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HOUSEHOLD INCOME, CONSUMPTION AND EXPENDITURE (HICE) SURVEY 2004/5

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In line with previous Household Income, Consumption and Expenditure (HICE) survey the goals of the 2004/5 HICE were to provide basic data needed for the purpose of designing socio-economic policy as well as other related issues that might arise at the micro level. In summary, and most notably with respect to this report, the intention was to:[1]

- provide data on the levels, distribution and pattern of household income, consumption and expenditure that will be used for analysis of changes in the levels of living standards of households over time in various socio-economic groups and geographical areas.
- obtain information for the formulation of socio-economic plans and policies. and
- furnish series of data for assessing the impact of existing or proposed socioeconomic programs on household living conditions.

Unlike previous HICE reports we adopt a more detailed approach in the analysis to enhance the added value from the latest in this series of surveys. In particular, we provide especially in depth analysis of the socio-economic characteristics associated with expenditure and a detailed expenditure analysis, that also extends beyond relatively simple descriptive data work, in order to provide particularly insightful information regarding that socio-economic factors that underpin living standards. The report focuses exclusively on the expenditure data.

The first two chapters provide the introduction and survey background followed by further detail regarding survey methods and data collection. Chapter Three is split into two parts, the first focuses on main socio-economic characteristics of expenditure - such as population and household size, characteristics of household heads and members, literacy, education and economic activities. The second part of the chapter then provides a more specific focus on expenditure characteristics providing an overview of the descriptive data before undertaking in depth statistical analysis. The main findings are as follow:

[1]Other objectives included obtain weights and other useful information for the construction of consumer price indices at various levels; provided data for compiling household accounts in the system of national accounts of especially in the estimation of private consumption expenditure.

Households Size/Demographics:

- The national average household size has decreased from 5 to 4.88 to 4.82, respectively for years 1995/6, 1999/00 and 2004/5.
- Almost one third of the population are less than 10 years of age and 47.2% are less than the lower limit of the normal working age (15 years).
- A high proportion (77.6%) of 0-9 year olds are in households that have 5 household members or more. 69.1% of 10-14 year olds live in households that have 6 or more members.
- The age composition of national and rural households has remained relatively static since 1995, however it would appear that urban households have undergone a degree of demographic structural change.
- As people get older the distribution of the proportion of individuals across the expenditure quintiles 'evens out'. For example, disproportionate numbers of children (under 10 years of age) live in the higher quintile households (8.5% in the highest expenditure quintile compared with 3.8% in the lowest quintile).

Household Heads/Members

- Although roughly equal proportions of the lowest quintile households are Male Headed Households (MHH) and Female Headed Households (FHH) gender differences increase with household expenditure.
- Beyond the lowest quintile, there is a fairly dramatic fall in the proportion of households that are FHH.
- Of the top two quintiles 85.4% of the households are MHH compared with only 14.6% FHH.
- Since 1995 the average proportion of FHH's in the lowest expenditure quintile has increased significantly from 43.5% to 49.5%.

Education/Literacy

- Slightly above one third (37.6%) of the population are found to be literate.

- Large gender differences appear to exist with 89% of rurally based female heads, in the lowest quintile, being illiterate compared with 68.5% of men.
- Illiteracy levels decrease as expenditure quintiles increase. For example, the proportion of illiterate, rurally based, individuals decreases to 73.7% and 60.1% moving from the 4^{th} to the 5^{th} quintile provides the most distinct jump in reduction of illiteracy status for both rural and urban, males and females.
- In all regions that average levels of female illiteracy is higher than that for males, with the largest inequalities between males and females being in Benishangul-Gumuz and Oromiya.
- Major educational attainment differences also exist across rural and urban areas, with 4.9% (38%) of the rural (urban) based population heads having completed the upper levels of primary education, or above.
- Regionally, comparisons of educational attainment the higher proportions of individuals completing primary educational level of 7-8 and beyond is dominated by the relatively high performers of Harari, Addis and Dire Dawa, with an average of 31.2%, 49.7% and 30.4%, of individuals, respectively completed up to this level of education.

Occupation

- As household size increases the proportion of working women, for quintile 1 households, reduces dramatically. Reduction in the proportion of women contributing income to households might of course be reflective of an increase in domestic and caring duties, that are a disproportionate responsibility of women.
- Self employed formal sector work in rural areas of course including agricultural and related activities (85%) is far higher than in urban areas (19.5%).
- The ratio of male:females employed in these sectors dramatically increases with quintile, especially in the public sector (self employed formal sector) where the ratio of males to females increases from 1.29 (1.91) to 4.5 (5.27) men to every women employed, as quintile increases.

Expenditure

Of the main findings from the descriptive data:

- The average expenditure per capita in the country is Birr 1697.35, however this varies considerably across the five quintiles, and 10 regions, and there is a particularly notable increase in expenditure between quintile 4 and 5, with expenditure per capita increasing by more than 1000 Birr.
- Apart from food, housing, water and fuel account for the second largest component of expenditure with an average of 320.51 Birr per person per annum and clothing and footwear is the third largest expenditure per capita grown with an average of 127.26 Birr of expenditure per person per annum.
- Analyzing specific major expenditure groups provides further understanding of expenditure patterns of the country. For example, fuel and power comprises a significant proportion (approximately 9%) of total expenditure, remaining relatively constant across quintiles. However, when we consider housing expenditure, these vary dramatically across quintiles with 16.8% of lowest expenditure quintile households expenditure being spent on housing, compared with only 7.4% of the highest quintile, and 9.3% overall.

Further statistical analysis significantly added value to our understanding of expenditure per capita by allowing us to establish with probability how specific socio-economic characteristics are statistically related to certain levels of expenditure per capita. We found:

- Female headed households (FHH) are on average fall in with the lowest quintile, were 4.9% less likely to be in the highest quintile and 5.6% less likely to be in the 4th quintile.
- Increasingly positive expenditure effects appeared in the statistical analysis - as educational attainment increases – for example, households that are headed by individuals that have completed primary education are 8.3% (11.4%) more likely to be in quintile 4 (5) than in the lowest quintile.
- Of the other findings, we also found that the type of activity, age, and region are all important influencers of expenditure per capita.

Calorie per capita

- Total calorie intake per individual per day is 2154.58 as obtained from the survey result.
- In the daily calorie intake, cereals have the major contribution - 62.8% (53.6% and 64.1% for Urban and Rural, respectively).
- Calorie intake per person per day for SNNP, Oromiya and Benshangul-Gumuz is above the average calorie intake at country level.
- The calorie intake per person per day for the rural areas in 2004/5 (1999/00) of the regions ranges from about 2124 (1616) in Afar to 2550 (2,440) in Harari. While in the urban areas, the daily calorie intake per person stood below 1,900 in SNNP and Dire Dawa Region

CHAPTER 1

INTRODUCTION AND OBJECTIVES

1.1 Overview

The level and distribution of poverty in Ethiopia is extensive. According to the results obtained from the 1995/96 and the 1999/2000 Household Income, Consumption and Expenditure (HICE) surveys and Welfare Monitoring (WM) survey of the Central Statistical Agency (CSA), about 44 percent of the total population (45 percent in rural and 37 percent in urban areas) are found to be below poverty line. The country together with development partners, as a result, has put poverty reduction strategies high on the agenda and working firmly on the implementation program since the beginning of this decade. With firm dedication to reduce poverty, the government has prepared its poverty reduction program entitled “Sustainable Development and Poverty Reduction Program” (SDPRP) in 2002. The strategy has been implemented over the past five years. Furthermore, the government has prepared and implementing the poverty eradication action plan entitled "A Plan for Accelerated and Sustained Development to End Poverty (PASDEP)".

In light of the plan to reduce poverty over time, a strong system of monitoring and evaluation has been put in place. Consequently, the issue of welfare monitoring in the country arose as part of the Economic Reform Program (ERP). The ERP specifically and strongly, underlies to see the effects of the reform program on poverty and building the analytical capacity of the government to monitor and evaluate such effects. To this end, the government has established a Welfare Monitoring System (WMS) in 1996 to oversight the following major activities:

- Establish an information system that provides a continuous picture of the poverty scenario in the country;
- Indicate the impact of reform programs on the level of household welfare;
- Establish follow-up procedures on the various programs and activities targeted towards poverty reduction; and

- Conduct regular statistical surveys to assess, in particular, the efficiency of targeted programs.

The CSA and Welfare Monitoring Unit (WMU) of Ministry of Finance and Economic Development (MoFED) has been the key actors in the Monitoring and Evaluation (M&E) system in place by way of producing, analyzing and disseminating poverty related data and results. The program has been supported by the World Bank IDA Credit and the Norwegian Trust Fund.

In line with strengthening the established M&E system of the government, the CSA and WMU of MoFED had also submitted a financing requirement proposal (entitled: Strengthening Data Collection, Analysis and Dissemination on Poverty Monitoring and the MDGs) to the Development Assistant Group (DAG). Following the signing of the Memorandum of Understanding (MU) between MoFED, CSA and the donors, various implementation activities have also been carried out.

In order to meet the data needs of the WMS, the CSA has been conducting the two surveys that provide poverty related data: the HICE and the WM surveys since 1995/96. The HICE and the WM surveys provide fundamental information for the designing and monitoring and evaluation of the country's poverty reduction strategy i.e., the SDPRP, the various socioeconomic policies and programs and hence monitor the progress towards meeting the Millennium Development Goals (MDGs). The two surveys are inseparable and provide basic data that reflect the standard of living of households, individuals and the society as a whole.

The HICE survey basically reflect the income dimension of poverty while WM survey aims at providing socioeconomic data that reflect the non-income dimension of poverty. The HICE survey provides statistics on income, consumption and expenditure of households and WM survey provides basic indicators on the various socioeconomic areas including health, education, nutrition, access to and utilization and satisfaction of basic facilities/services and related non-income aspects of poverty. The HICE survey has been conducted together with the WM survey every four-five

years since 1995/96. The latest of these HICE surveys is for 2004/5 and covered a representative sample of 21,600 households. Previous HICE were similarly representative, covered 11,928 and 17,332 households for 1995/96 and 1999/00, respectively.

Several reports have been produced based on the previous surveys including the statistical reports produced by the CSA: report on the 1995/96 HICE survey and WM survey, report on the 1999/2000 HICE survey and WM survey, summary reports for the 1999/2000 HICE and WM surveys and report, on the 1998 and 2004 WM surveys. Furthermore, two major poverty profile reports were produced by the WMU, the first one in 1999, and the second which underpinned SDPRP I in 2000, based on the 1999/00 HICE and WM survey data sets.

Unlike the previous two HICE surveys that had been conducted in 1995/96 and 1999/00, in the 2004/05 HICE survey data on Household Consumption Expenditure and Household Income were collected independently using separate modules. However, this report concentrates only on the household consumption expenditure part.

This report is a little different in structure compared with previous HICE surveys. The current report has tried to provide relatively comprehensive narrative for the survey findings, thus providing the end user with examples of how to fully utilize the rich data that has evolved from the HICE series. Furthermore, given the significant economic growth and poverty reduction that the country has experienced over the last decade, we thought it is also pertinent to compare some of the most recent HICE data with that of the previous surveys, such as the 1995/96 and 1999/00 HICE. The report constitutes four chapters and it is structured as follows. Chapter 1 highlights some background remarks (introduction and objectives) on the survey, Chapter 2 deals with survey methodology and operational issues and Chapter 3 presents major findings of the survey followed by summary of findings in Chapter 4. The report presents summary of statistical tables of the survey results at country and regional levels compiled for urban and rural areas.

1.2 Objectives of the HICE Survey

The core objective of the HICE survey is to provide data that enable to understand the income aspects of poverty and the major objectives are to:

- assess the level, extent and distribution of income dimension of poverty;
- provide data on the levels, distribution and pattern of household expenditure that will be used for analysis of changes in the households' living standard level over time in various socio-economic groups and geographical areas;
- provide basic data that enables to design, monitor and evaluate the impact of socio- economic policies and programs on households/individuals living standard;
- furnish series of data for assessing poverty situations, in general, and food security, in particular;
- provide data for compiling household accounts in the system of national accounts, especially in the estimation of private consumption expenditure; and
- obtain weights and other useful information for the construction of consumer price indices at various levels and geographical areas,

1.3 Training and Field Organization

1.3.1. Training of Field staff

Training was held in two stages in both rounds, i.e. in the first and second rounds of the survey period. The first stage was training of trainers and was conducted at the CSA head office. A total of 140 participants including professionals and sub-professionals from the head office, heads of the branch offices and the respective statisticians from each branch office were trained at this stage. The second stage training involved training of about 3970 field staff consisting of 3270 enumerators and about 700 supervisors and was conducted at all branch offices of the CSA.

The training at the head office lasted for about 15 days focusing on theoretical discussions on concepts, definitions, and principles of interview and how to complete questionnaires. The training also had focused in practical sessions which include

mock interviews and two-days field practice both in rural and urban areas. The objectives of practical interviewing of households were two fold. First, it enabled to assess how well the theoretical class discussions were understood by all participants so that they could convey the same message to enumerators and supervisors. The second objective was to examine the practical difficulties pertaining to the various socioeconomic groups, which would likely be encountered during the actual fieldwork.

The second stage training was undertaken at the branch offices and took about 22 days. The training was more detailed than the first stage in both theoretical and practical aspects to ensure the full competence of the field staff in collecting the required information. The trainers were professional and sub-professional staffs that were trained at the head office.

1.3.2. Field Organization

The CSA branch offices led by the Field Operations Department at the Head Office did the major work of the field organization. All the 24 branch offices of the CSA (Excluding Gambela) had fully participated in the survey undertaking, starting from recruitment of field staff, organizing the second stage training, in deploying the field staff to their respective sites of assignment, field supervision and retrieval of the completed questionnaires to the head office where the data processing activities took place. They were also responsible for administering financial and logistics aspects of the survey. Additionally, line government organizations especially Kebele's also had a significant role in facilitating the fieldwork. Writing administrative letters that introduce the work and the enumerators to the local people particularly the sample households, provision of field guides, etc were tasks of the local government units.

1.4. Explanatory Note

Further explanatory notes to be considered throughout the report are:

- Calorie Estimates

- The calorie estimates which had been used for the calculation of per person daily calorie intake in the previous two HICE surveys (1995/96 and 1999/00) were gross calories, while in the current survey (2004/5), in addition to the gross calorie intakes, net calorie intake has been also estimated and included in the report. The differences between gross calorie and net calorie, is given in chapter 2, under concepts and definitions.
- Usually, food composition tables prepared by ENHRI containing nutrients include food energy (calorie) are in terms of solid substance measuring units (i.e., per 100 grams). On the other hand, during the data collection of the HICE survey, the Quantity of consumed liquid items were measured in liquid measuring units. Hence in order to arrive at a most reliable calorie estimate, quantity of liquid items has to be converted into of solid measuring equivalents. Since, such exercise hadn't been done in the previous (1995/96 and 1999/00) surveys, an upward biase (over estimation of daily calorie per person) was expected. However, for the current survey (2004/5) all quantity of consumed of items in a liquid form are converted into their gram equivalent unit scales.

- Figures
    - Figures may not add up to totals because of rounding
    - Figures may slightly differ from table to table due to processing.

- Acronyms

Agri.	Agricultural
Non - Agri.	Non - Agricultural
CSA	Central Statistical Agency
DAG	Development Assistance Group
F	Female
M	Male
M+F	Both sexes
FHH	Female Headed Household
MHH	Male Headed Household
HH	Household Head
HM	Household Member
HICE	Household Income, Consumption and Expenditure
IDA	International Development Assistance
MDGs	Millennium Development Goals
M&E	Monitoring and Evaluation
MoFED	Ministry of Finance and Economic Development
PC	Per Capita
PHH	Per Household
PP	Per Person
R	Rural
U	Urban
R+U	Rual and Urban
WM	Welfare Monitoring
WMS	Welfare Monitoring System
WMU	Welfare Monitoring Unit
%	Percent
CV	Coefficient of Variation
CI	Confidence Interval
DE	Design Effect
SE	Standard Error

In addition to this report, a second report will be produced by the MoFED on poverty profile of the country. Although, both reports were prepared using the same data set due to the differences in the analysis approach and the indicators used these reports may not be identical. These two different approaches are:

CSA's report is based on analysis at current prices of the survey year and uses actual household size.

MoFED's report is based on 1995/96 constant prices and uses adult equivalent scale for its analysis.

CHAPTER 2

SURVEY METHODOLOGY AND PROCESSING

2.1 Coverage

The 2004/05 HICE Sample Survey covered all rural and urban parts of the country except all zones of Gambella Region, and the non-sedentary population of three zones of Afar and six zones of Somali regions. In the rural part of the country it was planned to cover 797 enumeration areas (EAs) and 9,564 households. However, due to various reasons 3 EAs and 64 households were not covered by the survey. The overall response rate is 99.62 percent for EAs and 99.3 percent for households. For urban areas 760 EAs and 12,160 households were planned to be covered ultimately, 100 percent of EAs and 99.50 percent of households were successfully covered by the survey.

2.2 Concepts and Definitions

URBAN CENTER: in principle is defined as a locality with 2000 or more inhabitants. In this survey, however, for practical purposes an urban centre includes the following regardless of the number of inhabitants.

i) All administrative capitals (Regional capitals, Zonal capitals and Wereda capitals),

ii) Localities with Urban Dweller's Association (UDAs) not included in (i),

iii) All localities which are not included either in (i) or (ii) above having a population of 1000 or more persons, and whose inhabitants are primarily engaged in non- agricultural activities.

*URBAN DWELLER'S ASSOCIATION, UDA, (*KEBELE): is the lowest administrative unit in an urban centre 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 centre.

FARMER'S ASSOCIATION (FA): 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.

ENUMERATION AREA (EA): is a unit of land delineated for the purpose of enumeration housing units and population without omission and duplication. An EA usually consists of 150 to 200 households in rural areas and 150 to 200 housing units in urban areas. An enumeration area should be related to a UDA or an FA in one of the following ways.

- An EA may be equal to an FA if the number of the households in the FA is less than or equal to 150 – 200 in rural areas; and is equal to a UDA in urban areas if the number of housing units in the UDA is 150 – 200.
- An EA may be a part of an FA or a UDA and its delineation can not extend outside the boundary of the corresponding FA or a UDA.

COLLECTIVE QUARTER: A collective quarter is a premise (a housing unit, a building or a compound) in which a number of unrelated persons reside together, and share common facilities. Examples of collective quarters are monasteries, prisons, boarding schools, home for aged, children's homes, work camps, military barracks, etc. It is important to note that in the premises of some collective quarters, there may be private households.

HOUSEHOLD: Constitutes of a person or group of persons, irrespective of weather related or not who normally live together in the same housing unit or group of housing units and who have common cooking arrangements.

HEAD OF HOUSEHOLD: A head of a household is a person who economically supports or manages the household or for reasons of age or respect, is considered as head by members of the household or declares himself as head of a household. Head of a household could be male or female.

MEMBER OF HOUSEHOLD: Person constituting a household is called member of the household. The following are considered as members of a household:

i) All persons who lived and ate with the household for at least six months including those who were not within the household at the time of the survey and were expected to be absent from the household for less than six months.

ii) All guests and visitors who ate and stayed with the household for six months and more.

iii) Housemaids, guards, baby-sitters, etc. who lived and ate with the household even for less than six months.

HOUSEHOLD SIZE: Is the total number of members of a household.

CONSUMPTION 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 commodities. It includes consumption of own crops and own livestock and livestock products, consumption of goods and services purchased for resale or produced or processed in the household enterprise other than agriculture, imputed rent of free housing (i.e. subsidized amount only), imputed rent of owner occupied housing, and, value of items obtained free (i.e. firewood, water, etc.).

The following major groups are included in the households consumption expenditure.

- Food and Non-Alcoholic Beverages;
- Alcoholic Beverages and Tobacco;
- Clothing and Footwear;
- Housing, water and fuel and power;
- Furnishing; Household Equipment and Maintenance,
- Health;
- Transport and communications;
- Recreation, Culture and Education; and
- Miscellaneous Goods and Services, such as Personal Care and Personal effects.

TOTAL EXPENDITURE : In household expenditure surveys total expenditure is defined as all household consumption expenditures as well as non-consumption expenditures. That is, all expenditures listed under consumption expenditure plus other expenditures such as remittance paid, deposit, interest paid, insurance premia, loans given out, repayments of loans made, pension and other contributions, donations, fines and related legal expenses, income tax, purchase of lottery tickets and gambling expenses, 'Ikub' payments, 'Idir' contributions, operating cost of household economic enterprises, and other similar payments.

HOUSEHOLD ENTERPRISE : Household enterprise is an economic enterprise undertaking where goods and services are produced for sale and it also includes those engaged in buying and selling activities. An agricultural enterprise producing for own consumption (Household Consumption) only is covered by the definition. Generally, the type of enterprise considered as a household enterprise by the survey is an economic enterprise run by the household/member of a household in which its primary aim being to manage the livelihood of the household and doesn't have any distinct demarcation between its income/expenditure and the households' income/expenditure.

INFORMAL SECTOR: For this survey informal sector is defined as household type enterprises/establishments or activities which:-

- are mainly engaged in marketed production, and
- are not registered companies cooperatives, and
- have no full written book of accounts, and
- have less that 10 persons engaged in the activity, and
- have no licence.

Therefore, for this survey an enterprise/establishment/activity is considered informal if it meets the aforementioned five criteria. However, an agricultural enterprise/activity run by private peasant holdings in rural areas and mainly produce for own consumption (household consumption) is considered as formal sector.

PRODUCTIVE ACTIVITY: This is an act of selling (making available to the market) the out put of an activity (the whole or in part) in kind or cash: This could be working in public or privately owned enterprise on salary/wage basis. Here too, all activities that are carried out in rural areas by private peasant agricultural holders are considered to be productive.

EMPLOYER: is a person who hires at least one employee for her/his enterprise/establishment or activity. Any one who uses hired labour for her/his activity and takes part in the productive activity is also included here in this survey.

EMPLOYEE: An employee is any worker hired by some one on contract, permanent or temporary basis. The payment could be in cash or kind on weekly, bimonthly or monthly basis.

SELF EMPLOYED: This is an individual who works in his own enterprise including agriculture with out hiring any one. In this survey those who use family labour without payment are also included here.

UNPAID FAMILY WORKER: A member of a household who is working for the enterprise/establishment or activity of the household with out payment.

WAGE/SALARY: includes all payments in cash or in kind made to employees in connection with work done for enterprise/establishment or activities.

"IDIR" : Refers to Community based insurance scheme in which a household head contributes a predetermined amount of money to the membership in order to be insulted from cash shortfalls in the event of death of a specified member of her/his family or himself.

"IQUB" : is a type of saving or revolving fund arranged by members of a community.

HOUSEHOLD EXPENDITURE QUINTILE: is dividing the households according to their expenditure level into five equal parts.

CALORIE: A calorie is the energy required to heat one gram of water by one degree Celsius. A kilo calorie, termed as Kcal, is 1.000 calories.

GROSS CALORIE: refers to crude calorie, that is estimated based on total purchased (produced) weight of consumed items with out discarding inedible materials.

NET CALORIE: is a calorie that is estimated based on the edible portions weight of consumed (food) items. It is a gross calorie deflated by (or minus) the proportion of the inedible portion (material), termed as refuse.

REFUSE: It refers to the percentage of the total purchased/produced weight that is discarded while preparing food. Refuse includes bones, pits, shells, and other inedible portions that could be eaten but as a rule are discarded; for example, potato parings and tough outer leaves of vegetables.

2.3 Sample Frame

The list of households obtained from the 2001/2 Ethiopian Agricultural Sample Enumeration (EASE) was used as a frame to select EAs from the rural part of the country. On the other hand, the list consisting of households by EA, which was obtained from the 2004 Ethiopian Urban Economic Establishment Census, (EUEEC), was used as a frame in order to select sample enumeration areas for the urban HICE survey. A fresh list of households from each urban and rural EA was prepared at the beginning of the survey period. This list was, thus, used as a frame in order to select households from sample EAs.

2.4 Sample Design

For the purpose of the survey the country was divided into three broad categories. That is; rural, major urban center and other urban center categories.

Category I: <u>Rural</u>: - This category consists of the rural areas of eight regional states and two administrative councils (Addis Ababa and Dire Dawa) of the country, except Gambella region. Each region was considered to be a domain (Reporting Level) for which major findings of the survey are reported. This category comprises 10 reporting levels. A stratified two-stage cluster sample design was used to select samples in which the primary sampling units (PSUs) were EAs. Twelve households per sample EA were selected as a Second Stage Sampling Unit (SSU) to which the survey questionnaire were administered.

Category II:- Major urban centers:- In this category all regional capitals (except Gambella region) and four additional urban centers having higher population sizes as compared to other urban centers were included. Each urban center in this category was considered as a reporting level. However, each sub-city of Addis Ababa was considered to be a domain (reporting levels). Since there is a high variation in the standards of living of the residents of these urban centers (that may have a significant impact on the final results of the survey), each urban center was further stratified into the following three sub-strata.

Sub-stratum 1:-	Households having a relatively high standards of living
Sub-stratum 2:-	Households having a relatively medium standards of living and
Sub-stratum 3:-	Households having a relatively low standards of living.

The category has a total of 14 reporting levels. A stratified two-stage cluster sample design was also adopted in this instance. The primary sampling units were EAs of each urban center. Allocation of sample EAs of a reporting level among the above mentioned strata were accomplished in proportion to the number of EAs each stratum consists of. Sixteen households from each sample EA were finally selected as a Secondary Sampling Unit (SSU).

Category III: - Other urban centers: - Urban centers in the country other than those under category II were grouped into this category. Excluding Gambella region a domain of “other urban centers” is formed for each region. Consequently, 7 reporting

levels were formed in this category. Harari, Addis Ababa and Dire Dawa do not have urban centers other than that grouped in category II. Hence, no domain was formed for these regions under this category.

Unlike the above two categories a stratified three-stage cluster sample design was adopted to select samples from this category. The primary sampling units were urban centers and the second stage sampling units were EAs. Sixteen households from each EA were lastly selected at the third stage and the survey questionnaires administered for all of them.

2.5 Sample Size and Selection Scheme

Category I: - Totally 797 EAs and 9,564 households were selected from this category. Sample EAs of each reporting level were selected using Probability Proportional to Size (PPS) with systematic sampling technique; size being number of households obtained from the 2001/2 Ethiopian Agricultural Sample Enumeration. From the fresh list of households prepared at the beginning of the survey 12 households per EA were systematically selected and surveyed.

Category II: - In this category 485 EAs and 7,760 households were selected. Sample EAs from each reporting level in this category were also selected using probability proportional to size with systematic sampling method; size being number of households obtained from the 2004 EUEEC. From the fresh list of households prepared at the beginning of the survey 16 households per EA were systematically selected and covered by the survey.

Category III:-127 urban centers, 275 EAs and 4,400 households were selected in this category. Urban centers from each domain and EAs from each urban center were selected using probability proportional to size with systematic sampling method; size being number of households obtained from the 2004 EUEEC. From the listing of each EA 16 households were systematically selected and the survey was carried out on the 16 ultimately selected households.

Including region rural, region urban and country domains, totally 61 reporting levels (including the 10 sub-cities of Addis Ababa) were formed. For the overall distribution of planned and covered EAs and households see Annex II.
Estimation procedures, standard errors and coefficients of variations for the estimates of selected variables are also presented in Annex III & Annex IV, respectively.

2.6 Data Collection

The data collection of the HICE survey in the first round and second round has taken place from 4 July to 3 August 2004 and from 4 February to 5 March 2005, respectively. A total of 3114 enumerators and 623 field supervisors with an average supervisor-enumerator ratio of one to five together with about 75 technical staff from the branch offices were involved in the field work.

In all of the selected sample units data were collected from 12 sample households from each rural sample EA and 16 households from each urban sample EA. In every EA two enumerators were assigned for the data collection in such a way that an enumerator has to collect data from six households in rural and from eight households in urban areas.

Data were collected in such a way that the six rural and eight urban households that were handled by one enumerator, were interviewed over a period of four weeks. The enumerator assigned in rural area visited two households daily and those enumerators assigned in urban EA visited two-three households daily, so that data has been collected from each sample household twice a week, i.e. for eight times during the survey month in each round. It is believed that the frequent visits made by the enumerators to each household was essential to control errors arising from memory lapse that is common in household surveys of this nature.

In relation to the nature and type of expenditure, different reference periods were used to collect information from each household /member of household. The reference periods used for data collection of different variables are given in summary Table B.

Summary Table 2.1 Reference Periods of Data Collection

Type of Data	Reference Periods
1. Population Characteristics	Beginning of Survey date
2. Food, Beverages and Tobacco	Twice weekly (3-4 days)
3. Clothing and Footwear	Last 3 & Last 6 Months
4. Housing, water, fuel & power	Conditional
▪ Water	Twice Weekly (3-4 Days)
▪ Fuel & power	Twice Weekly (3-4 Days)
▪ Other Durable Goods and Long Term Services	Last 3 & Last 6 Months
5. Furnishings, Household Equipment & Maintenance	Conditional
• Goods & Services for Routine Household Maintenance	Twice Weekly (3-4 Days)
• Other Durable Goods and Long Term Services	Last 3 & Last 6 Months
6. Health	Conditional
• Pharmaceutical Products & Drugs	Twice Weekly (3-4 Days)
• Medical Treatment and Other Health Expenses	Last 3 & Last 6 Months
7. Transport	Conditional
• Transport Service Charges	Twice Weekly (3-4 Days)
• Purchase, Operation and Other Durable Goods & Long Term Services	Last 3 & Last 6 Months
8. Communication	Conditional
• Frequent Service Charges	Twice Weekly (3-4 Days)
• Equipments, Rent and Maintenance	Last 3 & Last 6 Months
9. Recreation & Culture	Conditional
• Recreational and Cultural Services and News paper	Twice Weekly (3-4 Days)
• Equipments, Accessories & Repairs	Last 3 & Last 6 Months
10. Education	Conditional
• Educational Materials	Twice Weekly (3-4 Days)
• Educational Services	Last 3 & Last 6 Months
11. Miscellaneous Goods and Services	Conditional
• Personal Care & Financial Services	Twice Weekly (3-4 Days)
• Personal Effects (Goods) and other Durable Goods and Long Term Services	Last 3 & Last 6 Months

Both interview and objective methods of data collection were introduced to collect data from households and individuals using four modules. Interview method was used to collect information related to population characteristics, amount of expenditure, type of expenditure and source of expenditure. Objective method was used, basically, to measure consumption of food and beverages. Also, objective measurements had been used for non-industrial commodities such as fire wood, charcoal, … etc.

Apart from the HICE survey, price survey was also conducted side by side in a near by market, that is a market located around the selected EA. The basic objectives of the price survey were to:

- furnish price data for the purpose of valuation of consumed items in the cases where value or quantity is missing during data processing operation, and
- provide price data that would be used for consistency checking activities during the data processing activities.

2.7 Field Supervision

In survey of this type, regular and intensive supervision is necessary and crucial component of the whole data collection process. A regular supervision, which is also compulsory activity in the CSA surveys, has been undertaken at various levels to ensure the quality of the data. The permanent field supervisors were assigned to take care of the day-to-day supervision activities. Branch Statistical Office heads and statisticians were also involved in the regular supervision operation. Moreover, most of the professionals and sub professionals from the head office that were engaged in the training of the field staff were also deployed in the actual field supervision. A team comprised the top management has also visited the fieldwork of the survey.

2.8. Data Processing

The data processing activities were undertaken at the head office. These activities included manual editing, coding, verification, and data capturing (data entry) in its first

stage. Consistency checking, and data validation activities has been carried out in the second stage, while estimation with proper sampling weights and tabulation activities were carried out in the final stage of the data processing by concerned professionals.

2.8.1. Data Editing, Coding and Capturing

The first step of data processing activities was the training of 40 data editors/ coders and 20 supervisors by subject matter department staff members for the first round survey data. The data capturing (data entry) operation was carriedout using about 60 computers and as many data encoders. Similarly, the data processing activities of the second round survey were undertaken by about 60 editors/coders and 25 verifiers for about 85 days. Data entry operation took about 60 days using 125 computers and as many data encoders.

2.8.2 Data Validation and Cleaning

Data validation and cleaning activity was carried out by subject matter specialists and data processing programmers. The data cleaning and validity checking activities were carried out at commodity, and visit levels and has been done systematically. For this purpose various type of edit specification documents were prepared by subject matter specialists and used for the data cleaning purpose. The data cleaning and validation activities have passed through various steps, such as:

- Estimation of missing observations (either value or quantity) using the available results of the price survey that was collected at the time of the survey from a near-by market places;
- Validity and consistency of quantity and value of consumption items were checked at a visit level based on internal [1]and/or external [2] price data;
- Estimation (conversion) of consumption of own production using the observed quantities and the external price survey data;

- Comparison of the household expenditure were made on durable goods that were collected at different reference periods (3 and 6 months) in order to decide whether to utilized the 3 or 6 month's data for the analysis, and similar validation techniques have been carried out.

After completing the data cleaning and validation activities two sets of six month's estimates were separately created prior to merging the two rounds data sets. Due to the nature of the survey, the validity checking and data cleaning activity has taken a long period of time.

[1]Internal price is the value of consumption expenditure of commodities converted into price per standard unit.

[2]External price is the price of commodities generated from the price survey, that has been collected during the HICE survey in the near by market places of the selected EAs

CHAPTER 3

MAJOR SURVEY FINDINGS

3.1 SOCIOECONOMIC CHARACTERISTICS

3.1.1 Introduction

Following on from the survey specific characteristics highlighted in the previous Chapter, this chapter provides a focuses on the descriptive data of the main socio-economic factors, such as demographic characteristics of household members i.e. gender, age, educational status, occupational status, relationship to head and marital status and other general demographic characteristics, and the relation to expenditure. Wherever possible it also provides a more distinct focus and explanation of trends by disaggregating the analysis, for example, by focusing on issues such as dependency ratios, gender of household head, …etc.

3.1.2 Population and Household Size

On the basis of the 2004/5 HICE the total population of the sedentary areas of the country, excluding Gambella, at the time of the survey was 64.5 million, increasing from 56 million in 1999/00, with roughly equally proportions of males and females across periods (for example in 2004/5 there were 31.7million males and 32.8 million females). As would be expected such figures are much in line with the larger samples that the WM survey comprises. Based on the Welfare Monitoring Survey 2004, the total population estimate was 64.7 million. The rural and urban population was estimated at 55.3 million (27.5 million males and 27.8 million females) and 9.1 million (4.2 million males and 4.9 million females), respectively.

Considering the household size, Summary Table 3.1 indicates a national/urban/rural perspective 16.6% of households have the most commonly observed household size of 6 members. Urban household size appears to be slightly smaller compared with rural

households with the most common size being 5 individuals. Prior HICE reports - 1995/96 and 1999/00 identified the national average household size have decreased from 5 (1995/96) to 4.9 (1999/00), figures in Summary Table 3.2 indicate that this has now reduced to 4.8. Considering the urban/rural dimension the average household size for urban (rural) based households has decreased from 4.7 (5.1) in 1995 to 4.3 (4.9) in 2005.[2]

Summary Table 3.1: Percentage Distribution of Household Members by Household Size, Expenditure Quintile and Place of Residence, Country-2004/5

Exp. Qui.	Place of Residence	Household Size									
		1	2	3	4	5	6	7	8	9	10
1	R+ U	5.7	18.7	21.1	21.7	16.3	9.5	4.4	1.6	0.9	0.1
	R	5.1	19.0	20.9	21.6	16.3	9.9	4.6	1.6	1.0	-
	U	9.2	17.1	22.4	22.8	16.0	7.6	2.7	1.4	0.4	0.4
2	R+ U	0.8	6.8	16.3	17.8	18.4	19.5	11.8	4.5	2.1	1.9
	R	0.4	6.4	16.4	18.0	18.4	19.8	12.1	4.5	2.2	1.9
	U	3.4	10.5	16.1	16.3	19.2	16.6	9.8	4.8	1.2	2.1
3	R+ U	0.4	3.2	9.2	18.6	18.0	16.3	16.8	9.0	4.3	4.2
	R	0.2	2.8	8.7	18.7	18.7	16.2	17.0	9.0	4.4	4.3
	U	2.3	6.4	13.6	17.9	11.5	17.0	14.6	8.9	3.9	3.9
4	R+ U	0.3	1.4	5.3	10.9	17.8	18.8	18.3	14.3	6.6	6.4
	R	0.1	0.8	4.8	10.6	17.5	19.7	19.4	14.7	6.5	6.0
	U	1.8	5.4	9.4	13.9	19.7	11.7	10.0	11.4	7.3	9.4
5	R+ U	0.3	0.9	2.4	7.3	10.9	16.3	19.1	14.0	12.8	16.0
	R	0.1	0.5	1.4	5.9	9.4	16.3	20.3	15.0	14.2	16.8
	U	0.8	2.6	6.0	12.1	16.5	16.4	14.6	10.3	7.6	13.0
Total	R+ U	1.1	4.7	9.2	14.1	15.9	16.6	15.3	9.9	6.3	6.9
	R	0.8	4.4	8.9	13.8	15.8	16.9	16.0	10.1	6.5	6.8
	U	2.6	6.7	11.3	15.3	16.6	14.5	11.6	8.4	5.2	7.8

Summary Table 3.1 also shows the percentage distribution of household members by household size and expenditure quintile. A further observable general trend is that households in the highest quintiles also have a higher household size. For example, the most common household size in the lowest quintile is 4 persons [21.7% of individuals in the first quintile live in households with 4 individuals, compared with 10.9% of individuals in the highest quintile]. This increase in household size as households increase their expenditure appears to be relatively smooth across the quintiles. For example, by looking at the middle income quintiles (3 to 4) the median household size increases, from 4 to 6 individuals.

[2] 1995 figures based on HICE 1995 report.

Summary Table 3.2 indicates the average household size, disaggregated by region. Oromiya has the highest average household size with 5.2 persons per household, while the average household size observed in the rest of the regions range from 4.3 persons (in Harari) to 4.9 persons per household observed in Addis Ababa.

Summary Table 3.2:Average Household Size, Percent of Population by Broad Age Group, Dependency Ratio and Region

Region	Average HH Size	Broad Age Group in Years				Depend. Ratio[2]
		0-9	0-14	15-64	65+	
Coutry - Total	4.8	33.6	47.2	49.5	3.3	102
Urban	4.3	23.0	36.1	60.7	3.2	65
Rural	4.9	35.2	49.0	47.7	3.3	110
Tigray	4.6	31.9	45.9	49.9	4.2	100
Afar	4.4	29.6	42.8	55.0	2.1	82
Amhara	4.5	31.7	45.7	50.5	3.8	98
Oromiya	5.2	35.7	50.0	46.8	3.2	114
Somali	4.8	33.8	47.3	50.0	2.7	100
Ben-Gumuz	4.7	32.5	45.5	52.4	2.1	91
SNNP	4.8	35.4	48.1	49.2	2.7	103
Harari	4.3	29.1	40.6	55.5	3.9	80
Addis Ababa	4.9	15.7	26.9	69.7	3.4	43
Dire Dawa	4.4	24.8	37.7	58.5	3.8	71

3.1.3 Household Composition

Summary Table 3.2 also reveals descriptive data regarding the composition of households.

- Firstly, slightly over one third of the population are less than 10 years of age and almost 47.2% are less than the lower limit of the normal working age (15 years). However, this appears to be largely compensated by 49.5% of population being of a working age.

[2]Number of non working aged (<15 and>64 years) individuals over number of workings aged individuals.

- Rural/urban households comprise approximately 48%/61% working aged adults. Naturally this data does not reflect the capabilities of the working aged individuals but does at least in part, reflect the earning capacity of households. This appears further accentuated when looking at urban/rural households and the proportion of children in households - almost half of all rural households are comprised of children (aged 0-14 years of age), compared with 36.1% for urban households.

The dependency ratio for the country is computed to be about 102 (Summary Table 3.2), which implies that every 100 persons at economically productive age group is responsible to take care of themselves and additional 102 persons (children and aged population). The survey has indicated high variation in dependency ratio with higher dependency ratios in rural areas than urban. The dependency ratios for urban and rural areas are estimated to be 65 percent and 110 percent, respectively.

From a regional perspective the highest dependency ratio (114 percent) is observed in Oromiya, while the lowest is observed in Addis Ababa (43 percent) followed by Dire Dawa (71 percent).

Considering the distribution of household members, across age groups and expenditure quintiles perhaps one of the most interesting observations is that:

- Disproportionate numbers of children (under 10 years of age) live in the higher quintile households - they comprise 48.1% of households compared with 41.1% for the lowest expenditure quintile.
- Greater proportions of old aged individuals are in the lower quintile households than the higher quintile households.

Although the highest quintile households appear to contain the most children, as noted earlier, it is important to consider the dependency ratio – the proportion of dependant aged individuals (<15 years and 65 years or more) relative to the working aged individuals. Summary Table 3.3 below, reveal that the proportion of dependants to adults for the quintile

1 is 91 dependants per 100 adults (0.91 dependents per adult) but this varies significantly by rural/urban 94169 (i.e., 0.94/0.69 per adult).

Summary Table 3.3: Percentage Distribution of Population by Broad Age Group and Dependency Ratio, Country Level - 2004/5

Background Variable	Area of Residence	Expenditure Quintile 1	2	3	4	5	Total
Children Age	Rural +Urban	40.4	45.9	48.4	49.6	48.1	47.2
0-14 years	Rural	41.5	47.2	49.7	51.1	51.5	49.0
	Urban	34.0	36.1	37.4	37.8	35.5	36.1
Working Age	Rural +Urban	52.4	50.1	49.1	47.8	49.7	49.5
15-64 Years	Rural	51.7	48.8	47.9	46.3	46.4	47.7
	Urban	59.3	60.0	59.6	59.7	62.2	60.7
Old Age > 64	Rural +Urban	7.2	4.0	2.5	2.6	2.2	3.3
Years	Rural	2.3	4.0	2.4	2.6	2.1	3.3
	Urban	6.7	3.9	3.0	2.5	2.3	3.2
Dependency	Rural +Urban	90.8	99.6	103.7	109.2	102.2	102.0
Ratio	Rural	94.4	104.9	108.8	116.0	115.5	109.6
	Urban	68.6	66.7	67.8	67.5	60.8	64.7

Interestingly the ‘dependency gap’ between rural and urban grows as households increase their expenditure, with the dependency ratio of urban areas almost half that of rural areas, for the highest quintile households. Such figures would seem to strongly support the fact that urban households are significantly more advantaged regarding the proportion of potential workers.

If we consider household composition over time, comparing for example 1995 HICE reports (Summary Table 3.4) we find that the age composition of national and rural households has remained relatively static. Interestingly however urban households appear to have undergone a degree of structural demographic change with:

- The proportion of children (aged less than 15 years) in urban households in 1995/6 was 40.1% compared with 36.1% in 2004/5.
- The proportion of working aged adults is higher in 2004/5, with 60.7% compared with 56.4% 10 years ago. This has resulted in a dependency ratio decrease from 77.3% to 64.7% for urban areas, compared with an overall average increase from 99.2% to 102%.
- The proportion of old aged individuals in urban areas has also decreased over the 10 year period (3.5% to 3.2%).

Summary Table 3.4: Percentage Distribution of Population by Broad Age Group, Dependency Ratio and Survey Year

Background Variable	1995/6			1999/0			2004/5		
	All	**Urban**	**Rural**	**All**	**Urban**	**Rural**	**All**	**Urban**	**Rural**
Children (0-14 years)	46.4	40.1	47.5	47.0	38.6	48.3	47.2	36.1	49.0
Working Age (15-64)	50.2	56.4	49.2	49.8	58.0	48.5	49.5	60.7	47.7
Old Age (>64 years)	3.4	3.5	3.3	3.2	3.4	3.2	3.3	3.2	3.3
Dependency Ratio	99.2	77.3	103.3	100.8	72.4	106.2	102.0	64.7	109.6

3.1.4 Household Heads and Members – Quintile Disaggregation

From a gender perspective we note from Summary Table 3.5, below that there appears to be significant gender household head differences across the expenditure quintiles.

- For the population in quintile 1 of the population roughly equal proportions are male (Male Headed Households - MHH) and female (Female Headed Households – FHH).
- However the gender differences increase with household expenditure. For example, of the top two quintiles approximately 85.4% of the households are headed by males.

From a rural/urban perspective, the gendered quintile distribution of household heads as equally diverse as that at the country level. For example:

- 25.3% (60.7%) of urban households in the highest (lowest) quintile are fema

headed. The differences are even more extreme for rural households with on 11% of the households in the top quintile being FHH's and 47.4% in the bottc quintile.

Summary Table 3.5: Distribution of Households, by Gender of Head, Expenditure Quintile and Place of Residence - 2004/5

		Quintile 1	Quintile 2	Quintile 3	Quintile 4	All
Country	**MHH**	50.5%	72.1%	79.2%	85.4%	74.5%
	FHH	49.5%	27.9%	20.8%	14.6%	25.5%
Urban	**MHH**	39.3%	55.0%	63.4%	67.0%	61.4%
	FHH	60.7%	45.0%	36.6%	33.0%	38.6%
Rural	**MHH**	52.6%	74.6%	81.5%	88.2%	77.0%
	FHH	47.4%	25.4%	18.5%	11.8%	23.0%

Comparing such issues across time, and specifically with the 1995 HICE data:

- On average the proportion of quintile 1 FHH has increased from 43.5% to 45.5%and the proportion of FHH in quintile 5 has remained roughly constant (Figure 3.1).
- In the higher expenditure range (quintile 4) the proportion of FHH's in 2004/5 decreases below the 1995/6 level - i.e. there appears to be smaller proportions of FHH's in the upper expenditure range in 2004/5 than 10 years earlier.

Figure 3.1: Proportion of Female Headed Households (FHH) for 1995 and 2005, Disaggregated By Quintiles

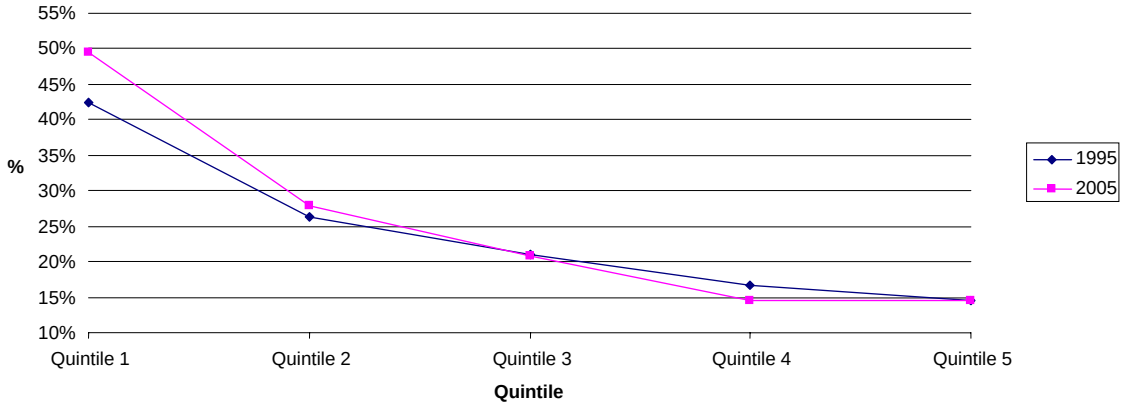
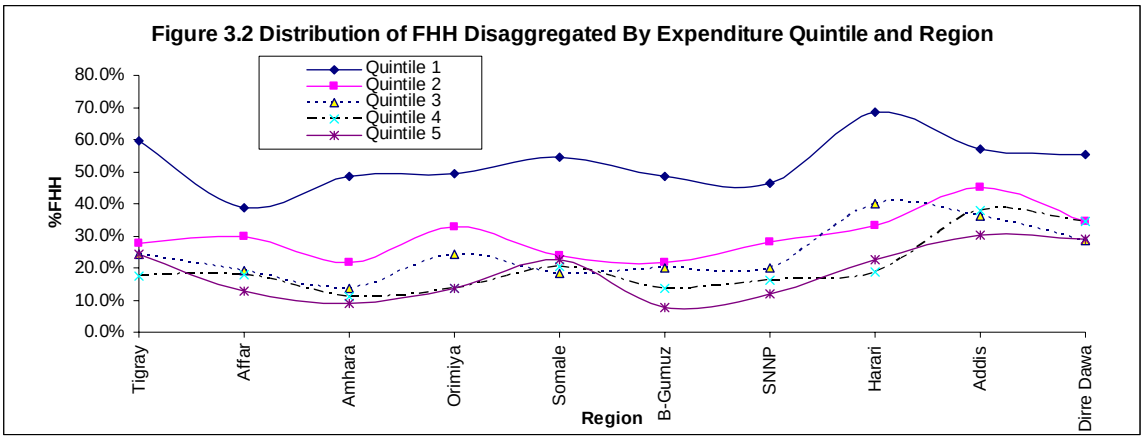


Figure 3.2 shows the distribution of female headed households across all the quintiles and regions. Beyond the lowest quintile, there is a fairly dramatic fall in the proportion of households that are FHH. Hence FHH appear to be particularly biased towards being in the lowest quintile of all regions.



Summary Table 3.6 considers household members and which indicates a relatively unequal distribution of males and females, across the expenditure quintiles. The proportion of male population increases as the household expenditure quintile increased, while the reverse is true for female household members.

Summary Table 3.6: Percentage Distribution of Population by Gender, Expenditure Quintile and Place of Residence-2004/5

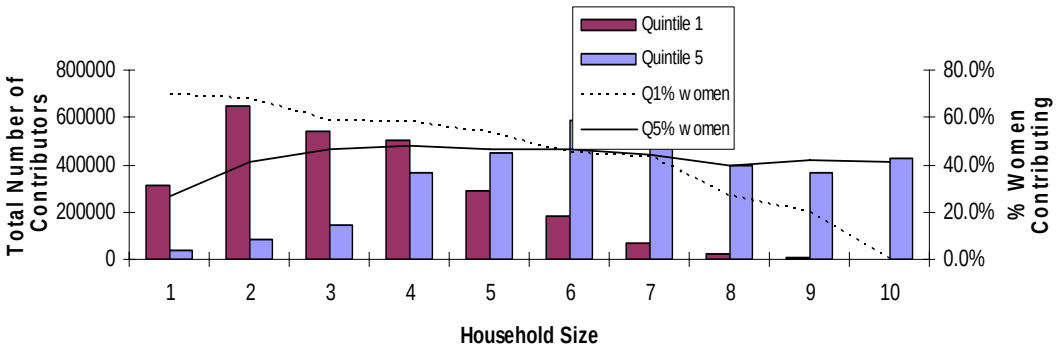
Place of Residence	Gender	Expenditure Quintile					
		1	2	3	4	5	Total
Country	Male	43.1	47.7	49.6	51.2	51.0	49.2
	Female	56.9	52.3	50.4	48.8	49.0	50.8
Rural	Male	43.3	48.0	50.0	51.7	52.0	49.7
	Female	56.7	52.0	50.0	48.3	48.0	50.3
Urban	Male	42.0	44.9	46.6	46.8	47.2	46.1
	Female	58.0	55.1	53.4	53.2	52.8	53.9

For example, it is worth noting that of the individuals in the lowest expenditure quintile, about 57% are females and 43.1% are males compared with the highest expenditure quintile where there are 49% females and 51% males.

3.1.5 Income Contributed Household Members

The survey questionnaire also includes additional component intended to indicate those household members (regardless of age/economic activity) who have contributed income (cash or kind) to the household at least once within a duration of 6 months prior to the survey date. Figure 3.3 displays the distribution of income contributor household members, disaggregated by household size, gender and expenditure quintile.

Figure 3.3: Total Number of Income Contriuting Household Members Disaggregated by Exp. Quintiles and Gender



For households with one member, and in expenditure quintile 1 the proportion of female heads contributing income is 69.1%, compared with the highest quintile single households where 73.3% of income contributors are male (i.e. only 26.7% are females). Figure 3.3 also shows that the total number of income contributing household members decreases, for quintile 1 households, as the household size increases. The reverse is true for quintile 5 households.

To summarize the results from the aforementioned figure:

- As household size increases the proportion of working women, for quintile 1 households, reduces quite dramatically. Intuitively one may think that stark reduction in the proportion of women contributing income to households might simply be reflective of an increase in domestic and caring duties associated with a growing household size. However, it is interesting to compare the trend in the proportion of total women income contributors of quintile 1 and quintile 5. The proportion of total income contributing women in the highest quintile relative to men, increases dramatically as households increase their size from 1 to 3 individuals, before leveling off.
- This 'leveling off' of female contributors for the highest expenditure quintile may reflect their higher levels of human capital, relative to the lowest quintile females, and therefore a far higher capacity to generate extra income.

If we compare the aggregate number of workers relative to household size for quintile 5, household size increases with the number of people contributing to household income increases, up to a household size of seven persons. This contrasts with the lower expenditure households, and is surely reflective of the large number of dependants that the lowest quintile households have, relative to the higher quintiles.

3.1.6. Literacy and Expenditure

In this survey, a person is considered to be literate if she/he can read with understanding and write a short statement at least in one language. Every member of a household aged five years and over was asked to state whether she/he is literate or not. However, literacy rate is computed in compliance with the UN recommendations as the proportion of the literate population from the domain of individuals aged 10 years and above.

Summary Table 3.7 focus on literacy rate (illiterate) household members and as highlighted in prior household survey descriptive data (WM 2004) - approximately 37.6% of the country

are literate. Using the HICE data to analyze this further significant rural/urban/quintile differences in literacy rates appear to be present.

Summary Table 3.7: Percentage Distribution of Illiterate Household Members by Expenditure Quintile, Gender and Place of Residence - 2004/5

Place of Residence	Gender	Expenditure Quintals					All
		1	2	3	4	5	
National	All	75.0	70.6	65.0	61.2	50.1	62.4
	Male	61.5	59.9	54.0	50.1	39.5	50.6
	Female	84.0	79.6	75.5	72.9	61.3	73.3
Rural	All	80.9	76.0	70.6	66.8	60.1	69.4
	Male	68.5	65.3	59.3	54.7	47.9	57.2
	Female	89.3	85.3	81.6	80.0	73.7	81.3
Urban	All	44.8	33.7	27.4	23.6	18.5	26.3
	Male	26.6	21.4	15.6	14.1	8.9	14.7
	Female	56.7	43.4	37.2	31.8	26.8	35.8

- On average 44.8% (80.9%) of the urban (rural) lowest quintile households are illiterate.
- Relatively large gender differences also appear to exist with 89.3% of rurally based females, in the lowest quintile, being illiterate compared with 68.5% of men. Analyzing this across expenditure classification reveals that, unsurprisingly, illiteracy levels decrease as expenditure quintiles increase. For example, the proportion of illiterate, rurally based, individuals decreases to 73.7% and 47.9% for female and males, respectively, as expenditure increase to the highest quintile.

Considering the proportion change in illiteracy status across quintiles (Figure 3.4) and disaggregating by gender we can see that:

- Notably, moving from the 4^{th} to the 5^{th} quintile provides some distinct reductions of illiteracy status - particularly in rural areas. For males and females illiteracy rates fall by 12.4% and 7.9%, respectively, when comparing the 4^{th} and 5^{th} quintile.

- Across most quintiles the reduction in female illiteracy is less than that for males (a notable exception to this is for the move from quintile 1-2 and urban based males and females)

Figure 3.4 Percentage Change in Illiteracy Disaggregated by Rural/Urban Male/Female Across Quintiles

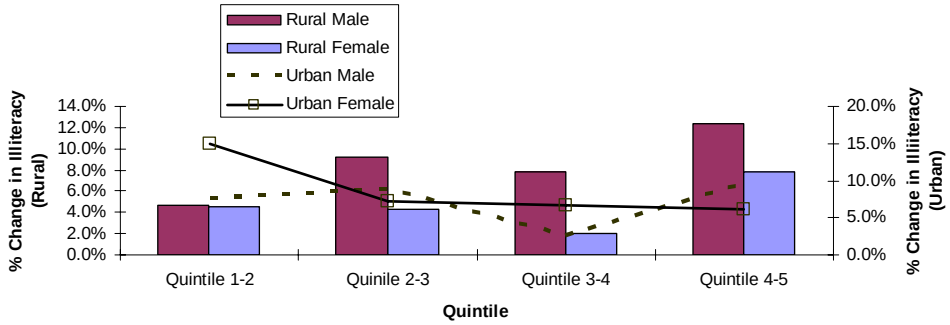
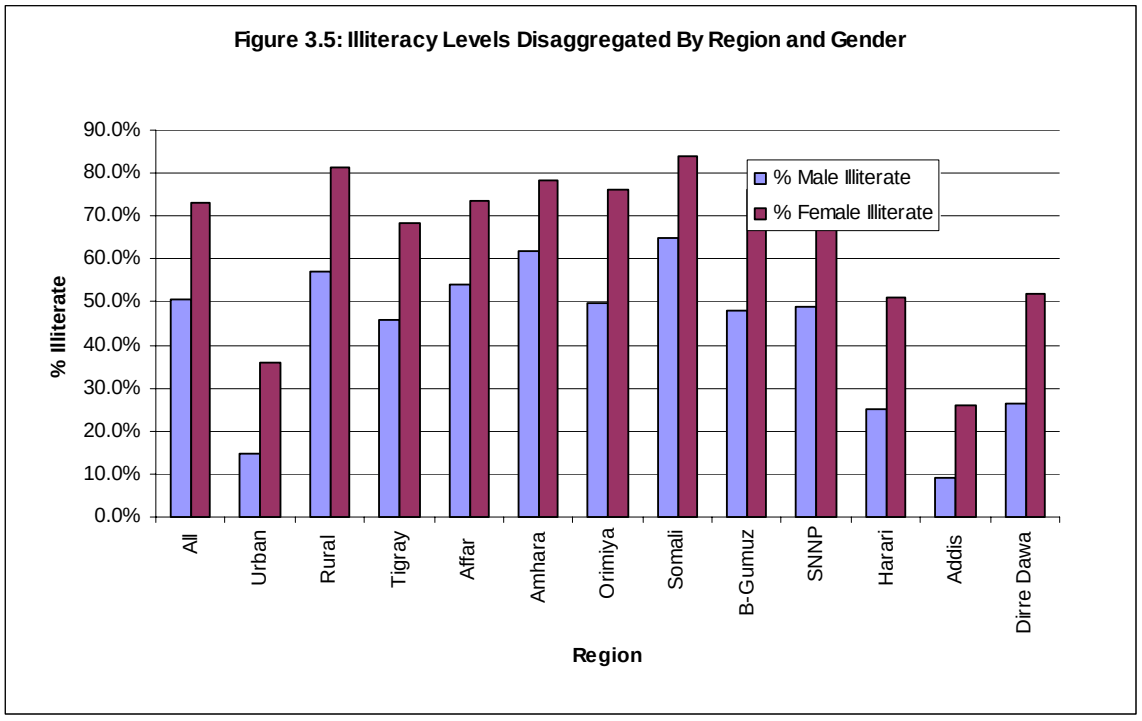


Figure 3.5 highlights some of the interesting regional differences of illiteracy, across both quintiles and gender. Across regions, the average level of female illiteracy (73.3%) is higher than that for males (50.6%), with the largest inequalities between males and females being in Benishangul-Gumuz and Oromiya, where 28.3% and 26.5% more males are literate than females.



3.1.7 Educational Level and Expenditure

Summary Tables 3.8, 3.9 and Figure 3.6 consider the educational level of household head and individual member and disaggregated by expenditure quintiles and gender. Considering household heads, Summary Table 3.8, indicates that only 10.2% of all household heads have completed the final levels of primary education(i.e., above grade 6). In the lowest (highest) quintile only 4.9% (18.9%) have completed above grade 6.

Major educational attainment differences exist across rural and urban areas:

- 4.9% (38%) of the rural (urban) based population heads having completed the upper levels of primary (grade 7-8) education, or above.
- On average 5.8% (46.6%) of MHH rural (urban) based households have completed upper levels of primary education (grade 7-8) and secondary, compared with 24.4% and 1.7%.

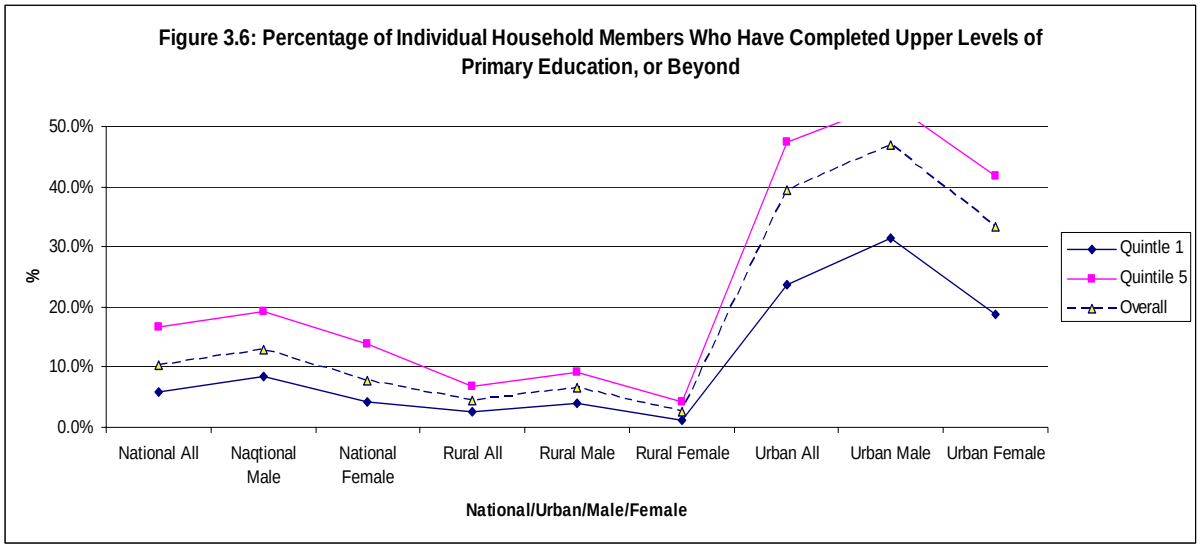
Summary Table 3.8 indicates that in all cases smaller proportions of FHH, relative to males. Perhaps surprisingly this is particularly acute in the higher quintile rural (urban) households where for example only 1.8% (36.8%) of FHH have completed upper levels of primary education or above compared with 8.9% (56.5%) of MHH.

Summary Table 3.8: Percentage of Household Heads Who Have Completed Above Grade 6, Disaggregated by Expenditure Quintile and Gender

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Overall
National						
All	4.9%	6.5%	9.4%	11.1%	18.9%	10.2%
Male	6.1%	6.4%	9.7%	11.4%	19.2%	11.3%
Female	3.6%	6.8%	7.7%	10.3%	17.1%	7.1%
Urban						
All	18.5%	29.6%	36.5%	44.4%	51.4%	38.0%
Male	25.7%	34.9%	42.3%	52.0%	56.5%	46.6%
Female	13.7%	23.1%	26.8%	29.6%	36.8%	24.4%
Rural						
All	2.3%	3.0%	5.3%	6.1%	8.1%	4.9%
Male	3.4%	3.5%	6.1%	6.6%	8.9%	5.8%
Female	1.1%	1.6%	2.2%	2.5%	1.8%	1.7%

When we consider educational attainment beyond secondary, interestingly the inequality gap between the highest and lowest quintile household heads seems to grow further than what appeared with primary education. For example, and as already noted, the average proportion of lowest quintile heads not completing primary education is 5.2% compared with 20.2% of the highest quintile.

If we consider educational attainment across all household members (Figure 3.6) are the rural/urban/quintile differences for individual members who have reached the upper levels of primary education or beyond (i.e. secondary education, university). As would be expected the proportion of individuals in the highest quintile who have completed these educational levels is higher than that of the lower quintiles, as is the case for more men than women.



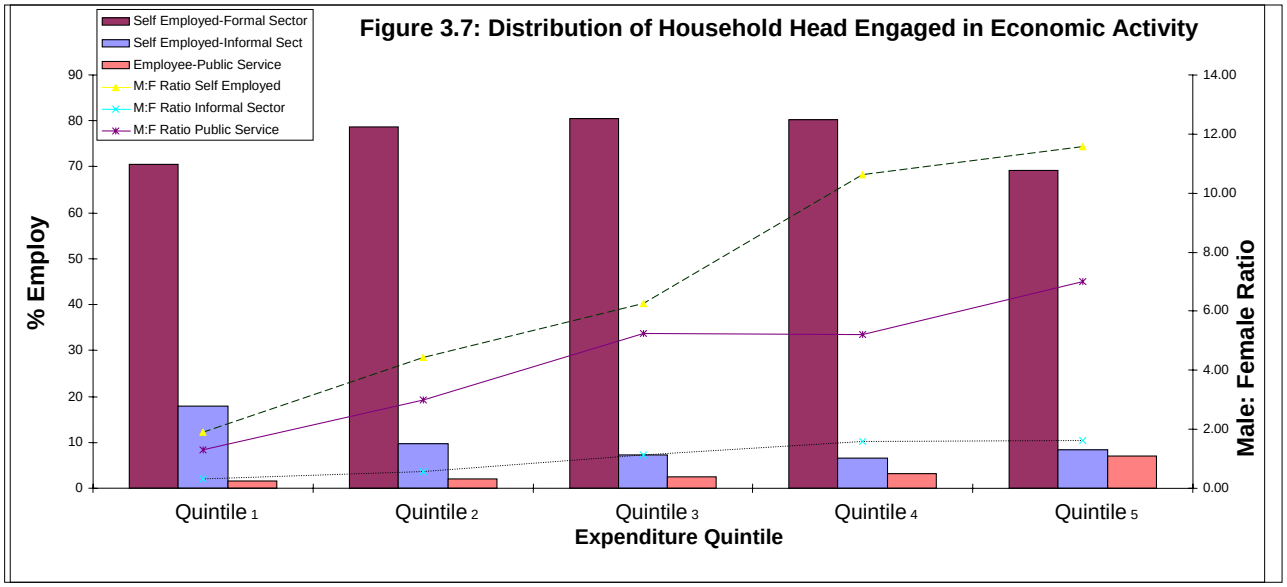
For regional comparisons of educational attainment (Summary Table 3.9) the higher proportions of individuals completing primary educational level of 7-8 and beyond is dominated by the relatively high performers of Harari, Addis Ababa and Dire Dawa, with an average of 31.2%, 49.7% and 30.4%, of individuals, respectively completed above grade 6 level of education. The exceptionally high educational attainments that are observed in Addis Ababa, Harari and Dire Dawa are expected, because unlike the rest regions the proportion of urban population of Harari, Addis Ababa and Dire Dawa are 53.7%, 98.8% and 67.8%, respectively. Throughout all regions there appears to be a disparity across gender. Amhara has relatively small differences across male/female school completion, although this is considering the very low level of overall educational attainment in this region.

Summary Table 3.9: Percentage of Population Aged 10 years and above Completing Above Grade 6, Disaggregated By Region and Gender

	All	Tig.	Afar	Amh.	Oro.	Som.	B-Gumuz	SNNP	Har.	Addis Ababa	Dire Dawa
All	10.3	11.0	12.0	5.6	8.9	8.5	9.8	8.7	31.2	49.7	30.4
Men	13.0	13.0	16.2	6.4	12.0	12.0	14.3	12.7	35.5	57.1	38.8
Women	7.8	9.1	7.9	4.9	5.9	5.0	5.0	5.0	27.3	43.5	22.6

3.1.8 Economic Activities

Considering the economic activity of household members, disaggregating by expenditure quintile and gender, Figure 3.7 summarises the household heads economic activities. The majority (76%) are in self employed formal sector (including private peasant agricultural holding in rural areas), self employed informal sector (9.8%) and the public sector, i.e. public enterprise and public service, (4.7%). From a gender perspective, as the ratio of male:females employed household heads in these sectors dramatically increases as expenditure quintiles increase, especially in the public sector (self employed formal sector) where the ratio of males to females in the lowest and highest quintiles increases from 1.6 (1.9) to 6.8 (11.6) men to every women employed.



From a rural/urban and regional perspective:

- Self employed in formal sector work in rural areas (85%), of course including rural agriculture, is far higher than in urban areas (19.5%).
- Self employed informal sector work in urban areas (36.9%) is far higher than in rural areas (5.4%).

Summary Table 3.10 Percentage of Household Heads' and all Members Engaged in Economic Activities by Employment Status and Region - 2004/5

Employment status		All	Rural	Urban	Tigray	Afar	Amhara	Oromiya	Somali	Bensh-Gumuz	SNNP	Harari	Addis Ababa	Dire Dawa
Employer	Head	4.9	5.3	2.3	1.8	1.9	7.1	4.9	1.7	6.8	3.5	3.2	2.2	2.2
	All	2.2	2.3	1.5	1.4	1.3	2.9	2.1	1.0	2.8	1.8	1.9	1.3	1.3
Self employed in Formal Sector	Head	76.0	85.0	19.5	71.6	41.0	77.1	77.6	68.2	78.6	82.4	40.7	17.8	35.1
	All	36.0	38.6	15.0	34.6	25.2	33.6	36.8	38.2	35.1	41.8	25.7	14.1	23.3
Self Employed in Informal Sector	Head	9.8	5.4	36.9	15.6	18.4	9.0	8.8	16.5	5.6	8.0	23.5	25.9	25.6
	All	8.6	5.7	32.8	10.0	15.4	5.7	8.0	15.6	3.7	11.0	31.0	21.6	24.1
Employee in Private Formal	Head	1.9	0.8	8.9	1.8	11.6	1.6	1.6	2.0	1.3	0.6	6.8	15.9	10.9
	All	2.8	2.0	10.0	1.8	10.5	3.4	2.6	1.3	1.6	0.8	5.9	18.0	9.4
Employee in Private Informal	Head	0.9	0.4	3.6	1.2	3.9	0.5	1.0	1.3	0.8	0.4	3.6	4.3	2.1
	All	1.0	0.6	4.4	1.4	3.2	0.4	1.1	1.0	0.5	0.9	2.9	5.0	2.5
Employee in public Enterprise	Head	1.4	0.7	5.9	2.1	12.1	1.0	0.9	2.5	1.3	1.1	3.0	9.8	6.6
	All	1.0	0.5	4.7	2.4	8.1	0.7	0.5	1.6	0.5	0.7	3.3	7.3	5.7
Employee in Public Service	Head	3.3	0.9	18.4	3.9	8.6	2.2	3.0	4.5	5.0	2.8	15.7	16.9	12.7
	All	1.9	0.4	14.1	2.4	5.1	1.2	1.5	2.9	2.7	1.6	13.6	13.3	9.0
Employee in NGO's	Head	0.5	0.3	1.8	0.5	1.1	0.4	0.6	1.0	0.2	0.4	2.5	2.7	1.9
	All	0.	0.2	1.4	0.5	0.6	0.3	0.3	0.5	0.1	0.2	1.5	1.8	1.5
Employee for Households	Head	0.2	-	1.2	0.5	0.2	0.1	0.1	0.5	0.1	0.1	0.4	1.8	1.0
	All	1.0	0.3	6.3	0.8	2.6	0.9	0.6	1.0	1.5	0.4	2.5	11.3	4.7
Unpaid Family Worker	Head	0.8	0.9	0.4	0.4	0.9	0.6	1.2	0.7	0.2	0.6	0.4	0.3	0.4
	All	44.5	48.9	8.3	44.1	27.2	50.3	45.8	35.0	51.1	40.7	11.0	3.6	17.1
Others & Not Stated	Head	0.4	0.2	1.2	0.7	0.4	0.4	0.2	1.1	0.1	0.2	0.4	2.2	1.4
	All	0.5	0.5	1.5	0.7	0.8	0.6	0.9	1.9	0.3	0.2	0.8	2.7	1.0

- Similarly, public sector (public enterprise and service) work accounts for 24.3% of household head urban employment activities compared with 1.6% of rural employment.
- The majority (above 70%) of household heads in Tigray, Amhara, Oromiya, Ben-shangul Gumuze and SNNP Regions are self employed in the formal sector (i.e., including rural agriculture), while the proportion of household heads that are self employed in an informal sector economic activity is below 16%.
- On the other hand, relatively higher proportion of household heads i.e., above 23% (18%) self employed in informal sector (employed in public sector), are observed in Harari, Addis Ababa and Dire Dawa regions.

Considering household members engaged in economic activities similar trends to the above exist, with employment activity largely dominated by self employed formal and informal sector work (36% and 8.6% of all the economic activities) and, in contrast to the household heads, unpaid family work (44.5%).

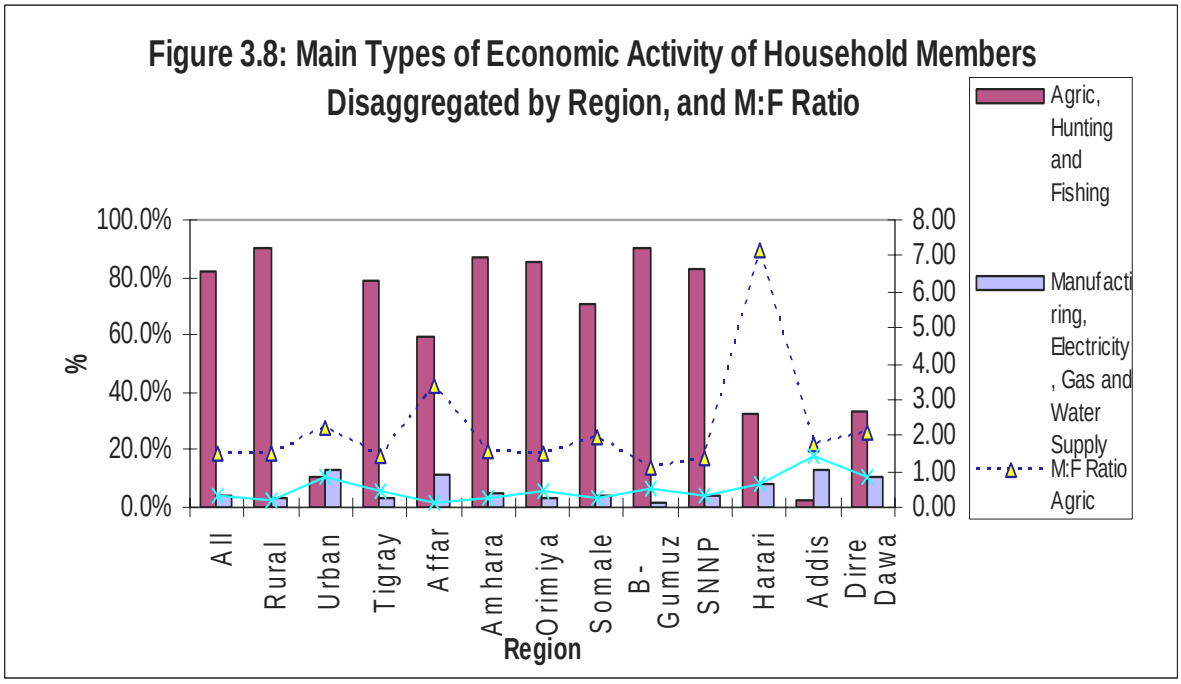
Finally, the major types of economic activities (industry) are focused upon in Summary Table 3.11 for individual household members, including head of households.

- As would be expected the majority (82%) of the population that are economically active are involved in agriculture, hunting and fishing.
- Relatively few differences in this proportion, across quintiles, although interesting gender differences. For example, of the 82% that are involved in agriculture the proportion of men and women in the lowest quintile are roughly equal, but only the ratio of men to women involved in this type of activity, as the highest expenditure quintile is reached increases to approximately two third men to one third women.
- Rurally based activities follow a similar trend, whilst only 10.5% of urban individuals are active in this sector.

Summary Table 3.11: Percent of Household Members Engaged in Economic Activities and Male: Female Ratio by Selected Type of Activities (Industries) and Region.

	Agriculture, Hunting and Fishing		Manufacture, Electricity, Gas & Water Supply		Repair of Motor Vehicle, Motorcycle & others		Hotels and Restaurants	
Region	%	M:FR	%	M:FR	%	M:FR	%	M:FR
All R=U	82.0	1.5	4.4	0.4	5.4	0.4	1.2	0.2
R	90.6	1.5	3.0	0.2	3.3	0.2	0.4	0.1
U	10.5	2.2	13.0	0.8	23.1	0.9	7.4	0.3
Tigray	78.6	1.4	3.6	0.4	4.5	0.5	2.0	0.1
Afar	59.4	3.4	11.6	0.2	8.4	1.1	3.9	0.2
Amhara	86.7	1.5	4.8	0.2	2.5	0.4	1.1	0.1
Oromiya	85.1	1.5	3.0	0.4	5.4	0.4	0.9	0.3
Somali	70.4	2.0	4.3	0.2	12.6	0.4	1.2	0.2
Ben-Gumuz	90.4	1.1	1.6	0.5	2.2	0.8	1.1	0.4
SNNP	82.7	1.4	4.2	0.3	7.3	0.4	1.0	0.2
Harari	32.5	7.1	8.0	0.7	24.4	0.3	1.8	1.6
Addis Ababa	2.6	1.8	13.0	1.4	19.0	1.4	4.5	0.7
Dire Dawa	33.6	2.1	10.6	0.9	20.8	0.5	3.7	0.3

We have also summarized the descriptive data regarding the two main types of economic activities (industry) in Figure 3.8, and have also adopted a gender based analysis to see what proportion of men and women are employed in certain types of industry, across regions. Of the four sectors highlighted in summary table 3.11, these comprise on average almost 93% of individuals economic activity. Areas such as Addis Ababa 19% (13%) predominate in repair of vehicles and the like (and the manufacturing sector), compared with areas such as Benishangul-Gumuz where more than 90% of individuals economic activities are in agriculture, hunting or fishing. Many of these trends are hardly surprising and are much in line with the rural/urban disparities.



Perhaps of greater interest is the male:female activity ratio in the main sectors. The overall average proportion of male to females in agriculture is 1.47 male for every female employed, but varies significantly across some regions. In Addis Ababa generally, the ratio of men to women employed in most of the sectors are above the urban average of the country. In contrast regions such as Amahara have below average number of male to female workers for manufacturing etc, and hotels and restaurant industry.

Summary Table 3.12: Employment Status and Male. Female Ratio of Workers, Disaggregated by Quintiles 1995 96HICE

		Q1	Q2	Q3	Q4	Q5
Employer	Total	1.2%	1.5%	2.0%	2.7%	3.0%
	M:F Ratio	3.86	4.91	8.42	5.84	9.07
Employee	Total	16.0%	9.7%	7.8%	7.1%	7.9%
	M:F Ratio	1.63	2.10	2.50	4.37	7.33
Self Employed	Total	47.2%	42.3%	37.3%	33.0%	34.2%
	M:F Ratio	1.57	3.44	5.86	7.38	6.52
Family Worker	Total	32.5%	43.5%	50.0%	54.3%	52.4%
	M:F Ratio	0.62	0.76	0.96	1.04	1.40

Although the categories of employment are not comparable for 1995 figures in Summary Table 3.12 indicate that the proportion of employee decreases as the expenditure quintiles increase but the ratio of male to female increased by a factor of 6.

3.2 EXPENDITURE CHARACTERISTICS

3.2.1 Introduction

In this section we provide a detailed breakdown of the expenditure characteristics associated with households in addition to also analysing calorie per capita patterns across households. At the end of the chapter we also complement, and extend, the aforementioned descriptive statistics with relatively brief econometric analysis that considers some of the determinants associated with expenditure level differences. This allows us to establish with some degree of confidence the statistical associations of the socio-economic variables associated with per capita expenditure as at 2005.

3.2.2 Overview of Expenditure Per Capita

Firstly we will consider expenditure per capita levels, Summary Table 3.13 shows that the average per capita total expenditure is 1697.35, with average expenditure per capita levels for those in quintile 5 being 117% greater than those in the lowest expenditure quintile (1). As can be seen in Figure 3.9, there is a particularly notable increase in expenditure between quintile 4 and 5, with expenditure per capita increasing by more than 1000 Birr. Such expenditure levels show an increase from previous survey years (Table 3.13) - the annual average of all payments per person at county level was 1319.08 Birr and 1,411.8 Birr in 1995 and 2000, respectively. Nominal, proportional increases over the period 1995-2000 and 2000-2005 are 7% and 20.2%, respectively.

Summary Table 3.13: Total Expenditure Per Capita Disaggregated by Place of Residence and Survey Year- Country Level

Place of Residence	1995	2000	% Change 1995Vs2000	2005	% change 2000Vs2005
All	1319.08	1411.80	7.0	1697.35	20.2
Rural	1210.30	1244.00	2.8	1557.45	25.2
Urban	1918.83	2400.71	25.1	2533.25	5.5

If we focus on the disaggregation of this expenditure by item grouping this allows trends associated with expenditure patterns across all income quintiles to be identified. Food and non-alcoholic expenditure tends to account for approximately 40% of the increase in overall expenditure between the lowest and highest quintile, with the lowest on average spending 665.92 Birr per annum, on such items, compared with the highest quintile who spend an average of 1060.56 Birr (also see Figure 3.9).

Summary Table 3.14: Expenditure per capita Disaggregated by Major Expenditure Group and Quintile-Country Level

	Quintiles					
	1	**2**	**3**	**4**	**5**	**All**
Food and Non Alcoholic Expenditure	665.92	735.65	806.12	888.82	1060.56	863.86
Alcohol and Tobacco	20.3	17.09	15.26	20.01	20.91	18.83
Clothing and Footwear	55.85	74.33	94.65	110.8	234.43	127.26
Housing Water Fuel Energy	309.32	280.8	274.22	272.73	427.94	320.51
Furnishing Household Equipment and Maintenance	26.8	35.67	43.97	58.19	151.54	72.32
Goods and Services for Routine Household Maintenance	9.42	11.18	13.55	17.07	60.25	25.87
Health Medical Treatment	5.73	8.26	8.52	10.97	22.7	12.48
Education	5.94	7.99	10.71	13.22	25.99	14.3
Other (inc. transport, communication miscellaneous)	70.42	97.41	132.49	195.39	540.90	241.92
Total Expenditure per capita	**1169.7**	**1268.38**	**1399.49**	**1587.2**	**2545.22**	**1697.35**

'Other' expenditure, which includes transport communication and miscellaneous items, account for much of the differential associated across the highest and lowest quintiles level. We provide a further investigation of some of these within item group variations below, however to summarize the general expenditure patterns further, on average:

- The largest component of expenditure is food and non-alcoholic expenditure with an average of 863.56 Birr per capita.
- Housing, water and fuel account for the 2nd largest component of expenditure with an average of 320.51 Birr per person per annum. On average this increases by 38% from the lowest to the highest quintile.
- Clothing and footwear is the 3rd largest expenditure per capita item with an average of 127.26 Birr of expenditure per person per annum. Expenditure in

the lowest expenditure quintile is on average spend 55.85 Birr per annum, compared with the highest expenditure quintile average of 234.43 Birr.

- Of the other major item category groups perhaps unsurprisingly expenditure on household furnishings, equipment and maintenance increases with overall expenditure. However, this more than triples between the fourth and fifth highest quintiles (increasing from 58.19 to 151.54 Birr). As would also be expected items such as household maintenance also increases with overall expenditure, as do all other categories. Overall such increases in expenditure per capita seem to be particularly pronounced between the 4th and 5th quintiles.

Figure 3.9: Food and Non-Alcoholic Expenditure Relative to Expenditure Per Capita Disaggregated By Quintiles

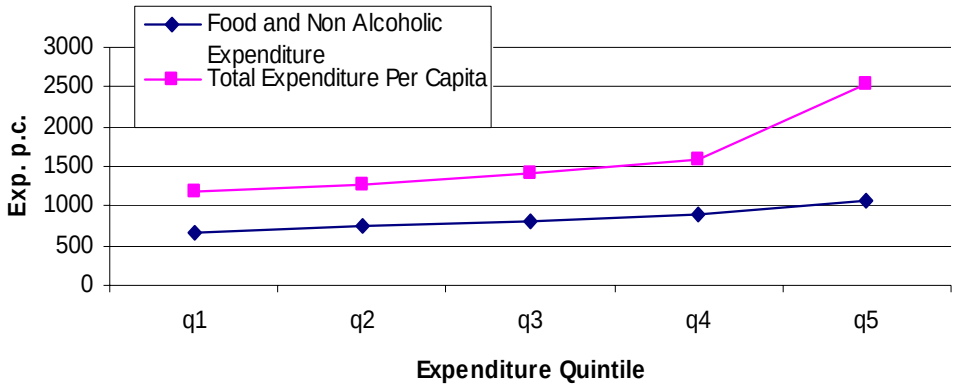


Table 3.15 provides a further focus on the disaggregated items groups by quintile, this time providing a summary of the percentage contributions to the overall expenditure of individuals, comprised from the aforementioned main categories. Of particular note:

- In line with prior expectations food and non alcoholic expenditure comprises a far higher percentage of quintile 1 individuals expenditure (56.93%) compared with individuals in quintile 5 (41.67%). Housing, and utility costs such as water and fuel also provide a significant burden on the lowest quintile individuals. Collectively food/non alcoholic and housing/water/fuel costs comprises 83.37% of the budgets for individual in quintile 1 compared with 58.48% of the budget for those in quintile 5.

- Given such large proportions of expenditure for those in the lowest quintile is on food/housing/fuel equally unsurprisingly highest quintile individuals devote significantly larger proportions of their budgets towards 'luxury' items such as household maintenance, furnishings, clothing and footwear etc. For example, although the average Ethiopian devotes 7.5% (decreasing from 9.5% in 1995, and 7.9% in 2000) of their overall expenditure to clothing and footwear, those in the highest quintile dedicate almost twice the proportion (9.21) than those in the lowest quintile (4.77%). The same is true of furnishings (5.95% and 2.29%, for the aforementioned respective quintiles) and household maintenance (2.37% and 0.81% for the aforementioned respective quintiles).

Summary Table 3.15: Proportion of Expenditure Disaggregated by Major Group and Quintile

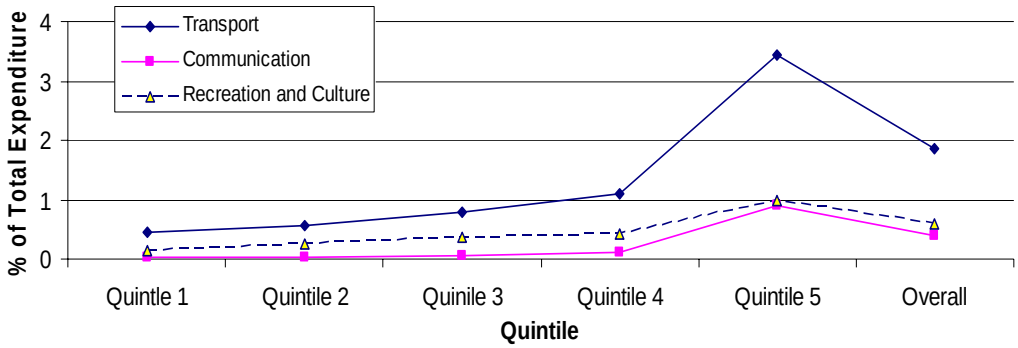
Exp. Groups	Quin. 1	Quin. 2	Quin. 3	Quin. 4	Quin. 5	All
Food and Non Alcoholic Expenditure	56.93	58	57.6	56	41.67	50.89
Alcohol and Tobacco	1.74	1.35	1.09	1.26	0.82	1.11
Clothing and Footwear	4.77	5.86	6.76	6.98	9.21	7.5
Housing Water Fuel Energy	26.44	22.14	19.59	17.18	16.81	18.08
Furnishing Household Equipment and Maintenance	2.29	2.81	3.14	3.67	5.95	4.26
Goods and Services for Routine Household Maintenance	0.81	0.88	0.97	1.08	2.37	1.52
Health & Medical Treatment	0.49	0.65	0.61	0.69	0.89	0.73
Education	0.51	0.63	0.77	0.83	1.02	0.84
Other (inc. transport, communication miscellaneous)	6.02	7.68	9.47	12.31	21.26	15.07

The 'other' categories mentioned in the final row appear to comprise significant differences across quintiles, with 21.26% of the highest quintals spending on this category compared with only 6.02 % of the budgets for those individuals in quintile 1. This category comprises items such as transport and communication and are plotted in Figure 3.9.

As would be expected the proportion of transport, communication, and recreation expenditure all increase with the increases of expenditure quintiles, but this is particularly pronounced between the two highest quintiles, and especially for

transport. For both communication, recreation and culture the increase in the expenditure budget share form quintile 4 to quintile 5 is 0.12% to 0.9% and 0.43% to 0.98%, respectively. For transport the proportionate budget share of expenditure increases by a multiple of slightly more than 2 between quintile 1 and quintile 4 (0.45% to 1.11%) before tripling between the upper two quintiles (1.11% to 3.44%).

Figure 3.10: Selected 'Other' Expenditure Disaggregated by Expenditure Quintile



Before providing a more detailed specific focus on the individual items of expenditure that comprise some of the aforementioned sub-group totals, we provide a summary of the above sub-groups expenditure classifications by region (Summary Table 3.16).

Perhaps unsurprisingly the highest expenditure per capita is in Addis Ababa, with approximately 46% of the expenditure per capita being on food and non alcoholic expenditure. Across all individuals in all regions, those living in Somali and Oromiya spend the highest proportions of their total expenditure on food and non alcoholic expenditure (54.2% and 56.5%, respectively). In both Addis Ababa and Dire Dawa housing, water, and fuel energy costs comprise more than one quarter of an average individuals expenditure, for example 616 Birr being the average expenditure in Addis Ababa compared with 258 Birr for those living in Amhara. Of the other items expenditure on health and medical treatment comprises less than 1% of expenditure in almost all regions,. but expenditure on education shows greater variance across regions, varying from 0.35% of individuals budgets in Afar to 3.12% in Addis Ababa.

Summary Table 3.16: Expenditure per capita (Proportions) Disaggregated By Major Groups and Region[3]

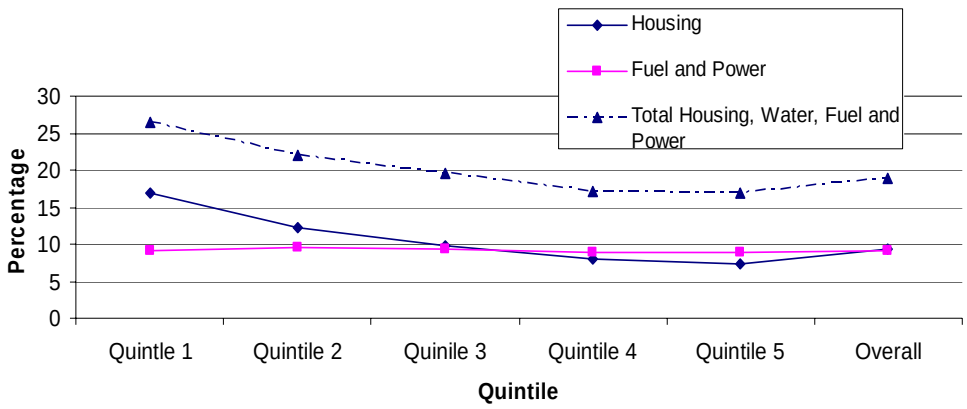
Major Groups	Tigray	Afar	Amhara	Oromiya	Somali	Benshangul--Gumuz	SNNP	Harari	Addis Ababa	Dire Dawa
Total Expenditure per capita	1770.99	1923.19	1547.73	1736.01	1650.55	1821.63	1589.84	2523.73	2573.3	2282.84
Food and Non Alcoholic Expenditure	817.12 (46.14)	965.75 (50.22)	800.9 (51.75)	941.66 (54.24)	932.99 (56.53)	952.65 (52.3)	786.05 (49.44)	1165.26 (46.17)	873.3 (33.96)	995.34 (43.6)
Alcohol and Tobacco	21.68 (1.22)	12.68 (0.66)	20.52 (1.33)	15.26 (0.88)	21.05 (1.28)	38.00 (2.09)	22.79 (1.43)	33.32 (1.32)	10.01 (0.39)	24.07 (1.05)
Clothing and Footwear	184.19 (10.4)	195.5 (10.17)	97.68 (6.31)	136.72 (7.88)	154.66 (9.37)	120.86 (6.63)	117.89 (7.42)	208.98 (8.28)	160.35 (6.23)	158.39 (6.94)
Housing Water Fuel Energy	319.39 (18.03)	335.12 (17.43)	258.94 (16.73)	333.71 (19.22)	316.3 (19.16)	313.21 (17.19)	312.01 (19.63)	437.03 (17.32)	616.00 (23.94)	516.82 (22.64)
Furnishing Household Equipment and Maintenance, Goods and Services for Routine Household Maintenance	71.16 (4.02)	123.63 (6.43)	39.32 (2.54)	86.39 (4.98)	91.57 (5.55)	110.95 (6.09)	63.13 (3.97)	146.05 (5.79)	165.99 (6.45)	141.39 (6.19)
Health and Medical Treatment	12.85 (0.73)	16.52 (0.86)	5.42 (0.35)	9.94 (0.57)	9.52 (0.58)	19.17 (1.05)	9.43 (0.59)	16.3 (0.65)	19.65 (0.76)	20.3 (0.89)
Education	11.00 (0.62)	6.67 (0.35)	9.25 (0.6)	13.26 (0.76)	10.21 (0.62)	10.91 (0.6)	10.89 (0.69)	41.37 (1.64)	80.34 (3.12)	53.68 (2.35)
Other (inc. transport, communication miscellaneous)	333.59 (18.84)	267.33 (13.9)	315.7 (20.39)	199.07 (11.47)	114.27 (6.92)	255.88 (14.05)	267.65 (16.82)	475.42 (18.83)	647.16 (25.15)	372.84 (16.33)

[3] Rounding explains differences in summing.

3.2.3 Expenditure Per Capita – Specific Item Focus

Considering some of the individual items groups, for example, housing fuel and power, we can learn more regarding the expenditure patterns of the population if we disaggregate to the specific items that comprise these item groups. If we look at Figure 3.11, the proportion of expenditure per capita remains relatively constant for fuel and power, with approximately 9% of expenditure. Housing costs, however, vary dramatically across quintiles with 16.8% of lowest income quintile population expenditure being spent on housing, compared with only 7.4% of the highest quintile, and 9.3% overall.

Figure 3.11: Housing, Fuel and Power - Expenditure Per Capita



The proportion of rent that comprises total expenditure decreases by more than one third from approximately 16.6% in the lowest quintile to 5.2% in the highest quintile.

Disaggregating expenditure categories further - for the food and non alcoholic beverages cereals comprise a major proportion of this expenditure (20.4% overall, 22.8% for the lowest quintile and 15.3% for the highest quintile). Other major components of food expenditure include pulses (3.9%), food out of home (3.0%) and Injera (1.6%), all proportions of which decline as quintiles increase.

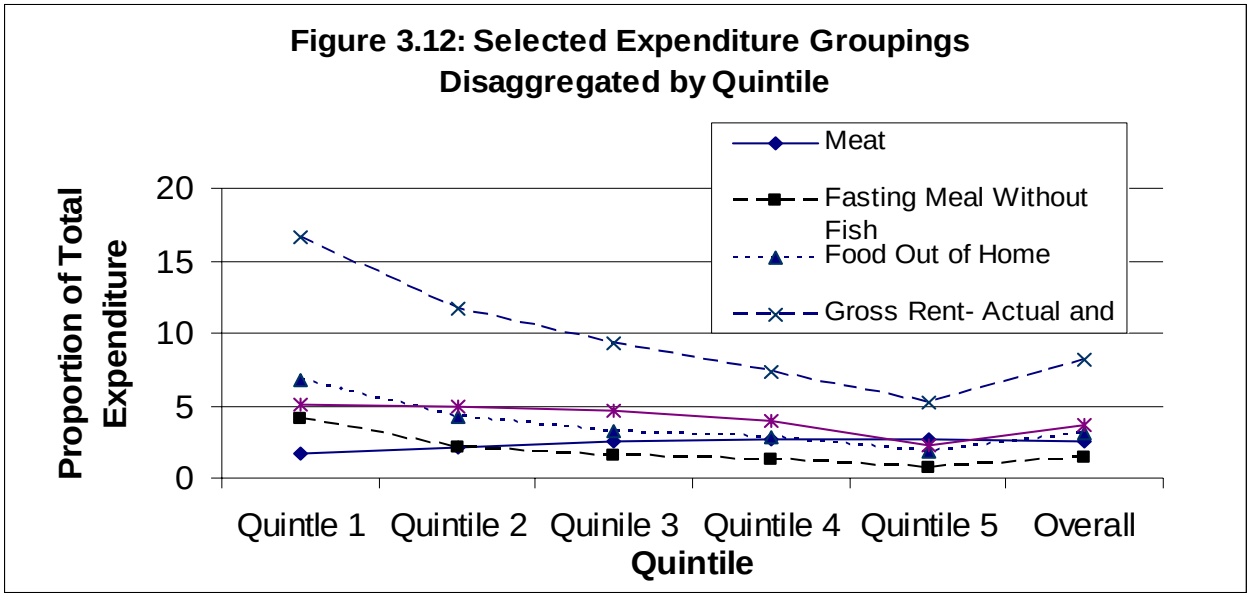


Table 3.17 provides a further disaggregation of the selected categories and individuals items that appear to be of further interest. Both the nominal average expenditure (Birr) is shown along with the percentage of expenditure per capita, all of which is disaggregated by expenditure quintile

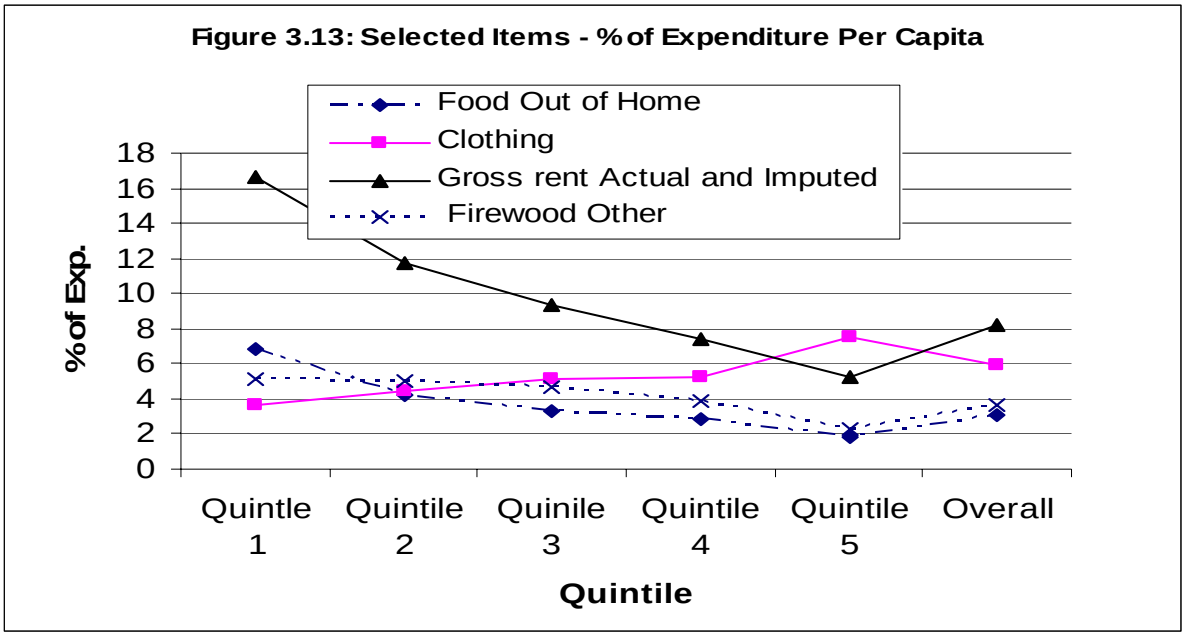
Summary Table 3.17: Expenditure Per Capita (%) of Selected Items Disaggregated by Quintile -country

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Overall
Cereals	266.26 (22.8)	309.02 (24.4)	340.82 (24.4)	367.68 (23.2)	389.58 (15.3)	345.45(20.4)
Pulses	53.43 (4.6)	59.97 (4.7)	64.31 (4.6)	70.31 (4.4)	73.81 (2.9)	66.17 (3.9)
Injera (Bread) and other Prepared Food	28.54 (2.4)	25.05 (2.0)	23.59 (1.7)	24.39 (1.5)	31.8 (1.3)	26.9 (1.6)
Meat	19.35 (1.6)	27.69 (2.2)	34.81 (2.5)	43.0 (2.7)	69.49 (2.7)	42.78 (2.5)
Oils and Fats	15.02 (1.3)	21.93 (1.7)	26.91 (1.9)	34.79 (2.2)	58.13 (2.3)	34.7 (2.0)
Fruits	2.63 (0.2)	3.79 (0.3)	3.76 (0.3)	3.39 (0.2)	4.43 (0.2)	3.72 (0.2)
Spices	29.51 (2.5)	28.12 (2.2)	29.0 (2.1)	30.15 (1.9)	33.2 (1.3)	30.3 (1.8)
Tubers and Stems	40.51 (3.5)	50.7 (4.0)	60.93 (4.4)	72.09 (4.5)	79.2 (3.1)	64.09 (3.8)
Coffee Beans	24.33 (2.1)	25.18 (2.0)	28.81 (2.1)	29.15 (1.8)	30.63 (1.2)	28.2 (1.7)
Chaat (Qat)	5.51 (0.5)	13.08 (1.0)	19.36 (1.4)	26.49 (1.7)	41.42 (1.6)	24.07 (1.4)
Food Out of Home	79.88 (6.8)	53.46 (4.2)	45.87 (3.3)	44.75 (2.8)	47.55 (1.9)	51.66 (3.0)
Clothing	43.32 (3.7)	56.82 (4.5)	71.77 (5.1)	82.85 (5.2)	191.02 (7.5)	99.95 (5.9)
Gross rent Actual and Imputed	193.71 (16.6)	148.19 (11.7)	129.68 (9.3)	116.87 (7.4)	131.08 (5.2)	138.4 (8.2)
Firewood Other	59.34 (5.1)	63.47 (5.0)	65.8 (4.7)	61.9 (3.9)	58.6 (2.3)	61.84 (3.6)

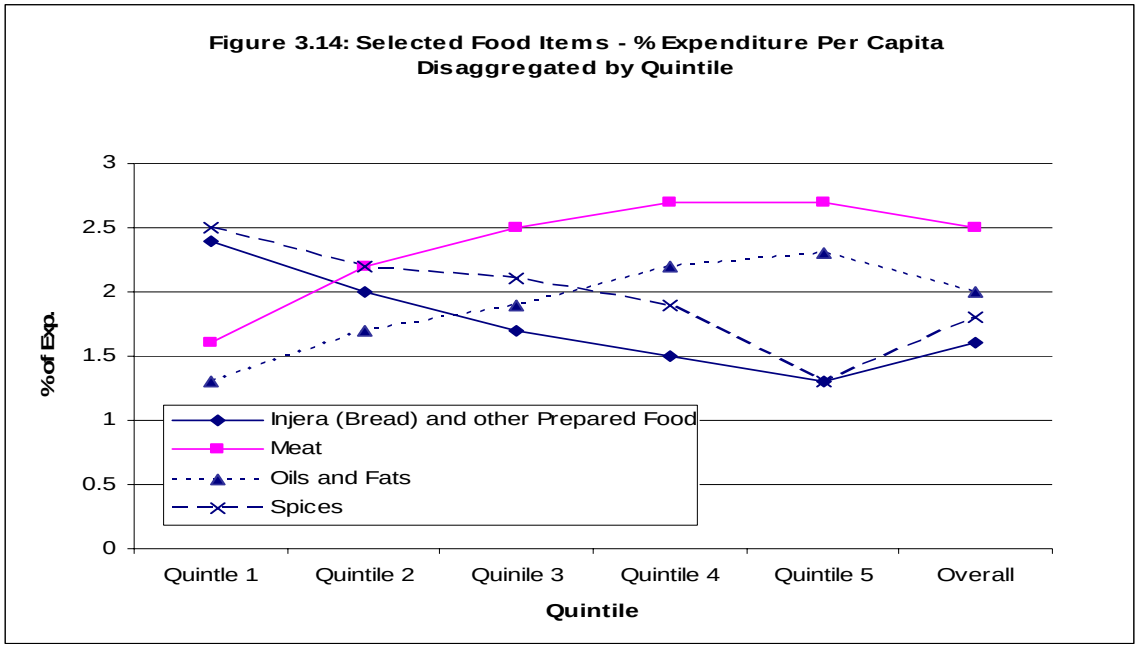
Of particular note:

- Cereals comprise a significant proportion of expenditure for those in the lowest quintile, almost 23%, compared with 15% of the highest quintile, and an overall average of 20.4%.
- Perhaps unsurprisingly Injera comprises larger proportion of total expenditure (2.4%) of those in the lowest quintile than in the highest(1.3%).
- The proportion of more 'luxurious' food items such as meat, increases as quintiles also increase. For example, the proportion of expenditure spent on meat for those in the lowest quintile is 1.6% while for those in the highest quintile is 2.7%
- The proportion of individuals expenditure spent on oils and fats also increase throughout the quintiles – with the nominal amounts per capita increasing on average by a multiple of 4 from the first to the fifth quintile.
- In comparison to aforementioned changes in meat/oils and fats expenditure patterns, nominal expenditure on spices tends to be relatively static throughout the quintiles, with the result being that the per capita proportion of expenditure falls from 2.5% to 1.3%, in the previously mentioned quintile classes. Similarly the proportion spent on tubers and stems tends remain relatively constant at an average of 3.8%, throughout the quintiles.
- Average expenditure per capita on Chaat increases by a multiple of 8 from quintile 1 to quintile 5 – a change that reflects a growth in average budget share terms from 0.5% to 1.6%, across the quintiles.
- Average expenditure per capita on 'Food out of home', provides interesting insights regarding expenditure patterns of the poor and the rich, in relative terms. Figures in Table 3.16 indicate that the average consumption per capita on food out of home decreases from 6.83% in quintile 1 to 1.87% in quintile 5.

Figure 3.13 provides a further focus on selected expenditure groups. House rental costs appear to impose considerably on the expenditure budgets of individuals in the lowest quintile, with this comprising 16.6% of the budget compared with the just over 5% for those in the highest quintile. Significant changes in the percentage appear to be between the first and second quintile that reflacts, in expenditure share terms, a fall of 4.9%.



Clothing and firewood expenditure provide interesting examples of how expenditure proportions appear to change relatively dramatically between individuals in the fourth and fifth expenditure quintiles. In nominal terms clothing expenditure more than doubles between these quintiles.



If we look further at selected items, and in particular Injera (bread and other prepared food), Figure 3.14, indicates there to be a fairly consistent decline in expenditure across the quintiles. In contrast Spices comprise an average of 2.2% of total expenditure for each of individuals across the first 4 quintiles, compared with 1.3% for those in the highest quintile.

3.2.4 Expenditure Per Capita – Further Statistical Analysis

To complement the aforementioned descriptive work, we undertake further statistical work by using econometric regression analysis, of various forms, to further establish some of the main socio-economic characteristics associated with expenditure. This allows us to establish with a further degree of confidence whether, for example, certain variables such as increases age, education etc. are statistically associated with certain levels of expenditure/living conditions. In addition, this analysis also allows us to draw, at least some, tentative quantitative conclusions regarding the extent to which certain characteristics might impact on the probabilities of a household being in, for example, a certain expenditure quintiles.

In particular, we separate this section into three types of statistical analysis, providing a non technical summary of the findings in the main body of this chapter and complement this with the technical statistical tables (econometric results) in the Annex I: Extended Statistical Analysis.

The first type of analysis looks at the factors (determinants) associated with change in per capita expenditure (Annex I: Table 1 – Ordinary Least Squares Regression). The second type of analysis looks at the main factors associated with per capita expenditure in both the lowest and highest quintiles (Annex I: Table 2 – Probit Regression of Quintile 1 and 5). The final type of statistical analysis considers the socio economic determinants and the statistical relationship associated with each of the different quintiles, to see how these may differ (Annex I: Table 3 – Multinomial Logit Regression). [4] [5] In the first of these three sections that follow we commence with a relatively general commentary.

3.2.4.1 Change in Expenditure Per Capita

In the first example of extending the statistical analysis beyond the simple descriptive statistics in Table 1 (Annex I) that many of the results (determinants of expenditure per capita) corroborate the trends already highlighted in the descriptive sections. In this first set of results we are ultimately looking at the typical socio-economic explanatory variables associated with changes in levels of expenditure per capita.

As expected it appears that an increase in the age of the household head, up to retirement age, is associated with significant increases in expenditure per capita levels, at the

[4] A degree of caution should be adopted in the interpretation of these results. Expenditure has not been adjusted for regional price variations or per adult equivalent units. These regressions are in no way expected to replace the formal poverty based calculations, but are undertaken as a complement to the descriptive analysis. We accept that there will be a degree of error once regional price variations are taken into consideration for such analysis.

[5] A multinomial logit regression analysis is adopted for the third type of analysis and the results are relative to the lowest quintile. We accept that the multinomial logit approach suffers from the need to make the strong 'independence of irrelevant alternatives 'drawback'[5], but other options such as the multinomial probit have their own problems, such as the dimensionality of the response probabilities and being computationally extremely resource intensive.

household level. This is logical given that when the household head becomes economically inactive through, for example, retirement the household will experience diminishing/lower economic returns and therefore lower expenditure per capita levels of the household.[6]

As in previous sections of the chapter we also find that female headed households are statistically less likely to be associated with increases in 'welfare', compared with male headed households.[7] [8] Marital status of the household head also appears to significantly influence expenditure per capita levels with unmarried headed households being much more likely to be associated with increases in expenditure, compared with widow headed households.

In the case of education, relative to households with heads that have missed education, increased 'welfare' returns as the educational level increase (see next section for probabilities associated with this). The effect of completing secondary education or higher education (certificate, college or university education) is particularly strong.[9] Types of economic activity also strongly influences expenditure per capita. If the head of the household works in agriculture or mining they are statistically less likely, relative to 'other' types of occupation (footnote re other) to have increased levels of expenditure per capita. Perhaps unsurprisingly the strongest, positive household expenditure effects arise if the household head is in either the financial or real estate sector.[10] There also appear to be varied regional effects on expenditure per capita

[6] See both age and agesquared coefficients for further detail.
[7] Significant at the 1% level.
[8] 'Welfare' in this context is loosely termed given that expenditure (a common reflector of welfare/poverty status) has not been deflated regionally.
[9] We have considered this variable at the household head level and created dummy variables for completing - some primary education, all primary education, some secondary education, completing secondary education, and university education. For example, if an individual has completed primary education then the dummy variable will reflect this by taking the value of 1, instead of 0.
[10] Statistically significant at the 1% level.

In the next two sections we now extend the statistical analysis to include assessments of probabilities, providing a number of examples that enable us to draw more substantive conclusions with regard to the main factors of influence on expenditure levels.

3.2.4.2 Quintile 1 and 5

This second part of the extended statistical analysis considers the main factors associated with household being either in the lowest or the highest quintile. In this case we purposely compare just these to quintiles of expenditure per capita to see how certain factors impact on the probability of household being in the lowest or highest 'welfare' state. As can see from Table 2 of Annex I the two sets of results appear to re-enforce each other in certain results, in addition to providing further support for the previously outlined main descriptive data.

Considering the gender of household head, and as tentatively suggested in the previous chapter, it appears that individuals that female headed households are statistically less likely to be in the highest quintile. In this case it would appear that are 1.8% less likely than male headed households to be in the highest quintile.[11] However, perhaps more starkly, female headed households are 4.4% more likely to be in the lowest expenditure quintile than male headed households.

As already indicated in the descriptive parts of this chapter, unmarried and married households heads are less likely[12] to be in the lowest quintile, relatively to widowed households, with unmarried headed households being 4% greater probability of being in quintile 5 of expenditure, compared with widowed headed households. Such results are intuitively sensible, given the income earning potential, traditionally higher proportion of workers to children etc., and in line with much of the previous evidence produced for sub-Saharan Africa.

[11] In Table 2 & 3 of Annex 3 the marginal effects represent probabilities.
[12] Statistically significant at the 1% level.

Findings from sections 3.1.6 and 3.1.7 also indicated that education, and literacy status, appeared to be strongly associated with expenditure per capita, with for example 82.1% of households in the lowest quintile being headed by individuals with no education, compared with 55.9% for the highest quintile. Results in Table 2, of Annex I strongly corroborate the importance of education. The effects of secondary school and university education, on expenditure per captia, appear to be particularly strong. For example, comparing these results to households headed by individuals who have no education, if an individual has a university (secondary) education this increases the probability of that households being in the highest expenditure quintile by up to 14.7% (8.5%). As would be expected the reverse is true for households in the lowest quintile, with for example households headed by individuals with some primary education having, on average, a 6% lower probability of being in the lowest expenditure quintile compared with households headed by individuals with no education.

As would also be expected the type of occupation undertaken by the head also impacts on the level of expenditure per capita. As in the previous sections working in agriculture/mining activities appear to be associated with not being in the highest quintile – in this case if the household head is employed in this type of activity it is associated with a 4% lower probability of being in the highest expenditure quintile. From an occupational perspective the biggest expenditure effects, unsurprisingly, appear to come from being employed in the financial or real estate sector. Compared with households who are headed by individuals who are employed in private households then households headed by individuals in the financial or real estate sector have a 3.4% increased probability of being in highest expenditure quintile. As with the prior set of results, we can also see significant regional effects on expenditure.[13]

[13] As with all of the statistical results, once again we should re-iterate the need for extreme caution in interpreting many of the statistical results. These are in no way meant to replace/be comparable with any of the poverty calculations/results/analysis that will be forthcoming.

3.2.4.3 All Quintiles

The final extended statistical analysis discussion is based on Table 3, Annex I, which shows statistical probabilities associated with socio-economic variables and the relationship with each of the 5 quintiles. This analysis differs from the previous sub-section in that here we are able to show the probabilities of being in a certain expenditure quintile, compared with the base of being in the lowest quintile. Once again, we aim to provide a relatively non-technical summary of the findings with examples elucidating.

As in the previous sub section we find further support for the findings that female headed households, and larger households, tend to be more likely to be in the lowest quintiles. For example, female headed households are on average, and compared with the lowest quintile, 4.9% less likely to be in the highest quintile and 5.6% less likely to be in the 4th highest quintile.

The analysis provided in Table 3 of Annex I appears to be particularly informative regarding martial status, with distinct differences appearing between the two highest quintiles. As in the previous sub section, and considering the above explanation, compared with living in households that are headed by widowed individuals, households headed by unmarried individuals are 6.8% more likely to be in the highest quintile. Interestingly however the effects of unmarried households is reversed for those in the 3rd and 4th quintile – potentially suggesting some interesting dynamics across these expenditure groupings, that needs further investigation.

As in both the descriptive results from the previous sections and aforementioned statistical analysis from this sub section we can once again see the increasingly positive effects as educational attainment increases – for example, households that are headed by individuals that have completed primary education are 8.3% (11.4%) more likely to be in quintile 4 (5) than in the lowest quintile. Similar trends for types of economic activity and region exist in these results, as they do in the previous sub section, with for example

households headed by individuals undertaking agricultural/mining activities almost 10% less likely to be in the highest quintile of the population. In addition, being employed in the hotel sector appears also increase the probability of being in the highest quintile of the population.

3.3 SOURCES OF HOUSEHOLD EXPENDITURE

3.3.1 Introduction

In the survey an attempt has been made to assess the sources of household expenditure. Households were asked to provide detailed information on their source of expenditure that enabled them to spend on each and every commodity/ service that has been consumed/ delivered during the reference period of the survey. This approach has been applied with the intention of arriving, indirectly, at a reasonable households' income sources.

Sources of income might depend on the types of economic activity, employment opportunity, natural resource, economic policy, and overall development level of the country. According to the survey findings, about 15 types of household expenditure/ income sources have been identified. However, this section provides a descriptive analysis on the contribution of selected income/expenditure sources to overall household expenditure disaggregating by area of residence and household expenditure quintiles.

3.3.2. Expenditure/Income Source Characteristics

The five main sources of household expenditure is highlighted in summary table 3.18. As would be expected the sources of household expenditure/income is predominated by agriculture (52.4%). This sector comprise on average almost 90% of households' expenditure. The second major source is non-agricultural household economic enterprise, which has 14% contribution to the total households' expenditure followed by wages and salaries which account for 10.4%.

From Quintile Perspective:

Relatively some differences has been observed in sources of expenditure across quintiles, such as:

- About 40% of household expenditure of these households in quintile 1 was generated from household agricultural enterprise and the proportions of its contribution increases with quintile increases up to the 4th quintile (61.6%), and then tend to decrease to 48.2% in the highest quintile.
- Non-agricultural household economic enterprise contribution comprises a far higher (almost double) proportion of quintile 5 households' expenditure (about 20%) compared to the proportions in the rest of the quintiles (quintile 1 to quintile 4).
- The proportions of household income generated from household remittances and house rent, systematically decrease with expenditure quintile increases. For example, the proportion of household expenditures generated from household remittance (house rent) for those households in the lowest quintile is 15% (10.7%), while for those households in the highest quintile is 4.9%(3.4%).

Summary Table 3.18: Proportion of Household Expenditure by Main Sources of Expenditure and Place of Residence Disaggregated by Quintile

		Expenditure Quintile					
Source of expenditure		1	2	3	4	5	Total
HH Agricultural Enterprise	R + U	39.6	52.1	57.2	61.6	48.2	52.4
	R	46.2	58.8	64.5	70.3	70.2	65.3
	U	4.1	6.3	7.1	5.9	3.7	4.6
HH Non-Agri. Enterprise	R + U	11.3	10.7	10.4	9.5	19.7	14.0
	R	7.9	7.5	7.4	6.2	10.4	8.2
	U	30.0	32.6	31.2	30.8	38.5	35.7
Wages and Salaries	R + U	8.4	7.4	7.3	7.5	14.6	10.4
	R	4.8	3.9	3.6	2.6	2.9	3.3
	U	28.4	30.9	36.3	39.0	38.3	37.0
House Rent (inc. Own Dwelling)	R + U	10.7	7.8	6.4	5.2	3.4	5.5
	R	11.6	8.2	6.6	5.2	3.2	5.8
	U	5.5	4.6	5.2	5.2	3.7	4.2
Remittance transfer from Households	R + U	15.0	9.4	7.3	6.4	4.9	7.1
	R	14.2	8.7	6.8	5.9	4.3	6.7
	U	19.1	14.0	10.7	10.2	6.3	8.7

From a Rural/Urban Perspective:

- The contribution of income generated from household agricultural enterprise in rural areas accounted for (65.3%) which is far higher than in the urban areas (4.6%).
- The contribution of household income generated from household non-agricultural economic enterprise (wages and salaries) to total household expenditure in urban areas (35.7%/37.0%) are far higher than in rural areas (8.2%/3.3%).
- The contribution of household remittance transferred to total household expenditure in urban areas (8.7%) is higher than in rural areas (6.7%).

Summary Table 3.19: Percentage Distribution of Household Expenditure by Main Sources of Income/Expenditure Disaggregated by Rural/Urban of Regions.

	HH Agri. Enterprise		HH Non-Agri. Enterprise		Wages and Salaries		Remittance From HHs	
Region	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Tigray	58.0	4.5	9.5	38.9	7.4	33.2	6.8	7.1
Afar	51.1	5.0	4.8	37.7	18.7	42.0	4.0	6.9
Amhara	68.7	4.8	4.7	40.6	2.5	31.7	8.2	9.1
Oromiya	66.7	6.3	8.4	46.1	3.0	29.9	5.6	7.6
Somali	57.6	5.0	12.3	34.8	3.2	35.8	4.1	11.0
Ben-Gumaz	58.8	16.5	8.9	24.3	4.3	44.3	6.6	6.3
SNNP	61.5	8.9	11.4	42.1	3.4	32.7	7.3	7.5
Harari	63.7	1.2	16.3	28.0	4.0	48.9	3.9	12.6
Addis Ababa	59.4	0.5	8.3	18.3	17.5	50.1	3.1	10.4
Dire Dawa	37.5	1.2	17.8	36.2	6.9	37.4	5.3	10.3
Country	65.3	4.6	8.2	35.7	3.3	37.0	6.7	8.7

From Regional Rural/Urban Perspective:

It has been also summarized the descriptive data regarding the four main sources of household expenditures which has been used for financing household expenditure in Summary Table 3.19, across regions. Generally, the pattern of income sources of regions

that are rurally based households and those residing in urban area households are more or less similar to the rural/urban households' income source profile at country level.

Of Particular notes:

- The source of household income generated from household agricultural enterprise in rural areas of Amhara contributes for 68.7% and that of (66.7%) to the total household expenditure in rural areas of respective regions which are above the rural average at country level.
- Perhaps surprisingly, household income generated from agricultural enterprise in urban areas of Benshangul-Gumuz comprises a large proportion of total expenditure (16.5%) compared to other regions.
- Relatively, higher proportion (above 11%) of household expenditure has been from non-agricultural household economic enterprise activities in rural areas of some regions. For example, the proportion of income generated from non-agricultural enterprise which was used to finance household expenditure by those rural households of Dire Dawa is 17.8%, while for those rural households of Afar is 4.8%.
- The proportions of income contributed from wages and salaries in rural areas of Afar (18.7%) and Addis Ababa (17.5%) are exceptionally high compared to similar areas of other regions.
- The highest proportion of income generated from wages and salaries has been observed in urban areas of Addis Ababa (50%) followed by urban areas of Harari (49%).
- The survey result provide interesting characteristics of transferred income, i.e., income that has been generated from household remittance. Because, the contribution of transferred income from households on financing household expenditure in urban areas of almost all regions is much higher than in the rural counterpart.
- Relatively, some differences have been observed in the proportion of household remittance transfers across urban areas of the regions. The highest proportion is

observed in Harari (12.6%) followed by Somali (11.0%), Addis Ababa, 10.4% and Dire Dawa (10.3%).

3.4. Calorie per capita

In the penultimate section of this chapter we now focus on the calorie per capita discussion before summarizing the main expenditure findings. It is important to present the findings on the food and the drink calories intake of the population covered in the survey.

At the country level the total calorie (gross) intake per individual per day is 2353 as obtained from the survey result. It can be seen from the Summary Table 3.20 that out of this daily calorie intake cereals have the major contribution, that is, 61.8% (52% and 63.2% for Urban and Rural, respectively). This is followed by potatoes; others tubers and stems 13.9% pulses 6.9%, oils and fats account for 2.3% of the total daily calorie intake of an individual while "Injera" (bread) and others, vegetables and fruits; other food items; coffee, tea leaves and hopes. take a share of 1.9%, 1.7%, 1.3%, and. 1.3%, respectively. Perhaps the most interesting urban/rural differences occur for oils and fats which accounts for 8.1% (1.5%) and potatoes, other tubers and stems which accounts for 4.0% (15.3%) of urban (rural) calorie intake.

Of the other items, the shares of daily calorie intake, at the national level, of milk, cheese and egg; spices; oil and fats; meat; non-alcoholic beverages; and food taken away from home are 1.0%, 1.1%, 2.3%, and 2%, respectively.

Summary Table 3.20: Daily Calorie (Gross) Intake Per capita by Food Group and place of Residence-Country Level

	Country Level		Urban Level		Rural Level	
Food Group	Calorie	%	Calorie	%	Calorie	%
Cereals	1453.8	61.8	1514.0	63.2	1078.0	52.0
Pulses	162.7	6.9	167.7	7.0	127.7	6.2
Oil Seeds	7.7	0.3	8.3	0.3	4.1	0.2
Pasta Products	4.8	0.2	1.5	0.1	24.7	1.2
Injera (Bread & Others	43.6	1.9	19.0	0.8	191.8	9.3
Meat	19.0	0.8	13.7	0.6	50.9	2.5
Fish	0.2	0.0	0.2	0.0	0.1	0.0
Milk, Cheese and Eggs	24.4	1.0	26.1	1.1	14.2	0.7
Oils and Fats	54.5	2.3	33.6	1.5	168.7	8.1
Vegetables and Fruits	40.0	1.7	39.0	1.6	46.2	2.2
Spices	26.1	1.1	23.7	1.0	40.2	1.9
Potatoes, Tubers and Stems	326.7	13.9	366.9	15.3	82.0	4.0
Coffee, Tea & Hopes	29.8	1.3	31.6	1.3	18.7	0.9
Other Food Items	31.6	1.3	24.6	1.0	73.3	3.5
Food out-home	47.4	2.0	42.3	1.8	78.0	3.8
Non Alcoholic Beverages	47.8	2.3	47.5	2.0	49.5	2.4
Alcoholic Beverages	34.1	1.5	35.5	1.5	25.0	1.2

Concerning regional daily gross calorie intake; that is the calorie intake per person per day for SNNP and Oromiya is above the average calorie intake at country level. The calorie intake per person per day for the rural areas in 2004/05 (1999/00) of the regions ranges from about 1861 (1617) in Afar to 2728 (2,440) in SNNP, while in the urban areas, the daily calorie intake per person stood below 1,900 in Afar and Dire Dawa Regions.

Summary Table 3.21 Calorie Intake per day, Disaggregated By Region and Year

	Gross Calorie						Net Calorie		
	2000/00			2005/05			2005/05		
Region	**All**	**Rural**	**Urban**	**All**	**Rural**	**Urban**	**All**	**Rural**	**Urban**
Tigray	2045	2124	1646	2093	2116	1987	2057	2084	1933
Afar	1743	1617	2337	1873	1861	1890	1826	1211	1848
Amhara	2155	2197	1801	2058	2067	1966	2007	2018	1907
Oromia	2257	2344	1588	2440	2470	2173	2324	2349	2100
Somalia	1960	2402	1869	2205	2196	2225	2170	2161	2189
Benshangul-Gumuz	2245	2273	1911	2099	2113	1993	2044	2059	1932
SNNP	2360	2440	1821	2728	2770	2272	2386	2411	2114
Harari	1967	2304	1730	2247	2586	1955	2198	2543	1901
Addis Ababa	1829	2177	1824	1989	2369	1984	1926	2336	1921
Dire Dawa	1876	2198	1761	1990	2255	1861	1956	2238	1818
Total	2211	2292	1738	2353	2397	2073	2216	2250	1998

CHAPTER 4

SUMMARY OF FINDINGS

The broad objectives of the report was to outline and add significantly to the analysis that is usually undertaken in relation to the HICE reports. With this objective, and that of providing policy useful analysis the report comprises two main analytical sections, the broad findings of which are highlighted below:

Socio-Economic Characteristics:

- The national average household size has decreased from 5 to 4.88 to 4.82, respectively for years 1995/2000/2005.
- The age composition of national and rural households has remained relatively static since 1995, however it would appear that urban households have undergone a degree of demographic structural change. For example the proportion of working aged adults has increased from to 59%, compared with 54.4% 10 years ago. This has resulted in a dependency ratio decrease from 83.8% to 69.5% for urban areas, compared with an overall average of 107.5%
- Although roughly equal proportions of the lowest quintile households are Male Headed Households (MHH) and Female Headed Households (FHH) significant gender differences increase with household expenditure. Additionally, the proportion of FHH has in the lowest quintile has increased over the 10 year period since 1995 from 43.5% to 49.5%.
- Approximately one third (37.6%) of the country to be literate.
- Illiteracy levels decrease as expenditure quintiles increase. For example, the proportion of illiterate, rurally based, individuals decreases to 73.7% and 60.1% moving from the 4^{th} to the 5^{th} quintile provides the most distinct jump in reduction of illiteracy status for both rural and urban, males and females.

- Regionally, comparisons of educational attainment the higher proportions of individuals completing primary educational level of 7-8 and beyond is dominated by the relatively high performers of Harari, Addis and Dire Dawa, with an average of 31.2%, 49.7% and 30.4%, of individuals, respectively completed up to this level of education.

Expenditure:

Looking at expenditure characteristics more specifically, and in particular the type of expenditure and what factors are associated with different levels of per capita expenditure. Of the main findings from the simple descriptive data:

- The average expenditure per capita at country level is 1697.35, however this varies considerably across the five quintiles, and 10 regions, and there is a particularly notable increase in expenditure between quintile 4 and 5, with expenditure per capita increasing by more than 1000 Birr.
- The largest expenditure grouping is food and
- A part from food, housing, water and fuel account for the 2nd largest component of expenditure with 18.1% and clothing and footwear is the 3rd largest component share of expenditure with share.
- Analysing individual specific items provides further understanding of expenditure patterns. For example, fuel and power comprises a significant proportion (approximately 9%) of total expenditure, remaining relatively constant across quintiles. However when we look at housing costs, these vary dramatically across quintiles with 16.8% of lowest income quintile population expenditure being spent on housing, compared with only 7.4% of the highest quintile, and 9.3% overall.

Further statistical analysis significantly added value to our understanding of expenditure per capita by allowing us to establish with probability how specific socio-economic characteristics are statistically related to certain levels of expenditure per capita. Of the main findings:

- Female headed households (FHH) are on average, and compared with the lowest quintile. In the 2nd part of the statistical analysis for example we found that FHH were 4.9% less likely to be in the highest quintile and 5.6% less likely to be in the 4th highest quintile.

- Increasingly positive expenditure/'welfare' effects appeared in the statistical analysis - as educational attainment increases – for example, households that are headed by individuals that have completed primary education are 8.3% (11.4%) more likely to be in quintile 4 (5) than in the lowest quintile

- Of the other findings, we also found that the type of activity, age, and region are all important influencers of expenditure per capita

Sources of Household Expenditure:

Although is types of household expenditure/income sources has been identified in the survey; household agricultural enterprise, household non-agricultural enterprise, wages and salaries, remittance trasfere from households and house rent were the main expenditure/income sources which have been contributed for 89.4% to the total household expenditure at country total. Of the main findings from the simple descriptive data:

- Household agricultural enterprise accounted for 5.2%, followed by household non-agricultural economic enterprise activities (14%) and wages and salaries (10.4%).
- As would be expected the main sources of household expenditure/income types in rural and urban areas significantly differ. Hence, the main sources of household expenditure/income in rural area was agricultural enterprice which has been contributed for 65.3%, while the main sources of household expenditure/income

in urban areas were wages and salaries as well as household non-agricultural economic enterprise activities which accounted for 37% and 35.7% respectively.

- The contribution of household remittance transferred to total household expenditure in urban areas (8.7%) is higher than in rural areas (6.7%) Similar situations has been observed in almost of the regions.
- The highest expenditure/income contributed to total household expenditure by agricultural enterprise in rural area of the regions was observed in Amhara accounted for about 69% followed by rural areas of Oromiya which accounted for about 67% of total household expenditure.

Calorie:

- Total calorie (gross) intake per individual per day is 2353 as obtained from the survey result.
- For the daily calorie intake, cereals have the major contribution - 61.8% (52% and 63.2% for Urban and Rural, respectively).
- Calorie intake per person per day for SNNP and Oromiya is above the average calorie intake at country level.
- The calorie intake per person per day for the rural areas in 2005 of the regions ranges from about 1861 in Afar to 2770 in SNNP, while in the urban areas, the daily calorie intake per person stood below 1,900 in Afar and Dire Dawa Region

References

Central Statistical Authority,1998, Revised Report on the 1995/96 Household Income, Consumption and Expenditure Survey, Statistical Bulletin 2004, Addis Ababa, Ethiopia

CSA, 2001, Report on the 1999/2000 Household Income, Consumption and Expenditure Survey, Statistical Bulletin 258, Addis Ababa, Ethiopia

CSA, , 2005, Welfare Monitoring Survey 2004, Analytical Report, Statistical Bulletin 339-A, Addis Ababa, Ethiopia

CSA, 2005, Welfare Monitoring Survey 2004, Statistical Report on Basic Population Characteristics, Education, Health, Nutritional Status and Child Care, Statistical Bulletin 339-B, Addis Ababa, Ethiopia

USDA, 1963, Composition of Foods, Agricultural Handbook No.8

Gunnar Agren and Rosalind Gibson
Food Composition Table for Use in Ethiopia, Report No.16

Ethiopian Nutrition Institute (ENI) 1968, Extended Food Composition Table for Use in Ethiopia

FAO, 1968, Food Composition Table for Use in Africa

P.L. Pellet and Sossy Shadarevian, 1970, Food Composition Tables for Use in Middle East

The Ethiopian Health and Nutrition Research Institute (EHNRI) and Food and Agriculture Organization of the United Nations (FAO), 1998-1997, Food Composition Table for Use in Ethiopia, Part III, Addis Ababa, Ethiopia

EHNRI, Food Composition Table for Use in Ethiopia, 1995-1997, Part IV, Addis Ababa, Ethiopia

ANNEX I: Extended Statistical Analysis

Table 1: OLS Regression - Expenditure per capita - Coefficients

Variable		Coefficient	T-ratio
Constant		2649.7932	(8.696)***
Age of head		43.1580	(4.725)***
Female Head		-447.6041	(-6.433)***
Age of head, squared		-0.3819	(-3.987)***
Heads Marital Status			
	Unmarried	1737.0648	(14.916)***
	Married	23.2347	(0.259)
	Cohabiting	187.8302	(1.835)*
	Divorced	138.8674	(0.925)
Heads Education			
	Some Primary	363.1859	(6.522)***
	Primary	804.2609	(7.434)***
	Some Secondary	807.9279	(7.309)***
	Secondary	1405.4592	(15.453)***
	University	2504.2721	(22.773)***
Heads Activity Type			
	Agriculture/Mining	-360.1890	(-1.986)**
	Manufacturing/Construction	-253.9481	(-1.346)
	Trade	-299.0029	(-1.49)
	Motor Vehicle	449.8956	(2.435)**
	Hotel	452.0940	(2.162)**
	Transport	-27.0240	(-0.126)
	Financial/Real Estate	973.6109	(4.027)***
	Public Administration	-116.7345	(-0.597)
	Education, Health and Social Works	-432.7531	(-2.152)**
	Other Community and Social Activities	-353.3365	(-1.819)*
Region			
	Amhara	-261.1308	(-2.062)**
	Orimiya	18.0609	(0.144)
	Tigray	243.6140	(1.76)*
	Affar	240.6771	(1.604)
	Somali	65.1774	(0.442)
	B-Gumuz	427.4974	(2.933)***
	SNNP	-105.1245	(-0.817)
	Harari	574.3634	(3.465)***
	Addis	33.5542	(0.255)

Defaults: Missed education, Widowed, Private households and other organisations activity, Dire Dawa
* Significant at 10% level, ** Significant at 5% level, *** Significant at 1% level

Table 2: Probit Regression Determinants of Household Expenditure p.c. Quintile, Disaggregated by Quintile 1 and 5 - Marginal Effects

	Quintile 1		Quintile 5	
Variable	**Marginal Effects**	**T-ratio**	**Marginal Effects**	**T-ratio**
Constant	-0.5841	(-18.245)***	-0.0288	(-2.298)**
Age of head	0.0003	(0.23)	0.0007	(1.449)
Female Head	0.0444	(3.913)***	-0.0178	(-4.074)***
Age of head, squared	0.0000	(-1.037)	0.0000	(-1.166)
Heads Marital Status				
Unmarried	-0.0080	(-0.362)	0.0412	(6.046)***
Married	0.0079	(0.59)	-0.0039	(-0.812)
Cohabiting	0.0458	(2.941)***	-0.0004	(-0.074)
Divorced	0.0262	(1.089)	-0.0049	(-0.622)
Heads Education				
Some Primary	-0.0598	(-6.357)***	0.0357	(8.083)***
Primary	-0.1492	(-7.237)***	0.0567	(7.738)***
Some Secondary	-0.1568	(-7.201)***	0.0651	(8.35)***
Secondary	-0.2334	(-11.062)***	0.0855	(9.669)***
University	-0.3879	(-12.039)***	0.1457	(10.172)***
Heads Activity Type				
Agriculture/Mining	-0.0008	(-0.089)	-0.0440	(-7.853)***
Manufacturing/Construction	0.0587	(4.423)***	-0.0098	(-2.175)**
Trade	0.0656	(3.685)***	-0.0109	(-1.915)*
Motor Vehicle	-0.0597	(-4.684)***	0.0280	(6.283)***
Hotel	-0.0832	(-3.783)***	0.0321	(4.639)***
Transport	-0.0325	(-1.349)	0.0012	(0.183)
Financial/Real Estate	-0.0546	(-1.502)	0.0338	(3.583)***
Public Administration	0.0019	(0.101)	0.0027	(0.542)
Education, Health and Social Works	-0.0105	(-0.46)	-0.0077	(-1.391)
Other Community and Social Activities	0.1152	(7.568)***	-0.0254	(-4.399)***
Region				
Amhara	0.0181	(0.926)	-0.0123	(-1.405)
Orimiya	-0.0996	(-4.235)***	0.0044	(0.612)
Tigray	0.0422	(2.06)**	0.0336	5.665)***
Affar	-0.0513	(-1.942)*	0.0303	4.288)***
Somali	-0.0111	(-0.475)	0.0167	(2.144)**
B-Gumuz	-0.1036	(-3.696)***	0.0402	(6.281)***
SNNP	0.0298	(1.518)	-0.0006	(-0.076)
Harari	-0.0713	(-2.382)**	0.0539	(7.917)***
Addis	-0.0085	(-0.407)	0.0216	(3.54)***

Defaults: Education: Missed education, Marital Status: Widowed, Occupation: Private households and other organizations activity, Region: Dire Dawa

* Significant at 10% level, ** Significant at 5% level, *** Significant at 1% level

Table 3: Multinomial Logit Regression - Household Expenditure p.c. Disaggregated by Quintile - Marginal Effects

	Quintile 1		Quintile 2		Quintile 3		Quintile 4		Quintile 5	
Variable	**M/Effects**	**T-ratio**	**M/Effects**	**T-ratio**	**M/Effects**	**T-ratio**	**M/Effects**	**T-ratio**	**M/Effects**	**T-ratio**
Constant	-0.3233	(-3.895)***	-0.2792	(-2.613)***	0.1903	(2.27)**	0.2558	(3.082)***	0.1564	(3.091)***
Age of head	0.0016	(1.166)	0.0016	(1.02)	-0.0036	(-2.276)**	-0.0012	(-0.797)	0.0016	(1.555)
Female Head	0.0564	(5.461)***	0.0391	(3.151)***	0.0104	(0.81)	-0.0566	(-4.615)***	-0.0492	(-6.523)***
Age of head, squared	0.0000	(-2.164)**	0.0000	(-1.169)	0.0000	(2.382)**	0.0000	(1.385)	0.0000	(-0.991)
Head Marital Status: Unmarried	0.0128	(0.607)	0.0087	(0.35)	-0.0525	(-2.136)**	-0.0377	(-1.746)*	0.0687	(5.511)***
Married	-0.0064	(-0.514)	0.0184	(1.204)	0.0091	(0.575)	-0.0177	(-1.148)	-0.0034	(-0.337)
Cohabiting	0.0178	(1.226)	-0.0116	(-0.636)	-0.0171	(-0.932)	0.0065	(0.385)	0.0044	(0.409)
Divorced	0.0158	(0.726)	0.0203	(0.776)	0.0246	(0.947)	-0.0547	(-2.099)**	-0.0060	(-0.393)
Heads Education: Some Primary	-0.0550	(-7.566)***	-0.0491	(-5.46)***	-0.0189	(-1.953)*	0.0566	(5.854)***	0.0664	(9.784)***
Primary	-0.1207	(-7.23)***	-0.0457	(-2.45)**	-0.0306	(-1.529)	0.0828	(4.497)***	0.1142	(10.241)***
Some Secondary	-0.1257	(-7.009)***	-0.1011	(-4.767)***	-0.0047	(-0.23)	0.1132	(6.089)***	0.1182	(10.553)***
Secondary	-0.1977	(-12.018)***	-0.1162	(-6.374)***	-0.0168	(-0.947)	0.1612	(10.25)***	0.1695	(17.739)***
University	-0.3277	(-12.752)***	-0.2490	(-8.716)***	-0.0069	(-0.276)	0.2810	(13.305)***	0.3025	(23.917)***
Head Activity : Ag/Mining	0.0019	(0.065)	0.0621	(1.7)*	0.0378	(1.078)	-0.0086	(-0.271)	-0.0932	(-5.253)***
Manufacturing/Construction	0.0352	(1.17)	0.0089	(0.234)	-0.0165	(-0.452)	0.0059	(0.18)	-0.0335	(-1.827)*
Trade	0.0540	(1.7)*	0.0318	(0.792)	-0.0073	(-0.187)	-0.0374	(-1.068)	-0.0411	(-2.12)**
Motor Vehicle	-0.0627	(-2.09)**	-0.0161	(-0.43)	0.0040	(0.111)	0.0408	(1.265)	0.0341	(1.923)*
Hotel	-0.0835	(-2.433)**	-0.0768	(-1.779)*	0.0107	(0.264)	0.0996	(2.751)***	0.0500	(2.491)**
Transport	-0.0298	(-0.848)	-0.0040	(-0.092)	0.0275	(0.67)	0.0203	(0.548)	-0.0141	(-0.676)
Financial/Real Estate	-0.0481	(-1.087)	0.0431	(0.852)	-0.0367	(-0.717)	0.0053	(0.12)	0.0364	(1.627)*
Public Administration	-0.0044	(-0.134)	0.0075	(0.187)	0.0076	(0.199)	0.0059	(0.171)	-0.0166	(-0.886)
Education, Health, Social Work	-0.0178	(-0.506)	0.0044	(0.102)	0.0118	(0.292)	0.0307	(0.869)	-0.0290	(-1.492)
Other Community/Social Activity	0.0890	(2.911)***	0.0673	(1.743)*	-0.0385	(-1.015)	-0.0527	(-1.545)	-0.0651	(-3.422)***
Region: Amhara	0.0128	(0.756)	-0.0315	(-1.567)	0.0683	(2.901)***	-0.0351	(-1.562)	-0.0146	(-0.957)
Orimiya	-0.0815	(-4.764)***	-0.0410	(-2.069)**	0.0709	(3.042)***	0.0268	(1.219)	0.0248	(1.668)*
Tigray	0.0322	(1.758)*	-0.0414	(-1.86)*	-0.0370	(-1.389)	-0.0167	(-0.671)	0.0629	(3.888)***
Affar	-0.0453	(-2.185)**	-0.1068	(-4.278)***	0.0306	(1.102)	0.0529	(2.034)**	0.0687	(3.998)***
Somali	-0.0025	(-0.126)	-0.0544	(-2.305)**	-0.0052	(-0.186)	0.0115	(0.436)	0.0506	(2.891)***
B-Gumuz	-0.0923	(-4.438)***	-0.0788	(-3.318)***	0.0417	(1.545)	0.0418	(1.629)	0.0876	(5.205)***

SNNP	0.0177	(1.034)	-0.0463	(-2.263)**	0.0142	(0.591)	0.0032	(0.141)	0.0111	(0.717)
Harari	-0.0919	(-3.708)***	-0.1454	(-4.87)***	-0.0103	(-0.317)	0.1252	(4.392)***	0.1224	(6.616)***
Addis	-0.0202	(-1.117)	-0.1131	(-5.133)***	0.0460	(1.848)*	0.0489	(2.12)**	0.0384	(2.532)**

Defaults: Missed education, Widowed, Private households and other organizations activity, Dire Dawa; * Significant at 10% level, ** Significant at 5% level, *** Significant at 1% level

ANNEX II Distribution of Sampling Units (Sampled And Covered) By Strata

Table 11. Number of Planned and Actually Covered Sampling Units (EAs & Households) of the 2004 (1996 E.C.) Household Income Consumption and Expenditure Sample Survey-Rural

Region	Stratum	Enumeration Areas		Households	
	Zone/Sp.wereda	Sampled	Covered	Sampled	Covered
Tigray	North Western Tigray	14	14	168	168
	Central Tigray	15	15	180	180
	Eastern Tigray	14	14	168	168
	Southern Tigray	15	15	180	180
	Western Tigray	13	13	156	156
	Region Total	**71**	**71**	**852**	**852**
Afar	Zone One	17	17	204	203
	Zone Three	18	18	216	216
	Region Total	**35**	**35**	420	**419**
Amhara	North Gonder	18	18	216	215
	South Gonder	17	17	204	204
	North Wello	16	16	192	192
	South Wello	20	20	240	240
	North Shewa	18	18	216	212
	East Gojam	19	19	228	225
	West Gojam	19	19	228	227
	Wag Hemira	14	14	168	168
	Awi	15	15	180	180
	Oromia	14	14	168	167
	Region Total	**170**	**170**	2040	**2030**
Oromia	West Wellega	15	15	180	179

	East Wellega	13	13	156	156
	Illubabor	13	13	156	156
	Jimma	16	16	192	191
	West Shewa	13	13	156	156
	North Shewa	13	13	156	156
	East Shewa	15	15	180	180
	Arsi	16	16	192	192
	West Harerghe	13	13	156	156
	East Harerghe	16	16	192	192
	Bale	12	12	144	144
	Borena	13	13	156	156
	South West Shewa	13	13	156	156
	Guji	13	13	156	156
	Region Total	**194**	**194**	2328	**2326**

Table 1 (Cont'd)

Region	Stratum	Enumeration Areas		Households	
	Zone/Sp.wereda	Sampled	Covered	Sampled	Covered
Somali	Shinile	12	12	144	143
	Jijiga	16	16	192	191
	Liben	14	13	168	151
	Region Total	**42**	**41**	**504**	**485**
Benishangul-	Metekel	15	14	180	168
Gumuz	Asosa	15	15	180	180
	Kemashi	16	16	192	189

	Region Total	**46**	**45**	**552**	**537**
SNNP	Guraghe	11	11	132	132
	Hadiya	9	9	108	108
	Kembata_Tambaro	9	9	108	108
	Sidama	12	12	144	140
	Gedeo	9	9	108	108
	Wolayita	11	11	132	132
	South Omo	9	9	108	108
	Shaka	8	8	96	96
	Keffa	10	10	120	120
	Gamo_Gofa	12	12	144	144
	Bench_Maji	10	10	120	120
	Yem Special Wereda	5	5	60	60
	Amaro Special Wereda	5	5	60	60
	Burji Special Wereda	5	5	60	60
	Konso Special Wereda	5	5	60	60
	Derashe Special Wereda	5	5	60	60
	Dawro	9	9	108	108
	Basketo Special Wereda	5	5	60	60
	Konta Special Wereda	5	5	60	60
	Siltie	8	8	96	96
	Alaba Special Wereda	5	5	60	60
	Region Total	**167**	**167**	**2004**	**2000**
Harari	**Harari**	**24**	**24**	**288**	**288**
Addis Ababa	**Addis Ababa**	**24**	**23**	**288**	**276**
Dire Dawa	**Dire Dawa**	**24**	**24**	**288**	**287**

Country Total		**797**	**794**	**9564**	**9500**

Table2 Distribution of Sampled and Covered EAs and Households of 2004 (1996 E.C) Household Income Consumption and Expenditure Sample Survey for Urban Domain of Regional Capitals and Major Urban Centers

Region	Zone	Wereda	Town	EAs		Households	
				Samples	Covered	Samples	Covered
Tigray	Mekele	Mekele	Mekele	23	23	368	365
Afar	Zone 1	Asayita	Asayita	15	15	240	238
Amhara	North Gonder	Gonder	Gonder	23	23	368	367
	South Wollo	Desse	Desse	23	23	368	367
	Bahir Dar	Bahir Dar	Bahir Dar	23	23	368	366
Oromia	East Shewa	Adaa' Liben	Debre zeit	23	23	368	367
	Adama\Nazreth	Adama\Nazreth	Adama	23	23	368	366
	Jimma	Jimma	Jimma	23	23	368	367
Somali	Jijiga	Jijiga	Jijiga	23	23	368	363
Benishangul	Asosa	Assosa	Asosa	15	15	240	238
SNNP	Sidama	Awassa	Awassa	23	23	368	367
Harari	Harari	Harari	Harar	23	23	368	366
Addis Ababa	Addis Ababa	Addis Ababa	Addis Ababa	200	200	3200	3187
Dire Dawa	Dire Dawa	Dire Dawa	Dire Dawa	25	25	400	395
Total				**485**	**485**	**7760**	**7719**

Table3 Distribution of Sampled and Covered EAs and Households of the 2004/1996 E.C Household Income Consumption and Expenditure Sample Survey for Urban Domain of Other Urban Centers

Region	EAs		Household	
	Samples	Covered	Samples	Covered
Tigray other Urban	33	33	528	527
Afar other Urban	20	20	320	314
Amhara other Urban	56	56	896	894
Oromia other Urban	78	78	1248	1247
Somali other Urban	22	22	352	343
Benishangul other Urban	20	20	320	320
SNNP other Urban	46	46	736	736
Total Other Urban	**275**	**275**	**4400**	**4381**

ANNEX III Estimation Procedures of Total, Ratio and Sampling Errors

The following formulas were used to estimate the required variables by reporting levels.

1. Estimate of Total $\hat{Y}_h$ in Rural Domain (Category I)

$$\hat{Y}_h = \sum_{i=1}^{n_h} \frac{M_h H_{hi}}{n_h M_{hi} h_{hi}} \sum_{J=1}^{h_{hi}} Y_{hij} = \sum_{i=1}^{n_h} \sum_{j=1}^{h_{hi}} W_{hi} Y_{hij} \text{ ----------} \quad (1)$$

Where,

$$W_{hi} = \frac{M_h H_{hi}}{n_h M_{hi} h_{hi}}$$ is the basic sampling weight

2. Estimate of Total $\hat{Y}_h$ in Major Urban Domain (Category II)

$$\hat{Y}_h = \sum_{a=1}^{3} \sum_{i=1}^{n_{aih}} \sum_{j=1}^{h_{hai}} W_{hai} Y_{haij} \text{ ----------} \quad (2)$$

Where,

$$W_{hai} = \frac{M_{ha} H_{hai}}{n_{ha} M_{hai} h_{hai}}$$ is the basic sampling weight

3. Estimate of Total $\hat{Y}_h$ in Other Urban Domain (Category III)

$$\hat{Y}_h = \sum_{i=1}^{n_h} \frac{M_h}{n_h n_{hi}} \sum_{j=1}^{n_{hi}} \frac{H_{hij}}{M_{hij} h_{hij}} \sum_{k=1}^{h_{hij}} Y_{hijk} \quad \text{----------} \quad (3)$$

$$= \sum_{i=1}^{n_h} \sum_{j=1}^{n_{hi}} \sum_{k=1}^{h_{hij}} W_{hij} Y_{hijk}$$

Where,

$$W_{hij} = \frac{M_h H_{ij}}{n_h n_{hi} M_{hij} h_{hij}} \text{ is basic sampling weight}$$

The following notations were used in the formula:

M_h = Total number of households in stratum h obtained from the sampling frame.

M_{hi} = Total number of households in EA/PSU i for rural and urban domain or in urban center/PSU i for other urban domain, stratum h obtained from the sampling frame.

n_h = Number of successfully covered sample EAs for rural domain in stratum h.

H_{hi} = Total number of households obtained from the survey listing in sample EA/PSU i stratum h for rural domains.

h_{hi} = Total number of households successfully covered in EA/PSU i stratum h for rural domain.

M_{ha} = Total adjusted number of households of the domain in substrata a and stratum h obtained from the sampling frame

H_{hai} = Total number of households obtained from the survey listing in EA/PSU i of substratum a and stratum h

n_{ha} = Number of successfully covered sample EAs/PSUs for major urban domain in substratum a and stratum h

M_{hai} = Total number of households in EA/PSUi in substratum a and stratum h obtained from the sampling frame

$h_{hai=}$ = Total number of sampled and covered households in sampled EA/PSU i , substratum a and stratum h

$\hat{Y}_{haij}$ = The observed value of characteristic y for household j, in EA/PSUi, substratum a and stratum h of Major Urban Domain

M_{hij} = Total number of households in EA/SSU j, urban centers/PSU i and stratum h obtained from the sampling frame for other urban center domain.

n_{hi} = Number of sample EAs successfully covered in urban center/PSU i and stratum h for other urban center domain.

H_{hij} = Total number of households obtained from the survey listing in EA/SSU j, urban center/PSU i and stratum h for other urban center domain

h_{hij} = Number of sample households successfully covered in EA /SSU j, urban center/PSU i and stratum h for other urban center domain.

Y_{hij} = The observed value of a characteristic y for household j in sampled EA/PSU i and stratum h for rural domain.

Y_{hijk} = The observed value of a characteristic y for household k in EA/SSUj, urban center/PSU i and stratum h for other urban domain.

Note: Estimate of total at country level, $\hat{Y}$, is obtained by summing up stratum/domain total estimates.

$$\hat{Y} = \sum_{h=1} \hat{Y}_h$$

4. Sampling Variance of the Estimates:

Sampling variance of estimate of stratum total are given by the following formulas:

The variance of domain or reporting total estimate is:

$$V(\hat{Y}_h) = \frac{n_h}{n_h - 1}\left[\sum_{i=1}^{n_h} \hat{Y}_{hi}^{\,2} - \frac{\hat{Y}_h^{\,2}}{n_h}\right] \text{----------} \quad (4)$$

in which $\hat{Y}_{hi} = W_{hi} \sum_{j=1}^{h_{hi}} Y_{hij}$ for rural and major urban centers domains,

and $\hat{Y}_{hi} = \sum_{j=1}^{n_{hi}} W_{hij} \sum_{k=1}^{h_{hij}} y_{hijk}$ for other urban center domain.

$$V(\hat{Y}) = \sum_{h} V(\hat{Y}_h) \text{----------} \quad (5)$$

$$SE(\hat{Y}_h) = \sqrt{Var(\hat{Y}_h)} \text{ ----------} \quad (6)$$

5. Coefficient of Variation (CV) and Confidence Interval (CI)

The following formulas were used to calculate CV and CI of the domain (reporting level) total.

The coefficient of variation (CV) of domain total in percentage is:

$$CV(\hat{Y}_h) = \frac{\sqrt{VAR(\hat{Y})}}{\hat{Y}} * 100 \text{ ----------} \quad (7)$$

and Ninety-five percent confidence interval (CI) of domain total:

$$\hat{Y}_h \pm 1.96 * SE(\hat{Y}_h) \text{ ----------} \quad (8)$$

6. Ratio Estimates:

$$\hat{R}_h = \frac{\hat{Y}_h}{\hat{X}_h} \text{ and } \hat{R} = \frac{\hat{Y}}{\hat{X}} \text{ ----------} \quad (9)$$

Where the numerator and the denominator are estimates of domain totals of characteristic y and x, respectively.

$$Var\left(\hat{R}_h\right) = \frac{1}{\hat{X}_h^2}\left[Var\left(\hat{Y}_h\right) + \hat{R}_h^2 Var\left(\hat{X}_h\right) - 2\hat{R}_h Cov\left(\hat{Y}_h, \hat{X}_h\right)\right] \text{----------} \quad (10)$$

In which

$$Cov\left(\hat{Y}_{h,}\hat{X}_{h}\right)=\frac{n_h}{n_h-1}\left[\sum_{i=1}^{n_h}\hat{Y}_{hi}\hat{X}_{hi}-\frac{\hat{Y}_h X_h}{n_h}\right] \text{ ---------- (11)}$$

Estimates of standard error, coefficient of variation and confidence interval for the ratio estimate can be calculated by adopting formulas 6, 7 and 8.