallion (1992). The welfare approach compares welfare and public policy decisions based on the preference (utilities) of individuals. This approach avoids making subjective judgment, which are inconsistent with individual behavior. The essence of the approach is the concept of preference ordering and the value of the goods by an individual are deemed to be sufficient statistics for assessing a person's well being. This approach is well developed both in theory and in practice. The non-welfare approach, on the other hand, prefers to assess the well being of a person based on certain elementary achievement, such as being able to afford to be adequately nourished or clothed. It may pay little or no regard to information on utilities of the individual only.

The non-welfare ideas have been more diverse. Some are based on identifying specific form of commodity deprivation, which may be absolute commodity deprivation (nutrition oriented or other basic needs approach) and relative commodity deprivation. This approach has a lot of arbitrariness in deciding what commodity matters and how one should value one against the other.

Sen (1980, 1985 and 1987) has provided a different concept, which depends on the non-welfare comparison, but does not rely on the command of commodities. He rejects both the utility as a metrics of welfare and non-welfare commodity based formulation. He defined poverty as lack of capability; capability mean to being able to live long, being well nourished, being healthy, being literate, and so on. The value of living standard lies in the living, not in the possession of commodities. Hence according to Sen, the task of poverty analysis is to determine what those capabilities are in specific society, and who fails to reach them. This idea has started getting acceptance by policy makers, NGO and international organizations. The World Development Report (2001) definition of poverty is similar to the ideas of Sen and non-welfare conceptual approach.

According to the World Bank Report (World Bank, 2001), poverty has many dimensions extending beyond the low level of income. The first dimension is material deprivation (lack of opportunity), which is measured by an appropriate concept of income or consumption. The second dimension is low achievement in education and health (low capabilities). The first and the second dimensions of poverty have been recognized by the World Development Report 1990.The third and the fourth dimensions of poverty are vulnerability (and exposure to risk or low level o security) and voiceless ness (and powerlessness), respectively (World Bank, 2000). The World Development Report 2000 recognizes these last two dimensions of poverty.

The four dimensions of poverty might interact and reinforce to each other (World Bank, 2001). Education and health can interact with material deprivation (World Bank, 1990). Low level of education and health can lead to low level of income and hence might lead to material deprivation. Reducing vulnerability may allow people to take advantage of higher-risk, higher-return opportunities thereby decreasing material deprivation by increasing income and welfare.

A 2.2: Consumption (Income) Poverty

Income or consumption traditionally measures material deprivation. Especially consumption (rather than income) is viewed as the preferred welfare indicator because consumption better captures the long-run welfare level than current income. Consumption may better reflect households' ability to meet the basic needs. Income is only one of the elements that allow consumption. Consumption reflects the ability of household's access to credit and saving at times when their income is very low. Hence consumption reflects the actual standard of living (welfare). Consumption is better measured than income. In most developing countries, households are more likely to understate their income level compared to their level of consumption expenditure. Income is so erratic and it may be very difficult for respondents to recall. However, for consumption to be an indicator of household's welfare it has to be deflated by an adult equivalent scale that depends on the nutritional requirement of each family member. The adult equivalent scale must therefore be different for different age groups and the gender of adult members. Therefore, many of the income poverty measure (such as the head count ratio, poverty gap ratio, and the square of poverty gap ratio) use consumption instead of income.

A 2.2.1: Measures of Consumption (Income) Poverty

In order to formulate a program to combat poverty, it is important to identify the poor. It is also desirable to measure the intensity of their poverty. Poverty measurement assumes that there is a predetermined and well-defined level of standard of living – called "poverty lines" below which a person is deemed to be poor. That is, there exist a level of consumption of various goods (food and non-food) below which survival beyond short period is threatened. In fact in most societies (including poorest societies) the notion of what constitutes poverty might go beyond the attainment of the absolute minimum needed for survival. Hence poverty line exists but values differ based on their location and the type of society in which people live.

Theoretically, the welfare approach sets a reference utility level, which can be thought of as a poverty line in the utility space. In the consumption space, poverty line is the point on the consumer's cost function[28] corresponding to that reference utility. However, the method of setting poverty line in practice is not based on welfare term only because welfare approach does not solve the problem of mapping from a consumption space to utility space. For the purpose of measuring poverty, the welfare framework does not provide a well-defined poverty line.

The non-welfare approach, often used for drawing poverty line, is based on the basic needs or minimum caloric requirement. There are three methods of setting poverty lines that use calorie requirement: *direct caloric intake*, *food energy intake* and *cost of basic need* methods. In the direct caloric intake method, poverty line is defined as the minimum calorie requirement for survival. Individuals who consume below a predetermined minimum calorie intake are deemed to be poor. Hence this method equates poverty with malnutrition. The draw back of this method is that its indication is not representative and it does not take into account the cost of getting the basic calorie requirement. It totally overlooks the non-food requirement. If poverty has to be measured by a lack of command of basic goods and services, measuring poverty by caloric intake only is unlikely to represent adequately the state of deprivation of the poor.

The second non-welfare method of setting poverty line is the food energy intake method. The basic idea in this method is to find the per capita consumption at which a household is expected to fulfill its calorie requirement. The poverty line then defined as the level of per capita consumption at which people are expected to meet their pre-determined minimum calorie

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[28] Consumer's cost function is the minimum expenditure needed to attain any given utility level.

requirement. It is estimated by regressing the per capita consumption expenditure on caloric intake. Then the predicted value of the per-capita consumption expenditure at the pre-determined calorie intake is taken as the poverty line. This method improves over direct calorie intake method in terms of the representative ness of poverty line because it provides monetary value rather than providing purely nutritional concept of poverty. However, if this method is applied to different regions and periods with the same country, the underlying consumption pattern of the population group just consuming the necessary nutrient amount will vary. Hence this method yields differentials in poverty line in excess of the cost of living facing the poor. In short this method does not yield a consistent threshold (poverty line) across groups, regions and periods.

The third method of setting poverty line is the cost of basic need method. First the food poverty line is defined by choosing a bundle of food typically consumed by the poor. The quantity of the bundle of food is determined in such a way to supply the predetermined level of minimum caloric requirement. This bundle is valued at local prices (or they are valued at national price if the desire is to get consistent poverty line across regions and groups). Then a specific allowance for the non-food goods consistent with the spending of the poor is added to the food poverty line. To account for the non-food expenditure, the food share of the poorest quartile or quintile divides the food poverty line. This method yields representative poverty line in the sense that it provides a monetary value of a poverty line that accounts for the food and non-food consumption. Similar to that of the food energy intake method, it does not provide consistent poverty lines across regions. With certain adjustments, however, it is possible to get consistent poverty line across regions, groups and periods in terms of real expenditure. These adjustments include using common bundle of food items for the whole country, using national average price, and deflating each region's consumption expenditure by the relative (relative to the national average) price index. Many countries often use this method to set their poverty line. We also use this method in this report.

The procedure we use in this report to set the poverty line is as follows. The first step is defining a common national bundle of food items meeting the pre-determined minimum nutritional requirement (2200 Kcal per day per adult). A combination of many food bundles can provide the minimum caloric requirement. The relative share of the food items in the poverty line depends on the caloric share of the items in the consumption of the poorest quartile (or quintile).

The second step is estimating the cost of food bundle. To do this the quantity of each item in the bundle is multiplied by its national average price of food item. The national average prices of items are given by the quantity-weighted average of regional prices. The third step is to estimate a reasonable allowance for non-food consumption. To do this, the food share of the poorest quartile divides the food poverty line. Since our poverty line is based on the national average price, the per capita consumption expenditure used for the calculation of poverty indices is deflated by the relative (to the national average) price index.

A 2.2.2: The Need for Spatial and Temporal Price Index

When working with data of cross section household survey, price variation will be spatial. People who live in different parts of the country pay different prices for similar goods. Ethiopia is a large country where transportation is not easy, is expensive in certain regions and distribution systems for most consumer goods are less integrated. Consequently, spatial price variation is large in both relative and absolute prices. Ethiopia is also mainly an agricultural country that depends highly on rainfall. Due to the frequent rain failure (drought), there is a large variation in both agricultural output and prices. The variation in agricultural price affects the income of people and hence affects the price of non-food items. Hence it is important to account for the spatial and temporal price variation in the calculation of poverty indices. To use consistent poverty line across regions and time, we need to construct price indices over time and regional relative price indices.

Price index is a pure number that can be used to aggregate a large number of individual prices into a single number. It is used to deflate the nominal consumption aggregate and obtain real expenditure or welfare ratio (money metric welfare). Using real expenditure it is possible to compare the welfare of individuals at different point in time and/or places.

We can use either of the two type of price index to take account of the temporal and spatial variation in prices: Paasche and Laspeyers price indices. The Paasche price index uses the current expenditure as weight, where as Laspeyers price index uses the base year budget share as a weight. Here we prefer the Laspeyres price index (which is traditionally the most preferred) to the Paasche price index. Laspeyres price index is simple to calculate and uses the same weight

for all households. It is also transparent and simple which is easily explained to policy makers (Deaton and Zaidi, 2001).

There are at least two main sources of price data in Ethiopia. The first source of price information is internal price computed from the HICE survey data (CSA of Ethiopia call it standard price). In the HICE survey, households report both quantity and expenditure for most food items and for a few non-food items. Dividing expenditure by quantities gives unit values. These unit values can be easily affected by quality choices, but experience shows that the spatial variation of unit values is closely related to the actual price variation (Deaton). As a result, unit values provide good price information especially when averaged over households in a cluster (Deaton and Zaidi, 2001).

The second source of price information is an independent price survey conducted by the CSA in selected markets (a mix of small and major towns) using price questionnaire. The CSA reports the prices of food and non-food items for each zone and major towns in Ethiopia every year. The problem with this kind of price information is that it is difficult to match price from the survey (price report) with the expenditure pattern of households in the HICE survey. There will be many households whose nearest observed price is too far away to be relevant. However, this price source is the preferred source when quantities of items are not collected from each household level. For most of the non-food items and for food taken away from home, where quantity observation is not possible in principle, the independent price survey of selected market is the only source of price information.

Hence we use internal prices, which are computed from the HICE survey data, to calculate the price index for all food items and few non-food items. When internal prices data are missing (for most non-food items) in the HICE data, we use the price data from the independent price survey conducted on selected small market comprising of small and major towns all over Ethiopia.

A 2.3: Education and Health Achievements

In 1990, the World Development Report expanded the traditional income based definition of poverty to further include capabilities such as health, education, and nutrition. This report explicitly acknowledges the interaction and the casual relationship among theses dimensions. Education is an input in well being since it provides a means of earning a higher income via

work. It is also a welfare outcome in itself because it allows an individual to participate in decision-making that determines the well being of his societies and himself. Hence literacy, the highest level of education attained (or primary completion rate), gross enrolment ratio, net enrolment ratio can be used in defining the characteristics of poverty.

Mostly literacy is calculated for people above 15 years old. Literacy is not measured below the age of 10 years. Adult literacy rate in this report is defined as the percentage of population aged 10 years and over who can both read and write with understanding a short simple statement on his/her everyday life. Literacy is a good measure of educational achievement, because it reflects a minimum level of successfully completing school. It is calculated by dividing the number of literate by the corresponding age-group population multiplied by 100.

Primary completion rate is defined as the total number of students completing the final year of primary education, regardless of age, expressed as a percentage of the population at the official primary graduation age. It is a simple measure that tracks the progress of the goal of education at all (by the year 2015). It indicates the degree of coverage of primary education.

The gross enrolment ratio is defined as the total enrolment in a specific level of education, regardless of age expressed as a percentage of the official school-age population corresponding to the same level of education in given school-year. It shows the general level of participation in a given level of education and the capacity of the education system to enroll students of a particular age group. It is calculated by dividing the number of pupils enrolled in a given level of education regardless of age by the population of the age group, which officially corresponds to the given level of education, and multiplied by 100.

Net enrolment ratio is the enrolment of the official age group for a given level of education expressed as a percentage of the corresponding population. It shows the extent of participation in a given level of education of children belonging to the official age group to the corresponding level of education. The gross enrolment ratio is always higher than the net enrolment ratio. Gross Enrolment ratio can exceed 100 percent there is a significant overage or underage participation in a given level of education. The difference between gross and net enrolment gives an indication of wrong-age school enrolment. Other school related variables such as the reason why not attending school; distance to elementary school can give additional pictures of education poverty.

The health status of a household can be taken as an indicator of well-being. It could be focused on the nutritional status of children, incidence of specific diseases (such diarrhea, malaria and respiratory diseases), life expectancy and fertility rate as indicators of health, nutrition, health and population status (poverty) of a society. If data on such health characteristics are not available, proxies such as the number visits to hospitals, and health centres, access to medical services, distance to the nearest clinic, the extent to which children receive vaccination can be used to indicate health poverty.

Health status of households can be assessed by infant mortality rate, under five-mortality rate and life expectancy. Infant mortality rate is the number of deaths to children under 12 months of age per 1000 live births. Under five-mortality rate is the number of deaths to children under five years of age per 1000 live births. Life expectancy is a key measure of welfare and it is the number of years someone is expected to live when he is born.

Anthropometrics can be used to assess nutritional status at individual and population level. It requires weight and height measurements over time so that the growth velocity can be measured. A decline in an individual's anthropometric index from one point in time to another could indicate illness, and/or nutritional deficiency that may result in serious health outcome. At the population level, data are commonly available from a cross section survey. Hence at this level, determining the proportion of the population below a cut-off point can assess the prevalence of low anthropometric indices. Using these proportions one can compare the nutritional status among regions and between dates.

Stunting, wasting and body mass indices (BMI) are anthropometric indices that are used to show long and short run malnutrition. Wasting and stunting are mostly used as measures of malnutrition for children up to the age of 5 years. Body mass index is more appropriate for adults, Low height to age ratio is an indicator of stunting (shortness). It is associated with poor overall economic conditions and or repeated exposure to adverse condition. A person is *stunted* when he is shorter than she/he would be at his/her current age. Specifically a person is stunted when the height/age ratio is less than the mean of height/age ratio minus two times the standard deviation of the standardized distribution. When the height/age ratio of an individual is less than the mean of the ratio minus three times the standard deviation of the standardized distribution, it

is called ***severely stunted***. Stunting is interpreted in general as a measure of long-term malnutrition because malnutrition causes slow growth. This measure is relevant especially for children up to five years old.

Low weight to height ratio is an indicator of wasting (thinness). *It is associated with a failure to gain weight or a loose of weight.* **Wasting** refers to the magnitude of the weight (kilo grams) to height (meters) ratio of a person. A person is wasted when the weight/height ratio is less than the mean of the ratio minus two times the standard deviation of the standardized distribution. If the ratio is less than the mean ratio minus three times the standard deviation, it is called ***severely wasted***. Wasting indicates short-term malnutrition. To make the figures of stunting and wasting comparable across countries, we use global distributions of the required ratios. The statistical package "*Epi Info*" is the recommended package to calculate the wasting and stunting figures.

Another index weight to age ratio is hybrid of stunting and wasting. However, it is not a recommended index to use it as a precise measure of nutrition because it fails to distinguish well-proportionate children (that is, tall and thin children from short).

Body mass index is a measure of adult malnutrition. It is defined as weight in kilogram divided by the square of height in meters. It is not calculated for pregnant and lactating women. A person is considered normal if his BMI is greater than 18.4, grade 1 chronic energy deficient if BMI is between 17 and 18.4, grade 2 chronic energy deficient if BMI is between 16 and 17, grade 3 chronic energy deficient if BMI is less than 16.

Total fertility rate (TFR) and adolescent fertility rate are used to indicate the population status of a country or group. TFR is the average number of births a woman could expect to have during her lifetime if she followed observed levels of fertility for her age group at every age. It is calculated as the sum of average annual age-specific fertility rate for all reproductive age group (15-50 years old). Adolescent fertility rate (also called age specific fertility rate for women 15-19) is the average number of births a women aged 15-19 could expect to have during her lifetime if she followed observed levels of fertility for that age group, expressed as per 1000 women aged 15-19. It is calculated as annual average.

A 2.4 Security and Empowerment

The World Development Report 2000 (World Bank, 2001) further extends the concept of poverty to include the dimensions of vulnerability, voiceless ness and empowerment. This has broadened the range of actions that can be considered and the causal framework for analyses. The report also recognizes the practical and operational difficulties with this expansion. The difficulties include measurement of vulnerability and empowerment and how to weigh the relative importance of the dimensions for policy actions.

At micro-level, the most important vulnerability (risk) that affects the poor are the risk of illness, death, injury, disability, harvest failure and unemployment. At meso (community) level, vulnerability may include harvest failure, unemployment, deforestation, soil degradation, and natural calamities, such as landslide, volcanic eruptions and AIDS). Earthquakes, floods, drought, civil strife, inflation, balance of payments are some of the risks that affect at macro level. These sources of vulnerability can reduce the likelihood of household capacity to get out of poverty. While risk at micro-level can be offset, partly, by actions at household level, macro-level risk require public actions.

Empowerment is an evolving and continued process, which occurs at different levels. At household level, empowerment refers to intra household inequality, access to and control over resources, and decision-making process. At community, regional and national level, empowerment means inequality in access to resources and social interactions that affects gender inequality, as well as the empowerment outcomes of different income, ethnic, or religious groups. Empowerment also includes representative ness in decision-making bodies at local, regional and national levels of government. Transparency may help to increase the probability that the poor will be treated with fairness and respect.

Since the HICE and WM survey data sets are not specifically designed to handle the dimensions of security and empowerment, the report might not include all of the required indicators of vulnerability and empowerment.

Appendix A 3: Computation of Price and Consumption Poverty Indices

A 3.1: Price Indices

A 3.1.1: Temporal price index

In this report, we use the 1995/96 constant Laspeyre's consumers' price index constructed by the CSA for the year 1999/00 to take account of the temporal variation in price. This index is constructed for the following category of reporting levels: Addis Ababa, country other urban, country rural. The CSA constructed the Laspyres consumer price index (CPI) for food and non-food item separately. The following formula is used to calculate the price index over time by the CSA.

$$LPI_{RF} = \sum_{i=1}^{m} w_i^{1996} \left(\frac{p_i^{2000}}{p_i^{1996}} \times 100 \right) R = 1,2,.......m; i = 1,2,..........n$$

where $w_i^{96} = \dfrac{p_i^{1996} q_i^{1996}}{\sum_{i=1}^{n} p_i^{1996} q_i^{1996}}$ for food items $\quad w_i^{96} = \dfrac{v_i^{1996}}{\sum_{i=1}^{n} v_i^{1996}}$ for $non-$food items

v_i^{1996} *is* the national aggregate expenditure of item i in 1996

A 3.1.2: Regional Relative Price Index

CSA does not provide regional (relative) price index. Hence we construct a Laspeyres (relative to the national average) price index for category of food item, and non-food items. The Laspeyers regional price index (RFPI) of food items are given by

$$RFPI_{RN} = \sum_{i=1}^{m} \left(w_i^N \times \left(\frac{p_i^R}{p_i^N} \times 100 \right) \right); R = 1,2,.......m; i = 1,2,..........n$$

Where R stands for reporting level or regions,

i stands for items.

p_i^R = The regional average (reporting level) price of item i

$$p_i^N = \sum_{R=1}^{m} \left(\frac{q_i^R}{q_i^N} \times p_i^R \right) = \text{National price of item i}$$

q_i^R =Total Regional (reporting level) quantity of item i consumed.

$$q_i^N = \sum_{R=1}^{m} q_i^R = \text{National aggregate quantity of item i}$$

$$w_i^N = \frac{p_i^N \times q_i^N}{\sum_{i=1}^{n}(p_i^N \times q_i^N)} = \text{National budget share of item i}$$

Not all non-food items have quantity in the HICE data. Only 2% of the items have values for both quantity and expenditure. There fore, it is necessary to use price data collected from an independent price survey conducted by the CSA. The regional non-food price index (RNFPI) is give by

$$RNFPI_{RN} = \sum_{i=1}^{n}\left(B_i^N \times \left(\frac{p_i^R}{p_i^N} \times 100 \right) \right); R = 1, 2, 3, \dots.m; i = 1, 2, \dots...n$$

Where R stands for reporting level or regions,

i stands for items.

p_i^R = The regional (reporting level) prices of item i.

$$p_i^N = \sum_{R=1}^{m}\left(\frac{v_i^R}{v_i^N} \times p_i^R \right) = \text{National price of an item i}$$

$$v_i^N = \sum_{R=1}^{m} v_i^R = \text{National aggregate expenditure on item i which is the sum of regional expenditure}$$

on items i

$$B_i^N = \frac{v_i^N}{\sum_{i=1}^{n} v_i^N} = \text{National budget share of an item i}$$

A 3.2: Poverty Indices

Since the work of Sen (1976) on the axiomatic approach to measurement of poverty, several indices of poverty have been developed. The most widely used poverty indices are the percentage of the poor, the aggregate poverty gap, and the distribution of income among the poor.

The Foster, Greer, and Thorbecke (1984) class of poverty measures denoted by P_{α} is useful for its ability to capture a range of value judgements on the incidence, depth and severity of poverty. When the real per-adult (per capita) household expenditure, Y_i, are ranked as

$$Y_1 \leq Y_2 \leq ....Y_q \leq Z \leq Y_{q+1} .... \leq Y_n ,$$

Where Z is poverty line, n is the size of the size of the population, and q is the number of poor, then P_{α} is given by

$$P_{\alpha} = \frac{1}{n} \sum_{i=1}^{q} \left(\frac{Z - Y_i)}{Z} \right)^{\alpha} ; \ \alpha \geq 0, \text{ for } Y \leq Z.$$

Here the parameter α reflects the policy maker's degree of aversion to inequality among the poor. If $\alpha = 0$, there is no concern about the depth of poverty then Po=q/n and the corresponding poverty index is called *Head Count Index* (P_0). Head-count index is easily understood and communicated, but it is insensitive to differences in the depth of poverty.

If $\alpha = 1$, the poverty index is called the *Poverty Gap Index* (P_1) and it measures the aggregate poverty deficit of the poor relative to the poverty line. Equivalently, poverty gap index (P_1) can be expressed as income gap ratio (mean depth of poverty as a proportion of the poverty line) multiplied by the head count index: that is poverty gap ratio can be written as:

$$P_1 = I.P_o = (1 - \frac{\overline{Y}_0}{Z}).\frac{q}{n}$$

Where, $\overline{Y}_0$ is mean income of the poor and Z is the poverty line. The income gap ratio, I, by itself is not a good measure of poverty. This is because if some one just below the poverty line is made sufficiently better off to escape poverty, the mean of remaining poor will fall so income gap will increase. This problem does not arise if income gap ratio is multiplied by the head count index. Hence poverty gap ratio gives a better picture of the depth of poverty. Poverty gap ratio can also be interpreted as an indicator of potentials for eliminating poverty by targeting transfers to the poor. The minimum cost of eliminating poverty using targeted transfer is the sum of all poverty gaps in a population - (Z- $\overline{Y}_0$)×q. A major drawback of the poverty gap measure, P_1, is that it does not capture the differences in the severity of poverty among the poor; that is, it is not

sensitive to the transfers of income among the poor. If income is transferred from the poor to the least poor, the poverty gap index will be unaffected.

When $\alpha > 1$, the P_α calculation gives more weight to the average income shortfall of the poorest of the poor. Thus P_2 (where $\alpha = 2$) measures the squared proportional shortfalls from the poverty line, which is commonly known as an index of the severity of poverty. The only drawback of the index of severity of poverty is that it is not easy to interpret.

A3.3: Comparison of Income Poverty between Groups and Time Periods

The commonly used method of comparing poverty indices across population groups (regions with in a country or a given region over time) and checking the robustness of poverty comparisons between groups and dates is to conduct a stochastic dominance analysis. Here we will discuss the first order stochastic dominance (FSD), second order stochastic dominance (SSD) and third order stochastic dominance (TSD) analyses in terms of comparing the distribution of a variable (for example, per capita household expenditure) among groups. The FSD analysis is done by drawing the cumulative distribution function which shows the level of consumption expenditure on the horizontal axis (various poverty lines), and the cumulative percentage population (head count ratios) on the vertical axis. This curve is called a *poverty incidence curve*. If the curves for the two groups (or dates) do not cross we can say unambiguously that one group has higher poverty incidence than the other group. If two curves cross at any of the point on the graphs, we can not say one group (rural) has higher or lower poverty incidence than the other (urban people). If we fail to compare poverty between two groups using FSD, we have to conduct the SSD and TSD analysis.

Tracing the area under the poverty incidence curve, which is called the poverty deficit curve, draws the SSD *curve*. Each point of the vertical axis on the poverty deficit curve corresponds to the value of poverty gap index (P_2) times the poverty line and values on the horizontal axis represents the value of poverty lines. The TSD curve traces the poverty severity curve or the area under the poverty deficit curve. Each point of the vertical axis of this curve is equal to the area under the poverty deficit curve (or poverty severity index (P_2). The horizontal axis measures various poverty lines. If again the poverty deficit curves and the poverty severity curves of the two groups (which are under comparison) cross each other, we cannot say there is a difference in poverty between the two groups.

User of this report must be cautious that poverty indices are descriptive measures. When we compare poverty indices between two groups and dates, it does not imply any causal relationship. For example if we compare poverty index between literate and illiterate people and we found that poverty index is less for literate than for illiterate, we cannot say that lack of education is the reason for poverty. If one wants to identify the underlying causes of poverty (or the effect of education on poverty), one has to estimate an econometrics model that includes all the relevant variables in the model plus the variable of interest.

Appendix A 4: Adjustment for the Spatial and Temporal Differences in Cost of Living

Construction of relative spatial and temporal price index is crucial to compare poverty across regions and time. Using the relative price index, nominal consumption expenditure is deflated so as to get real expenditure at a base year constant price. While the base for the relative spatial price index is the national average, the base for the temporal relative price is 1995/96. The temporal price index is calculated based on fourth months only (i.e, the survey months: June and July 1999, and January and February 2000). Hence the regional price index can be compared to the national average, which is 100, to see the regional relative cost of living. Regional poverty indices adjusted for the spatial and temporal price differences poverty in the 1999/2000 can be compared to that of 1995/96.

The spatial relative price indices for food, non-food and total items are summarized in Table A4.1. Tigray, Somalia, Aysaeta Town in Afar, Gambela Town, Harari Town, Addis Ababa and Dire Dawa has a relative price index higher than the national average in 1999/2000. Where as, Amhara, SNNP, Oromia and Rural and urban areas of Afar excluding Aysaeta have a relative price index lower than the national average. For the total of food and non-food items, the first, second and third highest cost of living is observed in Addis Ababa, Mekelle, and Jijiga Towns, respectively. The lowest cost of living is found in Amahara, Oromia and SNNP Regions. For food items Mekelle Town, Harari Town, Addis Ababa and Jijiga Towns ranks first, second, third and the fourth in the relative cost of living, respectively. For non-food items, Gambella Town ranks the first followed by Jijiga and Addis Ababa Regions.

To compare poverty in the year 1999/00 to that of 1995/96 periods, the nominal expenditure in the year 1999/00 is deflated by a temporal relative price index. The temporal Laspeyers relative

price index for the months of June 1999 and January and February 2000 (the HICE survey period) is shown in Table 5.2. The price index is calculated by CSA for Addis Ababa, rural areas and other urban areas separately. It is also done for food and non-food items separately. In Addis Ababa, the food and non-food temporal relative price index is the same. In rural and other urban areas, the food price index is higher that that of non-food price index.

Using the spatial and temporal relative price indices, the 1999/00 nominal consumption expenditure is deflated in order to arrive at the real consumption expenditure at 1995/96 constant prices. Before we calculate poverty indices, real per capita income is calculated adjusting the household size for adult equivalent to arrive at real consumption per adult. Adult equivalent household size is computed based on data sources from the United Nations World Health Organization.

Table A 4.1: Temporal Price Index for HICE 1999/00 Survey months at 1995/96 Constant Prices

	June1999	July 1999(%)	January 2000(%)	February 2000(%)	Average price Index(%)
Country level					
General		116.2	108.9	110.1	111.7
Food		123.7	106.8	109.8	**113.4**
Addis Ababa					
General		108.7	102.8	105.0	105.5
Food		112.6	100.7	103.5	105.6
Non-food*		104.8	105.3	106.7	105.6
Rural Areas					
General		115.5	107.3	108.6	110.5
Food		123.2	105.6	108.7	112.5
Non-food*		104.6	109.7	108.5	107.6
Other Urban					
General		119.0	115.5	115.7	116.7
Food		125.8	111.8	114.1	117.2
Non-food*		110.5	120.1	117.7	116.1

Source: Extracted from various issues of CSA publication
*Aggregated based on weights provided by CSA's Prices and Budget Department

Table A 4.2: Regional Relative Price Index by Reporting Level (1999/00)

Reporting Level	Food share	Food items	Non-Food	Total items
Tigray Rural	0.70	110.90	114.70	112.02
Mekellee Town	0.50	131.83	118.18	124.99
Tigray Other Urban	0.59	108.72	118.37	112.70
Afar Rural	0.67	100.04	87.85	96.04
Aysaeta Town	0.55	101.18	100.90	101.05
Afar Other Urban	0.56	99.52	98.70	99.16
North and South Gonder	0.71	87.93	76.57	84.61
East and West Gojjam and Agewawi	0.72	92.29	80.87	89.10
North Wollo and Wag Himra	0.71	89.04	82.68	87.21
South Wollo Oromia and North Shoa	0.69	94.01	88.45	92.27
Gonder Town	0.53	87.88	93.55	90.52
Dessie Town	0.57	92.10	87.61	90.18
Bahir Dar Town	0.49	92.71	101.05	96.94
Amhara Other Urban	0.57	93.98	93.22	93.65
East and West Wellega	0.68	94.06	90.87	93.04
Illubabor and Jimma	0.63	94.64	96.19	95.21
North and West Shoa	0.65	94.10	76.05	87.85
East Shoa Arsi Bale and Borena	0.63	95.89	99.52	97.22
East and West Harerghe	0.70	89.11	87.47	88.62
Debrezeit Town	0.48	94.72	98.02	96.45
Nazreth Town	0.46	94.75	91.84	93.18
Jimma Town	0.52	94.37	88.50	91.52
Oromia Other Urban	0.52	95.54	95.27	95.41
Somalia Rural	0.65	113.30	73.76	99.64
Jijiga Town	0.59	117.85	131.31	123.33
Somalia Other Urban	0.55	102.74	82.75	93.71
Benshangul Gumuzu Rural	0.64	98.49	93.99	96.87
Assosa Town	0.49	98.53	95.89	97.18
Benshangul Gumuzu Other Urban	0.49	97.69	91.97	94.77
Gurage Hadiya and Kemebata Na Aleba	0.62	98.42	74.04	89.14
Sidama Gedo Gurgi and Amaro	0.63	96.81	85.88	92.73
North and South Omo Derashe and Konso	0.66	98.37	84.32	93.61
Yem Kefa-Shekich and Bench Maji	0.61	97.99	74.53	88.84
Awasa Town	0.45	99.82	93.59	96.39
SNNP Other Urban	0.54	102.88	89.90	96.86
Gamble Rural	0.60	106.72	92.22	100.93
Gamble Town	0.52	103.68	135.37	118.85
Gamble Other Urban	0.55	105.90	86.82	97.38
Harare Rural	0.65	107.21	78.32	97.18
Harare Town	0.56	128.22	102.15	116.64
Addis Ababa Rural	0.60	120.06	97.42	111.08
Addis Ababa Town	0.51	125.48	125.16	125.32
Dire Dawa Rural	0.73	110.83	80.15	102.40
Dire Dawa Town	0.65	113.54	92.68	106.34
Dire Dawa Other Urban	0.70	110.87	77.70	100.88
Total	0.65	100	100	100

Source: own calculation from HICE survey and independent price survey both conducted by the CSA.

Appendix A 5: Checking the Poverty Line between the two Surveys Years

This is aimed at checking if the poverty line based on the 1999/00 HICE survey data set is similar to poverty line computed based on the 1995/96 HICE survey data set. TableA5.1a shows the results of food poverty line calculation for the year 1999/00. Absolute poverty line is defined on the basis of the cost of obtaining the minimum calorie requirement for subsistence, which is 2200 kcal per adult per year (Pavilion, 1994), taking the diet of the lowest income quartile households. The calorie share of the diets to the minimum calorie required for subsistence is calculated to arrive at the level of calorie and quantities of items of food group items that gives the 2200 kcal. The quantities of the food item groups are valued at the national average price obtained from the 1999/2000 HICE data, which are used to calculate the regional price index.

The values of these groups of food items are added to obtain food poverty line, which is equal to 686.26 Birr. This food poverty line is deflated by the temporal price index to express it at the 1995/96 constant prices, which is 1.134. Hence the food poverty line at the 1995/96 constant prices is 605.17 Birr. It is lower than the food poverty line estimated in 1995/96. Finally the contribution of each group of food item to the poverty line are calculated and put in the last column of TableA5.1a. Cereal-milled has the highest contribution to food poverty line, followed by cereals unmilled. Fruits, fish, oil fats, meats have very low share contribution in the poverty line.

The total poverty line is obtained after adjusting for non-food expenditure using the average food share of the lowest income quartile households. The food share of the lowest income quartile is 68.83 percent. Dividing the food poverty line of 605.17 by 0.6883 gives a total poverty line of 879.22 Birr. The poverty line calculated for the year 1999/00 is lower than that of 1995/96 by 18%. When we do this for the first two quartiles, the food poverty line is calculated to be 614.49 Birr at 1995/96 constant prices. Dividing it by the food share of the first 2-quartile income group (0.65), we get 914.02 Birr, which is lower than that of 1995/96 by 12.5 percent.

This may be because the food share of the lowest income quartile in 1999/2000 is higher; households have shifted to cheaper calorie sources, the difference in actual procedures used in 1995/96 and 1999/2000, or a combination of all factors. Since our aim is to compare poverty between 1995/96 and 1999/2000, we have used the 1995/1996 poverty line, which is 1075.03

Birr per adult per year, to estimate poverty indices for the year 1999/2000 and compare it to that of 1995/96 poverty estimates.

Table A 5.1a: Diet of the Lowest Income Quartile (Weighted)

Food Group	Mean kcal per kg/Lt.	Mean price per KG	Calorie share (%)	Kcal needed to get 2200 kcal	Gram per day per adult	Value of poverty line per year	Expenditure share (%)
	MCAL	MPIN	CSH_FG_P	KCAL_LEV	GRM_PD	VAL_POV	EXP_SHP
Cereals un-milled	3.47	1.77	13.76	302.80	87.17	56.38	8.46
Cereals milled	3.41	2.29	52.44	1153.58	338.20	282.75	40.84
Pulses un-milled	3.50	2.65	3.65	80.32	22.93	22.19	3.37
Pulses milled or split	3.45	5.20	3.76	82.75	23.96	45.51	7.15
Oil seeds	4.91	4.32	0.32	6.98	1.42	2.24	0.36
Cereals preparations	3.69	5.61	0.03	0.73	0.20	0.40	0.06
Bread and other prepared food	1.99	2.53	1.44	31.66	15.89	14.69	2.07
Meat	1.97	10.70	0.33	7.20	3.65	14.25	2.14
Fish	1.05	3.63	0.01	0.24	0.22	0.30	0.05
Milk, cheese and egg	0.86	2.46	0.70	15.50	18.06	16.25	2.03
Oils and fats	8.12	16.67	0.62	13.63	1.68	10.21	1.63
Vegetables	0.37	1.01	1.66	36.62	99.75	36.66	4.50
Fruits	0.52	2.95	0.06	1.27	2.45	2.64	0.24
Spices	2.97	13.76	1.06	23.38	7.88	39.57	5.83
Potatoes and other tubers	1.60	.92	17.82	392.07	244.58	82.08	12.51
Coffee, tea and buck thorn leaves	1.19	6.40	1.02	22.36	18.76	43.81	6.62
Salt, sugar and others	1.78	2.76	1.32	28.93	16.21	16.32	2.12
Total			100	2200.00		686.26	100.0

NB1: Quartiles are created based on household expenditure, using household weights. The figures in this Table are generated from the lowest income quartile. Quantities and expenditures across food item groups are aggregated using household weights.

NB2: Poverty line at 1999/00 price is 686.26 Birr while it is 605.17 Birr at 1995/96 constant prices (686.26/1.134). For the lowest income quartile households, the food share in total consumption expenditure is 68.83% in 1999/00. Hence, the total poverty line is 879.22 (605.17/0.6883). This falls short of the 1995/96 poverty line, which stood at 1075 Birr by 18%. In other words, the 1995/96 poverty line is greater than the 1999/00 poverty line by 22.3%.

Table A5.1b. Diet of the First Two Lowest Income Quartile (Weighted)

Food Group	Mean kcal per kg/Lt.	Mean price per KG	Calorie share (%)	Kcal needed to get 2200 kcal	Gram per day per adult	Value of poverty line per year	Expenditure share (%)
	MCAL	MPIN	CSH_FG_P	KCAL_LEV	GRM_PD	VAL_POV	EXP_SHP
Cereals un-milled	3.47	1.77	13.30	292.65	84.25	54.49	7.98
Cereals milled	3.41	2.29	51.46	1132.15	331.91	277.50	39.97
Pulses un-milled	3.50	2.65	3.78	83.09	23.72	22.95	3.45
Pulses milled or split	3.45	5.20	3.80	83.68	24.23	46.02	6.99
Oil seeds	4.91	4.32	0.32	7.05	1.44	2.26	0.35
Cereals preparations	3.69	5.61	0.04	0.88	0.24	0.49	0.07
Bread and other prepared food	1.99	2.53	1.25	27.56	13.83	12.79	1.83
Meat	1.97	10.70	0.40	8.85	4.49	17.51	2.56
Fish	1.05	3.63	0.01	0.31	0.29	0.39	0.07
Milk, cheese and egg	0.86	2.46	0.85	18.80	21.91	19.71	2.48
Oils and fats	8.12	16.67	0.84	18.46	2.27	13.83	2.17
Vegetables	0.37	1.01	1.54	33.97	92.53	34.01	4.29
Fruits	0.52	2.95	0.06	1.33	2.55	2.75	0.31
Spices	2.97	13.76	1.05	23.11	7.79	39.12	5.66
Potatoes and other tubers	1.60	0.92	18.77	413.02	257.65	86.47	12.77
Coffee, tea and buck thorn leaves	1.19	6.40	1.16	25.41	21.32	49.78	6.95
Salt, sugar and others	1.78	2.76	1.35	29.69	16.64	16.75	2.09
Total			100.00	2200.00		696.83	100.00

NB1: *Quartiles are created based on household expenditure, using household weights. Tables in figures come out from the lowest income quartile. Quantities and expenditures across food item groups are aggregated using household weights.*

NB2: *Poverty line at 2000 price is 695.83 Birr and at 1995/96 constant prices is 614.49(696.83/1.134). For the first two lowest income quartile households, the share of food in total consumption expenditure is 65% in 1999/2000. Hence, the total poverty line is 941.83 (695.83/0.65). This falls short of the 1995/96 poverty line, which stood at Birr 1075.0 by 12.5%. In other words, the 1995/96 poverty line is greater than the 1999/00 poverty line by 14%.*

Appendix A 6:Real Consumption Expenditure
Table A 6.1: Real Expenditure Per Capita by Reporting Level

Reporting Level	Real Food Expenditure Per Capita	Real Non-Food Expenditure P.C.	Real Total Expenditure Per Capita	Real Food Expenditure Per Adult Equivalent	Real Non-Food Expenditure Per Adult Equivalent	Real Total Expenditure Per Adult Equivalent
Tigray Rural	566.92	258.28	828.90	725.24	330.24	1060.21
Mekellee Town	520.29	811.22	1314.24	640.72	989.70	1609.70
Tigray Other Urban	488.71	407.38	896.58	618.38	514.55	1133.53
Afar Rural	527.06	492.64	997.81	661.15	608.82	1243.51
Aysaeta Town	761.30	856.25	1616.08	896.72	981.64	1876.82
Afar Other Urban	831.75	793.26	1618.75	990.92	932.44	1916.28
North and South Gonder	728.45	448.34	1165.85	919.99	565.64	1471.89
E& W Gojjam & Agewawi	669.58	358.67	1023.07	851.97	454.27	1299.89
North Wollo & Wag Himra	683.45	405.69	1084.95	850.88	497.45	1343.69
S. Wollo Oromia &N.Shoa	604.73	346.52	950.71	757.54	430.14	1187.26
Gonder Town	911.61	1100.38	2020.18	1109.90	1332.74	2452.42
Dessie Town	760.80	840.62	1592.82	919.99	1002.85	1912.90
Bahir Dar Town	770.61	951.46	1726.77	925.33	1133.23	2063.87
Amhara Other Urban	691.45	721.13	1405.37	851.27	884.47	1726.97
East and West Wellega	670.59	367.29	1039.53	842.57	456.10	1301.00
Illubabor and Jimma	587.25	380.99	969.09	753.76	489.51	1244.36
North and West Shoa	626.38	480.10	1087.82	796.64	609.87	1382.88
East Shoa Arsi Bale and Borena	577.96	386.85	965.98	745.09	491.10	1237.72
East and West Harerghe	731.95	339.14	1075.29	935.20	428.87	1369.62
Debrezeit Town	600.15	865.75	1467.30	730.58	1037.71	1769.81
Nazreth Town	588.15	978.35	1559.91	716.72	1188.17	1896.94
Jimma Town	561.22	734.74	1287.91	672.35	875.55	1538.43
Oromia Other Urban	585.33	761.53	1337.20	724.43	928.37	1641.25
Somalia Rural	574.81	562.39	1070.81	723.34	703.27	1344.30
Jijiga Town	682.12	512.71	1197.69	848.51	632.43	1484.18
Somalia Other Urban	745.24	893.62	1600.20	902.65	1069.35	1927.00
Benshangul Gumuz Rural	531.86	396.72	925.32	683.00	496.68	1176.19
Assosa Town	764.13	1037.59	1796.55	943.03	1266.37	2203.27
Benshangul Gumuz Other Urban	615.65	770.75	1374.51	766.50	953.59	1705.62
Gurage Hadiya and Kemebata Na Aleba	476.98	476.97	921.94	600.07	597.87	1158.10
Sidama Gedo Gurgi and Amaro	604.55	439.73	1039.18	777.38	563.20	1334.24
N & S Omo Derashe and Konso	482.97	327.55	804.03	602.42	405.91	1000.55
Yem Kefa-Shekich& Bench Maji	539.62	551.55	1056.61	702.81	712.48	1371.35
Awasa Town	587.12	1098.78	1672.02	709.23	1307.00	2000.15
SNNP Other Urban	577.25	754.65	1306.33	706.66	914.27	1590.54
Gambela Rural	496.26	411.99	900.83	618.00	507.57	1116.94
Gambela Town	672.38	594.25	1262.45	824.20	716.01	1533.42
Gambela Other Urban	588.54	590.43	1164.16	733.46	724.86	1441.31
Harari Rural	792.06	643.78	1394.74	1010.00	819.90	1777.72
Harar Town	617.52	766.78	1349.78	742.09	915.17	1616.59
Addis Ababa Rural	644.91	588.19	1214.10	785.00	714.09	1476.19
Addis Ababa Town	651.13	1059.46	1711.66	766.55	1227.67	1995.48
Dire Dawa Rural	697.65	393.33	1068.56	874.13	486.39	1333.95
Dire Dawa Town	764.18	647.98	1381.29	933.90	778.97	1676.85
Dire Dawa Other Urban	643.00	497.40	1092.54	841.73	640.01	1421.87
Total	612.43	451.23	1056.71	773.48	562.25	1327.22

Table A 6.1 a: Real Expenditure Per Capita by Region and Rural -Urban Residence at 1995/96 Constant Prices (1999/00)

Region	Real food expenditure per capita			Real non-food expenditure per capita			Real total expenditure per capita		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tigray	566.92	496.22	556.39	258.28	503.43	294.78	828.90	995.92	853.77
Affar	527.06	815.41	610.95	492.64	807.87	584.35	997.81	1618.13	1178.28
Amhara	667.61	719.32	672.42	384.15	775.95	420.56	1046.54	1490.06	1087.74
Oromiya	631.41	585.01	626.60	390.89	778.03	431.03	1020.46	1354.00	1055.05
Somalie	574.81	725.84	626.94	562.39	776.53	636.31	1070.81	1476.47	1210.83
Benshanguli	531.86	664.53	540.90	396.72	858.58	428.20	925.32	1513.43	965.40
Snnpr	521.58	578.40	525.52	428.72	794.62	454.12	933.43	1348.8	962.26
Gambella	496.26	638.48	531.77	411.99	592.71	457.11	900.83	1222.70	981.20
Harari	792.06	617.52	697.81	643.78	766.78	710.20	1394.74	1349.78	1370.46
Addis ababa	644.91	651.13	651.00	588.19	1059.46	1049.56	1214.10	1711.66	1701.21
Dire Dawa	697.65	755.17	738.32	393.33	636.78	565.49	1068.56	1359.81	1274.52
Total	609.48	631.25	612.43	391.98	829.61	451.23	994.73	1452.54	1056.71

Table A6.1 b: Real Expenditure Per Adult Equivalent by Region and Rural -Urban Residence at 1995/96 Constant Prices (1999/00)

Region	Real Food Expenditure Per Adult Equivalent			Real Non-Food Expenditure Per Adult Equivalent			Real Total Expenditure Per Adult Equivalent		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tigray	725.24	623.69	710.12	330.24	627.57	374.51	1060.21	1246.79	1087.99
Affar	661.15	969.06	750.73	608.82	943.85	706.29	1243.51	1907.13	1436.57
Amhara	842.04	881.79	845.73	481.56	946.06	524.72	1317.23	1821.50	1364.08
Oromiya	806.59	722.03	797.82	495.30	946.84	542.12	1299.67	1658.04	1336.83
Somalie	723.34	886.01	779.49	703.27	935.04	783.27	1344.30	1790.88	1498.45
Benshangul	683.00	824.61	692.65	496.68	1056.54	534.84	1176.19	1869.43	1223.44
Snnpr	662.02	706.96	665.14	541.73	959.88	570.75	1182.73	1638.11	1214.33
Gambella	618.00	787.51	660.32	507.57	719.59	560.50	1116.94	1496.18	1211.63
Harari	1010.00	742.09	865.32	819.90	915.17	871.35	1777.72	1616.59	1690.71
Addis Ababa	785.00	766.55	766.94	714.09	1227.67	1216.87	1476.19	1995.48	1984.57
Dire Dawa	874.13	927.04	911.55	486.39	768.64	685.98	1333.95	1657.89	1563.02
Total	774.44	767.40	773.48	494.78	993.16	562.25	1260.93	1750.66	1327.22

Table A6.2: Calorie Consumption, Food Share and Household Size by Reporting Level (1999/00)

Reporting Level	Kilo Calorie Per Adult Equivalent	Food Share (%)	Household Size	Adult Equiv. Household Size
Tigray Rural	2529.52	0.70	4.78	3.74
Mekellee Town	1829.22	0.50	4.49	3.67
Tigray Other Urban	1805.56	0.59	4.16	3.33
Afar Rural	1852.56	0.67	4.88	3.89
Aysaeta Town	2000.75	0.55	3.91	3.31
Afar Other Urban	1987.44	0.56	3.67	3.09
North and South Gonder	2581.85	0.71	4.74	3.77
East and West Gojjam and Agewawi	2841.84	0.72	4.63	3.65
North Wollo and Wag Himra	2574.24	0.71	4.36	3.50
South Wollo Oromia and North Shoa	2404.34	0.69	4.55	3.64
Gonder Town	2026.55	0.53	4.50	3.70
Dessie Town	1900.37	0.57	4.52	3.74
Bahir Dar Town	1996.21	0.49	4.10	3.43
Amhara Other Urban	1916.29	0.57	3.87	3.16
East and West Wellega	3005.76	0.68	5.08	4.07
Illubabor and Jimma	2811.09	0.63	4.98	3.90
North and West Shoa	2670.25	0.65	5.01	3.95
East Shoa Arsi Bale and Borena	2732.27	0.63	5.33	4.14
East and West Harerghe	2859.41	0.70	5.16	4.05
Debrezeit Town	1623.10	0.48	4.53	3.75
Nazreth Town	1605.60	0.46	4.84	4.01
Jimma Town	1563.01	0.52	4.73	3.97
Oromia Other Urban	1758.40	0.52	4.57	3.71
Somalia Rural	2272.94	0.65	4.95	3.98
Jijiga Town	1919.73	0.59	4.91	3.97
Somalia Other Urban	2023.48	0.55	5.66	4.64
Benshangul Gumuz Rural	2665.77	0.64	4.66	3.68
Assosa Town	2124.46	0.49	4.10	3.34
Benshangul Gumuz Other Urban	2103.52	0.49	4.22	3.38
Gurage Hadiya and Kemebata Na Aleba	2383.73	0.62	5.15	4.12
Sidama Gedo Gurgi and Amaro	3256.09	0.63	5.30	4.15
North and South Omo Derashe and Konso	2760.63	0.66	4.86	3.92
Yem Kefa-Shekich and Bench Maji	3005.08	0.61	5.09	3.96
Awasa Town	1711.54	0.45	5.11	4.24
SNNPR Other Urban	1941.89	0.54	4.72	3.88
Gambela Rural	2563.18	0.60	4.30	3.48
Gambela Town	1886.14	0.52	4.84	3.96
Gambela Other Urban	2122.23	0.55	4.87	3.92
Harari Rural	2759.59	0.65	4.91	3.85
Harar Town	1882.69	0.56	4.06	3.40
Addis Ababa Rural	2409.14	0.60	5.81	4.77
Addis Ababa Town	1906.81	0.51	5.03	4.33
Dire Dawa Rural	2528.18	0.73	5.16	4.12
Dire Dawa Town	1933.83	0.65	4.43	3.64
Dire Dawa Other Urban	1877.16	0.70	4.46	3.46
Total	2606.18	0.65	4.88	3.88

Table A6.2a: Calorie Consumption per Adult Equivalent Per Day and the Share of Food in Total Expenditure (1999/00)

Region	Kilo Calorie Per Day Per Adult Equivalent			Food Share in Total Expenditure (%)		
	Rural	Urban	Total	Rural	Urban	Total
Tigray	2529.52	1811.18	2422.56	0.70	0.57	0.68
Affar	1852.56	1990.53	1892.70	0.67	0.56	0.63
Amhara	2613.65	1929.83	2550.11	0.71	0.56	0.69
Oromiya	2798.49	1736.27	2688.35	0.66	0.51	0.64
Somalie	2272.94	1991.59	2175.83	0.65	0.56	0.62
Benshangul-Gumuz	2665.77	2110.41	2627.91	0.64	0.49	0.63
Snnpr	2815.66	1915.14	2753.17	0.63	0.53	0.63
Gambella	2563.18	1981.60	2417.97	0.60	0.53	0.59
Harari	2759.59	1882.69	2286.06	0.65	0.56	0.60
Addis ababa	2409.14	1906.81	1917.37	0.60	0.51	0.51
Dire Dawa	2528.18	1929.61	2104.91	0.73	0.66	0.68
Total	2722.87	1860.93	2606.18	0.67	0.53	0.65

Table A6.2b: Distribution of Household Size and Adult Equivalent Household Size by Region and Rural - Urban Areas (1999/00)

Region	Household Size			Adult Equivalent Household Size		
	Rural	Urban	Total	Rural	Urban	Total
Tigray	4.8	4.2	4.7	3.7	3.4	3.7
Affar	4.9	3.7	4.5	3.9	3.1	3.6
Amhara	4.6	4.0	4.5	3.7	3.2	3.6
Oromiya	5.1	4.6	5.1	4.0	3.7	4.0
Somalie	4.9	5.4	5.1	4.0	4.4	4.1
Benshanguli	4.7	4.2	4.6	3.7	3.4	3.7
Snnpr	5.1	4.8	5.1	4.0	3.9	4.0
Gambella	4.3	4.9	4.4	3.5	3.9	3.6
Harari	4.9	4.1	4.4	3.8	3.4	3.6
Addis Ababa	5.8	5.0	5.0	4.8	4.3	4.3
Dire Dawa	5.2	4.4	4.6	4.1	3.6	3.8
Total	4.9	4.6	4.9	3.9	3.8	3.9

A 6.3: Poverty Measures

Table A6.3.1: Moderate Poverty (1999/00)

Reporting Level	Head count index (P_0)				Normalized poverty gap (P_1)				Squared normalized poverty gap (P_2)			
	Estimate	Std. Err.	[95% Conf. Interval]		Estimate	Std. Err.	[95% Conf. Interval]		Estimate	Std. Err.	[95% Conf. Interval]	
Tigris Rural	0.805	0.029	0.748	0.861	0.292	0.022	0.249	0.334	0.133	0.014	0.106	0.160
Mekellee Town	0.589	0.042	0.506	0.672	0.203	0.026	0.151	0.254	0.090	0.018	0.055	0.125
Tigray Other Urban	0.735	0.048	0.640	0.829	0.319	0.033	0.254	0.384	0.162	0.022	0.119	0.204
Afar Rural	0.819	0.044	0.733	0.905	0.316	0.025	0.266	0.365	0.147	0.018	0.112	0.182
Aysaeta Town	0.485	0.071	0.345	0.624	0.151	0.027	0.098	0.204	0.060	0.012	0.036	0.085
Afar Other Urban	0.390	0.080	0.233	0.546	0.114	0.033	0.050	0.178	0.045	0.016	0.013	0.076
North and South Gonder	0.534	0.049	0.438	0.631	0.151	0.020	0.112	0.190	0.058	0.010	0.038	0.078
East and West Gojjam and Agewawi	0.641	0.045	0.554	0.729	0.202	0.021	0.161	0.243	0.084	0.011	0.062	0.105
North Wollo and Wag Himra	0.719	0.051	0.619	0.819	0.201	0.024	0.155	0.247	0.077	0.012	0.053	0.101
South Wollo Oromia and North Shoa	0.694	0.038	0.620	0.768	0.231	0.022	0.187	0.275	0.100	0.012	0.076	0.124
Gonder Town	0.321	0.059	0.206	0.436	0.092	0.018	0.057	0.127	0.037	0.007	0.022	0.051
Dessie Town	0.422	0.055	0.314	0.530	0.139	0.025	0.090	0.189	0.060	0.013	0.034	0.086
Bahir Dar Town	0.368	0.036	0.297	0.439	0.096	0.014	0.069	0.124	0.037	0.007	0.022	0.051
Amhara Other Urban	0.517	0.034	0.450	0.584	0.158	0.021	0.117	0.199	0.068	0.012	0.045	0.091
East and West Wellega	0.593	0.042	0.511	0.675	0.164	0.019	0.127	0.200	0.061	0.009	0.043	0.079
Illubabor and Jimma	0.641	0.047	0.550	0.733	0.207	0.028	0.152	0.261	0.092	0.017	0.057	0.126
North and West Shoa	0.557	0.048	0.463	0.652	0.143	0.016	0.111	0.175	0.051	0.007	0.038	0.065
East Shoa Arsi Bale and Borena	0.679	0.039	0.603	0.755	0.236	0.020	0.197	0.275	0.105	0.012	0.083	0.128
East and West Harerghe	0.563	0.054	0.457	0.669	0.143	0.018	0.107	0.178	0.048	0.007	0.034	0.062
Debrezeit Town	0.508	0.035	0.440	0.576	0.166	0.017	0.132	0.200	0.071	0.010	0.052	0.091
Nazreth Town	0.430	0.047	0.339	0.522	0.143	0.022	0.101	0.185	0.065	0.012	0.042	0.088
Jimma Town	0.535	0.048	0.442	0.628	0.176	0.022	0.133	0.219	0.077	0.012	0.053	0.101
Oromia Other Urban	0.520	0.029	0.462	0.578	0.168	0.011	0.146	0.190	0.072	0.006	0.060	0.084
Somalia Rural	0.707	0.033	0.643	0.771	0.190	0.016	0.158	0.222	0.072	0.009	0.055	0.089
Jijiga Town	0.572	0.048	0.478	0.666	0.187	0.024	0.140	0.234	0.082	0.014	0.054	0.109

Reporting Level	Head count index (P_0)				Normalized poverty gap (P_1)				Squared normalized poverty gap (P_2)			
	Estimate	Std. Err.	[95% Conf. Interval]		Estimate	Std. Err.	[95% Conf. Interval]		Estimate	Std. Err.	[95% Conf. Interval]	
Somalie Other Urban	0.537	0.014	0.509	0.565	0.108	0.026	0.056	0.159	0.032	0.015	0.002	0.062
Benshangul Gumuzu Rural	0.727	0.030	0.669	0.785	0.265	0.019	0.227	0.303	0.121	0.013	0.095	0.147
Assosa Town	0.311	0.046	0.221	0.401	0.080	0.018	0.045	0.115	0.029	0.008	0.014	0.045
Benshangul Gumuzu Other Urban	0.478	0.066	0.349	0.607	0.149	0.026	0.098	0.200	0.059	0.014	0.032	0.085
Gurage Hadiya and Kemebata Na Aleba	0.742	0.030	0.683	0.801	0.254	0.019	0.218	0.291	0.114	0.012	0.091	0.136
Sidama Gedo Gurgi and Amaro	0.592	0.047	0.500	0.683	0.164	0.017	0.130	0.197	0.061	0.008	0.046	0.077
North and South Omo Derashe and Konso	0.809	0.049	0.713	0.905	0.326	0.034	0.260	0.392	0.163	0.023	0.118	0.207
Yem Kefa-Shekich and Bench Maji	0.603	0.058	0.490	0.716	0.185	0.029	0.128	0.243	0.075	0.015	0.045	0.105
Awasa Town	0.451	0.054	0.345	0.558	0.149	0.021	0.108	0.191	0.067	0.012	0.044	0.089
SNNP Other Urban	0.566	0.039	0.489	0.642	0.185	0.016	0.154	0.216	0.077	0.011	0.056	0.098
Gambela Rural	0.759	0.038	0.684	0.834	0.245	0.027	0.192	0.298	0.105	0.016	0.074	0.136
Gambela Town	0.549	0.051	0.449	0.649	0.171	0.026	0.120	0.222	0.078	0.016	0.046	0.109
Gambela Other Urban	0.590	0.066	0.460	0.719	0.209	0.049	0.114	0.305	0.097	0.028	0.042	0.152
Harari Rural	0.318	0.040	0.239	0.397	0.059	0.009	0.042	0.076	0.015	0.003	0.010	0.021
Harar Town	0.507	0.034	0.439	0.574	0.150	0.016	0.119	0.181	0.057	0.008	0.042	0.073
Addis Ababa Rural	0.485	0.047	0.392	0.578	0.126	0.018	0.091	0.161	0.046	0.009	0.028	0.064
Addis Ababa Town	0.516	0.028	0.462	0.570	0.166	0.012	0.143	0.189	0.071	0.006	0.059	0.083
Dire Dawa Rural	0.615	0.046	0.524	0.705	0.149	0.017	0.116	0.183	0.051	0.008	0.034	0.067
Dire Dawa Town	0.476	0.042	0.395	0.558	0.142	0.017	0.109	0.175	0.057	0.009	0.040	0.074
Dire Dawa Other Urban	0.643	0.046	0.552	0.734	0.223	0.024	0.176	0.270	0.095	0.013	0.069	0.120
Total	0.640	0.011	0.618	0.661	0.205	0.006	0.194	0.216	0.088	0.003	0.081	0.094

Table A6.3.2: Absolute Poverty in Ethiopia by Reporting Level (1999/00)

Reporting Level	Head count index (P_0)				Normalized poverty gap (P_1)				Squared normalized poverty gap (P_2)			
	Estimate	Std. Err.	[95% Conf Interval]		Estimate	Std. Err.	[95% Conf.Interval]		Estimate	Std. Err.	[95% Confidence Interval]	
Tigray Rural	0.616	0.042	0.534	0.698	0.185	0.020	0.146	0.224	0.072	0.010	0.052	0.092
Mekellee Town	0.428	0.043	0.344	0.512	0.124	0.025	0.075	0.172	0.048	0.014	0.021	0.075
Tigray Other Urban	0.663	0.053	0.559	0.766	0.223	0.030	0.164	0.282	0.098	0.016	0.066	0.130
Afar Rural	0.680	0.046	0.590	0.770	0.203	0.023	0.157	0.248	0.081	0.015	0.052	0.111
Aysaeta Town	0.351	0.073	0.208	0.494	0.082	0.018	0.047	0.118	0.028	0.007	0.014	0.041
Afar Other Urban	0.244	0.061	0.124	0.364	0.060	0.023	0.015	0.105	0.020	0.009	0.002	0.039
North and South Gonder	0.340	0.046	0.250	0.429	0.077	0.015	0.048	0.106	0.026	0.006	0.014	0.039
East and West Gojjam and Agewawi	0.428	0.045	0.340	0.516	0.115	0.016	0.084	0.145	0.041	0.007	0.028	0.054
North Wollo and Wag Himra	0.441	0.056	0.331	0.551	0.102	0.018	0.066	0.138	0.034	0.007	0.020	0.049
South Wollo Oromia and North Shoa	0.505	0.052	0.403	0.607	0.137	0.018	0.103	0.171	0.052	0.008	0.036	0.067
Gonder Town	0.175	0.035	0.107	0.244	0.048	0.010	0.028	0.069	0.018	0.004	0.010	0.026
Dessie Town	0.313	0.053	0.209	0.417	0.082	0.018	0.046	0.119	0.030	0.008	0.014	0.047
Bahir Dar Town	0.223	0.034	0.156	0.290	0.048	0.011	0.027	0.070	0.017	0.005	0.007	0.026
Amhara Other Urban	0.332	0.045	0.245	0.420	0.093	0.016	0.061	0.125	0.035	0.008	0.020	0.050
East and West Wellega	0.356	0.043	0.272	0.441	0.084	0.013	0.058	0.110	0.026	0.005	0.016	0.036
Illubabor and Jimma	0.447	0.050	0.348	0.546	0.123	0.023	0.077	0.169	0.050	0.013	0.025	0.075
North and West Shoa	0.317	0.041	0.236	0.398	0.069	0.010	0.049	0.090	0.021	0.004	0.014	0.028
East Shoa Arsi Bale and Borena	0.507	0.040	0.428	0.585	0.144	0.016	0.112	0.175	0.056	0.008	0.040	0.072
East and West Harerghe	0.313	0.048	0.218	0.408	0.064	0.011	0.043	0.085	0.017	0.003	0.011	0.024
Debrezeit Town	0.367	0.037	0.293	0.440	0.099	0.014	0.072	0.127	0.036	0.007	0.023	0.050
Nazreth Town	0.285	0.045	0.196	0.374	0.090	0.017	0.057	0.123	0.036	0.008	0.021	0.051
Jimma Town	0.370	0.045	0.282	0.458	0.105	0.016	0.073	0.137	0.041	0.008	0.024	0.058
Oromia Other Urban	0.363	0.024	0.316	0.411	0.099	0.008	0.082	0.115	0.037	0.004	0.029	0.045
Somalie Rural	0.441	0.041	0.359	0.522	0.096	0.013	0.071	0.121	0.032	0.006	0.021	0.043

Reporting Level	Head count index (P_0)				Normalized poverty gap (P_1)				Squared normalized poverty gap (P_2)			
	Estimate	Std. Err.	[95% Conf Interval]		Estimate	Std. Err.	[95% Conf.Interval]		Estimate	Std. Err.	[95% Confidence Interval]	
Jijiga Town	0.399	0.049	0.302	0.496	0.112	0.020	0.073	0.152	0.043	0.010	0.023	0.062
Somalia Other Urban	0.199	0.085	0.032	0.366	0.036	0.024	0.010	0.082	0.011	0.009	0.007	0.030
Benshangul Gumuz Rural	0.558	0.035	0.491	0.626	0.166	0.018	0.131	0.200	0.067	0.010	0.047	0.087
Assosa Town	0.181	0.043	0.098	0.265	0.039	0.011	0.017	0.061	0.012	0.004	0.004	0.020
Benshangul Gumuz Other Urban	0.341	0.050	0.243	0.439	0.081	0.019	0.044	0.117	0.026	0.009	0.010	0.043
Gurage Hadiya and Kemebata Na Aleba	0.529	0.039	0.453	0.604	0.155	0.016	0.123	0.187	0.061	0.008	0.045	0.078
Sidama Gedo Gurgi and Amaro	0.386	0.039	0.310	0.462	0.084	0.012	0.061	0.107	0.026	0.005	0.017	0.035
North and South Omo Derashe and Konso	0.661	0.061	0.541	0.781	0.223	0.030	0.163	0.283	0.098	0.018	0.064	0.133
Yem Kefa-Shekich and Bench Maji	0.417	0.064	0.290	0.543	0.103	0.023	0.059	0.147	0.036	0.009	0.017	0.054
Awasa Town	0.323	0.046	0.232	0.413	0.092	0.016	0.060	0.123	0.036	0.008	0.021	0.051
SNNPR Other Urban	0.413	0.030	0.355	0.471	0.104	0.016	0.074	0.135	0.038	0.008	0.022	0.054
Gambela Rural	0.546	0.060	0.428	0.663	0.144	0.023	0.100	0.188	0.054	0.010	0.033	0.074
Gambela Town	0.347	0.058	0.234	0.460	0.102	0.022	0.058	0.146	0.044	0.012	0.021	0.067
Gambela Other Urban	0.439	0.095	0.252	0.626	0.134	0.042	0.053	0.216	0.054	0.018	0.018	0.089
Harari Rural	0.149	0.024	0.103	0.196	0.017	0.003	0.010	0.024	0.003	0.001	0.001	0.005
Harar Town	0.350	0.041	0.269	0.430	0.079	0.012	0.056	0.102	0.025	0.004	0.016	0.033
Addis Ababa Rural	0.271	0.041	0.190	0.352	0.059	0.013	0.033	0.085	0.020	0.006	0.009	0.032
Addis Ababa Town	0.362	0.024	0.315	0.410	0.097	0.009	0.080	0.114	0.036	0.004	0.028	0.044
Dire Dawa Rural	0.332	0.040	0.252	0.411	0.065	0.012	0.041	0.089	0.019	0.005	0.009	0.029
Dire Dawa Town	0.315	0.039	0.238	0.393	0.078	0.012	0.054	0.102	0.027	0.005	0.016	0.037
Dire Dawa Other Urban	0.518	0.050	0.420	0.616	0.137	0.020	0.097	0.177	0.045	0.008	0.030	0.060
Total	0.442	0.012	0.419	0.465	0.119	0.004	0.111	0.128	0.045	0.002	0.040	0.049

Table A6.3.3: Extreme Poverty in Ethiopia (1999/00)

Reporting Level	Head count index (P_0)				Normalized poverty gap (P_1)				Squared normalized poverty gap (P_2)			
	Estimate	Std. Err.	[95% Conf. Interval]		Estimate	Std. Err.	[95% Conf. Interval]		Estimate	Std. Err.	[95% Conf. Interval]	
Tigray Rural	0.374	0.048	0.280	0.467	0.079	0.013	0.054	0.104	0.025	0.005	0.014	0.035
Mekellee Town	0.246	0.061	0.126	0.366	0.052	0.018	0.018	0.086	0.016	0.007	0.002	0.031
Tigray Other Urban	0.437	0.063	0.314	0.560	0.112	0.022	0.069	0.154	0.042	0.009	0.025	0.059
Afar Rural	0.373	0.050	0.275	0.472	0.088	0.019	0.050	0.126	0.031	0.010	0.011	0.051
Aysaeta Town	0.140	0.041	0.059	0.221	0.027	0.008	0.011	0.043	0.008	0.003	0.003	0.013
Afar Other Urban	0.121	0.062	0.002	0.243	0.020	0.011	0.001	0.041	0.006	0.003	0.001	0.012
North and South Gonder	0.120	0.028	0.065	0.175	0.025	0.007	0.011	0.039	0.008	0.003	0.003	0.014
East and West Gojjam and Agewawi	0.213	0.032	0.151	0.275	0.043	0.008	0.027	0.059	0.012	0.003	0.007	0.018
North Wollo and Wag Himra	0.181	0.043	0.097	0.265	0.034	0.009	0.016	0.051	0.009	0.003	0.004	0.014
South Wollo Oromia and North Shoa	0.257	0.035	0.188	0.326	0.055	0.009	0.036	0.073	0.017	0.003	0.010	0.024
Gonder Town	0.107	0.027	0.055	0.160	0.019	0.004	0.011	0.027	0.005	0.001	0.003	0.008
Dessie Town	0.163	0.042	0.080	0.246	0.032	0.011	0.011	0.053	0.009	0.003	0.003	0.016
Bahir Dar Town	0.090	0.029	0.034	0.147	0.017	0.006	0.006	0.028	0.005	0.002	0.002	0.008
Amhara Other Urban	0.174	0.036	0.104	0.245	0.037	0.009	0.020	0.055	0.012	0.003	0.005	0.019
East and West Wellega	0.158	0.028	0.103	0.214	0.021	0.006	0.009	0.033	0.005	0.002	0.001	0.009
Illubabor and Jimma	0.214	0.048	0.119	0.308	0.055	0.016	0.023	0.087	0.020	0.007	0.006	0.035
North and West Shoa	0.119	0.023	0.074	0.163	0.019	0.004	0.012	0.026	0.004	0.001	0.002	0.006
East Shoa Arsi Bale and Borena	0.261	0.032	0.198	0.324	0.058	0.010	0.038	0.078	0.021	0.004	0.012	0.030
East and West Harerghe	0.132	0.028	0.076	0.188	0.013	0.003	0.006	0.019	0.002	0.001	0.001	0.003
Debrezeit Town	0.199	0.033	0.135	0.263	0.039	0.009	0.021	0.056	0.011	0.003	0.004	0.018
Nazreth Town	0.178	0.039	0.101	0.254	0.040	0.010	0.021	0.059	0.013	0.003	0.006	0.019
Jimma Town	0.192	0.033	0.127	0.257	0.044	0.011	0.023	0.065	0.015	0.005	0.006	0.024
Oromia Other Urban	0.187	0.018	0.151	0.224	0.040	0.005	0.030	0.050	0.012	0.002	0.008	0.017
Somalie Rural	0.156	0.029	0.099	0.213	0.031	0.008	0.016	0.046	0.009	0.003	0.003	0.014

Reporting Level	Head count index (P_0)				Normalized poverty gap (P_1)				Squared normalized poverty gap (P_2)			
	Estimate	Std. Err.	[95% Conf. Interval]		Estimate	Std. Err.	[95% Conf. Interval]		Estimate	Std. Err.	[95% Conf. Interval]	
Jijiga Town	0.217	0.044	0.131	0.304	0.047	0.013	0.022	0.072	0.014	0.005	0.005	0.023
Somalie Other Urban	0.045	0.037	0.027	0.117	0.011	0.010	0.008	0.030	0.004	0.004	0.003	0.011
Benshangul Gumuzu Rural	0.320	0.037	0.248	0.392	0.075	0.013	0.048	0.101	0.025	0.006	0.012	0.037
Assosa Town	0.070	0.026	0.020	0.121	0.010	0.004	0.002	0.019	0.003	0.001	0.000	0.005
Benshangul Gumuz Other Urban	0.136	0.057	0.025	0.247	0.025	0.011	0.004	0.046	0.007	0.003	0.000	0.013
Gurage Hadiya and Kemebata Na Aleba	0.315	0.037	0.243	0.387	0.068	0.011	0.046	0.089	0.022	0.004	0.013	0.030
Sidama Gedo Gurgi and Amaro	0.160	0.032	0.097	0.223	0.022	0.005	0.012	0.033	0.006	0.002	0.002	0.010
North and South Omo Derashe and Konso	0.434	0.065	0.307	0.561	0.113	0.023	0.068	0.157	0.043	0.010	0.023	0.063
Yem Kefa-Shekich and Bench Maji	0.200	0.049	0.103	0.296	0.036	0.011	0.015	0.056	0.009	0.004	0.002	0.017
Awasa Town	0.178	0.034	0.113	0.244	0.041	0.010	0.022	0.059	0.013	0.003	0.006	0.019
Snnp Other Urban	0.192	0.038	0.117	0.266	0.041	0.011	0.019	0.064	0.012	0.004	0.005	0.020
Gambela Rural	0.254	0.053	0.150	0.359	0.056	0.013	0.031	0.082	0.018	0.005	0.009	0.027
Gambela Town	0.179	0.045	0.091	0.266	0.048	0.014	0.020	0.076	0.020	0.007	0.007	0.034
Gambela Other Urban	0.248	0.084	0.084	0.412	0.059	0.020	0.019	0.099	0.019	0.007	0.006	0.033
Harari Rural	0.016	0.007	0.002	0.029	0.001	0.001	0.000	0.003	0.000	0.000	0.000	0.001
Harar Town	0.146	0.024	0.099	0.192	0.022	0.005	0.011	0.032	0.005	0.002	0.002	0.008
Addis Ababa Rural	0.088	0.027	0.035	0.141	0.020	0.007	0.006	0.034	0.007	0.003	0.001	0.012
Addis Ababa Town	0.186	0.019	0.149	0.223	0.038	0.005	0.028	0.048	0.012	0.002	0.008	0.015
Dire Dawa Rural	0.094	0.025	0.044	0.144	0.017	0.006	0.005	0.029	0.004	0.002	0.000	0.008
Dire Dawa Town	0.157	0.027	0.105	0.210	0.027	0.007	0.013	0.040	0.006	0.002	0.002	0.011
Dire Dawa Other Urban	0.307	0.077	0.157	0.457	0.045	0.010	0.026	0.064	0.009	0.002	0.005	0.013
National	0.2246	0.0095	0.2060	0.2432	0.0468	0.0027	0.0415	0.0522	0.0151	0.0011	0.0129	0.0173

Table A6.4: Regional Poverty Lines[29]

Region	Rural	Urban	Total
Tigray	919.80	1150.29	954.12
Affar	964.82	1163.71	1022.68
Amhara	917.17	1155.10	939.27
Oromiya	988.22	1269.52	1017.39
Somalie	989.62	1154.01	1046.36
Benshangul-Gumuz	1010.42	1324.32	1031.82
Snnpr	1024.03	1235.91	1038.73
Gambella	1079.17	1213.33	1112.67
Harari	991.94	1165.36	1085.59
Addis ababa	1074.08	1273.71	1269.51
Dire Dawa	893.33	984.77	957.99
Total	972.84	1225.12	1006.99

Table A6.5: Poverty Head Count Index Based on Regional Poverty Line

Region	P0			P1			P2		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tigray	0.49	0.65	0.51	0.12	0.22	0.14	0.04	0.10	0.05
Affar	0.58	0.34	0.51	0.15	0.08	0.13	0.06	0.03	0.05
Amhara	0.30	0.36	0.30	0.07	0.10	0.07	0.02	0.04	0.02
Oromiya	0.34	0.47	0.36	0.08	0.15	0.09	0.03	0.06	0.03
Somalie	0.34	0.40	0.36	0.07	0.08	0.07	0.02	0.03	0.02
Benshanguli	0.50	0.42	0.50	0.14	0.12	0.14	0.06	0.05	0.05
Snnpr	0.48	0.51	0.48	0.13	0.15	0.13	0.05	0.06	0.05
Gambella	0.55	0.47	0.53	0.15	0.15	0.15	0.05	0.07	0.06
Harari	0.08	0.40	0.25	0.01	0.10	0.06	0.00	0.03	0.02
Addis ababa	0.27	0.48	0.47	0.06	0.15	0.15	0.02	0.06	0.06
Dire Dawa	0.17	0.27	0.24	0.03	0.06	0.05	0.01	0.02	0.02
Total	0.37	0.46	0.39	0.09	0.14	0.10	0.03	0.06	0.04

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[29] 647.81 divided by Mean Food Share of each Reporting Level

Table A6.6: Contribution of Each Reporting Level to Total Poverty

Code No.	Reporting level	Population in 1995/96	# Of Poor	Contr. to National Poverty (%)	Population share (%)
1	Tigray Rural	3077636	1895330	7.67	5.50
2	Mekellee Town	128073	54775	0.22	0.23
3	Tigray Other Urban	410377	271894	1.10	0.73
4	Afar Rural	177585	120794	0.49	0.32
5	Aysaeta Town	16906	5932	0.02	0.03
6	Afar Other Urban	55955	13630	0.06	0.10
7	North and South Gonder	3584870	1217878	4.93	6.40
8	East and West Gojjam and Agewawi	4409832	1886754	7.64	7.87
9	North Wollo and Wag Himra	1492827	658608	2.67	2.67
10	South Wollo Oromia and North Shoa	3982166	2010219	8.14	7.11
11	Gonder Town	109998	19266	0.08	0.20
12	Dessie Town	90901	28437	0.12	0.16
13	Bahir Dar Town	100110	22312	0.09	0.18
14	Amhara Other Urban	1078706	358669	1.45	1.93
15	East and West Wellega	2892358	1030709	4.17	5.16
16	Illubabor and Jimma	2810668	1255277	5.08	5.02
17	North and West Shoa	3440322	1091502	4.42	6.14
18	East Shoa Arsi Bale and Borena	6226564	3154795	12.77	11.12
19	East and West Harerghe	3588537	1122537	4.54	6.41
20	Debrezeit Town	68377	25062	0.10	0.12
21	Nazreth Town	144925	41316	0.17	0.26
22	Jimma Town	87706	32449	0.13	0.16
23	Oromia Other Urban	1892121	687671	2.78	3.38
24	Somalia Rural	420674	185431	0.75	0.75
25	Jijiga Town	68163	27191	0.11	0.12
26	Somalia Other Urban	153580	30575	0.12	0.27
27	Benshangul Gumuz Rural	613457	342548	1.39	1.10
28	Assosa Town	14771	2680	0.01	0.03
29	Benshangul Gumuz Other Urban	30103	10277	0.04	0.05
30	Gurage Hadiya and Kemebata Na Aleba	3349834	1771149	7.17	5.98
31	Sidama Gedo Gurgi and Amaro	3161479	1220243	4.94	5.65
32	North and South Omo Derashe and Konso	3538396	2337983	9.47	6.32
33	Yem Kefa-Shekich and Bench Maji	1315527	548116	2.22	2.35
34	Awasa Town	98429	31772	0.13	0.18
35	SNNPR Other Urban	749127	309344	1.25	1.34
36	Gambela Rural	110017	60041	0.24	0.20
37	Gambela Town	21806	7571	0.03	0.04
38	Gambela Other Urban	14803	6497	0.03	0.03
39	Harari Rural	67229	10047	0.04	0.12
40	Harar Town	78924	27591	0.11	0.14
41	Addis Ababa Rural	42397	11476	0.05	0.08
42	Addis Ababa Town	1975153	715992	2.90	3.53
43	Dire Dawa Rural	76978	25535	0.10	0.14
44	Dire Dawa Town	172047	54274	0.22	0.31
45	Dire Dawa Other Urban	13822	7160	0.03	0.02
	Total	56000000	24700000	100.00	100.00

Table A6.7 Income sources in rural Ethiopia

Region	Sex_s1	sex_s2	sex_s8	sex_s10	sex_s12	sh_gift	sh_rent	sh_oth
Tigray	68.890	3.472	3.858	0.126	0.066	5.639	3.982	13.968
Affar	71.800	3.988	4.770	0.008	0.000	3.202	2.610	13.621
Amhara	75.817	3.801	2.150	0.085	0.021	4.467	3.164	10.495
Oromiya	73.319	5.407	3.087	0.245	0.010	3.261	3.218	11.454
Somalie	64.212	6.793	1.768	0.122	0.008	5.294	3.449	18.354
Benshanguli	71.386	6.626	3.122	0.136	0.001	2.709	3.764	12.257
Snnpr	69.050	7.586	2.971	0.343	0.001	3.770	4.338	11.943
Gambella	58.439	2.800	6.613	0.089	0.000	3.957	4.649	23.453
Harari	64.801	8.373	2.902	1.272	0.000	3.830	6.083	12.739
Addis ababa	61.500	7.769	12.769	5.071	0.000	1.497	5.577	5.818
Dire Dawa	51.633	3.589	3.366	0.092	0.000	7.253	3.471	30.595
Total	72.530	5.368	2.860	0.217	0.014	3.885	3.531	11.594

Explanation for income source codes:

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sex_1   From own agricultural enterprise source 1;
sex_2   From household enterprise other than agr source 2
sex_8   Wages salaries, bounces, overtime and allowances source 8
sh_rent  Income from house rent & other rent source 13 - 14
sex_10  From saving ,bank, saving account source 10
sex_12  Dividends , profit share source 12
sh_gift Gift and remittance source 3 - 6
sh_oth  Other receipts source 7, 9, 11, 15 - 16 .
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Table A6.8: Income sources in urban Ethiopia by Region

Region	sex_s1	sex_s2	sex_s8	sex_s10	sex_s12	sh_gift	sh_rent	sh_oth
Tigray	9.499	20.241	36.720	0.489	0.110	17.213	8.690	7.038
Affar	8.423	33.783	41.405	0.142	0.081	5.501	6.002	4.663
Amhara	5.677	40.228	33.829	0.542	0.002	7.236	6.617	5.869
Oromiya	6.402	33.764	38.257	0.323	0.019	8.370	6.847	6.017
Somalie	1.434	31.073	32.271	0.172	0.006	15.756	6.080	13.207
Benshangul-Gumuz	15.873	30.063	38.594	0.154	0.010	3.587	5.547	6.172
Snnpr	5.408	34.550	39.495	0.210	0.005	6.571	8.076	5.684
Gambella	4.893	24.972	48.564	0.320	0.003	5.876	7.120	8.252
Harari	1.781	25.549	47.405	0.651	0.000	11.237	5.702	7.676
Addis ababa	0.510	20.839	51.746	0.723	0.068	7.798	10.628	7.689
Dire Dawa	1.485	26.898	44.481	0.341	0.048	10.469	8.324	7.954
Total	4.597	30.301	41.152	0.463	0.034	8.671	8.047	6.735

Table A6.9: Income Sources in Ethiopia by Rural-Urban Areas

Region	sex_s1	sex_s2	Sex_s8	sex_s10	sex_s12	sh_gift	sh_rent	sh_oth
Tigray	60.046	5.969	8.751	0.180	0.073	7.362	4.683	12.936
Affar	53.362	12.657	15.428	0.047	0.024	3.871	3.597	11.015
Amhara	69.300	7.186	5.094	0.127	0.020	4.724	3.485	10.065
Oromiya	66.381	8.347	6.734	0.253	0.011	3.791	3.594	10.890
Somalie	42.543	15.174	12.297	0.139	0.008	8.905	4.357	16.577
Benshangul-Gumuz	67.602	8.223	5.540	0.137	0.001	2.769	3.886	11.842
Snnpr	64.633	9.457	5.506	0.333	0.001	3.964	4.597	11.508
Gambella	45.070	8.336	17.088	0.147	0.001	4.436	5.266	19.658
Harari	30.769	17.648	26.934	0.937	0.000	7.830	5.877	10.005
Addis ababa	1.791	20.564	50.927	0.814	0.066	7.666	10.521	7.650
Dire Dawa	16.172	20.071	32.440	0.268	0.034	9.527	6.903	14.585
Total	63.333	8.743	8.044	0.251	0.017	4.533	4.142	10.937

Table A6.10: Distribution of Income Sources by Reporting Level

Reporting Level	sex_s1	sex_s2	sex_s8	sex_s10	sex_s12	sh_gift	sh_rent	sh_oth
Tigray Rural	68.890	3.472	3.858	0.126	0.066	5.639	3.982	13.968
Mekellee Town	0.655	17.700	52.692	0.121	0.039	8.230	13.459	7.103
Tigray Other Urban	12.259	21.034	31.736	0.603	0.132	20.016	7.202	7.018
Afar Rural	71.800	3.988	4.770	0.008	0.000	3.202	2.610	13.621
Aysaeta Town	19.401	22.891	43.076	0.503	0.000	4.967	7.977	1.185
Afar Other Urban	5.106	37.074	40.900	0.034	0.105	5.663	5.405	5.714
North and South Gonder	74.973	5.042	3.662	0.003	0.063	2.531	1.972	11.753
East and West Gojjam & Agewawi	82.166	3.954	1.106	0.058	0.000	1.283	3.883	7.549
North Wollo and Wag Himra	67.879	2.386	3.745	0.281	0.000	11.464	2.976	11.269
South Wollo Oromia and North Shoa	72.521	3.045	1.347	0.114	0.016	7.112	3.511	12.334
Gonder Town	3.060	28.437	42.370	0.598	0.000	8.799	6.539	10.196
Dessie Town	1.175	26.093	40.505	0.540	0.000	12.882	11.256	7.549
Bahir Dar Town	2.128	25.265	51.415	0.532	0.006	6.481	8.783	5.390
Amhara Other Urban	6.653	44.010	30.763	0.538	0.002	6.671	6.033	5.331
East and West Wellega	74.524	6.756	3.572	0.707	0.000	2.241	2.478	9.722
Illubabor and Jimma	67.385	3.850	3.365	0.029	0.004	2.552	2.537	20.277
North and West Shoa	78.990	5.821	1.461	0.439	0.000	2.504	3.326	7.459
East Shoa Arsi Bale and Borena	72.244	6.529	3.278	0.127	0.000	3.534	3.338	10.950
East and West Harerghe	73.427	3.193	3.707	0.059	0.048	4.891	4.033	10.643
Debrezeit Town	1.297	21.287	52.828	0.202	0.000	8.686	6.004	9.695
Nazreth Town	2.396	28.009	43.919	0.660	0.114	7.570	10.941	6.392
Jimma Town	4.013	28.025	43.371	0.573	0.250	9.229	7.453	7.086
Oromia Other Urban	7.005	34.922	37.060	0.290	0.002	8.380	6.536	5.805
Somalia Rural	64.212	6.793	1.768	0.122	0.008	5.294	3.449	18.354
Jijiga Town	0.963	26.251	43.222	0.237	0.021	12.959	7.025	9.324
Somalia Other Urban	1.644	33.214	27.411	0.143	0.000	16.998	5.661	14.930
Benshangul Gumuz Rural	71.386	6.626	3.122	0.136	0.001	2.709	3.764	12.257
Assosa Town	4.961	28.055	47.578	0.455	0.024	4.077	7.537	7.313
Benshangul Gumuz Other Urban	21.227	31.048	34.186	0.007	0.003	3.346	4.571	5.612
Gurage Hadiya and Kemebata Na Aleba	64.199	9.379	4.497	0.320	0.002	4.684	5.150	11.767
Sidama Gedo Gurgi and Amaro	73.923	5.325	3.828	0.513	0.000	2.474	3.729	10.207
North and South Omo Derashe and Konso	68.240	8.497	1.272	0.240	0.000	4.495	4.368	12.887
Yem Kefa-Shekich and Bench Maji	71.864	6.001	1.598	0.265	0.000	2.604	3.650	14.018
Awasa Town	0.790	23.063	48.496	0.474	0.018	6.287	14.154	6.718
SNNPR Other Urban	6.015	36.060	38.313	0.176	0.003	6.609	7.277	5.548
Gambela Rural	58.439	2.800	6.613	0.089	0.000	3.957	4.649	23.453
Gambela Town	1.671	21.513	56.410	0.536	0.000	7.042	7.705	5.122
Gambela Other Urban	9.640	30.066	37.006	0.003	0.008	4.159	6.257	12.863
Harari Rural	64.801	8.373	2.902	1.272	0.000	3.830	6.083	12.739
Harar Town	1.781	25.549	47.405	0.651	0.000	11.237	5.702	7.676
Addis Ababa Rural	61.500	7.769	12.769	5.071	0.000	1.497	5.577	5.818
Addis Ababa Town	0.510	20.839	51.746	0.723	0.068	7.798	10.628	7.689
Dire Dawa Rural	51.633	3.589	3.366	0.092	0.000	7.253	3.471	30.595
Dire Dawa Town	1.413	26.788	45.425	0.333	0.052	10.363	8.368	7.258
Dire Dawa Other Urban	2.389	28.259	32.733	0.445	0.000	11.784	7.777	16.613
National	63.333	8.743	8.044	0.251	0.017	4.533	4.142	10.937

Table A6.11: Nutrition (Calorie) Based Equivalent Scales

Years of age	Men	Female
0-1	0.33	0.33
1-2	0.46	0.46
2-3	0.54	0.54
3-5	0.62	0.62
5-7	0.74	0.70
7-10	0.84	0.72
10-12	0.88	0.78
12-14	0.96	0.84
14-16	1.06	0.86
16-18	1.14	0.86
18-30	1.04	0.80
30-60	1.00	0.82
60 plus	0.84	0.74

Source: Calculated from the World Health Organization (19985) by Stefan Dercon

Appendix A 7: Regional rainfall and ex post risk copying mechanisms

Table A7.1: Monthly Average Rainfall (mm) by Meteorological Regions

Meteorological Region	1995/96	1996/97	1997/98	1999/00
Arisi	91.43	74.74	99.71	89.90
Bale	86.44	70.36	86.46	86.99
Gamo Gofa	110.03	89.97	132.69	69.36
Gojjam	131.46	130.32	131.43	163.63
Gonder	104.30	104.63	93.37	106.20
Harraghie	65.37	55.98	68.92	45.99
Illubabour	150.26	144.79	164.84	190.50
Keffa	152.79	152.40	162.32	140.20
Shoa	104.27	87.96	94.46	85.35
Sidama	107.14	78.74	102.88	68.27
Tigray	77.00	62.52	56.88	87.86
Welega	140.73	160.31	147.02	157.11
Wello	87.48	66.56	76.58	88.49
Total	**111.13**	**99.27**	**107.28**	**106.01**

Table A7.2. Standard Deviation of Rainfall (mm) by Meteorological Regions

Meteorological Region	1995/96	1996/97	1997/98	1999/00
Arisi	72.74	71.78	55.33	86.76
Bale	75.77	67.60	61.82	86.19
Gamo Gofa	87.34	86.37	92.27	61.55
Gojjam	127.57	139.49	123.00	149.51
Gonder	115.73	115.18	102.35	137.68
Harraghie	61.90	55.21	64.91	48.06
Illubabour	108.32	115.25	112.12	115.87
Keffa	99.54	100.41	95.45	122.80
Shoa	102.57	102.80	82.45	103.06
Sidama	85.61	73.06	78.42	59.72
Tigray	94.42	74.51	66.47	136.36
Welega	128.43	135.40	139.19	158.92
Wello	92.56	78.95	76.87	121.93
Total	**100.65**	**99.34**	**90.56**	**112.09**

At the time of writing this report, it was very difficult to match administrative regions as per the existing administrative set up with the locations of the reported meteorological stations. Hence, we provide the metrological stations as per the previous administrative set up.

Table A7.3: Source to Get 100 Birr For Unforeseen Circumstances in a Week by Region (All Ethiopia)

Source to get the 100 Birr	Tigray	Affar	Amhara	Oromiya	Somalie	Benshangu	SNNPR	Gambella	Harari	Addis Aba	Dire Dawa	Total
Sale of animal products	20.74	22.84	23.23	19.46	30.38	13.82	32.85	4.52	7.74	0.70	12.81	22.74
Sale of agricultural	11.25	8.90	15.19	16.43	7.00	14.29	12.72	16.16	9.20	0.50	0.91	14.13
Sale of forest product	0.22	0.00	0.51	0.30	1.51	0.76	1.12	0.76	0.80	0.01	0.39	0.54
Reserved money	3.19	10.55	3.64	4.08	9.45	5.32	4.63	8.36	17.35	12.50	8.95	4.48
Bank or saving account	0.18	0.18	0.16	0.29	0.29	0.32	0.10	0.61	1.46	6.54	3.14	0.44
Iqub	0.40	0.00	0.28	0.14	0.93	0.05	0.28	0.11	0.69	0.41	1.23	0.25
Idir	0.21	0.15	0.32	3.52	0.06	0.28	5.70	3.74	0.87	2.43	0.58	2.69
Bank equivalent loan	0.59	0.14	0.19	0.10	0.07	0.17	0.23	0.45	0.25	1.11	0.14	0.23
Loan from relatives	15.08	9.50	10.47	15.04	11.06	9.96	13.73	11.06	15.63	20.79	8.60	13.49
Gift from relatives	1.03	1.45	0.86	0.95	2.27	0.44	1.11	2.40	5.34	3.22	2.57	1.08
Loan from non relatives	1.50	3.07	2.67	4.45	1.97	6.37	3.17	6.93	10.20	8.98	5.35	3.65
Gift from non relatives	0.16	0.00	0.12	0.04	0.05	0.02	0.21	0.20	0.34	0.31	1.05	0.12
Sale of HH asset	0.29	0.39	0.40	0.87	0.15	0.37	0.40	0.16	0.53	2.29	1.15	0.63
Others	2.06	0.58	1.53	1.69	2.19	2.15	2.08	1.88	1.76	2.89	3.08	1.81
Not stated	0.99	0.00	0.01	0.00	0.11	0.00	0.00	0.15	0.00	0.16	0.43	0.08
????	42.11	42.25	40.42	32.64	32.51	45.68	21.66	42.50	27.87	37.15	49.62	33.65
Total	100	100	100	100	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100

Table A7.4: Source to Get 100 Birr For Unforeseen Circumstances in a Week by Region (Rural)

Source to get Birr 100	Tigray	Affar	Amhara	Oromiya	Somalie	Benshangu	SNNPR	Gambella	Harari	Addis Aba	Dire Dawa	Total
Sale of animal products	24.55	33.82	25.64	21.40	43.42	14.42	35.00	5.55	18.36	15.89	45.22	26.10
Sale of agricultural	12.47	12.65	16.73	18.28	10.28	15.09	13.58	20.85	21.01	23.47	3.45	16.22
Sale of forest product	0.26	0.00	0.54	0.32	2.19	0.82	1.21	0.94	1.10	0.63	1.49	0.61
Reserved money	1.92	2.76	2.13	2.14	2.56	4.23	3.34	4.87	6.23	9.59	1.08	2.45
Bank or saving account	0.00	0.00	0.05	0.13	0.00	0.21	0.04	0.00	0.00	5.03	0.00	0.08
Iqub	0.41	0.00	0.18	0.04	0.00	0.00	0.27	0.00	0.00	0.26	0.00	0.16
Idir	0.16	0.00	0.25	3.79	0.00	0.13	5.91	3.93	0.00	1.26	0.00	2.87
Bank equivalent loan	0.45	0.00	0.16	0.08	0.00	0.00	0.16	0.23	0.00	0.00	0.00	0.15
Loan from relatives	15.87	11.52	9.23	14.67	8.19	9.72	13.64	12.36	17.64	12.59	7.37	12.74
Gift from relatives	0.75	1.31	0.39	0.42	0.48	0.40	1.03	2.99	2.93	1.91	0.27	0.59
Loan from non relatives	1.28	1.00	2.23	3.82	0.00	6.22	2.82	6.45	5.46	5.37	4.84	2.95
Gift from non relatives	0.18	0.00	0.07	0.00	0.00	0.03	0.23	0.00	0.00	0.00	0.00	0.09
Sale of HH asset	0.00	0.00	0.21	0.79	0.19	0.34	0.24	0.00	0.81	0.37	0.00	0.42
Others	2.06	0.17	1.10	1.62	0.81	2.12	1.76	1.90	0.37	1.53	2.58	1.52
Not stated	1.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
	38.45	36.77	41.06	32.48	31.89	46.29	20.77	39.92	26.09	22.10	33.71	32.97
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table A7.5: Source to Get 100 Birr For Unforeseen Circumstances in a Week by Region (Urban)

Source to get the 100	tigray	affar	amhara	oromiya	somalie	benshangul	snnpr	gambella	harari	addis aba	Dire Dawa	Total
Sale of animal products	1.48	2.39	2.93	4.51	3.36	6.52	5.81	1.00	0.25	0.41	1.29	2.94
Sale of agricultural	5.10	1.92	2.19	2.19	0.22	4.51	1.94	0.26	0.87	0.07	0.00	1.77
Sale of forest product	0.00	0.00	0.23	0.10	0.11	0.00	0.03	0.17	0.60	0.00	0.00	0.09
Reserved money	9.62	25.07	16.36	19.01	23.72	18.66	20.79	20.21	25.18	12.56	11.75	16.49
Bank or saving account	1.07	0.52	1.14	1.53	0.89	1.68	0.85	2.69	2.49	6.57	4.26	2.59
Iqub	0.37	0.00	1.11	0.86	2.85	0.62	0.42	0.50	1.18	0.42	1.67	0.78
Idir	0.45	0.42	0.83	1.44	0.20	2.18	3.05	3.07	1.49	2.45	0.78	1.60
Bank equivalent loan	1.31	0.41	0.45	0.30	0.21	2.30	1.07	1.18	0.42	1.13	0.19	0.70
Loan from relatives	11.09	5.73	20.88	17.89	17.01	12.89	14.88	6.63	14.21	20.94	9.04	17.88
Gift from relatives	2.44	1.71	4.78	4.98	5.99	0.97	2.16	0.38	7.03	3.24	3.38	3.96
Loan from non relatives	2.59	6.91	6.30	9.30	6.04	8.22	7.57	8.58	13.53	9.05	5.53	7.75
Gift from non relatives	0.06	0.00	0.51	0.33	0.17	0.00	0.00	0.89	0.57	0.32	1.43	0.33
Sale of HH asset	1.77	1.11	1.99	1.47	0.05	0.74	2.42	0.72	0.32	2.33	1.57	1.85
Others	2.05	1.36	5.09	2.26	5.06	2.46	6.06	1.84	2.73	2.92	3.25	3.49
Not stated	0.00	0.00	0.11	0.00	0.34	0.00	0.04	0.64	0.00	0.16	0.59	0.09
	60.60	52.45	35.10	33.84	33.80	38.25	32.90	51.24	29.11	37.43	55.28	37.71
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Appendix A 8: Nutrition, Education, Health and Access to Services

Table A8.1: Wasted and severely wasted Children by Reporting Level (%) (1999/00)

Reporting level	Wasted			Severely wasted		
	Male	Female	All	Male	Female	All
Tigray Rural	13.1	11.5	12.3	3.5	1.3	2.5
Mekellee Town	2.7	4.2	3.4	1.4		0.7
Tigray Other Urban	4.9	9.2	7.3	1.3		0.6
Afar Rural	9.9	13.9	11.8	1.9	2.0	2.0
Aysaeta Town	8.3	7.7	8.1		3.7	1.2
Afar Other Urban	5.1	17.7	12.0		3.1	1.7
North And South Gonder	12.2	10.2	11.1	3.1	1.7	2.3
East and West Gojjam And Agewawi	13.4	10.6	11.9	2.3	3.2	2.8
North Wollo And Wag Himra	6.9	12.9	9.9	0.7	0.4	0.6
South Wollo Oromia And North Shoa	10.8	11.3	11.0	1.7	2.6	2.1
Gonder Town	10.8	14.7	12.7	1.5	2.9	2.2
Dessie Town	5.3	3.3	4.3		1.9	0.9
Bahir Dar Town	4.0	7.0	5.7	2.6	1.6	2.0
Amhara Other Urban	5.2	6.2	5.7	1.1	2.6	1.8
East And West Wellega	16.1	10.9	13.5	2.1	2.0	2.0
Illubabor And Jimma	6.7	7.5	7.1	0.2	2.1	1.1
North And West Shoa	7.3	6.8	7.1	1.2	0.7	0.9
East Shoa Arsi Bale And Borena	10.4	6.9	8.8	1.5	1.4	1.5
East And West Harerghe	9.9	9.3	9.6	1.4	0.9	1.2
Debrezeit Town	6.7	11.1	9.1	1.9	2.9	2.5
Nazreth Town	6.0	7.9	7.0		1.1	0.6
Jimma Town	1.5	8.2	4.4			
Oromia Other Urban	7.3	4.0	5.6	2.3		1.2
Somalia Rural	10.0	12.7	11.4	0.7	1.5	1.1
Jijiga Town	3.9	4.7	4.3	0.7	0.9	0.8
Somalia Other Urban	8.8	25.6	15.5	5.0	7.4	6.0
Benshangul Gumuz Rural	10.7	12.2	11.5	2.7	2.0	2.3
Assosa Town	9.6	7.0	8.3	1.2		0.6
Benshangul Gumuz Other Urban	12.9	9.2	10.9			
Gurage Hadiya And Kemebata Na	10.6	8.9	9.8	1.7	1.8	1.8
Sidama Gedo Gurgi And Amaro	7.4	10.4	8.9	3.5	2.5	3.0
North And South Omo Derashe And	10.9	7.3	9.2	1.9	0.8	1.4
Yem Kefa-Shekich And Bench Maji	10.7	8.4	9.5	1.0	0.9	1.0
Awasa Town	4.9	2.8	4.0	1.1	0.5	0.9
SNNPR Other Urban	7.5	2.4	5.2	1.1		0.6
Gambela Rural	8.6	15.2	12.0	0.9	1.6	1.3
Gambela Town	12.2	13.6	12.9	7.0		3.7
Gambela Other Urban	19.3	27.7	24.0	3.6	13.7	9.2
Harari Rural	5.3	5.1	5.2	0.5	1.0	0.8
Harar Town	3.7	7.6	5.7	2.1	2.5	2.3
Addis Ababa Rural	11.4	9.8	10.6	5.4	1.1	3.2
Addis Ababa Town	5.6	3.6	4.7	2.8	1.0	2.0
Dire Dawa Rural	17.0	13.1	14.9	3.6	3.3	3.4
Dire Dawa Town	14.3	2.0	11.4	3.5	2.0	3.1
Dire Dawa Other Urban	8.0	10.0	4.7	2.6	1.6	1.9

Table A8.2 Stunted and Severely Stunted Children by Reporting Level (%) (1999/00)

Reporting level	Stunted			Severely Stunted		
	Males	Females	All	Males	Females	All
Tigray Rural	62.3	63.1	62.7	32.7	36.3	34.5
Mekellee Town	40.6	54.8	47.0	25.7	17.7	22.0
Tigray Other Urban	36.4	45.3	41.2	11.0	28.6	20.5
Afar Rural	37.4	49.9	43.5	16.8	31.4	23.9
Aysaeta Town	43.0	35.1	40.5	14.5	10.3	13.2
Afar Other Urban	34.2	54.1	44.9	25.9	41.4	34.2
North And South Gonder	67.5	66.9	67.2	38.8	42.1	40.5
East And West Gojjam And Agewawi	71.7	69.6	70.6	45.4	43.7	44.5
North Wollo And Wag Himra	76.2	61.6	68.8	47.6	39.3	43.4
South Wollo Oromia And North Shoa	62.0	57.5	59.8	33.9	25.2	29.8
Gonder Town	74.9	60.1	67.9	36.5	36.6	36.5
Dessie Town	38.8	59.7	48.9	25.6	29.7	27.6
Bahir Dar Town	51.9	36.1	43.3	30.5	18.8	24.1
Amhara Other Urban	60.9	59.0	60.0	28.0	36.7	32.4
East And West Wellega	46.9	47.0	47.0	21.8	21.6	21.7
Illubabor And Jimma	62.8	60.6	61.7	34.6	32.8	33.7
North And West Shoa	60.3	59.0	59.7	32.3	31.5	31.9
East Shoa Arsi Bale And Borena	58.2	53.7	56.1	29.2	30.4	29.8
East And West Harerghe	55.3	51.9	53.6	29.0	26.7	27.9
Debrezeit Town	32.7	34.3	33.6	11.7	19.4	15.9
Nazreth Town	35.9	38.1	37.0	13.6	15.5	14.5
Jimma Town	39.9	32.3	36.6	9.5	15.1	11.9
Oromia Other Urban	47.7	49.7	48.7	23.1	18.0	20.6
Somalia Rural	58.9	52.6	55.6	38.1	33.9	35.9
Jijiga Town	52.2	37.8	45.5	26.1	24.0	25.1
Somalia Other Urban	36.9	30.3	34.2	22.6	15.0	19.5
Benshangul Gumuz Rural	54.6	52.3	53.4	31.4	26.8	29.0
Assosa Town	27.0	37.3	32.2	6.5	15.8	11.2
Benshangul Gumuz Other Urban	53.6	40.9	46.8	18.1	15.4	16.7
Gurage Hadiya And Kemebata Na	61.8	57.8	59.8	39.9	33.4	36.7
Sidama Gedo Gurgi And Amaro	70.7	65.1	67.8	43.3	35.1	39.1
North And South Omo Derashe And	57.4	50.3	54.1	33.8	33.3	33.6
Yem Kefa-Shekich And Bench Maji	52.8	49.0	50.8	28.1	26.4	27.2
Awasa Town	39.1	22.0	31.6	12.0	6.2	9.4
SNNP Other Urban	49.0	42.0	45.5	34.0	14.9	24.4
Gambela Rural	47.2	40.1	43.5	22.1	16.0	18.9
Gambela Town	24.1	37.2	30.4	14.3	15.3	14.8
Gambela Other Urban	33.4	27.3	30.2	13.6	16.2	14.9
Harari Rural	54.3	49.6	52.0	29.5	23.5	26.7
Harar Town	39.4	36.0	37.7	19.3	9.4	14.4
Addis Ababa Rural	46.6	51.6	49.1	29.6	27.0	28.3
Addis Ababa Town	34.6	39.9	37.2	15.4	18.5	16.9
Diredawa Rural	47.6	43.9	45.6	22.2	19.7	20.8
Diredawa Town	33.0	59.1	34.8	10.0	35.3	12.7
Diredawa Other Urban	36.9	52.2	56.7	15.8	10.1	26.6

Table A8.3: Literacy Rate by Reporting Level and Gender (%)(1999/00)

Reporting level	Male	Female	All
Tigray rural	30.8	15.8	22.8
Mekele town	88.6	67.2	76.0
Tigray other urban	76.6	48.2	59.1
Afar rural	10.4	2.1	6.7
Aysaeta town	80.3	48.8	63.7
Afar other urban	73.8	48.4	60.1
North and South Gonder	22.1	10.5	16.3
East and West Gojjam and Agewawi	27.5	7.4	17.5
North Wollo and Wag Himra	22.6	8.5	15.5
South Wollo, Oromia and North Shoa	30.1	12.2	21.1
Gonder town	91.4	64.2	75.2
Dessie town	90.2	66.0	76.0
Bahirdar town	87.0	62.7	72.7
Amhara other urban	78.3	55.5	65.0
East and West Wellega	41.2	14.0	27.1
Illubabor and Jimma	27.8	8.9	18.2
North and West Shoa	31.4	9.0	20.0
East Shoa, Arsi, Bale and Borena	37.1	11.4	23.9
East and West Harerghe	29.4	5.6	17.5
Debrezeit town	88.3	71.1	78.6
Nazreth town	90.8	72.3	80.2
Jimma town	81.7	62.6	71.1
Oromia other urban	77.7	57.6	66.7
Somalia rural	17.9	3.0	10.5
Jijiga town	80.1	53.5	65.2
Somalia other urban	55.5	24.9	41.2
Benshangul Gumuz rural	46.1	13.1	29.1
Assosa town	82.1	63.2	71.7
Benshangul Gumuzu other urban	71.0	50.9	60.5
Gurage, Hadiya and Kemebata na Aleba	43.3	14.2	28.1
Sidama, Gedo, Gurgi and Amaro	46.4	16.8	31.9
North and South Omo, Derashe And Konso	33.4	8.8	20.7
Yem Kefa-Shekicho and Bench Maji	39.7	13.6	26.3
Awasa town	90.8	72.7	81.1
SNNP other urban	75.0	54.8	64.5
Gambela rural	57.5	22.8	39.6
Gambela town	83.2	64.5	73.4
Gambela other urban	79.0	48.1	62.1
Harari rural	37.0	11.7	23.4
Harar town	90.0	66.4	76.5
Addis Ababa rural	39.1	26.2	33.1
Addis Ababa town	90.3	71.6	80.0
Dire Dawa rural	21.3	4.2	13.2
Dire Dawa town	84.6	61.5	71.5
Dire Dawa other urban	73.8	29.4	50.9

Table A8.4: Ownership Structure of Households' Dwellings by Region rural-Urban Areas
(% of Dwellings) (1999/00)

Type of Ownership	Tigray	Afar	Amh.	Orom	Som.	Bensh	SNNP	Gam.	Harari	A. A.	D.D.
Owned	83.9	79.6	86.6	88.1	84.7	87.7	92.6	84.1	62.1	36.1	60.7
Subsidized employer-part	3.3	5.1	5.6	4.0	2.7	6.7	3.6	7.4	1.3	2.3	3.8
Subsidized by relatives	4.9		2.4	1.9		1.3	0.6	1.5			2.1
Subsidized by organization	0.0	1.4	0.1	0.0	3.2	0.0	0.0	0.1	0.7	2.8	0.3
House rent enterprise	0.4	0.5	0.0	0.1	0.3	0.0	0.1	0.7	0.7	2.4	2.8
Kebele – rent	0.4	1.7	2.2	3.0	2.9	0.4	0.9	0.7	25.6	40.4	20.0
Private rent organization	0.0		0.0	0.0			0.1	0.1	0.3	0.6	
Rent from relatives	0.6	0.8	0.3	0.1	0.1	0.0	0.1	0.0	0.2	1.2	0.3
Rent from non relatives	6.0	10.8	2.4	2.3	5.8	3.6	1.7	5.0	7.7	12.2	7.9
Others	0.5	0.3	0.4	0.6	0.4	0.2	0.3	0.3	1.5	2.0	2.2
Type of Ownership	**% Of Urban Households by Region**										
Owned	49.3	50.8	50.4	50.6	68.0	68.3	60.6	66.6	37.8	35.3	48.4
Subsidized employer-part	2.0	5.7	2.2	1.5	3.1	0.8	1.5	5.5	0.9	2.2	3.9
Subsidized by relatives	4.3	3.7	3.0	2.8	2.9	2.0	3.4	1.0	0.3	2.8	2.3
Subsidized by organization	0.3		0.3	0.3		0.5	0.2	0.5			0.3
House rent enterprise	1.6	1.3	0.4	0.5	1.0	0.4	1.3	3.7	1.1	2.4	3.9
Kebele – rent	2.3	4.7	20.7	25.4	8.6	2.6	12.9	3.6	43.9	40.9	27.4
Private rent organization	0.1		0.0	0.3			0.9	0.5	0.5	0.6	
Rent from relatives	2.3	2.2	2.0	0.7	0.2	0.3	2.0	0.2	0.3	1.2	0.4
Rent from non relatives	36.9	31.0	20.5	16.8	15.9	24.9	16.2	17.9	13.1	12.3	10.8
Others	1.0	0.6	0.6	1.0	0.3	0.1	1.0	0.5	2.1	2.1	2.6
Type of Ownership	**% Of Rural Households by Region**										
Owned	90.3	94.5	90.8	92.8	93.1	89.2	94.9	88.5	96.0	89.7	93.8
Subsidized employer-part	3.7	5.1	6.0	4.3	2.5	7.2	3.7	7.9	1.9	5.8	3.4
Subsidized by relatives	5.0	0.2	2.3	1.7	3.3	1.2	0.4	1.6	1.4	1.3	1.5
Subsidized by organization			0.0								0.1
Kebele – rent				0.2		0.2	0.1				
House rent enterprise	0.2	0.2									
Rent from relatives	0.2		0.1							0.6	
Rent from non relatives	0.2		0.2	0.4	0.7	1.9	0.7	1.8		1.1	
Others	0.4	0.1	0.5	0.5	0.4	0.2	0.3	0.3	0.6	1.5	1.3

Table A8.5: Type of Material Walls are Made of (% of Dwellings) (1999/00)

Type of Material	Tigray	Afar	Amh.	Orom	Som.	Bensh	SNNP	Gam.	Harari	A. A.	D.D.
Wood and mud	21.5	57.9	83.7	87.6	49.4	42.9	60.7	60.8	80.7	84.2	34.6
Wood and	0.5	12.7	3.4	6.4	30.8	4.7	27.5	23.6	1.3	0.1	0.9
Bamboo or reed	0.4		0.1	1.3		32.1	5.6	0.2	12.7		0.1
Mud and stone	71.7	2.2	10.5	0.8	0.4	0.1	0.2	0.2	2.2	1.0	20.8
Cement and stone	1.5	3.1	0.3	0.3	1.9	0.3	0.2	1.0	2.0	2.4	22.1
Hollow block bricks	0.4	0.2	0.0	0.2	0.3	0.1	0.1	0.6		9.5	11.5
Bricks	0.1		0.0	0.1	0.1		0.0	0.1	0.9	0.4	0.1
Others	3.6	23.4	1.9	3.4	17.2	19.9	5.7	13.5	0.1	2.5	10.0
Not stated	0.1	0.5	0.1				0.0				
Urban											
Wood and mud	37.6	57.6	94.0	92.8	63.0	56.8	93.3	82.1	74.8	83.9	24.7
Wood and	0.3	1.3	1.5	0.8	5.0	2.0	2.1	6.3	1.0	0.1	0.5
Bamboo or reed	0.7	1.8	0.2	0.0		15.0	1.2		15.5		
Mud and stone	49.4	8.8	1.3	0.5	1.3	0.1	0.3	0.8	3.5	0.9	16.8
Cement and stone	7.5	0.5	2.1	1.9	4.2	0.4	1.4	5.0	3.5	2.4	29.8
Blocket	2.8		0.4	1.5	0.8	0.4	0.9	3.0	1.5	9.6	14.8
Bricks	0.7	28.6	0.2	0.8			0.1	0.4		0.4	0.2
Others	1.0	1.4	0.4	1.6	25.7	25.2	0.8	2.4	0.2	2.6	13.3
Not stated			0.0				0.0				
Rural											
Wood and mud	18.4	58.1	82.5	86.9	42.6	41.8	58.3	55.5	89.0	96.9	61.5
Wood and	0.6	18.9	3.6	7.1	43.6	4.9	29.4	27.9	1.7		1.8
Bamboo or reed	0.4	2.4	0.1	1.5		33.4	5.9	0.3	8.8		0.4
Mud and stone	76.1		11.6	0.8		0.1	0.2		0.5	2.7	31.7
Cement and stone	0.3		0.1	0.1	0.8	0.3	0.1			0.4	1.1
Blocket				0.0	0.0	0.1					2.4
Bricks	4.1	20.7			0.1						
Others	0.2		2.1	3.6	12.9	19.5	6.0	16.3			1.1
Not stated			0.1				0.0				

Table A8.6: Type of Materials Roofs are made of (% of Dwellings) (1999/00)

Type of Material	Tigray	Afar	Amh.	Orom	Som.	Bensh	SNNP	Gam.	Harari	A. A.	D.D.
Corrugated iron sheet	20.4	18.1	28.8	24.0	19.9	12.1	12.6	20.1	81.2	99.1	76.3
Grass	33.7	46.5	69.5	69.7	56.4	85.2	76.3	75.2	12.0	0.9	6.6
Others	45.9	35.4	1.7	6.3	23.7	2.7	11.1	4.8	6.8	0.1	17.2
	Urban										
Corrugated iron sheet	77.5	46.2	92.5	93.8	49.9	53.7	85.1	61.0	91.5	99.6	89.5
Grass	14.2	2.4	6.9	5.5	11.5	46.1	13.0	36.7	0.6	0.3	0.3
Others	8.3	51.4	0.6	0.7	38.7	0.2	1.9	2.3	7.9	0.1	10.2
	Rural										
Corrugated iron sheet	9.3	3.1	21.3	15.2	5.0	8.8	7.4	10.0	66.8	69.0	40.7
Grass	37.5	70.1	76.8	77.8	78.9	88.3	80.8	84.7	27.9	31.0	23.4
Others	53.2	26.8	1.8	7.0	16.2	2.9	11.8	5.4	5.3		35.9

Table A8.7 Type of lighting being used by the household now (% of households)

Type of lighting	Tigray	Afar	Amh.	Orom	Som.	Bensh	Snnp	Gam.	Harari	A. A.	D.D.
Kerosene	78.8	48.3	66.5	70.1	76.5	38.7	79.9	39.4	36.4	3.2	37.8
Electric private	4.1	7.4	2.2	4.2	3.9	1.0	2.1	5.3	22.0	52.1	23.1
Electric shared	8.2	20.3	3.5	4.4	6.0	1.9	2.9	5.9	40.9	44.0	38.2
Wood	8.2	23.6	27.3	20.8	12.4	57.7	15.1	46.2	0.5	0.3	0.5
Candle	0.1	0.2	0.0	0.0	0.9	0.4		0.3		0.1	
Others	0.5	0.3	0.5	0.5	0.3	0.1	0.0	2.9	0.2	0.3	0.4
Not stated	0.1				0.0	0.2					
	Urban										
Kerosene	27.6	30.2	49.6	32.6	68.0	57.3	33.7	37.5	1.2	1.8	16.7
Electric private	22.6	20.6	17.8	32.9	10.6	14.2	20.7	23.1	36.8	52.9	31.0
Electric shared	49.0	48.6	32.4	33.5	15.5	25.9	40.1	26.5	61.8	44.5	51.7
Wood			0.0	0.8	2.7	0.8	5.5	11.6		0.3	0.2
Candle	0.4	0.6	0.1		2.7	1.7		1.3		0.1	
Others		0.1	0.1	0.2	0.6	0.1	0.0		0.3	0.3	0.4
Not stated	0.3				0.1						
	Rural										
Kerosene	88.8	58.0	68.5	74.8	80.7	37.3	83.2	39.9	85.7	80.3	95.1
Electric private	0.5	0.3	0.4	0.5	0.7		0.8	1.0	1.3	3.3	1.6
Electric shared	0.3	5.1	0.1	0.7	1.3		0.2	0.8	11.8	16.4	1.7
Wood	9.8	36.2	30.5	23.3	17.2	62.1	15.7	54.8	1.2		1.4
Candle				0.0		0.3					
Others	0.6	0.4	0.6	0.6	0.2	0.1	0.0	3.6			0.3
Not stated						0.2					

Table A8.8: Type of Cooking Fuel being used by the Household Now (%) (1999/00)

Type of Cooking Fuel	Tigray	Afar	Amh.	Orom	Som.	Bensh	Snnp	Gam.	Harari	A. A.	D.D.
Collected fire wood	56.8	73.8	63.6	69.1	66.7	88.9	84.8	82.2	40.8	3.2	34.8
Purchased fire wood	10.4	13.1	8.2	7.1	14.2	4.1	6.2	11.7	20.0	10.5	15.4
Charcoal	0.2	10.6	0.5	1.3	13.3	1.8	0.5	4.9	6.9	4.3	9.1
Kerosene	0.3	1.4	0.3	1.5	0.3	0.0	0.7	1.1	22.7	65.5	37.5
Butane gas	0.1		0.2	0.1	0.1	0.1	0.2	0.1	0.6	2.6	0.6
Electric	1.0	0.2	0.1	0.4	0.1	0.0	0.0	0.0	0.9	3.6	1.5
Leaves	28.3	0.1	25.5	15.2	5.2	0.0	4.3		4.3	7.6	0.1
Others	2.6	0.9	1.5	5.2	0.2	5.0	3.3		3.7	2.7	1.1
Not stated	0.2	0.1	0.1	0.1		0.0	0.1			0.1	
						Urban					
Collected fire wood	16.9	24.2	22.6	20.1	38.3	50.0	20.1	30.1	11.8	3.0	11.9
Purchased fire wood	56.9	38.0	61.0	46.1	21.3	25.9	59.2	43.6	34.2	10.6	20.6
Charcoal	1.5	30.9	4.6	11.8	39.2	18.3	7.6	24.5	11.9	4.3	12.4
Kerosene	1.0	4.0	2.7	8.1	0.6	0.6	8.2	0.9	38.7	66.5	50.8
Butane gas	0.5		0.7	0.8	0.2	0.9	1.6	0.6	0.8	2.6	0.8
Electric	6.4		0.7	1.9	0.2	0.4	0.5	0.2	1.5	3.7	
Leaves	9.7	0.3	6.3	8.9		0.6	1.9		1.2	6.4	2.0
Others	7.0	2.5	1.2	1.9	0.2	2.9				2.7	1.5
Not stated	0.1	0.2	0.2	0.4		0.4	0.8			0.1	
						Rural					
Collected fire wood	64.5	99.7	68.4	75.3	80.8	91.9	89.4	95.0	81.4	13.9	96.7
Purchased fire wood	1.5	0.0	2.0	2.2	10.7	2.4	2.3	3.8	0.3	4.0	1.1
Charcoal				0.0	0.3	0.5			0.4	0.8	1.6
Kerosene	0.2		0.0	0.6	0.1		0.1	1.2	0.3	5.8	
Butane gas			0.1				0.1			0.6	0.3
Electric		0.3	0.1	0.2					8.8		0.3
Leaves	31.9		27.8	16.0	7.8		4.5		8.9	73.8	
Others	1.7		1.6	5.6	0.2	5.2	3.5			1.0	
Not stated	0.2		0.1	0.1			0.1				

Table A8.9: Type of Toilet Being Used by the Household Now (% of Households using the facility) (1999/00)

Type of Toilet	Tigray	Afar	Amh.	Orom	Som.	Bensh	SNNP	Gam.	Harari	A. A.	D.D.
Flush toilet private	1.0	0.6	0.8	0.6	0.4	1.1	0.7	1.4	1.2	9.3	3.2
Flush toilet shared	2.3	0.4	0.4	0.2	0.3	0.4	0.5	1.0	0.8	6.0	2.4
Pit latrine private	4.2	7.6	3.7	10.2	11.9	19.4	16.0	19.6	20.1	25.8	28.7
Pit latrine shared	4.2	5.9	2.2	5.2	15.0	7.2	4.5	7.9	27.0	44.2	26.9
Bucket	0.3		0.0	0.0	0.2	0.1			0.2	2.3	0.2
Field forest	87.9	85.5	92.7	83.5	72.1	71.9	76.2	70.0	50.3	9.4	38.5
Others	0.1	0.0	0.1	0.4			2.1		0.2	3.0	0.1
Not stated				0.0	0.1		0.0		0.2		
Urban											
Flush toilet private	5.3	0.7	0.8	1.3	1.3	2.6	0.7	4.0	1.4	9.4	4.1
Flush toilet shared	9.9	1.0	2.2	1.4	0.8	0.9	2.0	1.8	1.5	6.1	3.2
Pit latrine private	21.9	21.9	31.8	43.9	34.1	50.5	47.8	27.9	32.7	26.1	38.4
Pit latrine shared	21.5	16.1	17.8	26.1	43.7	26.4	27.5	16.2	45.7	45.0	36.4
Bucket	2.0			0.0	0.5	0.8			0.3	2.3	0.3
Field forest	39.1	60.2	47.2	27.1	19.4	18.8	21.6	50.1	17.8	8.1	17.5
Others	0.4	0.1	0.1	0.0			0.3		0.3	3.0	0.2
Not stated				0.1	0.2		0.0		0.3		
Rural											
Flush toilet private	0.2	0.6	0.8	0.5		0.9	0.6	0.8	1.0		0.8
Flush toilet shared	0.9	0.0	0.2			0.3	0.4	0.8			
Pit latrine private	0.8		0.3	5.9	0.8	17.0	13.7	17.5	2.4	10.2	2.4
Pit latrine shared	0.8	0.4	0.4	2.5	0.7	5.7	2.9	5.9	0.8	3.3	1.2
Bucket			0.0							0.3	
Field forest	97.4	99.0	98.1	90.6	98.5	76.0	80.1	75.0	95.8	86.2	95.6
Others			0.1	0.4			2.3				
Not stated											

Table A8.10: Gross and Net Primary and Secondary Enrolment Rate by Region (1999/00)

Primary Enrolment Rate		
Region	Gross	Net
Tigray	59.6	33.6
Afar	31.6	17.9
Amhara	51.9	34.3
Oromiya	59.0	32.4
Somali	33.3	19.1
Benshangul-Gumuz	84.0	44.7
SNNP	60.4	30.0
Gambela	124.9	69.6
Harari	101.5	66.6
Addis Ababa	109.6	77.9
Dire Dawa	75.7	51.8
Total	105.4	74.5
Secondary Enrolment Rate		
Region	Gross	Net
Tigray	22.3	17.6
Afar	12.2	9.5
Amhara	10.6	7.8
Oromiya	11.9	8.9
Somali	10.8	8.7
Benshangul	13.7	8.7
SNNPR	13.0	8.8
Gambela	33.6	20.3
Harari	49.8	37.3
Addis Ababa	68.1	51.9
Dire Dawa	41.8	31.4
Total	15.5	11.5

Table A8.11: Gross and net primary enrolment rate by region, gender, and rural-urban Areas (1999/00)

Region		GPER			NPER		
		Male	Female	All	Male	Female	All
Tigray	Urban	108.5	113.7	111.2	75.3	74.6	74.9
	Rural	49.6	51.2	50.4	22.9	29.7	26.2
	All	58.3	60.9	59.6	30.6	36.6	33.6
Afar	Urban	98.2	112.3	104.8	70.5	68.7	69.6
	Rural	16.7	21.8	18.9	5.2	13.9	9.0
	All	28.2	36.0	31.6	14.4	22.5	17.9
Amhara	Urban	103.0	114.4	108.6	74.8	82.3	78.5
	Rural	48.5	43.9	46.3	28.1	31.7	29.8
	All	53.4	50.4	51.9	32.3	36.4	34.3
Oromiya	Urban	104.4	110.0	107.4	76.1	77.1	76.6
	Rural	68.0	38.2	53.7	32.2	22.6	27.6
	All	71.2	46.0	59.0	36.1	28.6	32.4
Somali	Urban	76.2	55.5	67.1	40.2	43.1	41.4
	Rural	21.9	6.6	14.8	9.3	3.8	6.7
	All	41.8	23.4	33.3	20.6	17.3	19.1
Benshangul	Urban	120.4	131.0	125.8	83.1	85.8	84.5
	Rural	110.1	52.4	80.4	54.4	28.8	41.2
	All	110.9	58.7	84.0	56.7	33.4	44.7
SNNP	Urban	95.7	89.2	92.7	70.0	57.6	64.2
	Rural	73.8	41.7	58.0	33.7	21.2	27.5
	All	75.3	44.8	60.4	36.2	23.5	30.0
Gamble	Urban	117.8	129.3	123.5	74.0	79.3	76.6
	Rural	145.3	105.7	125.3	74.4	60.7	67.5
	All	138.7	111.2	124.9	74.3	65.0	69.6
Harari	Urban	118.7	109.7	113.6	86.4	83.7	84.9
	Rural	116.3	62.6	89.0	57.6	38.3	47.8
	All	117.4	87.8	101.5	71.2	62.6	66.6
Addis Ababa	Urban	107.6	113.7	110.9	78.4	79.4	79.0
	Rural	58.6	56.7	57.7	32.1	35.4	33.7
	All	106.4	112.5	109.6	77.2	78.5	77.9
Dire Dawa	Urban	106.4	82.5	93.5	78.5	59.7	68.4
	Rural	57.5	21.0	40.8	26.6	10.1	19.0
	All	88.1	64.0	75.7	59.1	44.8	51.8

Table A8.12: Gross and net secondary enrolment rate by region, gender, and rural- urban Areas (1999/00)

Region		GSER			NSER		
		Male	Female	All	Male	Female	All
Tigray	Urban	69.3	58.6	63.1	54.6	49.1	51.5
	Rural	12.8	10.7	11.7	8.9	8.9	8.9
	All	22.7	21.8	22.3	17.0	18.3	17.6
Afar	Urban	64.4	32.9	45.3	45.2	28.7	35.2
	Rural	1.5	0.0	0.9	1.3	0.0	0.7
	All	13.4	10.8	12.2	9.6	9.5	9.5
Amhara	Urban	70.7	61.2	65.2	52.6	49.2	50.6
	Rural	3.1	2.2	2.7	1.8	1.4	1.6
	All	10.2	11.1	10.6	7.1	8.6	7.8
Oromiya	Urban	63.8	52.6	57.9	50.5	40.3	45.2
	Rural	7.8	2.8	5.3	5.2	2.3	3.8
	All	14.4	9.3	11.9	10.5	7.3	8.9
Somali	Urban	28.7	25.5	27.3	21.8	21.6	21.8
	Rural	0.7	0.4	0.6	0.7	0.4	0.6
	All	11.5	10.0	10.8	8.9	8.5	8.7
Benshangul	Urban	72.7	38.3	54.4	45.8	25.6	35.0
	Rural	16.6	4.2	10.3	10.4	2.8	6.5
	All	20.8	7.0	13.7	13.0	4.7	8.7
SNNP	Urban	59.0	50.6	54.4	43.3	41.0	42.0
	Rural	12.9	4.2	8.9	8.0	2.7	5.5
	All	16.5	9.1	13.0	10.7	6.7	8.8
Gambela	Urban	89.1	46.9	69.0	56.7	25.8	42.0
	Rural	32.0	8.3	20.7	20.5	3.5	12.4
	All	47.3	18.6	33.6	30.1	9.5	20.3
Harari	Urban	81.3	79.1	80.1	61.9	59.4	60.5
	Rural	8.1	3.8	5.9	5.6	1.5	3.5
	All	50.0	49.7	49.8	37.8	36.8	37.3
Addis Ababa	Urban	78.5	62.0	68.9	58.6	48.1	52.5
	Rural	21.5	9.5	16.2	14.9	8.0	11.9
	All	77.4	61.4	68.1	57.8	47.6	51.9
Dire Dawa	Urban	64.5	53.5	58.3	47.9	40.5	43.8
	Rural	1.7	0.0	0.9	1.7	0.0	0.9
	All	43.1	40.6	41.8	32.2	30.7	31.4

Table A8.13: Gross and net primary enrolment rate by reporting level and gender (1999/00)

Reporting level	GPER			NPER		
	Male	Female	All	Male	Female	All
Tigris Rural	49.62	51.22	50.41	22.89	29.71	26.25
Micelle Town	102.91	113.87	108.43	84.08	80.78	82.42
Tigris Other Urban	110.08	113.70	111.92	72.81	72.92	72.86
Afar Rural	16.70	21.81	18.92	5.22	13.89	8.98
Wayzata Town	122.11	119.50	120.80	83.33	76.33	79.81
Afar Other Urban	91.34	109.82	99.71	66.75	65.97	66.40
Amphora Rural	48.47	43.93	46.26	28.08	31.71	29.85
Gender Town	109.86	104.85	107.36	84.91	79.63	82.28
Desire Town	99.41	103.61	101.63	82.16	85.79	84.08
Bihar Dar Town	104.03	138.16	120.60	80.54	85.87	83.13
Amphora Other Urban	102.45	114.56	108.38	72.63	82.05	77.24
Roomier Rural	67.98	38.17	53.74	32.17	22.63	27.61
Defreeze Town	108.51	109.70	109.18	82.82	81.28	81.95
Nazareth Town	115.31	105.79	110.26	86.02	73.92	79.60
Jimmy Town	103.51	108.06	105.80	77.12	79.51	78.32
Roomier Other Urban	103.65	110.38	107.26	75.26	77.07	76.23
Somalia Rural	21.92	6.60	14.76	9.30	3.80	6.73
Jigjig Town	86.95	80.81	83.93	66.23	55.93	61.17
Somalia Other Urban	73.08	45.92	61.52	32.57	38.17	34.95
Benching Gumuz Rural	110.07	52.37	80.37	54.36	28.78	41.19
Assisi Town	122.76	129.53	126.15	88.36	78.31	83.32
Benching Gumuz Other Urban	119.23	131.64	125.70	80.40	89.33	85.06
SNNPR Rural	73.80	41.69	58.05	33.65	21.17	27.53
Awasa Town	106.76	100.61	103.67	76.80	64.75	70.73
SNNPR Other Urban	94.43	87.70	91.30	69.22	56.66	63.39
Gamble Rural	145.34	105.72	125.29	74.39	60.68	67.45
Gamble Town	106.85	146.92	124.31	77.12	80.55	78.62
Gamble Other Urban	142.38	108.21	122.10	66.82	77.85	73.37
Harare Rural	116.26	62.63	89.04	57.58	38.28	47.79
Harar Town	118.74	109.66	113.56	86.40	83.71	84.87
Addis Ababa Rural	58.58	56.68	57.68	32.08	35.45	33.68
Addis Ababa Town	107.64	113.74	110.86	78.41	79.43	78.95
Dire Dawa Rural	57.53	21.04	40.77	26.61	10.05	19.00
Dire Dawa Town	106.25	86.75	95.69	80.62	62.73	70.93
Dire Dawa Other Urban	107.82	36.23	70.17	56.92	26.95	41.16

Table A8.14: Gross and net secondary enrolment rate by reporting level and gender (1999/00)

Reporting level	GSER			NSER		
	Male	Female	All	Male	Female	All
Tigray Rural	12.76	10.70	11.74	8.92	8.94	8.93
Mekellee Town	82.00	73.45	76.88	68.59	59.24	63.00
Tigray Other Urban	65.07	52.94	58.15	49.91	45.30	47.28
Afar Rural	1.51	0.00	0.87	1.29	0.00	0.74
Aysaeta Town	74.79	31.98	52.80	55.21	23.15	38.74
Afar Other Urban	60.60	33.09	43.16	41.44	29.99	34.18
Amhara Rural	3.08	2.21	2.66	1.78	1.37	1.58
Gonder Town	77.32	67.25	71.14	59.82	53.58	55.99
Dessie Town	110.17	79.86	91.63	74.55	58.27	64.59
Bahir Dar Town	92.69	59.97	72.06	67.22	50.49	56.68
Amhara Other Urban	64.97	59.00	61.54	48.84	47.69	48.18
Oromia Rural	7.83	2.78	5.35	5.16	2.30	3.76
Debrezeit Town	72.20	58.62	64.32	59.88	50.42	54.39
Nazreth Town	56.85	64.06	60.95	44.77	51.50	48.60
Jimma Town	70.51	64.07	66.83	49.29	46.06	47.44
Oromia Other Urban	63.75	50.55	56.93	50.72	38.48	44.39
Somalia Rural	0.72	0.39	0.57	0.72	0.39	0.57
Jijiga Town	66.43	39.62	51.21	40.95	31.41	35.54
Somalia Other Urban	18.45	17.62	18.13	16.63	16.18	16.45
Benshangul Gumuzu Rural	16.63	4.21	10.29	10.38	2.83	6.53
Assosa Town	66.20	43.76	53.52	48.15	28.12	36.83
Benshangul Gumuzu Other Urban	75.44	35.54	54.80	44.83	24.30	34.21
SNNPR Rural	12.90	4.19	8.86	7.97	2.67	5.51
Awasa Town	68.41	55.88	61.58	50.76	46.24	48.30
SNNPR Other Urban	57.55	49.79	53.29	42.14	40.16	41.06
Gambela Rural	32.05	8.28	20.73	20.47	3.51	12.40
Gambela Town	90.83	61.04	76.22	61.86	33.47	47.93
Gambela Other Urban	86.60	22.93	57.81	49.19	12.79	32.73
Harari Rural	8.06	3.85	5.89	5.60	1.55	3.52
Harar Town	81.28	79.06	80.05	61.90	59.35	60.49
Addis Ababa Rural	21.47	9.52	16.16	14.94	7.99	11.85
Addis Ababa Town	78.47	61.95	68.93	58.63	48.10	52.55
Dire Dawa Rural	1.66	0.00	0.93	1.66	0.00	0.93
Dire Dawa Town	66.61	55.19	60.15	49.07	41.58	44.83
Dire Dawa Other Urban	36.35	20.32	28.87	32.47	20.32	26.80

Table A8.15 Mean distance (Kilo meter) to reach the nearest public services by reporting level (1999/00)

Reporting Level	Mean Distance To Nearest				
	Primary school	Secondary school	Health centre	Drinking water in rainy season	Drinking water in dry season
Tigray Rural	4.01	24.65	7.77	0.52	0.82
Mekellee Town	0.34	1.75	1.63	0.00	0.00
Tigray Other Urban	0.67	1.90	1.54	0.00	0.00
Afar Rural	6.61	41.05	10.65	0.34	2.55
Aysaeta Town	0.23	1.39	0.64	0.00	0.00
Afar Other Urban	1.04	1.66	0.53	0.00	0.00
Amhara Rural	3.56	24.97	8.27	0.31	0.58
Gonder Town	0.50	1.36	0.92	0.00	0.00
Dessie Town	0.26	1.03	1.09	0.00	0.00
Bahir Dar Town	0.78	2.62	1.29	0.00	0.00
Amhara Other Urban	0.47	4.54	0.86	0.11	0.11
Oromia Rural	3.45	22.65	8.69	0.50	1.08
Debrezeit Town	1.35	2.51	2.03	0.08	0.08
Nazreth Town	0.66	1.65	1.60	0.04	0.16
Jimma Town	0.85	1.64	1.79	0.04	0.10
Oromia Other Urban	0.91	3.66	1.45	0.10	0.12
Somalia Rural	5.49	31.72	7.81	0.82	2.76
Jijiga Town	0.82	1.58	1.63	0.00	0.00
Somalia Other Urban	0.62	1.15	1.03	1.80	0.24
Benshangul Gumuzu Rural	3.32	22.55	8.48	0.11	0.11
Assosa Town	0.34	1.00	0.66	0.00	0.00
Benshangul Gumuzu Other Urban	1.00	1.64	0.65	0.33	0.33
SNNPR Rural	2.78	15.67	6.58	0.36	0.81
Awasa Town	0.53	0.95	1.68	0.00	0.00
SNNPR Other Urban	0.74	8.89	1.14	0.14	0.19
Gambela Rural	3.09	15.14	7.23	0.40	0.66
Gambela Town	0.00	0.59	0.59	0.00	0.00
Gambela Other Urban	0.00	0.49	0.49	0.00	0.00
Harari Rural	1.53	9.53	3.81	0.30	0.43
Harar Town	0.51	1.89	0.52	0.00	0.00
Addis Ababa Rural	4.91	6.73	5.56	0.57	0.79
Addis Ababa Town	0.79	1.85	0.93	0.02	0.02
Dire Dawa Rural	2.58	18.67	3.68	0.21	0.53
Dire Dawa Town	0.60	3.30	1.24	0.00	0.00
Dire Dawa Other Urban	1.00	9.00	1.00	0.00	0.00

**Table A8.16: Distance (Kilo Meter) to reach the nearest public services by quintiles
(1999/00)**

Mean distance (KM) to nearest		Ethiopia			Rural			Urban		
		Population percentile cut-offs			Population percentile cut-offs			Population percentile cut-offs		
Primary school	Quintile	25	50	75	25	50	75	25	50	75
	1	1	3	4	1.5	3	5	0	0	1
	2	1	2.5	4.5	1	3	5	0	1	1
	3	1	2.5	4	1	3	4.5	0	1	1
	4	1	3	4	1.5	3	4.5	0	1	1
	5	1	2	3.5	1	3	4	0	0.5	1
Secondary school	1	6	15	30	9	18	31	0.5	2	3
	2	6	15	29.5	8.5	18	30	1	2	3
	3	6	15	30	9	17	30	1	1	3
	4	6.5	15.5	30.5	9.5	18	32	1	2	3
	5	3	12	24	9	18	30.5	1	1	3
Health centre	1	3	6	11.5	3	6	12	0	1	2
	2	3	6	10.5	3	6	11	0	1	2
	3	3	6	9.5	3	6	10	0	1	2
	4	3	6	10	3	6	11	0	1	2
	5	2	5	9	3	6	11	0	1	2
Drinking water in rainy season	1	0	0	1	0	0	1	0	0	0
	2	0	0	1	0	0	1	0	0	0
	3	0	0	0.5	0	0	1	0	0	0
	4	0	0	1	0	0	1	0	0	0
	5	0	0	0.5	0	0	0.5	0	0	0
Drinking water in dry season	1	0	0	1	0	0	1	0	0	0
	2	0	0	1	0	0	1	0	0	0
	3	0	0	1	0	0	1	0	0	0
	4	0	0	1	0	0	1	0	0	0
	5	0	0	1	0	0	1	0	0	0

Table A8.17: Source of drinking water in rainy season by reporting level (%) (1999/00)

Reporting Level	Private Tap	Public Tap	Protected Well/ Spring	Unprotected Well/ Spring	River/Lake /Pond	Others	Safe water	Unsafe water
Tigray Rural	0	5.88	13.62	32.42	43.12	4.96	19.5	80.5
Mekellee Town	27.9	65.69	0.57	0.82	1.08	3.94	94.16	5.84
Tigray Other Urban	10.62	70.47	1.33	4.61	5.06	7.9	82.42	17.57
Afar Rural	0.18	18.79	6.72	14.95	58.21	1.14	25.69	74.3
Aysaeta Town	19.48	72.55	3.11	0.6	4.25	0	95.14	4.85
Afar Other Urban	17.4	57.01	2.28	9.07	12.47	1.78	76.69	23.32
Amhara Rural	0.22	1.83	9.15	55.12	29.72	3.96	11.2	88.8
Gonder Town	23.5	64.34	7.1	4.51	0	0.56	94.94	5.07
Dessie Town	33.52	63.32	0.31	1.73	0.89	0.22	97.15	2.84
Bahir Dar Town	26.05	68.93	1.79	0.9	2.06	0.27	96.77	3.23
Amhara Other Urban	9.09	66.04	9.63	6.61	4.84	3.8	84.76	15.25
Oromia Rural	0.15	4.84	10.29	40.97	41.51	2.23	15.28	84.71
Debrezeit Town	42.7	53.82	2.59	0.59	0	0.3	99.11	0.89
Nazreth Town	41.14	58.6	0	0	0	0.26	99.74	0.26
Jimma Town	18.19	49.28	21.63	4.28	5.83	0.78	89.1	10.89
Oromia Other Urban	20.85	50.12	10.63	2.82	7.72	7.85	81.6	18.39
Somalia Rural	0	6.69	3.77	24.78	61.39	3.37	10.46	89.54
Jijiga Town	17.98	80.14	1.03	0.84	0	0	99.15	0.84
Somalia Other Urban	0	0	18.17	0	62.34	19.49	18.17	81.83
Benshangul Gumuzu Rural	0	2.86	17.98	19.36	58.66	1.14	20.84	79.16
Assosa Town	7.93	18.34	7.16	28.62	7.67	30.29	33.43	66.58
Benshangul Gumuzu Other Urban	0	10.44	25.37	27.33	15.7	21.15	35.81	64.18
SNNPR Rural	0.21	7.68	12.68	32.76	45.79	0.88	20.57	79.43
Awasa Town	30.03	69.65	0.33	0	0	0	100.01	0
SNNPR Other Urban	12.61	55.61	16.98	9.33	2.91	2.56	85.2	14.8
Gambela Rural	0	20.3	0	30.68	47.65	1.37	20.3	79.7
Gambela Town	15.08	55.23	8.55	2.65	16.03	2.47	78.86	21.15
Gambela Other Urban	0.63	90.35	0	0	9.03	0	90.98	9.03
Harari Rural	0	8.15	38.12	42.66	7.06	4	46.27	53.72
Harar Town	21.3	69.69	6.17	2.53	0.31	0	97.16	2.84
Addis Ababa Rural	1.16	44.05	37.47	0	10.69	6.62	82.68	17.31
Addis Ababa Town	35.31	63.84	0.12	0.13	0.18	0.42	99.27	0.73
Dire Dawa Rural	0	4.49	49.79	33.04	0	12.69	54.28	45.73
Dire Dawa Town	12.4	85.54	0	1.61	0	0.46	97.94	2.07
Dire Dawa Other Urban	3.75	88.98	7.26	0	0	0	99.99	0

Table A.9: Summary of poverty indicators in Ethiopia for the year 1999/2000

Reporting level	S	SS	LT	GPER	NPER	GSER	NSER	Po	P1	P2	W	S. W	FPO
Tigray Rural	62.7	34.5	22.8	50.4	26.2	11.7	8.9	61.6	18.5	7.2	12.3	2.5	51.7
Mekellee Town	47.0	22.0	76.0	108.4	82.4	76.9	63.0	42.8	12.4	4.8	3.4	0.7	62.8
Tigray Other Urban	41.2	20.5	59.1	111.9	72.9	58.1	47.3	66.3	22.3	9.8	7.3	0.6	65.3
Afar Rural	43.5	23.9	6.7	18.9	9.0	0.9	0.7	68	20.3	8.1	11.8	2.0	63.5
Aysaeta Town	40.5	13.2	63.7	120.8	79.8	52.8	38.7	35.1	8.2	2.8	8.1	1.2	32.4
Afar Other Urban	44.9	34.2	60.1	99.7	66.4	43.2	34.2	24.4	6	2	12.0	1.7	27.9
North and South Gonder	67.2	40.5	16.3	39.5	24.2	2.8	1.7	34	7.7	2.6	11.1	2.3	21.9
East and West Gojjam And	70.6	44.5	17.5	46.0	33.5	3.0	2.1	42.8	11.5	4.1	11.9	2.8	32.7
North Wollo And Wag Himra	68.8	43.4	15.5	47.4	24.8	1.9	0.7	44.1	10.2	3.4	9.9	0.6	29.2
South Wollo Oromia and North	59.8	29.8	21.1	52.5	33.1	2.5	1.3	50.5	13.7	5.2	11.0	2.1	42.1
Gonder Town	67.9	36.5	75.2	107.4	82.3	71.1	56.0	17.5	4.8	1.8	12.7	2.2	18.7
Dessie Town	48.9	27.6	76.0	101.6	84.1	91.6	64.6	31.3	8.2	3	4.3	0.9	33.8
Bahir Dar Town	43.3	24.1	72.7	120.6	83.1	72.1	56.7	22.3	4.8	1.7	5.7	2.0	32.1
Amhara Other Urban	60.0	32.4	65.0	108.4	77.2	61.5	48.2	33.2	9.3	3.5	5.7	1.8	37.5
East and West Wellega	47.0	21.7	27.1	61.0	31.2	9.5	6.8	35.6	8.4	2.6	13.5	2.0	30.2
Illubabor and Jimma	61.7	33.7	18.2	52.0	30.1	4.1	3.3	44.7	12.3	5	7.1	1.1	39.6
North and West Shoa	59.7	31.9	20.0	47.7	27.9	3.8	3.3	31.7	6.9	2.1	7.1	0.9	31.2
East Shoa Arsi Bale And Borena	56.1	29.8	23.9	55.4	25.5	5.0	3.3	50.7	14.4	5.6	8.8	1.5	48.1
East and West Harerghe	53.6	27.9	17.5	52.2	26.3	4.8	2.5	31.3	6.4	1.7	9.6	1.2	25.5
Debrezeit Town	33.6	15.9	78.6	109.2	81.9	64.3	54.4	36.7	9.9	3.6	9.1	2.5	50.7
Nazreth Town	37.0	14.5	80.2	110.3	79.6	61.0	48.6	28.5	9	3.6	7.0	0.6	51.7
Jimma Town	36.6	11.9	71.1	105.8	78.3	66.8	47.4	37	10.5	4.1	4.4	0	55.3
Oromia Other Urban	48.7	20.6	66.7	107.3	76.2	56.9	44.4	36.3	9.9	3.7	5.6	1.2	48.5
Somalia Rural	55.6	35.9	10.5	14.8	6.7	0.6	0.6	44.1	9.6	3.2	11.4	1.1	46.9
Jijiga Town	45.5	25.1	65.2	83.9	61.2	51.2	35.5	39.9	11.2	4.3	4.3	0.8	35.8
Somalia Other Urban	34.2	19.5	41.2	61.5	35.0	18.1	16.5	19.9	3.6	1.1	15.5	6.0	33.5
Benshangul Gumuz Rural	53.4	29.0	29.1	80.4	41.2	10.3	6.5	55.8	16.6	6.7	11.5	2.3	56.2
Assosa Town	32.2	11.2	71.7	126.2	83.3	53.5	36.8	18.1	3.9	1.2	8.3	0.6	27.2
Benshangul Gumuz Other Urban	46.8	16.7	60.5	125.7	85.1	54.8	34.2	34.1	8.1	2.6	10.9	0	47.7
Gurage Hadiya Kemebata and	59.8	36.7	28.1	59.1	28.1	9.4	6.0	52.9	15.5	6.1	9.8	1.8	63.6
Sidama Gedo Gurgi And Amaro	67.8	39.1	31.9	70.1	31.3	10.9	6.2	38.6	8.4	2.6	8.9	3.0	36.6
North and South Omo Derashe And Konso	54.1	33.6	20.7	42.0	19.8	6.6	4.2	66.1	22.3	9.8	9.2	1.4	63.7
Yem Kefa-Shekich And Bench Maji	50.8	27.2	26.3	69.2	38.0	8.2	6.0	41.7	10.3	3.6	9.5	1.0	52
Awasa Town	31.6	9.4	81.1	103.7	70.7	61.6	48.3	32.3	9.2	3.6	4.0	0.9	53
SNNP Other Urban	45.5	24.4	64.5	91.3	63.4	53.3	41.1	41.3	10.4	3.8	5.2	0.6	54.2
Gambela Rural	43.5	18.9	39.6	125.3	67.5	20.7	12.4	54.6	14.4	5.4	12.0	1.3	61.8
Gambela Town	30.4	14.8	73.4	124.3	78.6	76.2	47.9	34.7	10.2	4.4	12.9	3.7	35.5
Gambela Other Urban	30.2	14.9	62.1	122.1	73.4	57.8	32.7	43.9	13.4	5.4	24.0	9.2	54.8
Harari Rural	52.0	26.7	23.4	89.0	47.8	5.9	3.5	14.9	1.7	0.3	5.2	0.8	15.5
Harar Town	37.7	14.4	76.5	113.6	84.9	80.1	60.5	35	7.9	2.5	5.7	2.3	47.7
Addis Ababa Rural	49.1	28.3	33.1	57.7	33.7	16.2	11.9	27.1	5.9	2	10.6	3.2	35.9
Addis Ababa Town	37.2	16.9	80.0	110.9	79.0	68.9	52.5	36.2	9.7	3.6	4.7	2.0	47.8
Dire Dawa Rural	45.6	20.8	13.2	40.8	19.0	0.9	0.9	33.2	6.5	1.9	14.9	3.4	25.3
Dire Dawa Town	34.8	12.7	71.5	95.7	70.9	60.1	44.8	31.5	7.8	2.7	11.4	3.1	26.9
Dire Dawa Other Urban	56.7	26.6	50.9	70.2	41.2	28.9	26.8	51.8	13.7	4.5	4.7	1.9	48.9
National	56.8	31.3	29.4	58.9	33.8	15.5	11.5	44.2	11.9	4.5	9.6	1.8	41.9

S= Stunting; SS = Severe stunting = Literacy %; GPER = Gross primary enrollment; NPER = Net primary enrollment ratio; GSER = Gross secondary enrollment ratio; NSER = Net primary enrollment ratio; P0 = head count index; W = wasting; SW = Severely wasted; P1 = poverty gap index; P2 = Severity of poverty index; FP0 = food poverty head count index.

Source: Calculated from the HICES and WMS data of 1999/2000 collected by CSA.

Table A.10: Summary of Consumption Poverty Indices in 1995/96

Reporting level	P0 (%)	P1 (%)	P2 (%)	FP0 (%)
Tigray	57.9	17.7	7.5	67.5
Afar	51.8	15.7	6.4	52.1
N. And s. Gonder	50.8	13.7	5	59.9
E. And w.gojam; agewawi	64.5	20.6	8.8	68.9
N.welo and wag hamra	60	18.7	7.8	55
S.welo, oromiya and n.shoa	52.7	14.2	5.3	54.9
E. And w. Welega	38.9	9.1	3.2	49.6
Jima and illubabor	42.1	10.9	4	41.1
N. And w. Shoa	36.1	8.9	3.1	52.1
E.shoa,arsi,bale and borena	35.5	8.1	2.6	45.7
East and west haraghe	22.1	5	1.7	22.4
Somali	34.6	7.7	2.6	43.2
Benishangul	47.6	13.7	5.5	61.2
Yem, keficho	49.6	14.9	6	48.3
N. And s. Omo	77.4	29	13.3	66.6
Hadiya, kemb. And gurage	52.2	14.4	5.7	58.1
Sidama	41.4	10.7	3.6	31.3
Gambela	41.8	12.4	5	45.1
Harari - rural	13.3	2	0.4	16.3
Addis ababa - rural	40.4	10.8	4	38.7
Dire dawa - rural	36.6	8.5	2.9	30.8
Mekele	46.4	13.7	5.4	60.5
Bahr dar	38.2	9.3	3.2	52.3
Gonder	33.9	10.6	4.5	43.7
Dessie	71.9	29.2	15	68.3
Jima	29.2	7.7	2.9	34.3
Debre zeit	29	7	2.4	40.6
Nazareth	44.2	14	5.8	54.7
Harar	29.1	7.4	2.5	28
Addis Ababa	30	8.7	3.5	36.5
Dire Dawa	24.6	5.6	2	38
Other urban centres	33.6	10.2	4.3	34.7
Total	45.5	12.9	5.1	49.5

P_0= head count index; P_1= normalized poverty gap index; P_2 = squared poverty gap;
Fp_0=food poverty head count index.