FOOD SECURITY AND VULNERABILITY IN SELECTED TOWNS OF TIGRAY REGION, ETHIOPIA

WFP-Ethiopia
Vulnerability Assessment and Mapping (VAM)

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Tigray Regional Government

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Executive Summary

Tigray National Regional State is one of the regional states within the structure of the Federal Democratic Republic of Ethiopia. It is located in the northern part of the country bordering with Eritrea in the north, Sudan in the west, Afar in the east and Amhara in the southwest. The region had an estimated population of over 4.3 million at the end of 2007, of which about 19.5% lived in urban areas (CSA census report, 2007). More than 58% of the total population were living in absolute poverty (earning less than a dollar a day), which makes the region's situation more serious compared to the national average (44.4%). Added to this has been the impact of inflation that started increasing in 2005 and has apparently resulted in increased food insecurity in urban areas. The prices of cereals have increased by more than 100% since mid 2005 when the country faced spiral price increases. The *"new emergency"* facing the urban poor as a result of the rapid food price increase resulted in the Government initiating an urban grain market stabilization program in 2007. The program started initially in Addis Ababa and was expanded to cover 12 urban centers. Since April 2007, the Government has sold over 420,000 MT of wheat to urban consumers at a subsidized price. The Government continued with the program in 2008 and 2009 with further grain imports for the program.

The Government also took some fiscal and monetary measures in 2008 by lifting certain taxes from food commodities (especially oil), as well as measures to curb the excess supply of money. With further increases in cereal, pulses and oil prices expected as a result of the general global price increases and reduced production from climate change imminent, it is becoming ever more important to understand and monitor people's vulnerability to these changing circumstances. Understanding the drivers of urban food insecurity and recommending sustainable interventions is of paramount importance as shocks and hazards affecting urban food insecurity may ultimately lead to famine in the extreme, urban areas become prone to social unrest, as highlighted by the food riots and unrest in some countries. In order to effectively support the efforts and initiatives being made, the Government, WFP and partners embarked on this study aiming at collecting useful information on the effect of the soaring market prices on urban population and identify potential areas for intervention.

Objectives of the study

The purpose of the study was to generate food security and vulnerability information to help policy and decision makers to design and implement programs that contribute to the reduction of urban food insecurity and vulnerability. The specific objectives of the study included:

- To identify food security and livelihoods problems, constraints, strategies and coping mechanisms among different social and economic groups in the selected major towns of Tigray Region.

- To do an in-depth analysis of the major factors to food and livelihoods insecurity in selected towns of Tigray in order to inform policy and program design as well as potential areas of interventions.

- To establish baseline data on urban vulnerability and lay foundation for developing a practical monitoring system that provides an early indication of food insecurity and livelihoods vulnerability.

Key Findings

Asset Holding: Overall, 65% in Zalambesa, 45% in Maichew, 40% in Adwa and 36% to 38% of households in Mekele and Adigrat were 'asset poor'. Only 5% of households in Zalambesa, 14% to 18% in Maichew and Adwa, and 22% to 27% in Adigrat and Mekele were 'asset rich' (more than 10 types of assets). The most common types of assets owned were basic household possessions such as beds (93%), table and chairs (52%), radio (50%), and sofa sets (29%). Television sets were owned by 46% of households, 48% of households owned jewellery, 45% owned wrist watch and 35% owned CD/DVD player. Of transport assets, bicycles were owned only by 4% and cars only by 1.6% of the households. Some 31% owned cell phone, 11% owned refrigerator and 7% had satellite receiver dish. Livestock ownership was limited with only 18% of households having livestock on average one cow, one sheep or goat and 3 chickens. The asset rich tended to more likely own cattle.

Livelihood Groups: As perceived by respondents, the main livelihood sources for the majority of slightly better-off and better-off households were civil service and business while the poor and the very poor relied on other activities like casual labour, street vending, small businesses, and begging (not working). Regarding income levels, as perceived by respondents, the majority of the poor had a monthly income of *Birr* 300-600 while most of the very poor earned below 300 *Birr*. A majority of slightly better-off households earned *Birr* 1000-3000 monthly. The majority of the better-off households earned more than 3000 *Birr* per month. Using clustering approach the households were clustered into 12 livelihood groups depending on income sources ranging from those who depended on government salary to those dependent on assistance and begging.

Expenditure: The average monthly per capita expenditure for the major Tigray towns was Birr 237, with a minimum of *Birr* 63 per capita in Zalambesa and a maximum of *Birr* 330 per capita in Mekele. Based on expenditure, 76% of people had a per capita expenditure of less than *Birr* 300 which was equivalent to US$1.0 per day. The percentage of people with poor expenditure, or less than US$ 1.0, was 93% in Zalambesa, 83% in Adwa, 76% in Adigrat and Maichew, and 63% in Mekele. On average 68% of the total household income was spent on food across five major towns in Tigray. Households in Adwa spent 76% of their monthly expenditure for food compared to 71% in Adigrat, 72% in Mekele and 70% in Maichew. Of the total food expenditure, cereals took the largest share of 52% of total expenditure in Mekele, 51% in Adwa and Adigrat, 47% in Maichew and 16% of total expenditure in Zalambesa.

Markets: During the time of this survey, availability of food commodities ranged from as low as 42% (Barley) and as high as over 90% (oil, sugar, and red pepper) depending on the type of food items. The food commodities most impacted by supply problems in recent months included wheat (flour and grain), maize, teff, rice, pulses and meat with availability ranging from 53 to 70 percent. Around three-quarters of the groups interviewed felt that food commodities were available in markets while the remaining groups felt food items were scarcely available.

Nearly 93 percent of traders indicated that compared to the previous year the price of most staple foods increased on average by 60 to 90%. For instance, the price of wheat grain increased by 34%, teff and rice each increased by about 68%; maize by about 41%; meat by about 60%; vegetables by about 52%; oil by about 34%; and milk by about 55%. Nearly three-fourth of the interviewed traders indicated that the major reason for the increase in price was the increase in prices from the source of commodities; and only 10% indicated

increase in transport cost as the main reason. About 41% indicated that price rise started one year back; 25% indicated six month before; and 18% indicated more than a year ago.

According to focus group discussions and key informant interviews, the main reasons for the excessive price increase since 2005 included:

- o Opportunistic traders, brokers and farmers who took advantage of favourable conditions and made food commodities scarce by hoarding and created irregularities in food markets resulting in poor supply, high demand and higher prices.
- o Fuel price increases on a continuous basis was also mentioned as a major cause for increasing/expensive transport cost that had contributed to the food price increases.

Nearly 90% of traders stated that the major reason for the increase in price was due to the increase in prices from sources of the commodities.

Food Security: Households with poor consumption could consume cereals and edible oil regularly, and sugar only three days per week. Households with borderline consumption could consume cereals, edible oil, and sugar regularly, and vegetables and pulses once per week. Households with good consumption could consume cereals, sugar, pulses and edible oil regularly, potatoes (two days), vegetables (two days), pulses (five days) and meat/fish (one day). The results show that 14.5% of households had poor consumption, 28.3% had borderline consumption and 57% acceptable consumption. The greatest percentage with poor consumption was in Adwa (35% of sample households), followed by Zalambesa with 15% of households, Mekele with 12% and the lowest poor consumption was in Adigrat with 5% followed by that of Maichew with 8% of households.

Access to Social Services: Access to safe drinking water is still considered a major problem for most of the population in Ethiopia. The household survey indicated that on average 90% of households had access to piped water and there was stability of supply with only 12% of the surveyed communities in the selected five major towns reporting deteriorating access to safe drinking water in 2008 compared to the previous five years. The reasons for the latter included frequent pipe water interruption (5.6%) and poor services (6%). Even though access to water got improved, water related diseases were reported by some of the households.

About 83% of respondents indicated that hygiene and sanitation conditions were generally improved, while 14% indicated those remained the same in 2008 compared to the previous five years. Only 3% of respondents reported deterioration of hygiene and sanitation. For those who felt that sanitation had deteriorated, major reasons included poor water supply (2%) and unaffordable soap prices (1%).

Regarding access to health facilities, about 28% said that access to the services deteriorated compared with the previous five years while the remaining 72% had seen access to health services either the same or improved. From those who reported access to health services as having deteriorated, 50% were due to unaffordable services, 33% were due to poor services, 12% as a result of 'expensive life', and 5% due to more money being spent on food.

Health: More than 96% of household members were in good health during 2008 and only 4% were ill for more than three months or less. The major disease affecting children under 5 years was diarrhoea, followed by fever and malaria. Most households accessed their health services from the private, public and referral hospitals.

Heating and Lighting: Charcoal was indicated as the major source of cooking fuel by most households ranging from 55% to 70%, with wood being the main source for Zalambesa and Maichew. Nearly all (90 to 99%) of households reported that electricity was their main source of lighting. However, 62% of focus group discussions indicated that electricity services had immensely deteriorated during the survey year. The situation was described as the worst ever. The major problems with electricity services were frequent power interruption (91%) and poor services (6%). While frequent power interruption was a country-wide phenomenon, poor services were more localized. Only a few households used wood, candle, and gas/kerosene (paraffin) as their source of lighting.

Social Problems: In the relatively slightly better-off family members where there was no enough food in the house, suspicion between husband and wife arose making one a cause for the unfavorable situation; for the unbalanced living conditions. At least 13% of households sold their assets like their furniture, jewelry and some sold even their productive assets with the main reason being to purchase food (90% of households that sold assets). Divorce and separation was reported by the community to be growing and this was supported by the household interviews that indicated 17% of the household heads were divorced and 7% separated. Some men deserted their family members out of frustration. Other families run out of clothing since they used their entire budget for food. This type of disproportional use of income for food leaves a very small budget for health care.

One of the social disruptions caused by the food price increment was that many students dropped out from schools both at elementary and secondary schools. When there is food stress, students will be forced to look for a casual labor than to go to school and they will be forced to minimize their consumption of food by saving their money. Some children desert their own family and go to their relatively better-off relatives to live with them. Others start living on the streets. In such stressful conditions, some household members migrated to other places to look for other options like begging and casual labor. Some even opted to theft. Such living conditions can cause illnesses that lead to worsening of the lives of the affected. Another social problem mentioned by the community was that girls and women were forced to become commercial sex workers increasing prostitution and associated health risks.

The Vulnerable Groups: Households headed by elderly and children were most affected. The low income groups like casual laborers, pensioners, those dependent on assistance and begging were in low income levels, and hence were vulnerable to prices and food insecurity. Female headed households were more likely to be vulnerable, as were also households with big family size and those households who were asset poor.

Coping Mechanisms: Relying on less expensive food as a coping mechanism was widespread among the households as they attempted to put food on the table with savings much decreased. The other common coping mechanism was for family members to forego meals. The most commonly cited coping strategies that was used first by households when dealing with shocks were:

- To eat less preferred or less expensive foods by 97% of households in Adwa, 93% in Maichew, 89% in Adigrat and 67% and 68% of households in Zalambesa and Mekele towns.

- Limiting portion size at meal by 66% of households in Mekele, 65% in Maichew, 64% in Zalambesa, 49% and 46% of households in Adwa and Adigrat towns.

- Reducing the number of meals eaten per day by 55% of households in Mekele 53% in Maichew, 38% in Zalambesa and 35% in Adwa and Adigrat towns.

Access to Market Stabilization Program: The Government, as it did in other major towns in the country, provided subsidized food in sufficient quantity for those who were able to purchase with some amount of money. This was done through Kebele Administrations and it was said to have saved many urban people from a serious shortage of food, which otherwise would have resulted in a disaster. The government established consumers associations, which were assisting consumers not to be exposed to some unfair traders.

Overall, 47% of households reported that they had access to subsidized wheat from their Kebeles. The percentage of households with access to subsidized wheat was 71% in Mekele and Adigrat, 40% in Maichew, 27% in Adwa and only 3% in Zalambesa towns. The most common reason for people not having access to subsidized wheat were that they simply did not want to buy/ biased against (33% of respondents), followed by not registered in the Kebele where they lived (31% of households). Another 12% indicated they did not have money to buy the food while 7% indicated that there was not enough subsidized food for purchase. Lastly, about 5% of households indicated they did not know about the program and another 5% indicated that they were not interested.

Other Assistance Programs: With regard to NGOs working in the area, they were providing free food for the disabled, to the chronically sick, to the helpless and elderly and to the malnourished children. In addition to this, NGOs were also supporting the Safety Net Program, thus supporting a good number of the poor and the affected population.

Future Expectations: People had different expectations and opinions on how things would come out in the future. They expected things to remain in the same problem, with no change and others, even, expected things to get worse and worse. They expected people to resort to less preferred, non-nutritious and less expensive food and limiting portion of meal and frequency of eating for a while. For the above not to happen, people suggested prayers to God and get His blessings.

Conclusions

From the survey findings it can be concluded that:

- Food availability was negatively affected as a result of poor supply of food commodities, malfunctioning of markets, high transport costs, hoarding of grains by traders, and increased exports of food items that contributed to the shortage of commodities in markets.

- Food accessibility was also seriously impacted due to several factors that include:
  - Poor level of asset base for more than half of the surveyed households.
  - High poverty conditions of the majority of populations where more than 70% of households were living at less than a dollar a day.
  - High level of expenditure on food by the majority of households (more than 70% of their income spent on food).
  - Below acceptable level of consumption by about one-third of the surveyed households.

- o Increased inflation on food commodities and other services that led the households to have weak purchasing power.

- Food utilization was also affected due mainly to the poor basic infrastructure and deterioration of basic services such as safe drinking water, sanitation, housing and health facilities.

- As a result of the deterioration of all the three pillars of food security some of the surveyed population were found to be highly food insecure.

- Significant proportion of the households were also increasingly exposed to several risk factors that included high prices of food and non-food commodities and services, worsening food insecurity, preventable/communicable diseases, family disintegration, and disruption of social support/ networks.

- In order to minimize some of the risks households were found to use consumption related poor coping strategies that included skipping meals, reducing meal sizes, shifting to less expensive and less preferred food items, etc.

- As a result of high exposure to several risk factors and using damaging types of coping mechanisms, many households were found to be vulnerable. The study findings further indicated that the situation would not improve in a near future–rather worsening conditions were anticipated to continue unless appropriate measures would be taken.

- Although the Government tried to contain the multi-faceted problems of the population by distributing wheat at subsidized prices and lifting of taxes from food commodities, compared to the magnitude and seriousness of the challenge, the level and type of assistance provided to the most affected households was found to be insufficient.

Recommendations

- WFP together with the relevant Government organizations and other partners need to design a food aid program and implement through appropriate intervention modalities that include free food distributions, market support, school feeding, and food-for-work/ asset in order to reduce problem of food insecurity and related vulnerability conditions of the most affected poor households.

- UNICEF in collaboration with the relevant Government organizations and other partners need to act on affected/ deteriorated basic services such as water, sanitation, health facilities, etc.

- A multi-agency and multi-sectoral task force should be established as soon as possible in order to address the multi-dimensional problems of the affected population and design a well coordinated urban food security and market monitoring system.

- The Government together with its development partners should plan and implement a long-term and sustainable solutions and design welfare monitoring system for the urban population in order to reduce the existing high level of poverty of the population.

1. Introduction

1.1. Background and Rationales

Ethiopia is presently the second most populous country in Africa, with a total population of about 74 million and growing with a rate of ~2.5% per annum (CSA, 2007). Only around 17% of the population lives in urban areas; this is a very low level of urbanization even by standards of sub-Saharan Africa. However, the rate of urbanization is quite high with an average growth rate of 4% per year. With this rate of growth, Ethiopia's urban population is estimated to exceed 50 million by 2050[1]. Ethiopia has enjoyed a steady economic growth over the past a few years with a real GDP growth rate, for instance, of 11.9% in 2003/04, 10.5% in 2004/05, 9.6% in 2005/06, and 11.4% in 2006/07[2]. Economic growth highly depends on performance of the agricultural sector that accounts for 47% of the GDP followed by the services sector (accounting for ~39%) and the manufacturing sector (accounting for ~14%). The Ethiopian agriculture is largely rain-fed and thus highly vulnerable to the vagaries of weather. Only about 10% of cereal croplands are irrigated, and yield variability at the regional level is one of the highest in the developing world. Drought can shrink farm production by as much as 90% from a normal rainfall year. Extreme dependence on rain-fed agriculture and recurrent occurrence of drought has been a major immediate cause of food insecurity in Ethiopia. As various sources indicate, food insecurity levels in the rural areas of the country rose from about 2 million people in 1995 to about 14 million in 2008, of which 7.5 million were covered by the safety net program of the government.

As in many developing countries, food security and vulnerability assessments in Ethiopia have traditionally focused on rural areas, where the majority of the total population as well as the poorest and most food-insecure segments of the population live. Nevertheless, as the urban population increased and with occurrence of economic shocks, food insecurity in urban areas has become a major concern. A study by Abbi Kedir and Andrew Mackay (2003) estimated chronic poverty in urban areas at 26% and stated that 23% of households studied experienced transitory poverty. The 1999/2000 national Household Income, Consumption and Expenditure (HICE) Survey estimated that 37% of the urban population was below a poverty line compared to 45% in rural areas. Poverty in urban areas is driven by unemployment, underemployment, lack of sanitation, rising cost of living, reduced inter-dependency among urban households, household composition, low asset ownership, low level of education, high dependency on the informal sector, HIV/AIDS (estimated at 7.7% prevalence in urban areas[3]) and increased population pressure due to natural growth and rural-urban migration.

The contribution of inflation to food insecurity in the urban areas has been significant. For example, the price of cereals increased by more than 100% since the mid-2005. Between 2002 and 2007, the food component of the national consumer price index (CPI) rose by over 62% (over 15% inflation per annum). This is faster than the general CPI and significantly faster than non-food prices, suggesting that those involved in non-food sectors of the economy (predominantly the urban population) have become relatively poorer over those five years. Whilst inflation is on the increase, wage rates have not kept pace with it, as an example the least paid civil servants (Custodial and Manual services) salaries on average increased from *Birr* 200 in 2001 to *Birr* 320 in 2007, a 60% increase only.

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[1] CSA 1994 Census population figures and projections. The new national census, conducted in May 2007, will revise the urban population figures and growth rates.
[2] Ministry of Finance and Economic Development; National Bank of Ethiopia
[3] Ministry of Health, 2007

Similarly professional and scientific services salaries increased from *Birr* 760 to *Birr* 1068 per month an increase of only 40.5% for the same period. The inflation for the same period was 93% and for food items it was 125 percent[4].

The greatest impact of inflation is obviously on the urban and rural poor who are net buyers of food. In order to mitigate impacts of the high and mounting food prices, the Government launched an urban grain market stabilization program in 2007. Through this program, a total of over 120,000 MT of wheat was sold to urban consumers between April 2007 and August 2008 at Birr 1.8 per kg. The program was started initially in Addis Ababa, and then expanded to cover 12 urban centres, including Addis Ababa, namely: Bahir Dar, Gondar, Dessie, Kombolcha, Mekele, Adigrat, Dire Dawa, Harar, Awassa, Nazareth and Jimma. The Government continued with the program from mid August 2008 in a different form and sold 150,000 MT of wheat to wholesalers, consumers, millers and traders at Birr 3.5 per kg on a first come first served basis, removing the coupons or ration card system which was previously in use. The Government also took some measures in 2008 by lifting certain taxes from food commodities (especially oil), as well as measures to curb the excess supply of money. These fiscal and monetary measures might take time to reduce prices and lead to improved food security of the urban poor.

While the Government's Disaster Prevention and Preparedness Policy does not exclude assistance to urban areas, it provides no clear direction for the institutional disaster response mechanism in an urban context. Understanding the drivers of urban food insecurity and recommending sustainable interventions is of paramount importance as shocks and hazards affecting urban food insecurity may ultimately lead to increased poverty and urban areas becoming prone to social unrest, as highlighted by the food riots and unrest in some countries such as Egypt, Ivory Coast, Indonesia, and Sierra Leone. Constructing a poverty assessment profile at the urban/ town level helps to assess the cause, characteristics, and location of poverty within the urban areas and also provides a snapshot showing who is poor, where they live, their access to services, living standard, and others thereby contributing to the targeting of poverty measures.

This report presents a study of urban food insecurity and vulnerability undertaken in selected major towns of Tigray. The Regional government of Tigray being cognizant of the incidence and severity of poverty in urban areas wanted to embark on urban food security and vulnerability assessment with the cooperation of UN World Food Program (WFP) Ethiopia. Therefore, five major towns of the region (Mekele, Adigrat, Zalambesa, Adwa and Maichew) were selected for the food security and vulnerability study.

1.2. Objectives and Methodology

1.2.1. Objectives

The purpose of this assessment study was to generate food security and vulnerability information to help policy and decision makers design and implement programs that contribute to the reduction of urban food insecurity and vulnerability.

The specific objectives were:

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[4] Ethiopia Economic Association, April 2008

- To identify food security and livelihoods problems, constraints, strategies and coping mechanisms among different social and economic groups in selected urban areas,
- To define predisposing factors to food and livelihoods insecurity in urban areas in order to inform policy and program design,
- To outline household food expenditure and food access patterns among different socioeconomic groups in the urban areas,
- To establish baseline data on urban vulnerability and lay foundation for developing a practical monitoring system that provides an early indication of food insecurity and livelihoods vulnerability,
- Examine the linkages between food security, education, nutrition and health,
- Understand the impact of soaring food prices on food and livelihoods security, and
- Identify appropriate food and non food interventions and policy implications.

1.2.2. Methodology

Sampling and coverage of the survey
A stratified two-stage cluster design was used for selection of ultimate sampling units (households), with Kebeles as clusters. The first stage selection was done by probability proportional to size (PPS) where size is the total number of households compiled from the 2007 population and housing census cartographic work. The second stage sample (household) selection was done by systematic random sampling.

Sampling and coverage of household survey
The most common instruments used for the assessment of urban food security and vulnerability are, among others, household income, consumption, assets and expenditure and well being instruments; Focus Group Discussion and Key Informant Interviews; and Traders instruments. Stratified two-stage cluster sampling was used in order that the data collected be representative and free of bias. It is clear that urban/town households are diverse and need to be stratified to get adequate representation from each stratum. The purpose of stratifying is to have uniformity by grouping people together (cluster) according to their similarities. There are two strata for Mekele city, the sub-cities and ketenas. All the sub-cities were considered and from each sub-city 3 ketenas were randomly selected.

Household respondents were selected randomly using cluster sampling methods. For such purpose supervisors were given some awareness on how to sketch the Ketenas sampling units using the usual PRA techniques to identify the major settlement areas, social services, business areas and others. They proceeded their sampling selection by spinning any local materials in order to select the path until the assumed households are covered. Data collection on Traders was designed to cover the diverse aspects of food items in each town. Accordingly, 150 traders were interviewed from Mekele, and from the other three towns each 75 traders were interviewed while in Zalambesa only 45 traders were interviewed as total number of traders available were few. In a similar fashion, 15 FGD and 30 KII were held from all of the towns. In selecting respondents care was taken to include all segments of society like the disable, veterans, street child, etc.

Table 1.1. Sampling frames and sample sizes from the study towns

Category	Mekele	Adigrat	Zalambesa	Adwa	Maichew
Total population[*]	220,935	59,011	8,226	41,515	24,071
Male (% of Pop)[*]	48.6	45.2	46.7	45.2	47.1
HH Size[*]	3.4	3.4	3.4	3.4	3.4
Household targeted	600	300	300	300	300
% target	0.92	1.73	12.40	2.46	4.24
Households covered	600	299	299	299	300
Traders targeted	150	75	75	75	75
Traders covered	45	75	45	75	75
FGs and KI targeted	45	45	45	45	45
FGs and KI covered	45	45	45	45	45

[*]2007 CSA Census added growth rate of 2.5%

Key Indicators

The approach generally adopted for urban study is a combination of:

- Income/consumption measures (basic baskets of goods, like food, water, clothing)
- Unsatisfied basic needs index (literacy, school attendance, piped water, sewerage, etc)
- Asset indicators (car, television, chair and tables, type of housing like floor, roof, etc)
- Vulnerability indicators (physical assets, human capital, income diversification, links to networks, participation in safety net programs, access to credit, market, etc)

Accordingly, the household survey used for urban food security and vulnerability study included the following basic information (Table 1.2) that derives the key indicators of urban food insecurity and vulnerability:

Table 1.2. Themes of analysis and indicators used in the study

Theme of analysis	Specific indicators
Household demographics	Age pyramids, sex
Household food security	Analysis of food dietary diversity and food frequencies (one day and seven day meal recall) to calculate food consumption scores
Asset wealth	Number of different types of assets owned
Expenditure and income	Monthly (reported) per capita income and expenditure pattern
Coping	Various types of coping strategies adopted by households
Access to services	Access to health, education, water and sanitation, electricity, etc
Markets	Price changes and impacts, etc
Programs and safety nets	Food sources and the urban grain stabilization programs

1.3. Methods of Data Analysis

Relevant quantitative and qualitative data were collected using the various methods and instruments described above in order to get a complete picture of the situation under study. All quantitative data from households, traders and key Informant/ Focus Group

questionnaires were entered into computer using CSpro Application Software. The quantitative data were exported from CSpro to SPSS for processing and analysis. Analysis of the quantitative data was then undertaken using SPSS, whilst all qualitative information were manually extracted by key common issues, coded and analyzed by categorization, classification and summarization techniques using MS Excel. The findings were then systematically organized, summarized and presented in the form of tables and figures as appropriate.

2. Tigray National Regional State: Brief Description

Tigray National Regional State is within the structure of the Federal Democratic Republic of Ethiopia. It is located in the northern part of the country bordering with Eritrea in the north, Sudan in the west, Afar in the east and Amhara in the southwest. The region extends from 120° 13' to 140° 54' N and from 36° 27' to 40° 18' E. It has an autonomy to manage overall political, social and economic development of the region. The region has five Administrative Zones: Western, Northwestern, Central, Eastern and Southern zones. According to Bureau of Agriculture study documents, the region has total area of 53,386 km^2 (5.34 million ha), of which 1.08 million ha (20.23%) is suitable for agriculture. About 1.0 million ha (18.73%) of total area is under cultivation or 92.6% of the arable land implying that very little of the arable land is left for further expansion. The region has about 300,000 ha suitable for irrigation. Kola, Woina-Dega and Dega are major agro ecologic zones in the region, with average temperatures ranging from 15 to 27.5°c and annual rainfall of 450 to 980mm.

The major crops produced in the region are teff, sorghum, wheat and maize. Other crops such as sesame, horse bean, lentil, niger seed, cotton and spices are also produced. It has 3.04 million cattle, 2.4 million shoats, 2.3 million poultry, 187,000 beehives and good potential of lakes and river fishery. The region is endowed with natural resources such as natural gum, marble, gold, sandstone, gypsum, quartz and others.

The region is inhabited by a total population of over 4.3 million at the end of 2007, of which about 19.5% lived in urban areas (CSA census report, 2007). About 1.45 million people in rural areas benefit from the safety net programme. Bu the time of this study, more than 58% of the total population was living in absolute poverty (earning less than a dollar a day), which makes the region's situation more serious compared to the national average (44.4 percent).

The 2002/03 information obtained from Health Bureau (BoH) indicated that health service coverage of the region was 55%. According to the information obtained from Water Resource Development Commission of the region (2003/04), the rural and urban safe drinking water coverage was 32% and 64%, respectively. Information source from Education Bureau (2004/05) of the region shows that education level of 1 to 8, 9 to 10, and 11 to 12 grades were 88.45%, 31.99% and 17.74%, respectively. The expansion of rural road net works was at a low stage despite the rural roads authority's effort. According to the report of the authority the density of roads was 44km/1000 persons.
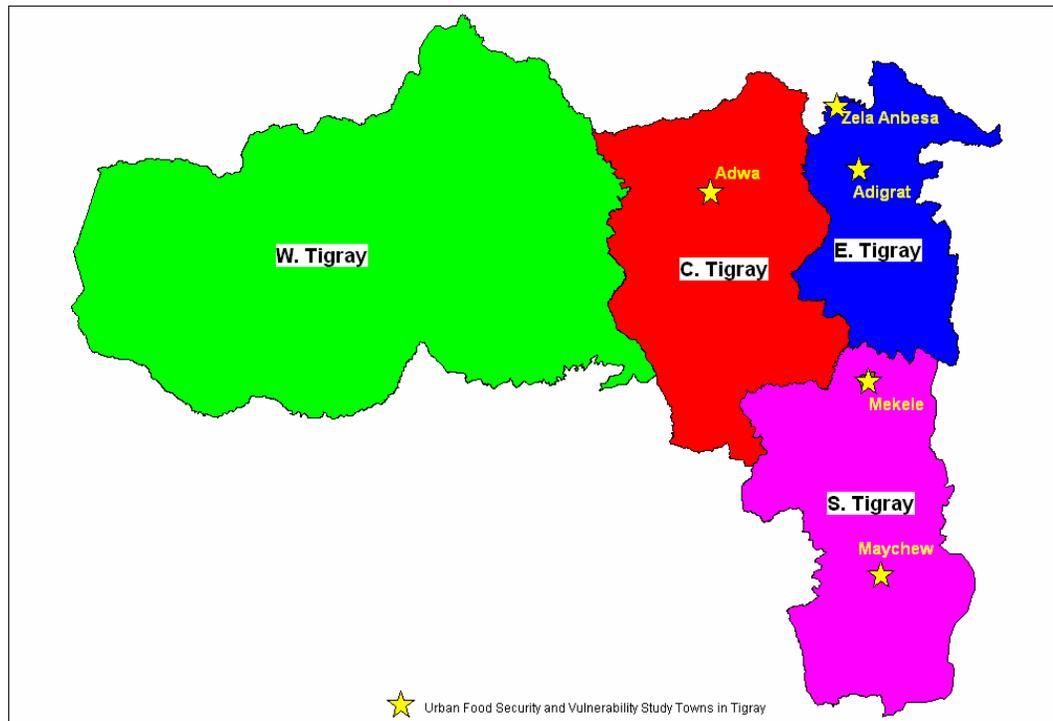
Figure 2.1. Tigray National Regional State, Ethiopia (cf- improved map)

Tigray is highly vulnerable to recurrent droughts and with reducing trend of natural resources. Currently, the regional government together with other development partners is working to reverse this situation. Multifaceted efforts are being undertaken to improve the living conditions of the people in the region and the nation as a whole with the assistance of donor agencies and international communities. Though the region has potential resources that can minimize the food insecurity situation and improve socioeconomic development of the region, among others there are still financial, skill and management gaps of implementing institutions, which are the major development challenges of the region.

According to estimates by Bureau of Finance and Economic Development of the region, average real GDP per capita at constant price for the years 1992 EC (1999/00) to 1999 EC (2006/07) was *Birr* 1000.38. This figure was slightly lower than the national poverty line indicated in the PASDEP document (*Birr* 1075.00). Though per capita income was not disaggregated by urban and rural areas, it is expected that the urban population would be affected by the recent price increases, hence impacting on the expenditure pattern of the poor urban dwellers.

2.1. Major Urban Centers in the Region

In Tigray there are 86 urban centers that are identified as towns by the Bureau of Construction and Urban Development. Out of these towns 15 are found in the North western zone, 11 in Western zone, 22 in central, 15 in the Eastern, 22 in the Southern zone, and of course the remaining one is Mekele. Out of the existing towns of the region, 44

towns (51.2%) have already established municipalities and the remaining 48.8% are without municipalities. Besides, sixteen towns including Mekele have development plans.

2.2. Food Insecure Areas in the Region

Tigray Region is one of the food insecure regions of the country. Prior to 1995 E.C, the regional government had identified 16 woredas as food insecure. However, the number of food insecure woredas increased from 16 to 31 as reported by the food security office of the region. According to recent data obtained from the Bureau of Agriculture, out of the 34 woredas of the region only three woredas (Kafta-Humera, Welkayte and Tsegede) are food secure. The remaining 31 woredas of the region are classified as food insecure. Integrated family based packages and afforestation are under way to change the situation.

2.3. Road Network and Density

Availability of standard road is one of the basic necessities and precondition for development. The expansion of road construction can greatly support the development efforts being made in the different sectors of the economy. Without road network socio-economic development seems impractical. Due to the protracted war that took place in the region and the then oppressive policies in the past decades, no road maintenance was carried out and as a result almost all existing roads were extensively damaged, or out of use. The total road available in the region in 2001 E.C. was 2850 km, where 450 km was asphalt and the rest 2400 km was all weather road. This brings the density to 53 km per 1000 km^2. Taking the population size of the region (data of 2007), road density was 0.7 km per 1000 population.

2.4. Rural Water Supply

Different actors were doing on the water supply sector in the rural areas of the region. The water resource and energy bureau, Rest, Catholic church, Orthodox church, Irish aid etc. were some of the actors. As end of 1994 E.C., the total number of water supply units constructed in the region was 3,126. Out of this 2475 (79.2%) are hand pumps, 186(5.9%) motorized, 451(14.4%) spring development, 3 ponds, 4 solar pump, 3 wind pump and 4 cistem. According to the information from water enterprise, the total water supply coverage in the region (2000 E.C.) is 62 per cent where the rural population water supply coverage is estimated at 56 per cent and urban 72 per cent.

2.5. Electric power

Electric power supply is one of the most important components of development. The region has hydroelectric power supply. Excluding data from the new power supplies from Gilgel Gibe and Tekeze, 230 KV are connected from Alamata to Mekele, 132KV from Mekele to Adigrat and from Mekele to Adwa, 132 KV is connected to Wukro, 66KV is connected from Adwa to Indaselassie, and from Maychew to Alamata. The location and capacity of the electric supply sub-stations is listed below (Table 2.1).

Table 2.1. Location and capacity of the electric supply sub-stations in Tigray

	Location	Capacity /KVA
1	Indaselassie	6300
2	Adwa	40,000
3	Wukro	25,000
4	Adigrat	40,000
5	Mekele	160,000
6	Messebo	40,000
7	Maichew	6300
8	Alamata	140,000

2.6. Health infrastructure distribution

Recent data from Health Bureau shows that the hierarchy of health institutions changed with the recent civil service reforms that enable efficient service delivery and wider community health coverage. Accordingly, reports of 2000 E.C. reveal that the number of health posts was 590 in the proportion of one health post per tabia (peasant association); 117 nucleus health centers; 52 health centers; 12 district hospitals; and 1 referral hospital. The ratio of bed to population was 1:2376. The health performance indicators of the region (2000 E.C.) depicts that infant mortality rate in the region was 67 per 1000 live births; child (under 5 year) mortality rate was 106 per 1000 live births; maternal mortality rate was 551 per 100,000; and HIV/AIDS prevalence rate was about 2.8. The 2002/03 information obtained from Health Bureau (BoH) indicated that health service coverage of the region was 55%. Some health provision indicators or ratios with respect to number of population are given Table 2.2.

Table 2.2. Some health service coverage indicators in Tigray

	Indicator	Ratio
1	Hospital to population	1:289,430
2	Health center to population	1:35,296
3	Health post to population	1:7,071
4	Clinic to population	1:46,185
5	Hospital Beds to population	1:2,810
6	Medical Doctors to population	1:73,584
7	Nurses to population	1:1,719

2.7. Education

Gross Enrollment rate: In 1999 E.C. there were 538 schools enrolling a total of 1.106 million students in both primary and secondary schools (CSA, 2008). Gross enrollment rate relates total enrollment at a level of education in a given year corresponding to population of the age for that level in the same year. Gross enrolment rate (2000 E.C. report of Education Bureau) reveals that in primary school (1st – 8th grades) reaches 106.3% for boys and 105.5% for girls, which works an average rate of 105.9% for all boys and girls.

Net Enrollment Rate: In 2000 E.C. reports revealed that the net enrolment rate of the region in the full course primary school level (1st to 8th grades) was 83% for boys and 95% for girls, with an average rate at 94%.

Dropout Rate: Dropout rate of the region for the year 2000 E.C. is shown in Table 2.3.

Table 2.3. Dropout rate in Tigray in 2000 E.C

Grade levels	Boys	Girls	Average
1st – 4th	10.2	7.8	9.0
5th – 8th	7.8	6.2	7.0
1st – 8th	9.4	7.3	8.3

Tigray Education Bureau, 2000 E.C.

3. General information about the study population

3.1. Household sizes

Demographic variables such as population size and sex composition are important inputs in the process of socioeconomic development planning where its ultimate goal is to improve the welfare of the people.

The samples were weighted in order to account for the different size of populations from the five surveyed towns. The results of the study showed the average household size to be 4.5 and this was higher compared to 3.4 for urban areas in Tigray region as a whole (2007 Population and Housing census). There is minimal difference in the mean household size across the five towns studied, the smallest being for Adwa (4.35) and the biggest for Zalambesa (4.83). This was not surprising as there were a large number of displaced people in Zalambesa. Table 3.1 indicates majority of the households' have 3 to 5 members and this is comparable with the 2005 Ethiopia Demographic Health Survey (EDHS). From the survey close to half of the households (46%) had 5 or more members (Table 3.1).

Table 3.1: Distribution of Number of people per Household compared to EDHS

Number of Usual members	Survey % of households	EDHS % of Households
1	5	13
2	12	13
3	18	16
4	19	18
5	17	14
6	12	11
7	8	6
8	5	4
9+	4	5

Figure 3.1: Population Age Distribution Compared to EDHS
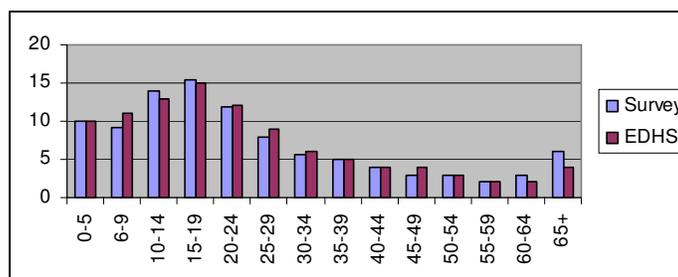
3.2. Household composition by age and sex

In the survey, information on demographic and livelihood parameters was collected for 3,735 men and 4,445 women, with women being more than men. From the survey, age composition distributions indicate that the percentage of children less than 15 years of age was almost similar to the EDHS, 33% from the survey compared to 34%. The population distribution was such that most of the population was between the age group of 10 and 24 years and this was similar to the EDHS. Comparing with the EDHS, there was however a difference in the percent of population for the age groups 6 to 9 years and over 60 years. The population structure for Tigray urban areas is typical of a

Figure 3.2: Population Distribution by Sex
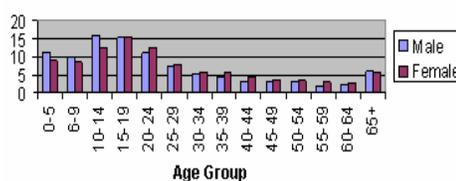
Table 3.2: Sex Composition of Households by Town

	Survey results		Census 2007
Town	Male	Female	Male (%)
Mekele	46.2	53.8	48.6
Adigrat	47.1	52.9	45.2
Zalambesa	43.6	56.4	46.7
Adwa	45.4	54.6	45.2
Maichew	45.5	54.5	47.1
Total	45.7	54.3	

developing country where majority of the population are in the economically non-productive age groups (Figure 3.1).

The population distribution by age and sex indicated that only the 0-14 and over 65 years age groups had the percentage of men higher than that of women. The male/female ratios from the survey data were consistent with results of the 2007 Central Statistical Agency (CSA) census. The sex composition of the population covered by the survey was 45.6% male and 54.4% female. The census gives the proportion for Tigray urban areas as a whole as 47% being male and 53% female (Figure 3.2).

The sex composition of households sampled across urban centres show that the male households constitute 52.1 % whiles the female households 47.9 %. Compared with the census results of 2007, Mekele has the highest percentage of males at 48.6% followed by Maichew and Zalambesa at 47% and the Adigrat and Adwa has 45.2% of the population being males. Whilst the survey results indicate that Mekele has 46% male population, Adigrat (47%), Adwa (45%) and Maichew (46%). From the survey results, Zalambesa has the highest female population of 56.4%, the reasons could be due to men out migrating for labour (Table 2.2)

3.3. Children's living arrangements and orphanhood

The Social Affairs Bureau (SAB) indicated that over 10,000 children below the age of 18 years were orphans in Tigray towns. Taking into consideration the 2007 CSA census data, the percentage of children who were orphans in Tigray towns range between 4 and 5% in Adigrat, Adwa and Maichew towns excluding Zalambesa and Mekele (Table 3.3). The survey results across the towns indicate percentages of orphans similar to SAB and indicated that about 3.7% of children were double orphans (both parents deceased). The percentage of double orphans was as high as 5.7% in Maichew and 5.3% in Mekele towns, respectively,

Table 3.3: Number of orphans

Towns	Male	Female	Total
Mekelle	NA	NA	NA
Adigrat	1612	1532	3144
Zalambesa*	1479	1634	3113
Adwa	1062	1094	2156
Maichew	471	475	946

* data for the woreda Kulomekheda not Zalambesa town
Source: BOFED, 2007, Social Affairs Bureau

while in Adigrat, Zalambesa and Adwa only 2% of children were double orphans. In Tigray urban areas as a whole some 14.8% of children had lost one of their parents (single orphans), this is even lower than the 2005 DHS that reported 18.4% for the Tigray region urban areas. The number of single orphans was almost similar across all the urban canters with Zalambesa and Adwa having the least percentages of about 11%. The percentage of orphans was mostly attributed to the death of the father. The percentage of orphans

Figure 3.3: Orphanhood across the urban centers

from the 2004 Welfare Monitoring Survey for Tigray region was estimated at 11.5%,
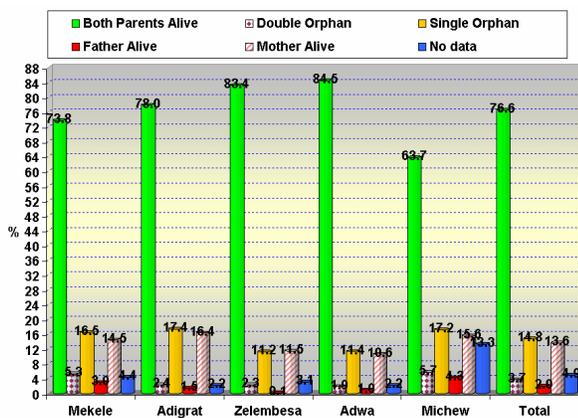
hence being comparable to some of the survey findings. Maichew had the lowest percentage (64%) of children under 18 years having both parents surviving, this could be attributed to the non-response rate in the survey as the greatest percentage of non-response rate came from this town (Figure 3.3).

Overall, 72% of children in Tigray urban areas were living with both parents, with the percentage not varying significantly across all urban centres studied. The percentage was much higher compared with the 53% reported for Tigray urban areas in the 2005 DHS. The highest percentages of children living with both parents were 77% in Maichew and 74% in Mekele. The highest percentage living with at least one parent was in Zalambesa with 30% of children, followed by Adigrat with 26% and Adwa with 24% (Figure 3.4) A further 34% live only with their mother, 2% live only with their father and 4.5% live with neither parent

Figure 3.4: Children Living Arrangements

and the highest percentage was in Adigrat, Adwa and Maichew- accounting for about 6% of children.
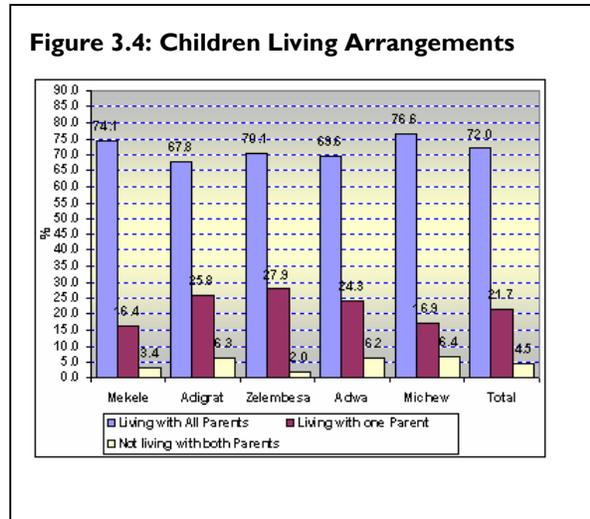
3.4. Marital status

Of the surveyed households, about 52% of household heads were married, 21% widowed, 17% divorced and 7% separated and the remainder either cohabiting or never married. The data on divorce rate appears to be quite high (Figure 3.5).
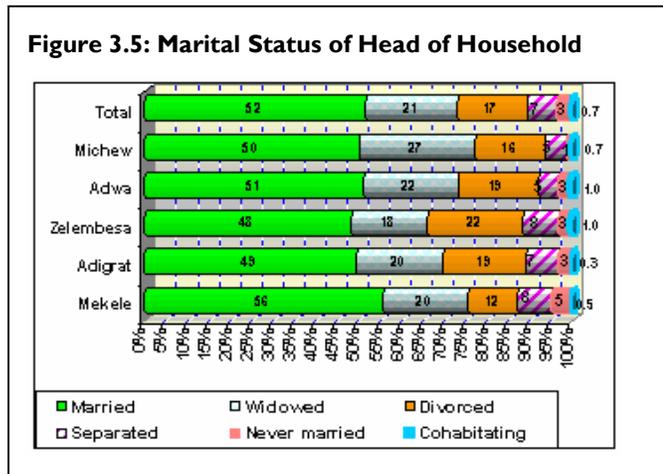
3.5. People leaving out from households during 2008

Not many people left their households between January and October 2008. From the sampled populations of the towns studied, 5.1% left their households for different purposes. Of the people

Figure 3.5: Marital Status of Head of Household

who left their households, children less than two years constituted 38.6%, followed by adults in the age group of 18 to 59 years old with 30%. Next in number were adolescents (11.6%), while elderly above 65 years and children between 5 and 11 years old were at the lowest end (~10%). Of those who left their households, 70% of the working age group 18 to 59 years was from Zalambesa, followed by Michew (13.5%). At least 26% of the people aged between 18 and over 60 years left their households. When the reasons for their leaving was assessed, attending school and looking for work constituted the dominant reasons for 51% and 35.6%, respectively.

3.6. People with disabilities

Based on secondary data, the proportion of people with disabilities was not high across all the towns. The number was in line with the survey data that shows very low percentage of disabaled people across all urban centres estimated at about 1% of the poupulation except in Zalambesa with about 2% of the population. In terms of physical, mental and both has almost equal shares for the total population (Table 3.4).

Table 3.4: Disabled persons by Town

| Town | % Disabled People from Survey | | | | ** No of Disabled People Social Affairs Bureau | | |
	None	Physical Disability	Mental	Both physical and mental	Male	Female	Total
Mekele	98.9	0.6	0.4	0.1	NA	NA	NA
Adigrat	97.9	1.3	0.6	0.1	349	168	517
Zalambesa	97.9	1.9	0.3		1156*	613	1769
Adwa	98.8	0.7	0.4	0.1	635	576	1211
Maichew	97.4	1.7	0.7	0.2	50	42	92
Total	98.3	1.1	0.4	0.1			

**Source: BOFED, 2007, Social Affairs Bureau
* data for the woreda Kulomekheda not Zalambesa town

3.7. Focus Group discussion participants and Key Informants characteristics

The selection of the focus group and key informant participants sought a balance between males and females, with 55% being male respondents and 45% were females. With regard to age group of participants, about half of them were between 30 and 50 years old, while those below 30 constituted 22% and the remaining 28% were over 50 years old. The economic profiles of group interview participants included civil servants (34.6%), shop owners (24.1%), daily labourers' and others (11.5%). Together these constituted about 70% of the entire group of respondents. About 30% were classified as housewives, beggars (including street children), and not working due to various reasons as well as those serving for religious institutions, police/ military departments and those engaged in agricultural activities. In general, the study took advantage from the diverse occupational groups of the population (Table 3.5).

Table 3.5: Occupation of Participants for FGD/KII

Characteristics	Percent
• Civil servant	34.6
• Shop/business	24.1
• Agriculture	3.7
• House Wife	8.7
• Working in Religious Institution	4.8
• Not working	8.5
• Beggar/Street Children	2.1
• Police/Military Service	2.0
• Daily Labourer and others	11.5

3.8. General information on the traders

The data collection from traders covered 92% (377) retailers and 8% (31) wholesalers across the five towns, this ensured coverage of a range of consumer goods. Accordingly, 150 traders were interviewed in Mekele, 75 traders each in Adigrat, Adwa and Maichew and 45 traders in Zalambesa town. Of the traders interviewed the majority (53%) were small shops/tuck shops where majority of the consumers buy their commodities, roadside vendors were also captured constituting 4% of the total samples, similarly main or large shops were captured constituting 9% of the samples. At least 12% of the samples captured big grain traders and 8% was fruit/vegetable sellers (Table 3.6).

Table 3.6: Breakdown of trader and shops by type

Survey Sample		Number	Percent
Type of Trader	Wholesaler	31	7.60
	Retailer	377	92.40
	Total	**408**	
Type of Shope	Small shop/Tuck shop	218	53.43
	Roadside Vendor	18	4.41
	Vegetable/Fruit Seller	34	8.33
	Main/Large shop	36	8.82
	Big Grain Market	49	12.01
	Miller	1	0.25
	Butchery	39	9.56
	Other	13	3.19
	Total	**408**	

4. Major findings of the survey

4.1. Educational levels and characteristics

The level of education across the towns was such that about 29% of the population had no formal education and this percentage is comparable with 30% in the 2005 DHS for Tigray urban areas. In general more females (34%) had no education compared to the males (22%) and this was true across the five urban centres and across levels of education from primary to tertiary. Zalambesa had the highest percent of females with no education (43%) followed by Adigrat (34%). On students enrolled in schools, the highest percentage was in Adigrat. The highest percentage of the population with tertiary or higher education was found in Mekele at 12%, followed by Maichew (9%) and the lowest was in Zalambesa with 1.5% of the population having attained tertiary education (Table 4.1).

Table 4.1: Levels of education in the urban areas

Town	Sex	No Education	Still (enrolled) attending school	Some primary	Primary completed	Some secondary	Secondary completed	Tertiary or higher
Mekele	Male	18.1	9.2	16.6	13.7	15.2	12.6	14.5
	Female	31.3	7.6	16.8	12.7	12.6	9.8	9.3
	Total	25.2	8.3	16.7	13.2	13.8	11.1	11.7
Adigrat	Male	21.6	42.1	5.8	2.8	8.0	11.1	8.6
	Female	34.8	35.2	6.8	1.5	7.0	10.7	4.0
	Total	28.6	38.4	6.3	2.1	7.4	10.9	6.2
Zalambesa	Male	33.0	4.4	43.3	4.0	11.3	2.5	1.4
	Female	43.2	1.8	36.6	1.7	12.0	2.9	1.6
	Total	38.8	3.0	39.5	2.7	11.7	2.8	1.5
Adwa	Male	19.6	7.7	27.5	6.7	13.6	16.9	7.9
	Female	27.6	4.6	30.6	6.6	12.4	14.7	3.4
	Total	24.0	6.0	29.2	6.6	13.0	15.7	5.5
Maichew	Male	20.9	5.6	19.9	9.1	20.4	13.4	10.6
	Female	34.9	3.9	15.7	9.7	16.1	12.9	6.9
	Total	28.5	4.7	17.6	9.4	18.0	13.1	8.6
All Towns	Male	21.9	13.2	21.5	8.4	13.9	11.5	9.6
	Female	34.1	9.9	20.8	7.4	12.1	10.0	5.7
	Total	28.5	11.4	21.1	7.9	12.9	10.6	7.5

On average school attendance in 2000 E.C. from the five towns was 75%, with Mekele with the highest (81%) and Zalambesa the lowest (61%). Zelelmbesa also had the highest percentage of children never enrolled at 38% followed by Adigrat at 28%. The precentage that did not attend school were highest in Adwa at 8.2% and lowest in Zalambesa at 0.6%. Dropout rates across all the towns were very low at less than 1%. From focus groups, some 43% percieved that number of school dropouts had increased in EC 2000 compared to previous years whilst 32% indicated that number of dropouts had decreased and the

Figure 4.1. School attendance in EC 2000
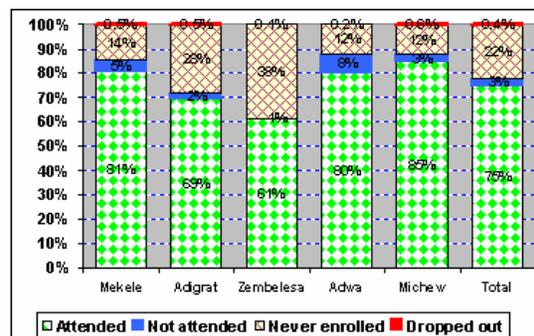
remainder (25%) indicated that dropouts rates remained the same. The rate of absence for at least four days a month in EC 2000 was very low averaging 5% across the five towns, with the highest rate being in Maichew and Adwa at 7.3% and the lowest rate in Mekele at 3.2%. The remaining towns of Adigrat and Zalambesa had abesentism rates of four days per month of 5% and 4% respectively (Figure 4.1). The students that completed school in EC 2000 was 93% across the five towns, with Zalambesa and Adigrat having the highest percentage of 97%. Mekele and Maichew had 95% and 96%, respectively. Adwa had the lowest with only 77% completing school in EC 2000.

Out of those who dropped out or were absent for four days per month, the main reasons were as follows: 7% due to illness; 4.9% indicated the reason was helping with household work; 4.3% was because they had to work for food and money; 3.2% gave the reason of not interested in schooling; 2.5% indicated that school was expensive and had no money whlist the remender 2.1% had reasons ranging from hunger, school too far, early marriages and pregnancy.

4.2. Housing, water, health, electricity, fuel supply and access

Housing conditions

Households were asked a number of questions in relation to tenancy status and housing quality.   One question was referring to how long household members lived in their existing accommodation. Of the surveyed households, 98% gave response to this question. Of these, 87% had lived in their accommodation for more than a year, 5% from 6 months to one year and 6% less than 6 months. In terms of tenancy status, which is a good measure of economic welfare, 53% of households owned the house they were living in. The second largest group was lodgers with no written agreement (27%) followed by tenants with written agreements. Both groups could be asked to vacate the house, the former without prior notice. The remaining households lived in family houses (4%), free hold

Figure 4.2: Tenure Status across Urban areas

(1%) and others (2%). Across the five towns, tenure status of households revealed that the percentage of households owning or purchasing tenure was higher in Zalambesa (70%), followed by Maichew (65%) while around 45% of households in Adigrat and Adwa towns had households having own tenure and living in rents without written agreement in equal proportion. While in Mekele town half of the households owned tenure while the rest half lived in rents with and without written agreements (Figure 4.2).

For those paying rentals for their houses, 36% reported that they paid cash for
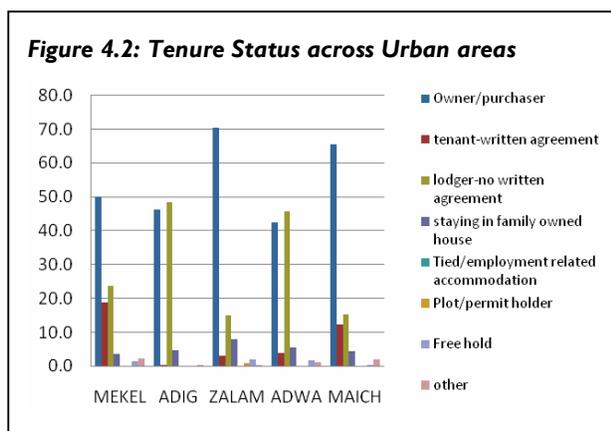
Table 4.2: Percent of Households and Months of Rental Arrears

Town	NO arrears	2 to 3 months	4 to 6 months	> 6 months	Total
Mekele	40.0	52.0	8.0		100
Adigrat	10.3	51.7	24.1	13.8	100
Zalambesa	29.4	52.9	11.8	5.9	100
Adwa	23.5	35.3	41.2		100
Maichew	26.1	52.2	17.4	4.3	100
Total	25.2	49.5	19.8	5.4	100

rentals and about 30% of the total households who paid rent indicated they were in debt (rent arrears). For those who were in rent arrears, almost 50% were in a debt of two to three months (Table 4.2)

Number of people per room indicated that the greatest level of crowding (more than three people per room) existed in Mekele (62%), of which 21% were more than four people per room, followed by Adigrat and Zalambesa at 57%, with Adigrat having 19% with more than four people per room. The least level of crowding was in Maichew with only 41% of people living with at least 4 people per room and 10% had more than four people per room (Figure 4.3).

Figure 4.3: Crowding (Persons per Room)
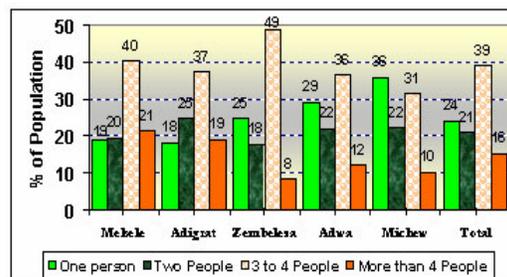
The quality of housing was such that a majority of households (52%) lived in backyard pole and mud homes under iron/ roof tiles. Another 11% lived in flat/town houses with brick under tile/ iron roof, and only 7% lived in detached brick houses with tile/ iron roof. While 24% lived in semi detached brick houses with tile/iron roof, about 3% lived in private houses/hut mostly made of non-durable materials.

With respect to share of kitchen facilities with bed room or independent kitchen facilities, Zalambesa town had the highest number of households with own kitchen at 81%, followed by Maichew with 60% of the houeseholds with own kitchen for cooking. Mekele had the least number of households with own kitchen (42%), followed by Adigrat 52% and Adwa 59%. The largest number of households sharing a kitchen was in Mekele at 58% of the households, followed by Adigrat at 47%, Adwa at 41%, Maichew at 40%, and the least number of households sharing a kitchen was in Zalambesa at 19%. The use of bedrooms as kitchens was not common with less than 0.3% of the households using a bedroom as a kitchen and only in Mekele, Adigrat and Adwa.

Water and sanitation

Significant portion of households (57%) used piped water inside their homes. Mekele and Adigrat towns had the highest percentage (66%) of households using tapped water inside houses, whilst Zalambesa had the lowest (12%) but had the highest percentage using

Table 4.3: Water sources for households by town (% of HHs)

	Mekele	Adigrat	Zalambesa	Adwa	Maichew	Total
Piped water inside the house	65.9	66.7	11.7	74.2	55.3	56.6
Piped water outside the house	12.0	13.0	5.4	23.7	19.0	14.2
Communal tap (BONO)	6.2	13.3	75.3	1.0	14.0	19.3
Borehole/protected well	1.3	2.0			2.3	1.2
Unprotected well	0.2					0.1
River, stream, pond	1.2	0.3			1.0	0.6
Rain water	1.3					0.4
other	11.9	4.7	7.7	1.0	8.3	7.6

communal water (Bono) source (75%). Few households (~20%) in Adwa and Maichew towns used piped water outside their houses for drinking water (Table 4.3) .

A majority of households (97%) did not treat their drinking water. Only 3% treated water using different mechanisms such as boiling (45%), using water guard (8%), and 12% used filters. From the group interviews a majority reported stability of watr supply, with only about 12% reporting that access to safe drinking water had deteriorated in 2008 compared with the previous five years. For those who indicated deterioration in services, the major reasons mentioned included frequent pipe water interruption (5.6%) and poor services (6%).

Toilet facility types exhibited variations across all the five towns where in Maichew 56% of households used pit private latrines while a significant portion of households (33%) used the bush. In Adwa town, it was peculiar in that all types of toilet facilities were unifromly distributed ranging between 8% to 25% of households. In Zalambesa two main types of toilet facilities were in use: 40% of households used VIP private and 33% used the bush. In Adigrat five types of toilet facilities namely the bush (26%), VIP communal (21%), pit

Figure 4.4: Access to toilet facilities across towns

communal (20%), pit private (14%), VIP private (15%) were in use. In Mekele the toilet facilities in ascending order of availability were pit communal, bush, VIP communal, and pit private (Figure 4.4) .
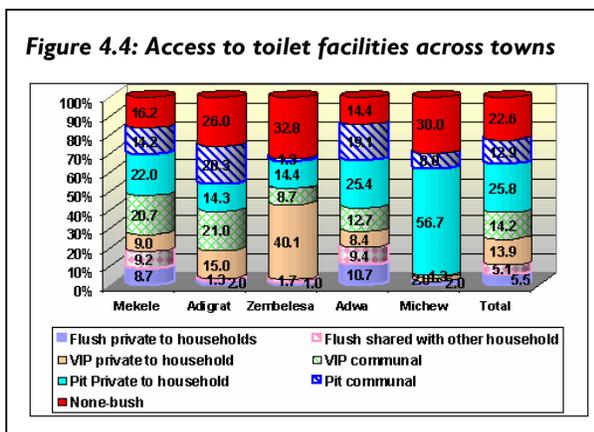
According to information generated from the qualitative interviews, hygiene and sanitation conditions had generally improved (83%) or remained the same (14%) over the past five years. Only 3% of respondents had reported deterioration in hygiene and sanitation conditions. For those who felt that sanitation had deteriorated, major reasons included poor water supply (2%) and unaffordable soap prices (1%).

Heating and lighting

Charcoal was the dominant source of fuel for cooking for 55% of households in Adwa; 60% in Adigrat and 70% in Mekele. Zalambesa and Maichew used the least charcoal with 15% and 32% of households using it, respectively but in stead most households used wood as the main source of cooking fuel with 67% of households in Zalambesa and 59% in Maichew. Wood was the second major source of cooking fuel in Mekele (13% of households); Adigrat (26%) and Adwa (41%). Animal dung was also used as source of cooking fuel except in Maichew with 13% of the households in Zalambesa using animal dung, followed by Adigrat town (6%) of households. Electricity was not normally used as cooking fuel with only about 3% of the households using it across the five towns. The highest perectage was 7% of households in Maichew. Other sources of cooking fuel accounted for about 4%.

In almost all towns, 90 to 99% of households used electricty as the dominant source of lighting while insignificant (less than 1%) used wood and paraffin as source of lighting in the towns.

Health and health facilities

The modbidity of household members in the past 12 months (refering November 2007 to November 2008) exhibited that more than 96% of members in total were in good health, and only 4.2% were either sick for 3 months or less. Illness for more than three months among households (chronic illness) was relatively low and ranged between 0.5% in Zalambesa to as high as 1.8% in Mekele. The illness of less than three months was highest in Adwa and Maichew at 4% and lowest in Mekele and Adigrat at 2% (Figure 4.5).

Figure 4.5: Morbidity across urban towns
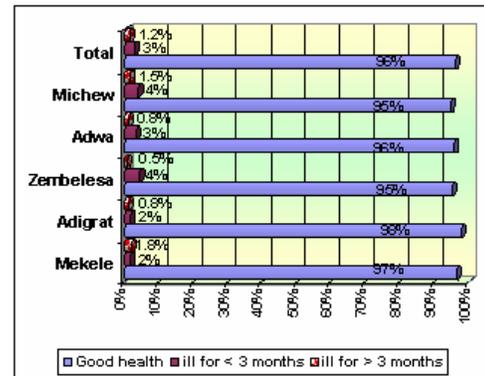
The type of diseases varied across the towns for those who had been ill. In Mekele town the most common disease was chronic fever (24% of cases- the highest for all towns), followed by other illnesses (not named), back ache and diarrhoea, pneumonia, TB and hypertension. Diarrhoea Adigrat town, the most common diseases was others (not named) followed by headaches (25% of cases, the highest in all towns), followed eye problems (19% of cases- the highest in all towns), HIV and TB. In Zalambesa town the most common disease was other (not named) diseases, followed by diarrhoea (13%, the highest for all towns), this was

Figure 4.6: Major Diseases across urban towns
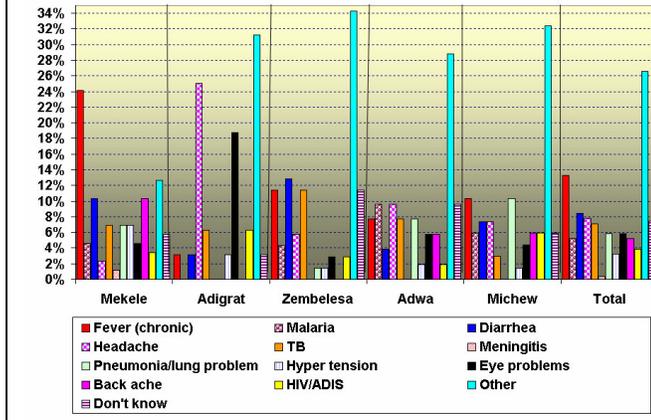
not surprising as the town had the least access to private piped water system; the third common diseases were chronic fever and TB. In Adwa town, the most common diseases were other (not named) diseases followed by headache and malaria (10% of cases and the highest in all towns), this could be due to the river pasing through the town. In Maichew, the most common diseases were other (not named) diseases followed by fever and pneumonia (10% of cases, the highest across all towns), follwed by diarrhoea and headaches (Figure 4.5). The major diseases affecting children under 5 years were diarrhoea, followed by fever and malaria.

The type of illness by age group indicated that chronic illness (ill for more than three months) and even illness for less than 3 months mainly affected the young and old age groups, with 6.4% of the under 5 years falling ill for more than 3 months. Of the elderly greater than 60 years of age, 5.4% had illness for less than 3 months and 4.2% had illness

for more than 3 months. Of the age group 18 to 59 years, 2.5% had illness for less than 3 months and 1.2% for more than 3 months, whilst of the age group 5 to 17 years, 1% had illness for less than 3 months and 0.5% for more than 3 months. Headaches and TB were most common in the age groups 18 to 59 years, whilst backache and eye problems, as expected, were common in the more than 60 years age group. Other diseases were spread across all age groups (Table 4.4)

Table 4.4: Spread of Illness across Age groups

Type of Illness	< 5 Yrs	5 -17 Yrs	18 - 59 Yrs	> 60 Yrs
Fever(chronic)	23.9	26.2	7.2	5.3
Malaria	4.2	4.8	6.5	3.5
Diarrhea	28.2	4.8	1.4	3.5
Headache	2.8	2.4	12.2	7.0
TB	2.8		12.9	3.5
Meningitis		2.4		
Pneumonia/lung problem	8.5	7.1	4.3	5.3
Hyper tension	1.4	2.4	2.2	8.8
Eye problems		4.8	5.0	15.8
Back ache		2.4	3.6	17.5
HIV/ADIS	1.4	4.8	6.5	
Other	16.9	33.3	32.4	19.3
Don't know	9.9	4.8	5.8	10.5

Households' access to health services varied across towns, with most households seeking treatment at the central hospital (53%), except in Zalambesa where majority (79%) sought treatment form the District /Municipal hospital and this was also the second most important source of treatment for households. Only about 16% of the population did not seek to get health care in Adigrat and Maichew towns. Very few households sought treatment from traditional /spiritual healers (4%) (Table 4.5). For those not seeking medical attention the main reason was lack of money (60% on average; 100% of cases in Zalambesa and Mekele; 80% in Adigrat and 50% in Adwa and 36% in Maichew). Not believing in health services and religious belief as a reason was only reported in Maichew (18% of cases). About 28% indicated that access to health services deteriorated in 2008 compared with the previous five years while the remaining 72% indicated as access either remaining the same or improved.

Table 4.5: Access to Health Services (%HH)

	Mekele	Adigrat	Zelembesa	Adwa	Michew	All Towns
Did not get Health care	5%	16%	3%	8%	16%	8%
Central Hospital	54%	72%	31%	67%	56%	53%
Referal hospital	7%	19%	14%	10%	4%	10%
District/Municipal	16%	16%	79%	10%	16%	29%
Other public	1%				1%	1%
Mission facility	3%					1%
Community health	2%	3%	1%	2%		2%
Private hospital/clinic	17%	6%	10%	6%	3%	9%
pharmacy	7%	3%		2%	16%	6%
Traditional /spiritual	3%	6%	4%	8%	1%	4%

4.3. Assets, livelihoods, income sources and expenditure patterns

Assets

The household questionnaire collected information on each household's ownership of basic and productive assets. Asset wealth was determined by counting the number of different types of assets a household owned and then creating categories of: asset poor (0 to 4 different types of assets), asset medium (5 to 9 different types) and asset rich (10 or more types). Overall, 66% of

Figure 4.7 Asset Poverty across towns

households in Zalambesa, 49% in Maichew, 43% in Adwa and 39% in Mekele and 41% in Adigrat were 'asset poor'. Some 39% in Maichew and Zalambesa, 37% in Mekele and
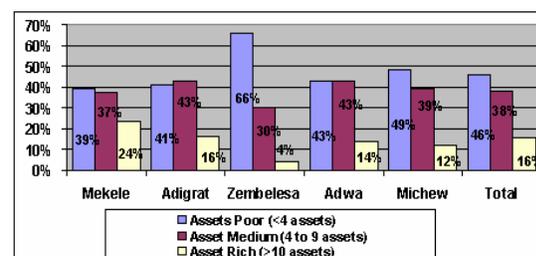
43% in Adigrat were 'asset medium'. Only 4% of households in Zalambesa, 14% in Adwa, 16% in Adigrat, 12% in Maichew and 24% in Mekele were 'asset rich' (Figure 4.7).

The most common types of assets owned were basic household furnishings such as beds (93%), table and chairs (52%), radio (50%), and sofa sets (29%). Television sets were owned by 46% of households. Some 48% of households owned jewellery, 45% owned writ watch and 35% owned CD/DVD players. From transport assets bicycles were owned by 4% and cars owned only by 1.6% of households. About 31% owned cell phone, 11%

Table 4.6. Selected Asset Holding Across Urban Centres						
Assets	**Mekele**	**Adigrat**	**Zalambesa**	**Adwa**	**Maichew**	**Total**
Sofa set	37%	31%	5%	39%	27%	29%
Table and chairs	52%	69%	26%	59%	51%	52%
Radio	59%	61%	21%	67%	33%	50%
Television	56%	46%	17%	56%	45%	46%
CD/DVD	39%	36%	26%	22%	45%	35%
Sell gas stove	31%	47%	21%	32%	26%	31%
Jewellery	54%	49%	52%	43%	38%	48%
Cell phone	33%	34%	11%	39%	38%	31%
Beds	94%	97%	89%	96%	86%	93%
Refrigerator/freezer	17%	10%	2%	15%	5%	11%
Watch/clock	17%	52%	25%	50%	43%	45%
Satellite dish	11%	6%	2%	8%	5%	7%

owned refrigerator/freezer and 7% had satellite TV receivers (Table 4.6).

Overall, 13.4% of households indicated that they had sold assets over the previous 6 months. However, it was more of asset poor households in Zalambesa, Adwa and Adigrat who sold assets compared to asset medium and asset rich households. Selling of assets for purchase of food was mentioned by 89% of households as the main reason. While 9.5% indicated school fees and uniforms, 5% medical expenses and 3.3% of payment of debt as the main reasons for selling out assets (Table 4.7).

Table 4.7: Asset Sales and Reasons for Selling Assets

	Mekele	Adigrat	Zembelesa	Adwa	Michew	All Towns
% HH Sold Assets	3.7%	12.7%	51.2%	5.7%	3.7%	13.4%
Reasons for Selling Assets						
Fees/levies	9.1%		2.0%			2.1%
Funeral expenses			2.0%			1.2%
Medical expenses	4.5%	7.9%	4.6%	5.9%		5.0%
School fees and uniform	9.1%	13.2%	9.2%		18.2%	9.5%
Purchase food	72.7%	97.4%	90.2%	88.2%	90.9%	89.6%
Pay debts	9.1%		2.6%	5.9%	9.1%	3.3%

Livestock ownership was low, on average 17.9% of households owned only 1 cattle, 1.2 sheep/goats and 2.6 poultry. Only 5 to 6% of households in Adigrat, Adwa and Mekele, and 12 to 14% of households in Zalambesa and Maichew had cattle. Sheep/goats were owned by 5% of households, while poultry were owned by 10% of households. Asset rich households were slightly more likely to own cattle while asset poor households owed more of sheep or goats. Poultry ownership was high for the asset medium households. Married households were more likely to own livestock and own a savings account. On ownership of a

Figure 4.8: Livestock and bank Account ownership
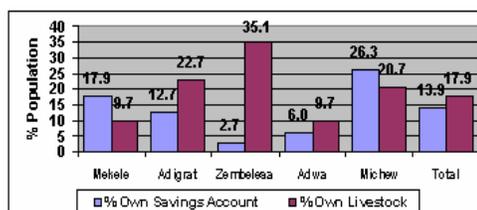
savings or bank account, only 14% of households had an account and Zalambesa had the least percentage but hade the highest livestock ownership (Figure 4.8)

Livelihood Groups

Households were asked to state up to three most important sources of livelihood, and based on this livelihood groups were constructed using principal components analysis and clustering techniques. The results revealed that many households depended on government wage, small business/ self employment, non-agricultural wage labour except for Zalambesa, where a majority of the population was dependent on food assistance and safety net public works program. The livelihood sources varied across the urban centers with Adigrat having 30% of households dependent on small business /self employment. This could be due to its history as it served as the entry town to the previous port of Mitswa and as a trading town with Asmara. Maichew had the second largest percentage of small business /self employment which could be due to the presence of military base that created a demand base for commodities. A small percentage of households relied on handicraft, agricultural labour, assistance and farming. Zalambesa had the largest population dependent on the most insecure livelihood as majority of the population depended heavily on food assistance. There were also households who depended on assistance in the form of either remittance, or food assistance (Table 4.8).

Table 4.8: Livelihood Groups Across the urban Areas

	Mekele	Adigrat	Zalambesa	Adwa	Maichew	All Towns
Government salary/wage	19.6%	17.3%	3.7%	19.4%	24.3%	17.3%
Small business/self-employed	13.5%	30.3%	1.3%	21.4%	13.7%	15.6%
Other not specified activities	2.5%	1.0%	0.3%	5.0%	0.3%	1.9%
Non-agricultural wage labour	13.9%	17.7%	1.7%	14.0%	10.3%	11.9%
Petty trade (firewood sales, etc...)	12.7%	2.0%	1.0%	10.4%	14.3%	8.9%
House rental income, pension, allowances	11.2%	6.0%	0.3%	8.7%	12.3%	8.3%
Remittances, gift	5.4%	12.0%	2.3%	7.4%	7.3%	6.6%
NGO, private company salary	9.9%	5.3%	0.7%	3.3%		4.8%
Handicrafts/artisan	7.0%	4.3%		6.7%	3.3%	4.7%
Agricultural wage labour	0.3%	0.7%	0.3%	2.0%	2.3%	1.0%
Assistance dependents (begging, food assistance, borrowing)	0.7%		87.0%	0.7%	1.3%	15.0%
Farming and sales of livestock	3.3%	3.3%	1.3%	1.0%	10.3%	3.8%

Livelihood groups by sex of heads of households was such that male-headed households dominated in government employment, non-agricultural wage labour, farming and sale of livestock, handicraft and artisan, NGO and private company employments, whilst the remaining livelihood groups consisting of less reliable sources of income that included food assistance/ begging/ borrowing, petty trade, remittances and gifts, house rent and pensions, were dominated by women-headed households with the exception of

Figure 4.9: Livelihood Groups by Gender
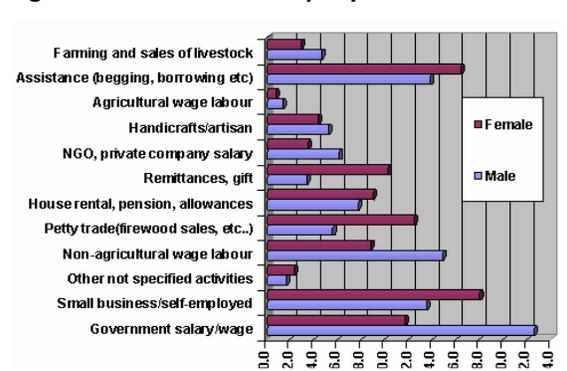
dependence on small business/ self employment. Women-eaded households were thus more vulnerable to income shocks (Figure 4.9).

At least half of the begging assistance livelihood group sold assets since January 2008, followed by other not-specified activities and the petty trade livelihood group with at least 10% in the group selling assets. The non-agricultural wage labour group, followed by the handicraft artisan and the agricultural wage labour livelihood groups had the most people per room (tend to be more crowded). In addition the assistance begging, non-agricultural labour, and other not-specified livelihood groups tended to have large household sizes of greater than 7 persons per household. Hence, these livelihood groups were the most vulnerable groups as far as asset ownership was concerned, as they could not use asset bases for coping. The majority of NGO and private company employment livelihood groups were asset medium, followed by government employees group which was also the group with the highest percentage of asset rich (29% of the group), followed by the house rental (22% in the group).

Expenditures

The average monthly household expenditure for the five towns was *Birr* 928. The average monthly per capita expenditure was Birr 237. Incomes varied across the urban areas with the lowest average income per household of Birr 432 per month (Birr 63/ capita) observed in Zalambesa and the highest income of Birr1268 (Birr 330/ capita) in Mekele. Expenditure for the remaining cities ranged from Birr 771 in Adwa to Birr 939 in Adigrat; expenditure levels depict livelihood patterns in the different towns (Figure 4.10).

Figure 4.10: Average Expenditure by town
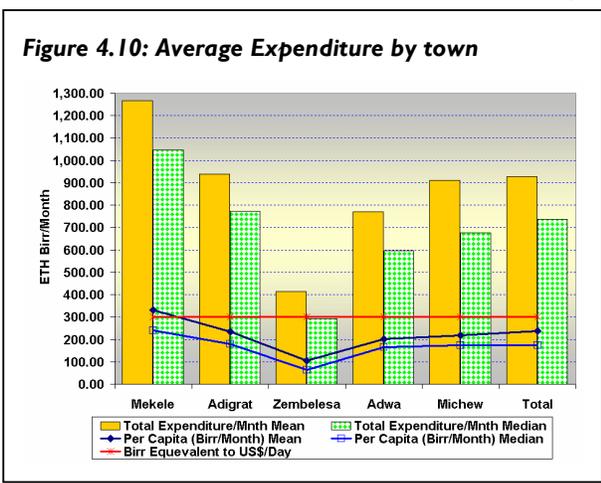
Distribution of expenditure across the five towns indicated that about 50% of households in Zalambesa spent less than Birr 300 per. Most of the households in Mekele spent more than Birr 600 per month. In the remaining towns, it was distributed between expenditures of Birr 300 to Birr 600, Birr 600 to 900 and over Birr 1000 (Table 4.9).

Figure 4.11: Average Expenditure by Livelihood group
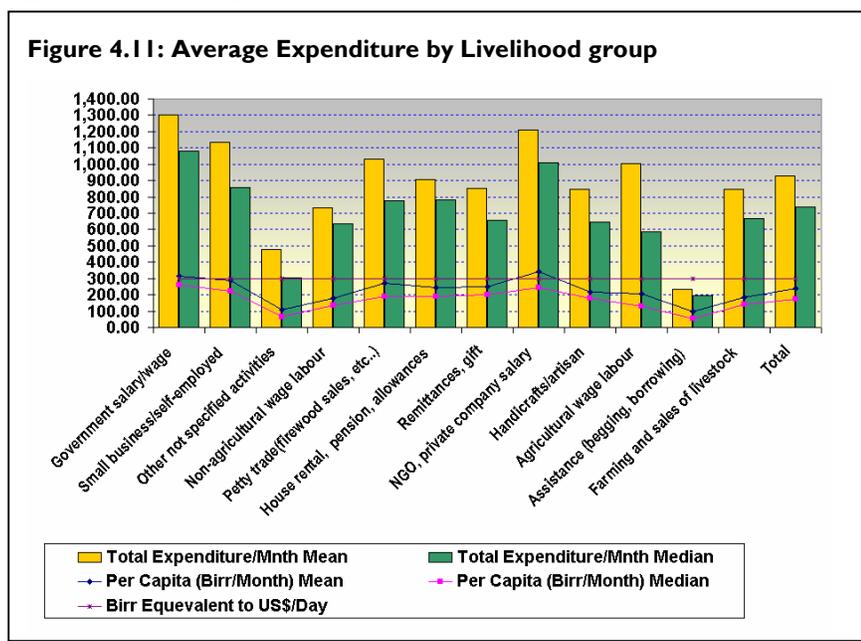
Examination of expenditures by livelihood groups indicated that the highest expenditure was within the government employees and NGO and private employees groups. The non-agricultural labour and artisans were also among the livelihood groups with low expenditures, hence income levels. These groups were the most vulnerable as they had also poor assets and tended to be crowded. From the community interviews petty traders, small business and beggars/ assistance were perceived as the poor in the community (Figure 4.11).

Expenditure by asset holdings was such that the asset poor (less had the least per capita expenditure of Birr 165 per month, followed by the asset medium with Birr 259 per month, whilst the asset rich as expected had the highest per capita expenditure of Birr 394 per month. This indicates that the better the asset base the better economic status of a household.

Table 4.9: Livelihood Groups Across the urban Areas

| | Expenditure categories/HH/Month | | | |
	Less than Birr 300	300 to 600 Birr	601 to 1000 Birr	More than 1000 Birr
Mekele	6.0%	14.9%	26.5%	52.6%
Adigrat	7.0%	26.0%	33.0%	34.0%
Zalambesa	52.5%	28.1%	10.7%	8.7%
Adwa	13.7%	36.5%	28.4%	21.4%
Maichew	16.0%	26.7%	27.7%	29.7%
Total	16.9%	24.5%	25.5%	33.2%

Considering the sex of heads of households and distribution of expenditure by commodity, female-headed households spent far less than male-headed households, with male headed households spending on average Birr 1,500 per month, or per capita expenditure of Birr 249 per month compared to Birr 1,000 (Birr 224 per capita) per month for female-headed households. The difference in expenditures between male- and female-headed households was spread across all commodity groups, with the greatest difference in expenditures being in food, both cereals and non-cereals. This is implies that female-headed households were generally poor than male-headed households (Table 4.10).

Table 4.10: Expenditure Birr/Month Male and female headed Households

	Male	Female	Total
Cereals	551.31	363.95	461.54
Other Foods	551.31	363.95	461.54
Utilities(Elec, water, etc)	148.17	112.16	130.92
Rent	37.98	36.45	37.25
Transport	15.14	7.57	11.51
Non Food and Soap etc	29.56	20.42	25.18
Entertainment (Alcohol, chat, and tobacco)	27.20	10.28	19.10
Education	18.93	12.62	15.91
Health and mediacation	9.63	5.23	7.52
Funeral and burial society	3.08	1.81	2.47
Assets, inputs and clothes	36.07	16.63	26.75
Debt repayments	45.90	25.35	36.05
Total	1,474.28	976.41	1,235.73

In terms of marital status, married households had better expenditure of about Birr 1500 per month (238 per capita per month), never married were much better off with per capita expenditure of Birr 437 per month, followed by the separated with Birr 269 per capita. Widowed and divorced were worse off with per capita expenditure of Birr 213 per month, followed by cohabiting with per capita expenditure of Birr 224 per month.

On average, 68% of the total household income was spent on food with cereals accounting for about 50% of total expenses, except in Zalambesa where cereal expenses were about 16% and other foods accounted for 34% because almost 85% of households depended on safety nets and food assistance. Households in Mekele, Adwa, Adigrat and

Table 4.11: Expenditure by Category of commodity

	Mekele	Adigrat	Zembelesa	Adwa	Michew	Total
Cereals	52.4	51.0	16.1	51.7	46.9	45.1
Other Foods	19.1	21.2	33.6	24.4	23.1	23.4
Utilities(Elec, water, etc)	17.5	14.6	19.4	16.3	10.7	16.0
Rent	6.2	4.9	1.5	6.6	2.1	4.6
Transport	1.1	0.8	1.8	0.6	1.1	1.1
Non Food and Soap etc	2.8	2.8	7.2	3.4	2.4	3.6
Entertainment (Alcohol, chat, and tobacco)	1.7	1.1	2.9	0.3	2.9	1.8
Education	1.7	1.7	4.0	0.3	1.2	1.8
Health and mediacation	0.6	0.9	1.3	0.6	0.8	0.8
Funeral and burial society	0.2	0.3	0.4	0.1	0.3	0.3
Assets, inputs and clothes	1.9	2.6	6.5	1.6	2.2	2.8
Debt repayments	0.8	3.1	6.7	0.6	8.2	3.4

Maichew had at least over 70% of their monthly expenditure on food. The largest share of expenditure went to utilities (electricity, water, telephone and fuel) averaging 16% of total expenditure, rent takes up about 5%, non-food expenditure including soap and toiletries took up about 4% and the rest of the expenses took up between 1 and 2% each (Table 4.11).

4.4. Food consumption, food security and nutrition

4.4.1. Current consumption

A most direct indicator of food security is to measure calorie intake of household members. However, this is very time consuming. Frequencies of meals and dietary diversity have been found good proxy indicators of household food security. Combining these two types of information a single composite indicator, the Food Consumption Score can be calculated. In this study, households were asked to recall types of food items their members consumed over the seven days prior to the survey date as well as to indicate the number of days the food type was consumed. Using standard WFP VAM analytical method, the items consumed were grouped into eight food groups (staples, pulses, vegetables, fruits, meat and fish, sugar, milk, oil). These different food groups were given weights based on nutritional density, animal proteins with the highest weight. A consumption score was calculated combining information on dietary frequency and dietary diversity. Then, thresholds (cut off points) were used to classify households as having poor, borderline or acceptable consumption levels.

Table 4.12: Food Security Status across Urban centres

Town	Poor Food Consumption	Border Line Food Consumption	Good Food Consumption
Mekele	11.7	31.4	56.9
Adigrat	4.7	15.7	79.7
Zembelesa	15.1	24.7	60.2
Adwa	35.8	39.8	24.4
Michew	8.0	26.7	65.3
Total	14.5	28.3	57.3

At household level, research has shown that dietary diversity and frequency[5] are good proxy measures of food security. Using a 7-day recall period, information was collected on variety and frequency of different foods and food groups to calculate a weighted[6] food consumption score. Weights were based on nutritional density of the foods.

Figure 4.12: Days consumed by consumption category
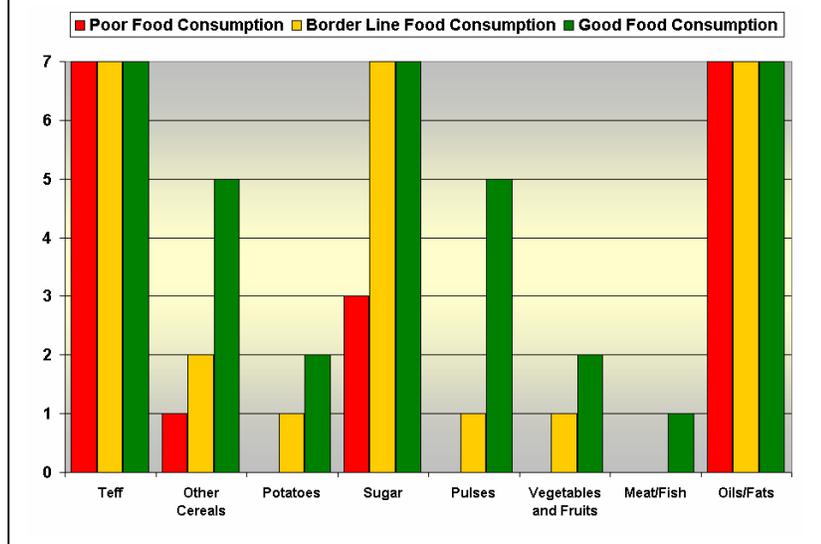
Cut-off points or thresholds were established to enable analysis of trends and to provide a

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[5] The number of different foods or food groups consumed by the household over a given period of time.
[6] Animal proteins = 4; pulses = 3; cereals/roots/tubers = 2; fruits and vegetables = 1; oil and sugar = 0.5

benchmark for success. Households were then classified as having either 'poor', 'borderline', 'acceptable' or 'good' consumption based on the analysis of the data. Use of the Food Consumption Score also allows for comparisons of dietary quality and diversity between populations. Based on this analysis at least 14.5% of the population across all the urban centres had poor consumption or considered as food insecure. The greatest percentage was in Adwa with 35% of the population, followed by Zalambesa with 15% of the population in this category (Table 4.12)

Table 4.13: Food Security Status by Livelihood Group

	Poor Food Consumption	Border Line Food Consumption	Good Food Consumption
Government salary/wage	10.0	22.8	67.2
Small business/self-employed	14.9	23.8	61.2
Other not specified activities	8.6	25.7	65.7
Non-agricultural wage labour	15.9	38.8	45.3
Petty trade(firewood sales, etc..)	22.0	32.7	45.3
House rental, pension, allowances	16.8	31.5	51.7
Remittances, gift	16.0	23.5	60.5
NGO, private company salary	4.6	24.1	71.3
Handicrafts/artisan	11.8	35.3	52.9
Agricultural wage labour	22.2	27.8	50.0
Assistance (begging, fd assistance, borrowing)	17.8	26.7	55.6
Farming and sales of livestock	7.4	33.8	58.8
Total	14.5	28.3	57.2

In terms of dietary diversity, households with 'poor' consumption managed to eat the equivalent of only cereals and oil on a daily basis and sugar three times a week. This was considered a bare minimum and was a sign of extreme household food insecurity. Households with 'borderline' consumption were eating the equivalent of cereals, oil and sugar daily, two days of other cereals and a day of vegetables and pulses. Households classified as having 'good' consumption on average consumed: cereals, oil and sugar seven times in a week and in addition had more consumption of other foods, hence their diet was more diversified. Additional foods included five days of other cereals, two days of potatoes, five days of pulses, two days of vegetables and one day of meat or fish (Figure 4.12)

Considering the livelihood groups, the poorest food consumption was in the petty trade group (22% of households), followed by the assistance group (18%). These groups were thus the most vulnerable (Table 4.13).

On gender, female-headed households were more food insecure (17.5%) compared to male-headed households (12%). For marital status, households with divorced or separated status tended to be more food insecure (20%), followed by the widowed (18%), whilst married and never-married households had about 10% of households as food insecure. None of the cohabiting was food insecure. Household size seemed not to be closely related with food insecurity, but the larger a household, the less percentage of food insecurity was observed and this could be a factor of dependency as the larger a household the more people who are working.

The food security status by asset holdings was such that most of the poor food consumption and the borderline consumption (56%) were poor to medium asset holders with at least 23% of the poor asset holders being with poor food consumption, indicating that the asset poor were more food insecure compared to households with a good asset base. The largest percentage of asset poor with poor consumption was in Adwa (55%), and 21% in Mekele (Figure 4.13).

Figure 4.13: Food Security by Asset Group

On income levels, consumption improved with the improvement in income levels with 30% of households earning less than 300 Birr per month consuming poorly, followed by 19% for those whose expenditure was between 300 and 600 Birr/month. Only 13% of households whose income was Birr 600 to 1000 per month had poor consumption, whilst only 4.2% with greater than 1000 Birr/ month had poor consumption. Similarly more households (79%) with income/ expenditures of greater than Birr 1000 had good consumption followed by the second income level (Birr 600 to 1000) with 55% having good consumption. The least good consumption was with households whose income was less than Birr 300 (37% of households) followed by 44% for households with expenditure/ income of Birr 300 to 600 Birr.

4.4.2. Sources of food

On food sources to households, majority of food (95%) came from purchases either from the main shop or roadside vendors/tuck shops except in Zalambesa where 50% of food was sourced from food assistance, as households were participating in the public works safety net program. Other food sources were insignificant with production contributing about 5% in Maichew and Zalambesa towns. Subsidized food as the source of foods was almost negligible in the towns studied. The fact that almost 95% of the food was purchased for most of the population had an implication that the rise in prices of food had a great impact on food access for the urban population. For Zalambesa, with most of the food coming from food assistance/safety net, any disruption on this program would have a significant impact on the food security of households in this town (Figure 4.14).

Figure 4.14: Food Sources across towns
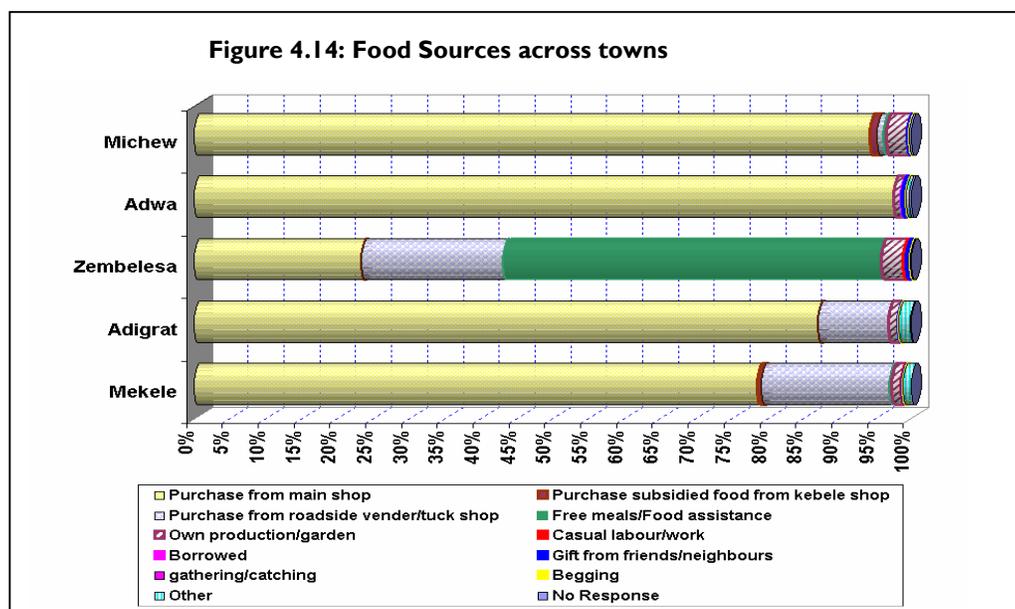
4.4.3. Change in consumption

To gauge impact of prices on consumption, a comparison was made between December 2008 and October 2008 and this was measured through the consumption score. Based on the consumption score, the population with poor consumption doubled between December 2007 and October 2008 across all towns. In Adwa, the population increased from 9 to 36%,

and in Zalambesa and Adigrat the population remained stable. The percentage with borderline consumption also increased while the percentage with good consumption decreased from 70% in December 2007 to 57% in October 2008 (Table 4.14). This indicates a serious change in food security conditions of households between the two periods and this was mainly attributed to the increase in food prices.

Table 4.14: Comparison % Population between Dec 2007 and October 2008

| Town	Poor Food Consumption		Border Line Food Consumption		Good Food Consumption	
	Dec-07	Oct-08	Dec-07	Oct-08	Dec-07	Oct-08
Mekele	5.8	11.7	23.9	31.4	70.3	56.9
Adigrat	4.0	4.7	14.0	15.7	82.0	79.7
Zembelesa	15.4	15.1	25.8	24.7	58.9	60.2
Adwa	9.0	35.8	30.1	39.8	60.9	24.4
Michew	3.7	8.0	16.7	26.7	79.7	65.3
Total	7.3	14.5	22.4	28.3	70.3	57.3

Comparison across livelihood groups, indicated the same pattern with almost all livelihood groups having the percentage of poor consumption almost doubled between the two periods (December 2007 and October 2008). The farming and sale of livestock and the other activities groups had insignificant changes in the percentage of the poor consumption population. The group with borderline consumption varied across the livelihood groups, similarly the good consumption decreased between the two periods across all the livelihood groups (Table 4.15).

**Table 4.15: Comparison % Population between Dec 2007 and October 2008 by Livelihood Groups**

Livelihood groups	Poor Food Consumption OCT 2008	Poor Food Consumption Dec 2007	Border Line Food Consumption OCT 2008	Border Line Food Consumption DEC 2007	Good Food Consumption OCT 2008	Good Food Consumption DEC 2007
Government salary/wage	9.9	3.5	23.1	17.6	67.0	78.8
Small business/self-employed	14.9	5.7	23.8	17.1	61.2	77.2
Other not specified activities	15.1	14.3	25.1	25.5	59.8	60.2
Non-agricultural wage labour	15.9	7.9	38.8	23.8	45.3	68.2
Petty trade(firewood sales, etc..)	21.9	6.9	33.1	32.5	45.0	60.6
House rental, pension, allowances	16.9	5.4	30.4	24.3	52.7	70.3
Remittances	16.7	7.8	20.6	18.6	62.7	73.5
NGO, private company salary	4.6	1.1	24.1	18.4	71.3	80.5
Handicrafts/artisan	12.2	6.1	36.6	25.6	51.2	68.3
Assistance dependents	20.8	16.7	34.7	31.9	44.4	51.4
Farming and sales of livestock	7.2	7.2	33.3	15.9	59.4	76.8
Agricultural wage labour	22.2	5.6	27.8	33.3	50.0	61.1
Total	14.5	7.3	28.3	22.4	57.2	70.3

All towns and all livelihood groups across all the studied towns lost their consumption between December 2007 and October 2008. The greatest loss in consumption was recorded in Adwa across all livelihood groups with a loss as high as -20 points in the food consumption score recorded in the assistance group. The losses in other towns varied across the livelihood groups, for an example in Zalambesa a loss of -21 points in the food consumption score was experienced by the group dependent on petty trade followed by a loss of 17 points for the group dependent on house rentals and all other livelihood groups had loss in consumption of different magnitudes except the small business and self employment that gained 6 points between the two periods. Adigrat seemed to have the least losses followed by Mekele, this could be due to the fact that those were big towns and benefited from trade and hence prices (Figure 4.15)

Figure 4.15: Change in Consumption by Livelihood Group
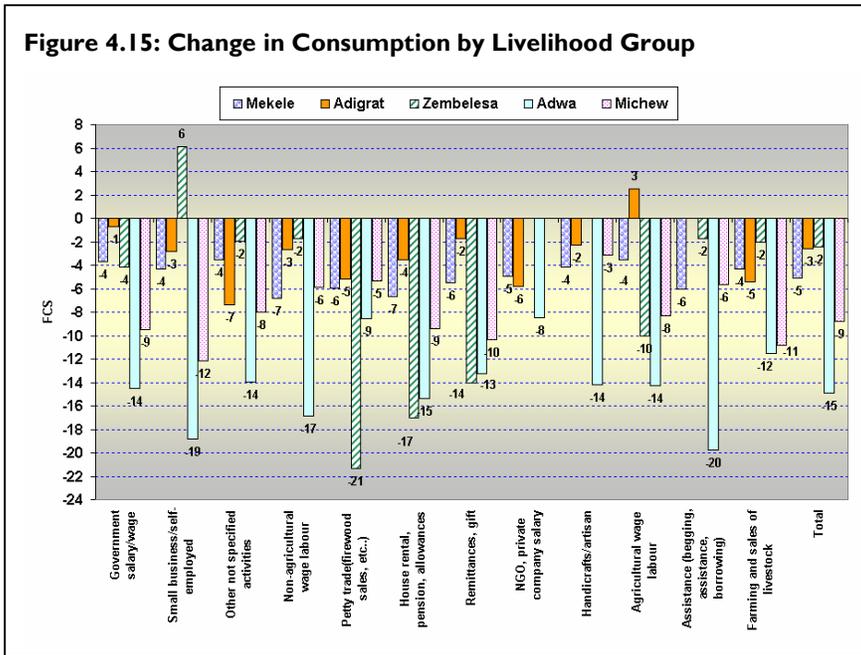
The perception on whether consumption patterns had changed within a household was solicited and, generally there was an indication that some households had their consumption decreased between December 2007 and October 2008. Many had shifted to less expensive commodities as a strategy. The reasons for the changes mentioned included that preferred cereals were too expensive (63% of the households) and 1% indicated preferred meat was not available in the market, whilst 34% indicated lack of income as the major reason for changes consumption. Fifty seven percent of households in Zalambesa reported that there was no change in cereal consumption compared to December 2007, while 27% indicated that they changed their cereal consumption to less expensive commodities and only 8% reported change by 75% to 100%. The next town with a high proportion of households who did not change their cereal consumption was in Adigrat where they accounted for about 42%. In Mekelle, about 45% of households reported that they changed their cereal consumption to less expensive commodities while 35% responded that their cereal consumption did not change. In Maichew, 27% of households responded that there was no change in their cereal consumption. Exceptional figure was observed in Adwa where 42% of households reported that their cereal consumption decreased by 50 to 75%, and about 20% of households replied that their cereal consumption decreased by less than 50%. Only 15% reported no change on their cereal consumption (Table 4.16).

Figure 4.16: Change in Commodities
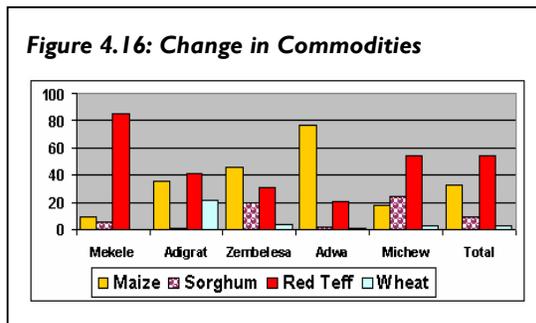
On average 38% of households in the five towns changed their consumption to less expensive commodities. Nearly 60% changed to red teff as a substitute to white teff. Red teff preference in the towns ranged from 55% in Maichew town to 84% in Mekele and the least (31%) was in Zalambesa town. In Zalambesa preference for Maize accounted for 47% (Figure 4.16). The reason for change to less expensive commodities in all of the five towns

was due to the fact that preferred cereal price was too expensive (64% of households). The next reason indicated by most of households across the 5 towns was insufficient income (Table 4.17).

4.5. Markets and food prices

4.5.1. Market conditions: supply/availability of food commodities

Table 4.17: Reasons for changing to less expensive commodities by HHs

|	Preferred cereal too expensive	Preferred meat not in the market	Not enough income	More HH members	Less HH members	Other
Mekele	64.5	1.1	31.0	1.1	1.1	1.1
Adigrat	55.7		41.0		1.6	1.6
Zembelesa	81.3	4.2	12.5			2.1
Adwa	61.0		39.0			
Michew	72.5	2.5	25.0			
Total	63.5	0.9	33.5	0.5	0.7	0.9

According to information gathered through focus group discussions and key informant interviews, food supply deteriorated between late 2005 and the survey time. The food supply situation became at its worst in 2008. During the time of this survey, availability of food commodities ranged from as low as 42% (barley) and as high as over 90% (oil, sugar and red pepper), depending on the type of food items. The food commodities most impacted by supply problems were wheat (flour and grain), maize, teff, rice, pulses and meat with availability ranging from 53 to 70%. Around three-quarters of the groups interviewed felt that food commodities were available in markets while the remaining groups felt that food items were scarcely available.

Figure 4.17: Change in Prices

The survey collected information on availability in the market of prefered food items that households consume and their prices during the survey period and a month earlier. Availability of commodities in the two periods was good for most commodities. However availability of some items such as wheat flour (52%), lamb meat (8%), goat meat (6%), chicken (72%), cheese and yogurt (83%) and butter (18%) were lower. About two-thirds of traders interviewed indicated that supply of cereal commodities to the market had decreased and cited reduced harvest as one of the major reasons for the reduced supply– around 40% of all types of traders (wheat, sorghum, maize and teff). For the small percentage of traders (6 to 12%), that indicated an increase in supply, most mentioned price increases as the reason. For the percentage that indicated an increased supply into the market, food aid being sold in the market was cited as one of the reasons (mostly wheat traders with some others).

4.5.2. Situation of prices on food commodities

Traders were asked about changes in prices in comparison to the same period of a previous year. Nearly 93% of traders indicated the price of most staple foods had increased on average by 60 to 90%. For instance, the price of wheat grain increased by 34%, teff grain

and rice each increased by about 68%, maize by about 41%, meat by about 60%, vegetables by about 52%, oil by about 34%, and milk by about 55%. Nearly three-fourth of interviewed traders indicated that the major reason for the increase in price was the increase in prices from sources of the commodities; and only 10% indicated increase in transport costs as the main reason. About 41% indicated that price rise started one year earlier, 24.6% six month earlier, and 18% more than a year earlier.

According to focus group discussion participants and key informant interviewees, the main reasons for the high price increases since 2005 were as follows:

- o The government's strategy regarding rural micro-financing for farmers in which they were given better access to credit and favourable arrangements on in-kind repayment with relaxed period of repayment and better prices than before had resulted in better/increased production of food commodities and improved the confidence of farmers and helped them not to rush to over-supply the market and sell their products during harvest time at lower prices. As a result, food availability was negatively affected which has led to increasing food prices.

- o Opportunistic traders, brokers and farmers took advantage of favourable conditions and made food commodities scarce by hoarding and created irregularities in food markets resulting in poor supply, high demand and higher prices.

- o Fuel price increases on a continuous basis was also mentioned as a major cause for increasing/expensive transport costs that had even complicated food price increases.

4.5.3. Volume of trade/sales

There was a high variability in traded quantity amongst traders whereby it ranged from 0.3 mt to 1.5 mt for wheat grain and from 0.5 mt to 50 mt for teff. The quantity sold as proxy for trading activity indicated that compared to a previous year, sales dropped by 45% for grain, 44% for pulses, 41% for meat and 23% for vegetables, which was indicative of speculative trader behaviour. When outlying values were filtered out, results showed that compared to a usual week the amount of grain sold decreased by about 39%, pulse by 35%, and

Table 4.18: Demand for grain

Food	Demand In %		
	Increased	Decreased	No change
Wheat	26.67	73.33	0.00
Maize	46.67	46.67	6.67
Teff	33.33	66.67	0.00
Sorghum	40.00	53.33	6.67

perishable commodities such as vegetables by around 17% between January and June 2008. Most traders (94.7%) indicated that there was a change in buyer's behaviour. In this regard, there was a shift from expensive to cheaper goods as well as in amounts they purchased. For instance, grain traders indicated that demand for expensive commodities like teff declined by about 66% and wheat by about 73% whilst the demand for cheaper goods like maize rose by 47% and sorghum by 40% (Table 4.17). The main reasons cited for changing demand behaviour was the steep rise in the prices of main staple food items. The main coping strategy adopted by households was reducing amount of commodities purchased at a given time (96.5%), opting for cheaper foodstuffs (83.1%), and not buying in bulk as usual (88.9%).

4.5.4. Availability of food commodities

The survey collected information on availability of preferred food items that households consume during post Belg and post Meher seasons. Around 80% of traders interveewed felt that food commodities were avaliable in the market in both seasons while the remaining groups felt food items were scarcely avaliable. For instance, taking the avarage of the two seasons, around 82% of traders reported that wheat grain was avaliable, for pulses 85% of traders, for vegetables 79% of tradeers, for fruits 75% traders, and for oil 89% of traders reported avalibility in the market (Fig 4.18). Generally, around 80% of traders indicated that most major staple food were avaliable in the market in both periods.


Figure 4.18: Availability of food items in the market
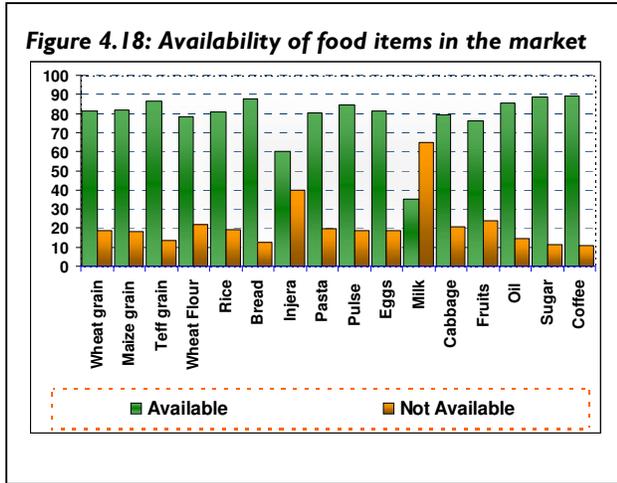
4.5.5. Sources of food items for traders

About three-fourth of traders interviewed indicated that major sources of commodities for re-sale was from other traders (74%), very low from farmers (25.8%) and the remaining was from own sources. These indicated that households or direct consumers obtained main staple foods after a chain of many intermediate traders (value chain), which has a negative effect on the market and the price. Availability of stocks depended on trader sizes and commodities sold, with larger shops and traders having more stocks than smaller ones. For grains, approximately 18% of traders had stocks. Wheat was kept longer (more than four weeks for 43% of the surveyed traders) than teff and maize which were held only upto two weeks for approximately 48% of traders. For pulses, oil and sugar, only one-quarter of the traders had stocks. Pulse stocks usually lasted for 2-3 weeks for approximately 47% of the traders. The duration of oil and sugar stocks also depended on size of shops. Approximately 67% of traders had stocks for perishable commodities and the shelf life barely exceeded one week for about 90% of the traders. Stocks were more available and long lasting in large shops than small shops.

Figure 4.19: Main source of food for traders
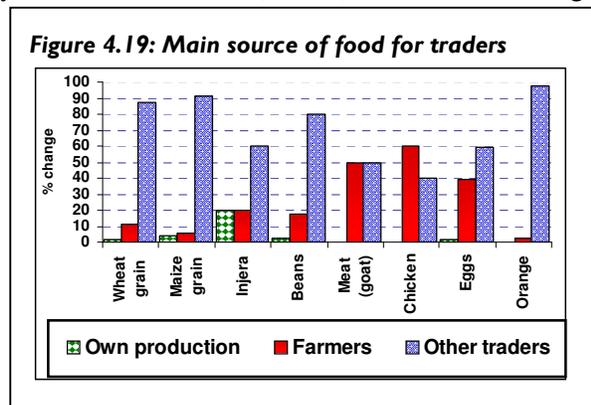
4.5.6. Supply of food commodities

Considering quantities sold as a proxy for trading activity, sales collapsed by between 40 and 50% for all commodities compared to a previous year which was indicative of speculative trader behaviour. Supply of cereal commodities to the market declined with the main reasons being reduction in harvest (10%), less food aid being sold (8%) and less stock holding by traders (11%), whilst the remaining (70%) did not know the reason why supply declined. From 35 to 50% of traders indicated that there was an increase in supply by traders from other regions providing produce (25%) and price increases (25%) as the main reason among the others. For those that indicated an increased supply into the market, food aid being sold in the market was cited as one of the reasons (mostly wheat traders with some others).

Table 4.19: Supply for grain

Food	Supply Rate In %		
	Increased	Decreased	No change
Wheat	38.89	44.44	16.67
Maize	55.56	22.22	22.22
Teff	44.44	38.89	16.67
Sorghun	38.89	33.33	27.78

4.5.7. Access to credit

Nearly 58% of wholesalers and 51% of retailers had access to credit, of which 77% of wholesalers and 68% of retailers obtained credit through bank/credit associations/cooperatives and the remaining traders accessed credit from other traders providing the commodities. About 65% of the surveyed traders thought there was no change in access to credit, 18% reported reduced access to loan opportunities particularly for retailers and small traders. After filtering out outliers average interest rate was found to be 3.83% per month and this figure remained the same for 82% of traders and less for 10% of traders compared to a previous year. Traders were

Figure 4.20: Traders getting and giving out credit

asked whether households were seeking more credit; two-thirds of the traders indicated an increase in number of households seeking credit. On the other hand, traders reported that about 22% of households increased in the amount of credit requested, whilst 43% indicated a decrease in amount of credit requested.
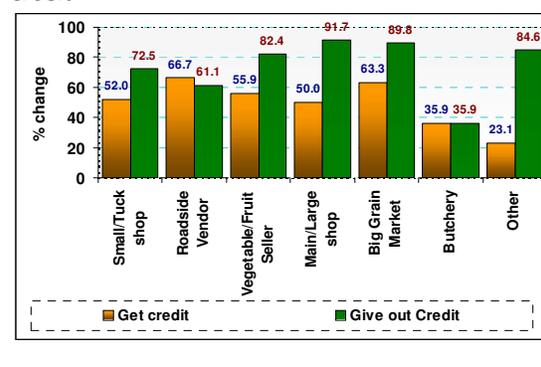
4.5.8. Difficulties for trading and potential impact of food aid including subsidy

The main difficulties for trading appear to be taxes (27%), followed by cost of commodities to purchase for resale (27%), as well as lower demands for goods (17%). Infrastructure such as cost of fuel, road connection and lack of transport had low impact on traders (19%). On the potential impact of food aid distributions on the market, 37% of traders indicated they did not see any impact on the market, whilst 23% thought there was an impact because it reduced number of people who came to buy and the other 20%

indicated price of main staples declined when large volume of food aid was distributed in their area. Traders were also asked about impacts of food aid distribution on trading activities, 37% of them indicated they did not see any impact on their trading activities, whilst 36% thought there was an impact because it reduced the profit margin they made and the other 23% indicated reduced sales.

4.5.9. Market response capacity

The turnover of increasing food supplies depends on types commodities traded. Traders were asked about the response in supplies for an increase in demand. About 81% of traders reported that perishable foodstuffs such as meat, fruits and vegetables, *injera and* bread were the items the market responded more quickly (less than two weeks) and for grains, pulses, sugar and oil the response could take up to a month (Figure 4.21).

Figure 4.21: Market response capacity

Source: Survey result
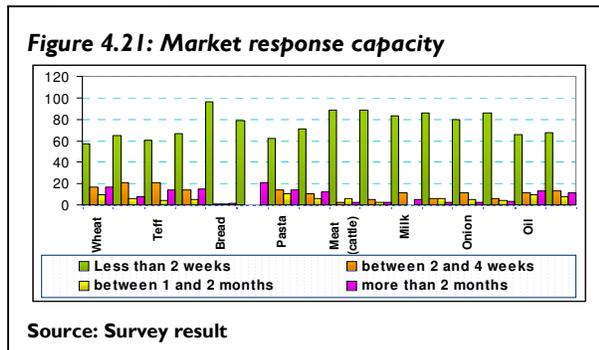
4.6. Perceptions on vulnerability, poverty, and impacts of rising food prices

According to perceptions of respondents, the main livelihoods for the majority of slightly better off and better-off households were civil service and business while the poor and the very poor relied on other activities like daily labour, road-side vendor, small businesses, and begging (not working). Regarding income levels, as perceived by the respondents, the majority of the poor had monthly income of *Birr* 300-600 while most of the very poor earned below *Birr* 300. A majority of slightly better off households could earn *Birr* 1000-3000 monthly. The majority of better off households could earn more than *Birr* 3000 per month. The information further indicated that very poor people constituted about 50%, the poor about 30%, the slightly better off about 15% and the remaining 5% were considered as better off.

4.6.1 Impacts of food price increases

Food is the basic necessity of human beings to survive. Shortage of food leads to complicated problems in households and society at large. Among the surveyed households, in households where there was no enough food, suspicion between husband and wife arose making one a cause for the unfavorable situation. They sold their assets like their furniture, jewelry and some even sold their productive assets. Divorce and separation showed considerable increase. Some men even deserted their families out of frustration. Other families run out of clothing since they used their entire budget for food. This type of disproportional use of income for food leaves no budget for health care and becoming another serious issue in a different direction threatening life. In many family members at the different places where there was food stress, complaint on the government was widespread making it the first responsible body to control the situation. Those family members showed frustration to live in the future.

One of the social disruptions caused by the food price increment was to see many students dropping out of schools both at elementary and secondary levels. When there is food stress, students will be forced to look for a casual labor than to go to school and they will be

forced to minimize their consumption of food by saving their money. Some children desert their own families and go to their relatively better-off relatives to live with them. Others start living street life. In many family members, it is imperative to forego meals. In such stresses, people migrate to other places to look for other options like begging and casual labor. Some go to theft. To some of them, these types of living conditions caused illnesses that lead them to the worst situation of their lives. The other social problem will be seeing girls and women forced to becoming commercial sex workers.

All people cannot be affected with equal magnitude since people have different capacities to be resilient to problems like food shortage. In Tigray, households headed by the elderly were found most affected. Similarly, households headed by children were also most affected. The low income groups like daily laborers, pensioners were no different from the above. Low income groups of big family size were also very highly affected. There were quite a number of displaced people from Eritrea living in Tigray. Those people had no assets; they did not have their own houses and they did not have income sources. As expected, those people were also highly affected by the increased price of food.

4.6.2. Impact of price increases on markets and traders

When sales in the market are beyond people's financial capacity, people will be forced to refrain from purchasing and this is what happened in Tigray. The number of purchasers in the market is highly affected, decreased. Shortages of food in the market are also observed. These shortages are artificially created. The traders with better capital tried to hoard food to sell during favorable times. This situation helped some traders to get more profit. However, the government, to some extent, counteracted this by supplying more subsidized food to the public. Other traders with less capital missed their customers and are negatively affected. Few were forced, even, to leave the business.

4.7. Main challenges and priorities of surveyed communities

4.7.1. Main challenges communities

The main challenges of the communities, according to respondents, included high and increasing food prices (97%), frequent power interruptions (90%), limited income opportunities (93%), and price increases for fuel/ electricity (93%). Challenges on other sectors and services such as health facilities, education, transport, etc. were also indicated as major problems for most of the population in the surveyed towns of the region.

4.7.2. Main priorities of communities

As a follow up after discussing the current situation of the communities and their prevailing challenges, respondents were given chance to list their priorities. Accordingly, more than 96% of them mentioned improved access to subsidized food, improved access to electricity and better employment opportunities (94%) as their issues of priority. Improved access to other basic services such as education, drinking water and health facilities (95%) were also among the communities' priorities.

4.8. Shocks and coping strategies

Households were asked to prioritize the shocks/difficulties faced over the past six months and actions taken to address the shocks or difficulties encountered. They were allowed to name as many as they liked and then to identify the top three shocks. Overall, the main shocks listed by households were: unusually high food prices (95%), unusually high fuel/ transport costs (45%), reduced income of household member/s (44%), loss or reduced employment of household member/s (21%), electricity/gas cuts (9%), drought/ irregular rains, prolonged dry spell (8%) and insecurity/violence (7%) (Table 4.20).

Table 4.20. Shocks experienced by towns

Shocks	MEKELE	ADIGRAT	ZALAMBES	ADWA	MAICHEW	Total
Loss or reduced employment for HH member	13	25	33	1	29	21.3
Reduced income of a household member	22	47	45	56	45	44.3
Serious illness or accident of HH member	3	5	4	2	2	3.7
Death of head of household	1	5	1	1	1	1.8
Death of working HH member	1	1	1	0	0	0.8
Death of other member	2	2	0	1	1	1.4
Unusually high food prices	77	96	76	91	89	94.8
Unusually high fuel/transport prices	30	54	30	44	51	44.8
Electricity/gas cuts	3	28	5	6	4	9.2
Drought/irregular rains, prolonged dry spell	0	10	20	8	4	8
Unusually high level of crop pests and disease	1	0	6	0	0	1.4
Theft of productive resources	0	1	0	0	0	0.3
Insecurity/violence	0	6	33	0	0	7.2
Floods	0	0	0	0	0	0.1
Other	0	0	0	1	0	0.2

Figure 4.22 shows the differences between reported shocks by asset wealth groups, indicating that wealthier households were more affected by electricity/gas cuts while poor households were affected more by unusual high food, fuel and transport prices, and reduced income of household members. Summary analysis of these findings showed that the asset poor households had an unusual set of reported shocks in that only 43% reported unusually high food prices, 24% reported reduced income of household member/s and 20% reported unusual high fuel and transport prices. The wealthier groups were more likely to report being

Figure 4.22: Shocks by Asset Group
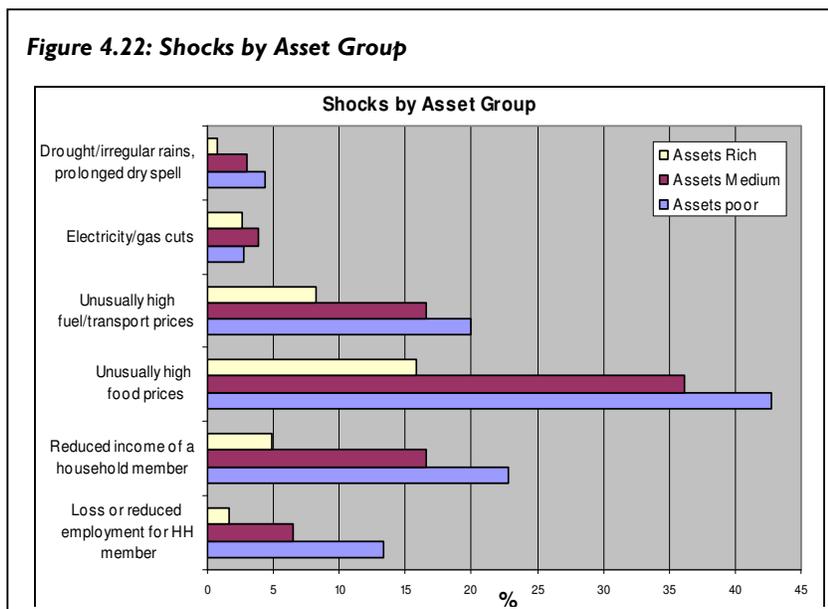
affected by high prices (fuel/transport) while poorer groups appear to be more affected by reduced incomes or illness/injury of household member/s.

The most commonly cited coping strategies used first by households when dealing with shocks were (cf. Figure 4.23):

- To eat less preferred or less expensive foods by 97% in Adwa, 93% in Maichew, 89% in Adigrat, and 67% and 68% of households in Zalambesa and Mekele towns, respectively.

- Limiting portion size at meals by 66% in Mekele, 65% in Maichew, 64% in Zalambesa, 49% and 46% of households in Adwa and Adigrat towns, respectively.

- Reducing the number of meals eaten per day by 55% of households in Mekele, 53% in Maichew, 38% in Zalambesa and 35% in Adwa and Adigrat towns.
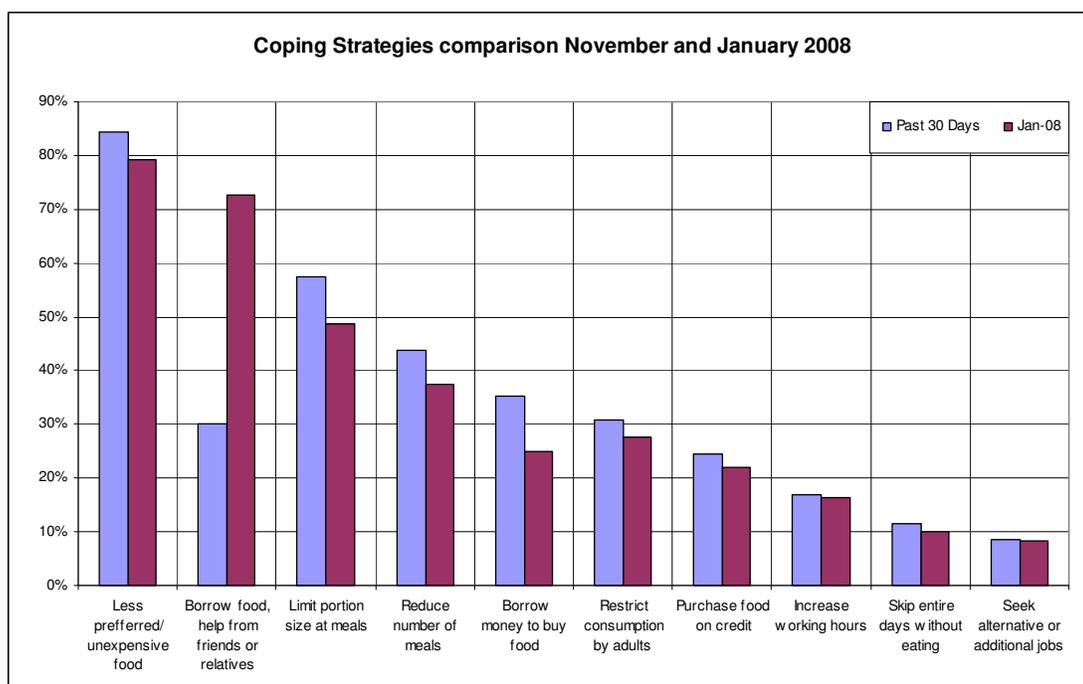

Figure 4.23. Shocks by Asset Group

Figure 4.24 shows the relationship between asset wealth and coping strategies for households affected by shocks. The asset rich were much more likely to increase working hours than the asset medium and asset poor households, while the asset poor were much more likely to increase borrowed food and decrease expenditure on health care than the asset medium or asset rich. On the other hand, findings from focus group discussions and key informant interviews showed that relying on less preferred/ less expensive food (99%), reducing meal size (97%) and reducing number of meals (94%) as well as restricted consumption by adults in favour of children (85%) were the major types of coping strategies used by the surveyed populations. Years of drought and recent high food prices plus localized shocks had a huge impact on average urban household's ability to acquire and maintain assets as well as their ability to manage adverse effects of repeated shocks to

their livelihoods. Reducing both quality and quantity of meals, as the primary or most frequent coping strategy for impoverished households, further degrades what is already very poor diet diversity for many urban households.
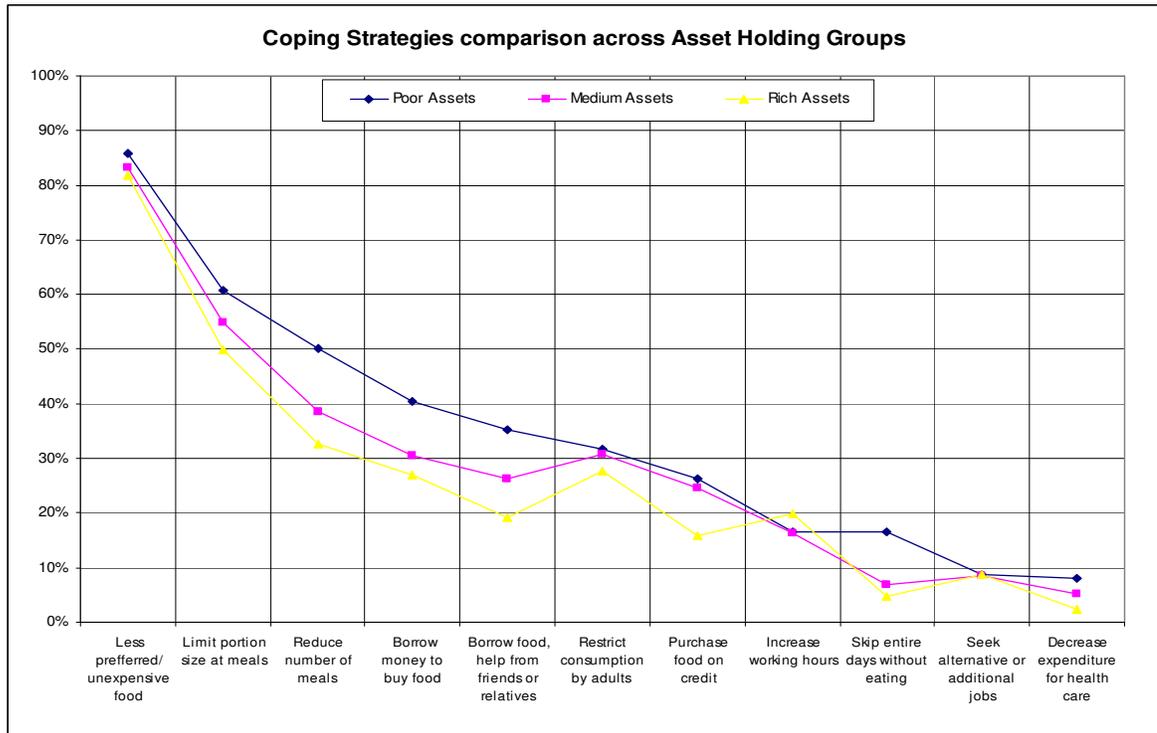

Figure 4.24. Coping strategies across asset holding groups

Figure 4.25 compares the frequency of coping strategies used by households in the five towns studied. Increased out-migration, selling more animals, decreased expenditures, consumption of seed stocks and begging for food and money were most commonly used strategies in terms of frequency by households who experienced shocks.

Frequency of Using the Different Coping Strategies
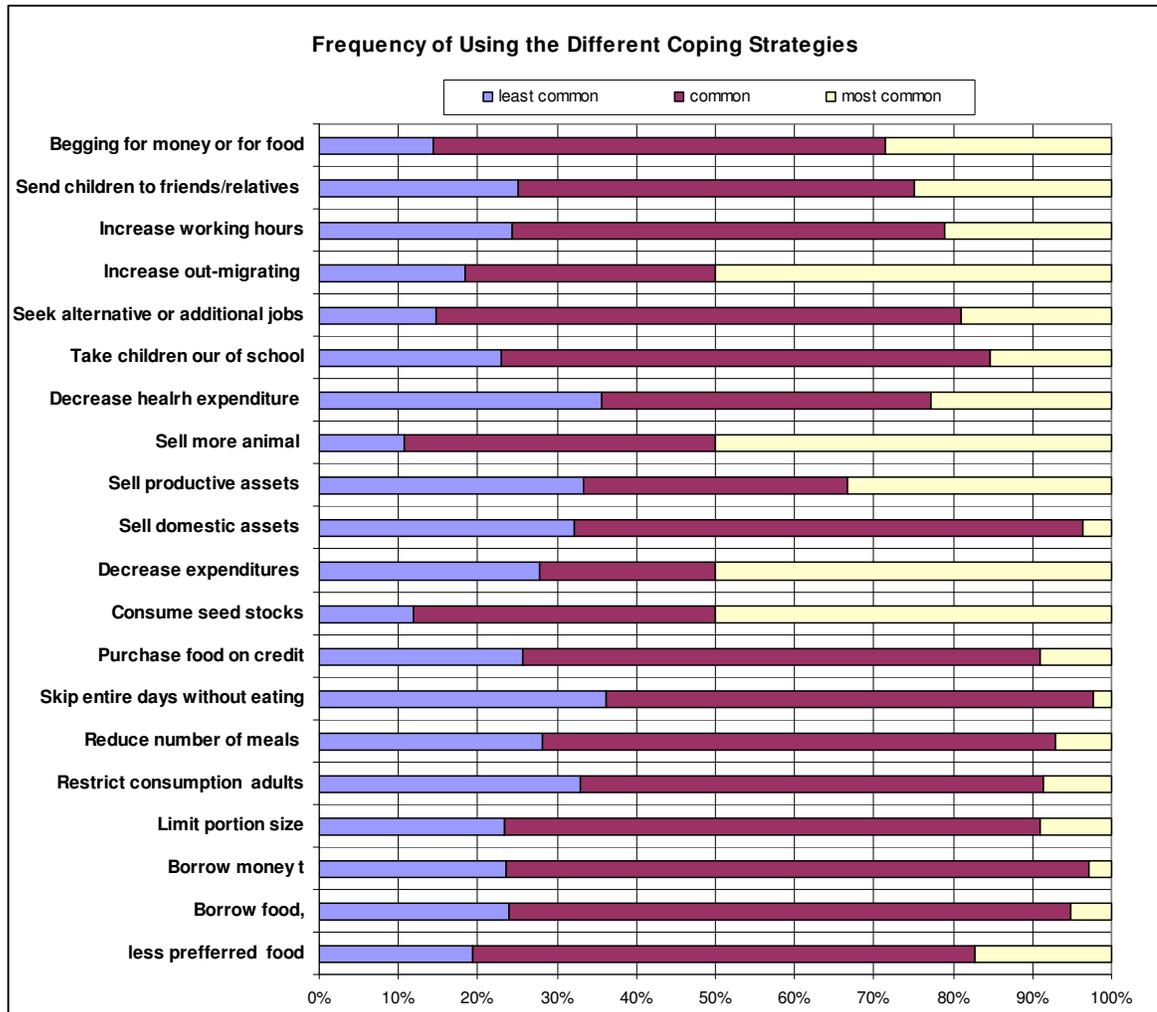
Figure 4.25. Frequency of using different coping strategies

4.9. Responses by affected people, interventions and impacts as well as future prospects

4.9.1. Access to subsidized food

Overall, 47% of households reported that they had access to subsidized wheat from their *Kebeles*. The percentage of households with access to subsidized wheat was 71% in Mekele and Adigrat, 40% in Maichew, 27% in Adwa and only 3% in Zalambesa. The most common reasons for people for not having access to subsidized wheat were lack of willingness to buy/biased against (33%), followed by not registered in the Kebele where they lived (31% of households). Another 12% indicated that they did not have money to buy
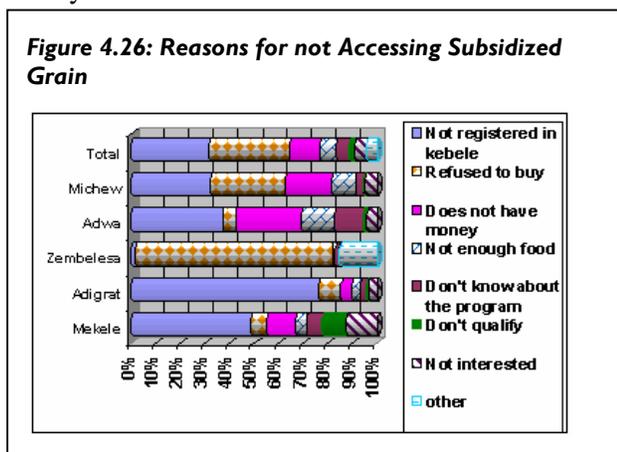
Figure 4.26: Reasons for not Accessing Subsidized Grain

the food while 7% indicated that there was not enough subsidized food for purchase. Lastly, about 5% indicated they did not know about the program and another 5% indicated that they were not interested (Figure 4.26).

By asset wealth groups, 55% of asset rich households had access to the subsidized grain, followed by 48% of asset medium and only 43% of asset poor households. The main reasons asset poor households indicated for not having accessed subsidized wheat were that they were unwilling to buy (39%) followed by not registered in Kebeles (24%), and 18% indicated they did not have money. Some 5% stated that there was not enough food and only 3% stated that they did not know about the program. For household level data, program participation was defined as any household member having participated or benefited from any of the following: food for school children (eaten at school or taken home), food for young/malnourished children or for pregnant/lactating women, free meals for households, cash from HIV/AIDS programs, food from HIV/AIDS programs, cash for work, food for work, cash transfers from social assistance programs (government, private, NGO), free health care/drugs and any other support between January 2008 and the time of the survey for this study. The highest overall participation/assistance received was from free meals for households by 6%, followed by food for work programs as reported by 5% of all sample households. Food for work program for asset poor households was 7% compared to 2% for asset rich households. Cash for work and micro credit (NGO or other agency program) was reported by 3%.

4.9.2. Impressions regarding responses by affected people and impacts of all interventions

The surveyed population Tigray took several measures to counteract the increased price of food and other food-related items. Many of them thought of engaging themselves, at any rate, in some income generating activities and put great efforts to make that a reality. They tried to access credit facilities given in their local areas; REST is one to give credit, and invested in poultry, dairy farm, getting involved in petty trade like selling charcoal, selling firewood etc. Others, who were not able to get credit facilities did casual labor like loading and unloading by carrying on their shoulders, some got employed in construction sites, others especially women were engaged in housework as maids. However, this situation did not apply to all the affected people in Tigray. Some were so vulnerable, literally with no capacity, that they could not do anything except to be at the mercy of nature, government and/or other people. Of these, a few migrated to other places which they thought was favorable to get assistance. Many of the migrants depended on begging and lived in temporary places. The Government and some NGOs were very much helpful in putting much effort towards supporting the highly affected population of Tigray. With regard to NGOs, they were providing free food for the disabled, to the chronically sick, to the helpless and elderly and to malnourished children. This had been done since the time the news and reports about the suffering of the affected population were widely spread, heard and seen. In addition to this, NGOs were very much supporting the Safety Net Program, programs that support a good number of the poor and the affected population.

The government, as it did in other major towns in the country, provided subsidized food for those who were able to purchase with some amount of money. This was done through the kebele administrations and it was said to have saved many urban people from a serious shortage of food, which otherwise would have resulted in a disaster. The government

established consumers associations, which were assisting consumers not to be exposed to unfair traders.

4.9.3. Impressions about the situation likely to occur in the coming months

People were found having different expectations and opinions on how things would come out in the future. Some views were completely at opposite sides. Some expected the following months to be much better since people would be determined to work more whatever the type of work and become independent, the market would be regulated by the government, consumers associations would serve people rationally and the meher rain harvest would be available sufficiently. Moreover, people's attitude would change in eating habit and would resort to vegetables, fruits etc. These conditions would encourage them to cultivate their backyards for vegetables and fruits and use them for income and for their own consumptions. People would also develop saving systems. They would also learn to be economical or cost-conscious. In the meantime, they expected the government's subsidized food supply to continue until people would be able to stand on their own feet, and finally self sufficient and independent.

On the other hand, others were completely pessimist. They expected things to remain in the same problem, with no change and others even expected things to go worse and worse. They undermined the government's and NGOs' interventions in mitigating the problem and expected people to resort to less preferred, non-nutritious and less expensive food and limiting portion of meals and frequency of dieting for some time to follow. For the above not to happen, respondents suggested all to pray to God and get His blessings.

5. Conclusions and Recommendations

5.1. Conclusions

From the survey findings it was concluded that:

- Food availability was negatively affected as a result of poor supply of food commodities, malfunctioning of markets, high transport costs, hoarding of grains by traders, and increased exports of food items that contributed to the shortage of commodities in markets.

- Food accessibility was also seriously impacted due to several factors that included:

    o Poor level of asset base for more than half of the surveyed households.

    o High poverty conditions of the majority of the population that was found out for more than 70% of households who were below the national absolute poverty line.

    o High level of expenditure on food by the majority of households (more than 60% of their income spent on food).

    o Below acceptable level of consumption by about one-third of the surveyed population.

    o Increased inflation on food commodities and other services that led households to have deteriorated purchasing power.

- Food utilization was also affected due mainly to the poor basic infrastructure and deterioration of basic services such as safe drinking water, sanitation, housing and health facilities.

- As a result of the deterioration of all the three pillars of food security most of the surveyed population were found to be highly food insecure.

- Significant proportion of households were also increasingly exposed to several risk factors that included high prices of food and non-food commodities and services, worsening food insecurity, preventable/communicable diseases, family disintegration, and disruption of social support/networks.

- In order to minimize some of the risks households were found to use consumption related destructive coping strategies that included skipping meals, reducing meal sizes, shifting to less expensive and less preferred food items, etc.

- As a result of high exposure to several risk factors and using damaging types of coping mechanisms, many households were found to be under severe vulnerability situation. The study findings further indicated that the situation would not improve in a near future– in stead worsening conditions were anticipated to continue unless appropriate measures would be taken.

- Although the government tried to contain the multi-faceted problems of the population by distributing wheat at subsidized prices and lifting of taxes from food commodities, compared to the magnitude and seriousness of the challenge, the level and type of assistance provided to the most affected households was found to be insufficient.

5.2. Recommendations

- WFP together with the relevant Regional Government organizations and other partners ought to design a food aid program and implement through appropriate intervention modalities that include free food distributions, market support, school feeding, and food for work/asset in order to reduce problem of food insecurity and related vulnerability conditions of the most affected poor households.

- UNICEF in collaboration with the relevant Regional Government organizations and other partners need to act on affected/deteriorated basic services such as water, sanitation, health facilities, etc.

- A multi-agency and multi-sectoral regional task force should be established as early as possible in order to address the multi-dimensional problems of the affected population and design a well coordinated urban food security and market monitoring system.

- The Regional Government together with its development partners should plan and implement a long-term and sustainable solutions and design welfare monitoring system for the urban population in order to reduce the existing high level of poverty of the population.